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To cite this article: Elizabeth Simon (2021): Explaining the educational divide in electoral behaviour: testing direct and indirect effects from British elections and referendums 2016–2019, Journal of Elections, Public Opinion and Parties, DOI: [10.1080/17457289.2021.2013247](https://doi.org/10.1080/17457289.2021.2013247)

To link to this article: <https://doi.org/10.1080/17457289.2021.2013247>



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Published online: 17 Dec 2021.



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# Explaining the educational divide in electoral behaviour: testing direct and indirect effects from British elections and referendums 2016–2019

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## ABSTRACT


An educational divide has become apparent in Western democratic politics. Our understanding of why this divide has emerged remains limited as existing studies have not utilized mediation methodologies, which allow detailed examination of how education's shaping effect on electoral behaviour is transmitted. This study addresses this gap in knowledge – providing a more complete picture of why modern British politics divide along educational lines. It applies the Karlson–Holm–Breen method to British Election Study data to explore firstly, what proportion of education's total effect on vote choices, cast in the 2016 referendum, 2017 and 2019 General Elections, was transmitted indirectly, and secondly, the relative contribution of economic orientations, cultural attitudes and political cue-taking behaviours as drivers of this divide. Findings show 67–91% of education's total effect on vote choices was transmitted indirectly and crucially, that vote choices divided along educational lines largely because educational groups exhibited divergent economic orientations, cultural attitudes and cue-taking behaviours. Results also highlight that educational division(s) in the referendum and General Election voting were driven by different mechanisms.

**ARTICLE HISTORY** Received 1 May 2021; Accepted 26 October 2021

## Introduction

It is well established that educational attainment influences a plethora of attitudes and outcomes (Hainmueller and Hiscox 2007; Surridge 2016; Van De Werfhorst and De Graaf 2004; Weakliem 2002). In Western democracies, education is not only a potent source of social division but an emergent source of political division. Across Europe, nationalist and populist support comes primarily from the least educated and most green and social liberal party voters

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 Supplemental data for this article can be accessed at <https://doi.org/10.1080/17457289.2013247>.

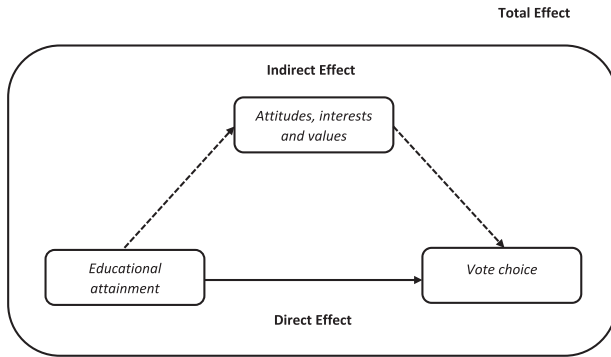
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are graduates (Bovens and Wille 2017). In 2016, Clinton held a 20 percentage point lead over Trump amongst graduates in the United States (PRC, 2018) and just 22% of United Kingdom (UK) graduates voted to leave the European Union (EU), compared to 72% of those with no qualifications (Curtice n.d.). Despite an explosion of scholarly interest in why this “new” educational divide has come to bear, our understanding of this phenomenon remains limited as existing empirical work has employed regression-based methods, which cannot provide a complete picture of the ways education shapes electors’ vote choices.

This paper addresses this gap in the literature by using a mediation technique, capable of decomposing educational attainment’s total effect on electoral behaviour into direct and indirect portions, to analyse 2016–2019 British Election Study data. It goes beyond the scope of existing works by examining precisely what share of education’s total effect on vote choice is transmitted (in)directly and exploring the relative contribution of economic orientations, cultural attitudes and political cue-taking behaviours as drivers of this divide. Undertaking a comprehensive investigation of the ways in which education shapes electoral behaviour allows this paper to make its’ central contribution – providing a more complete picture of why British electors’ vote choices divide along educational lines today. Insights produced will strengthen our understanding of the sources and dynamics of educational polarization in ways that not only provide a basis for taking action to reconcile this stark educational divide, which has the potential to threaten the very functioning of British democracy, but allow calculated predictions to be made about how this divide may shape future political landscapes.

## **The educational divide in Western democratic politics**

Education’s powerful effect in shaping vote choices has recently been highlighted in many Western democracies. As a widespread consensus that politics divide starkly along educational lines has developed, so too has our knowledge of why this divide exists. Works by Bovens and Wille (2017), Fieldhouse et al. (2019), Goodwin and Heath (2016), Hooghe and Marks (2018) and Stubager (2010, 2013) have stressed this divide must be viewed through the lens of influential vote choice theories – particularly Campbell et al.’s (1960) Michigan model and Lipset and Rokkan’s (1967) cleavage theory – which argue socio-structural variables shape group-based attitudes, interests and values, which in turn influence vote choices. They propose that much of education’s effect on electoral behaviours is transmitted indirectly, with educational divisions in voting being driven by differently educated persons’ asymmetric attitudes, interests and values, rather than by any direct consequences of experiencing more education (Figure 1 offers an illustration). Exploring how education’s effect on electoral behaviours is decomposed



**Figure 1.** (In)direct and total effects in the education–vote choice association.

into direct and indirect components holds the key to revealing how education shapes electoral behaviour, and therefore to developing fuller understandings of why politics divide along educational lines.

Western democratic politics are structured along two ideological dimensions, and electors' positions along these determine their vote choices (Dalton 2018; Häusermann and Kriesi 2015; Wheatley 2016). The first is an economic conflict, driven by competing self-interests, relating to income, inequality and views of the state's role in resolving such tensions (Dalton 2018). The second is a cultural conflict between those with liberal stances on issues such as environmentalism and egalitarianism, promoted by social movements conceived in the 1970s, and immigration and integration, which achieved salience through globalization, and those who oppose the changing "status quo" and thus, express conservative reactions to these issues (Norris and Inglehart 2019).

Interestingly, research conducted across various temporal and geographical contexts has shown education structures opinions along both dimensions – highly educated persons are, on average, considerably more culturally liberal, and somewhat more economically conservative, than their less educated counterparts (Hainmueller and Hiscox 2007; Surridge 2016; Van De Werfhorst and De Graaf 2004; Weakliem 2002). Through becoming more educated and particularly attending university, individuals internalize liberal cultural attitudes via socialization processes (Surridge 2016). This "liberalizing" function could explain education's linkage with voting – more and less educated persons vote for different parties because of their distinctive cultural attitudes. Given educational attainment performs a "stratification" function in globalized Western democracies – affording the highly educated well-paid, high-status jobs and economic security whilst exposing the lesser educated to competition for scarce lower-skilled job opportunities (Kriesi et al. 2008) – it also seems plausible that education-based variation in voting is explained by educational groups' asymmetric economic attitudes and interests.

Hakhverdian et al. (2013) suggest that educational attainment has a broader set of functions in modern societies; it not only stratifies and liberalizes but also shapes individuals' internalization of political messages. Citizens receive cues from news media (Reeves, McKee, and Stuckler 2016) and political elites (Hobolt 2016), which influence their vote choices. As education structures the volume and type of news consumed (Chan and Goldthorpe 2007), and populist, anti-establishment attitudes, which have been cued by elites in recent years and are linked to disruptions in traditional voting patterns seen across Western democracies (Geurkink et al. 2020), it seems plausible that accounting for educational groups' differential internalization of political cues could explain why politics divide along educational lines.

That our economic orientations, cultural attitudes and the political cues we internalize are all associated with vote choice, and education structures these attitudes, interests and behaviours, suggests it is reasonable to expect these factors may explain (or more technically, mediate) education's effect on voting. Despite this, just a few pioneering studies have conducted empirical tests that explore whether, and to what extent, these "funnels of causality" (Campbell et al. 1960) contribute to explaining why modern Western democratic politics divide along educational lines. Studying British and Danish contexts, respectively, Fieldhouse et al. (2019), Goodwin and Heath (2016) and Stubager (2013) have shown that introducing measures of electors' cultural attitudes (and to a lesser extent, economic attitudes, status and/or political disillusionment) into vote choice regression models greatly reduces the magnitude of education's effect, and in some cases renders this statistically insignificant. In doing so, these studies have advanced our knowledge of why politics divide along educational lines. Firstly, by confirming that a substantial portion of education's total effect on electoral behaviours is indeed transmitted indirectly, and secondly, by indicating that asymmetry in educational groups' cultural attitudes is likely a key driver of educational division over vote choices.

This said, our understanding of why educational divisions have formed remains limited. Existing studies have all adopted logistic regression-based analytical strategies, which involve inferring the overall size of education's indirect effect(s) on electoral behaviour from a comparison of total and direct effects. Consequently, they have not shed light on precisely what portion of education's total effect on vote choices is transmitted indirectly or identified how much of the "educational gap" in voting is explained by each indirect mechanism – leaving us with only a partial understanding of how education shapes electoral behaviour. Only by using specialist mediation methodologies can scholars address these gaps in knowledge. For example, providing insight into whether the direct effect of becoming more educated, or the indirect effects of education transmitted via cultural attitudes, economic orientations and cue-taking behaviours, carry more

weight in shaping electors' vote choices. Doing so will not only better get to the roots of this educational divide and thus provide a basis for developing the much-needed, more detailed picture of why politics divide along educational lines but is imperative in a methodological sense. This is because regression-based effect decomposition methods, of the type used to estimate non-linear models in existing works, only provide accurate results for linear models (Karlson, Holm, and Breen 2012).

## **Advancing understandings of the educational divide**

Scholars must identify mediation techniques capable of decomposing education's total effect on vote choices into (in)direct effects, and quantifying the strength of each of these pathways, and apply these in empirical work if we are to develop a complete picture of why politics divide along educational lines. This will not only allow exploration of whether existing studies' conclusions hold under more robust tests of the education–vote choice linkage but also generate novel findings.

This study takes up precisely this research agenda by asking: how can the educational divide observed in electoral behaviour be explained? This question is explored by testing two hypotheses. Firstly, that: a statistically and numerically significant portion of education's total effect on electoral behaviours is transmitted indirectly, via attitudinal, interests-based and behavioural mechanisms (H1). This paper then goes significantly beyond the scope of existing works, which have largely focused on testing the role played by education's "liberalizing" function in explaining education–vote choice associations, by performing a test of the novel, and more expansive, hypothesis that politics divide along educational lines, at least partly, because educational groups have asymmetric economic orientations, cultural attitudes and political cue-taking behaviours, which shape their vote choices (H2).

Failure to consider this more expansive set of indirect mechanisms, through which education may shape vote choices, could not only preclude the development of a comprehensive explanation of this phenomenon but also jeopardize the accuracy of conclusions drawn. This is because, by definition, direct effects denote the effect of an independent variable, on a dependent variable, remaining unexplained by specified mediators (Karlson, Holm, and Breen 2012).

## ***The British case***

The British context stands out as an interesting case for exploration. Britain has not only experienced dramatic growth in the (relative) size of its highly educated population, over the past half century,<sup>1</sup> which has rendered educational attainment a meaningful point of socio-demographic division

(Bovens and Wille 2017; Ford and Jennings 2019), but also is a context in which education's striking shaping effect on politics has recently been highlighted. Whilst prior to 2016, an educational divide in British politics was neither widely discussed nor observed (see Appendix A), this changed with the 2016 EU Referendum campaign when it became apparent that educational attainment marked the deepest gradient in Brexit support (Curtice *n.d.*). Education's importance in shaping the contours of British public opinion has been at the forefront of debate since then. Figure 2 clearly illustrates the stark educational divide in electoral behaviour has not subsided post-2016. Whilst politicians, commentators and scholars alike have sought to understand the drivers of this emergent divide, important gaps in knowledge remain. This study addresses these by exploring its hypotheses in the British context.

## Materials and methods

This study uses nationally representative British Election Study Internet Panel (BESIP) data (Fieldhouse et al. 2020), which includes measures of vote choice, socio-demographic characteristics and political attitudes, interests and behaviours, unrivalled by other UK survey data sets, to test its hypotheses in three recent national political contests, which are considered first-order elections.<sup>2</sup> It utilizes data on 23,716, 18,885 and 24,526 English and Welsh electors who reported voting in the 2016 referendum, 2017 and 2019 General Elections, respectively. Scots are excluded as the dominance of the Scottish National Party and issues of Scottish independence means their political behaviour cannot be compared with English and Welsh electors' (Cutts et al. 2020). See Appendix B for analyses including Scots.

## Dependent variables

As this paper seeks to explain why British electors' vote choices have divided along educational lines, it was deemed non-sensical to include non-voters and those who could not recall or did not report, their vote choices (Appendix B shows results including non-voters).

This study employs three dependent vote choice variables – one for each political contest considered. A binary measure of EU Referendum voting records whether respondents reported opting to Leave or Remain in BESIP Wave 9. Both 2017 and 2019 General Election vote choice measures take three-category formats, recording whether BESIP Wave 13 and 19

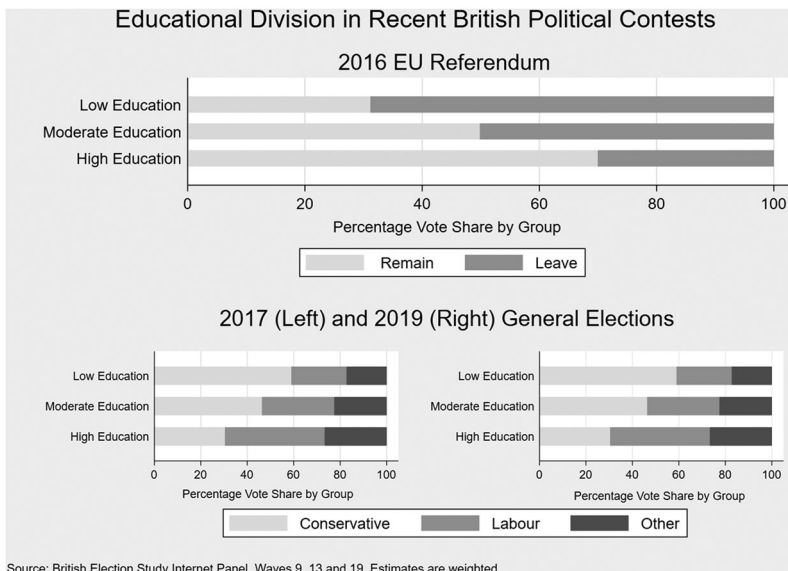
<sup>1</sup>25% of UK residents aged 25–34 and 16% aged 55–64 held tertiary educational qualifications in 1997, compared to 51 and 37%, respectively, by 2018 (OECD 2021).

<sup>2</sup>While EU referendums are often regarded as second-order elections, Glencross and Trechsel (2011) demonstrate these are better conceptualized as first-order contests.

respondents,<sup>3</sup> respectively, reported voting for the Labour party, the Conservative party or another party. The loss of detail caused by grouping parties receiving marginal vote shares (<10% of valid votes) was deemed a necessary trade-off to avoid sparse data biases.

### *Independent variables*

The National Vocational Qualification (NVQ) framework is a convenient schema for classifying educational attainment, which equalizes academic, vocational and international qualifications and accounts for temporal variation in qualifications offered (Connelly, Gayle, and Lambert 2016). This study uses a modified variant of the NVQ framework. NVQ Levels 1 and 2, which represent the lowest educational levels (not exceeding secondary school qualifications), are combined as BESIP coding does not allow distinction between these. Persons with no qualifications are included in this low education category. NVQ Levels 3 and 4 were pooled, as few BESIP respondents held Level 4 qualifications. This category represents “moderate” educational attainment (post-secondary but below degree level). In the traditional NVQ framework, Level 5 encompasses both academic, namely “first” and “higher” degrees, and vocational qualifications, including professional institute membership (see Dearden et al. 2002). Here, only those with academic degrees are classified in the high education category, as BESIP coding does not distinguish Level 4 and 5 vocational qualifications.



**Figure 2.** Educational division in the British Electorate 2016–2019.



As education is central to testing this study's hypotheses, analyses exclude respondents with missing educational information.

Including socio-demographic control variables associated with voting and educational attainment ensures education's true, unconfounded, shaping effect on electoral behaviour is uncovered and therefore, that reliable conclusions are drawn in relation to this study's hypotheses. Age, gender, ethnicity, country of residence, class background and interest in politics are included as controls. Age is continuous whilst gender and ethnicity are binary coded (male/female and white British/other, respectively). Country of residence, class background and political interest are categorical variables. Appendix C provides additional information on coding and descriptive statistics.

Indicators of economic orientations, cultural attitudes and political cue-taking were carefully selected to ensure all theorized mechanisms by which education might indirectly shape vote choices were captured and thus, that a fully comprehensive understanding of why vote choices divide along educational lines in modern Britain was produced. Three measures of economic orientations (annual household income, occupational class and left-right attitudes) are used. They encompass both economic interests and attitudes and capture that educational groups are not only afforded divergent economic opportunities and securities in modern economies but also have alternative views of the state's role in resolving economic issues. The occupational class measure is a modified version of the three-class analytical National Statistics Socio-Economic Classification; including separate categorizations for intermediate and self-employed occupations, as Evans and Mellon (2020) show these groups exhibited disparate voting behaviours in recent British political contests.

Eight indicators of attitudes towards social hierarchy and tolerance of non-conformity, which Stubager (2013) argues represent the essential tenets of the cultural ideological divide, capture cultural attitudes. These are British and European identity, views on equal opportunities for ethnic minorities and gays and lesbians, libertarian-authoritarian attitudes, and views on the amount of, and economic and cultural "threats" posed by, immigration.<sup>4</sup> Finally, two political cueing measures (on- and offline news readership<sup>5</sup> and populist attitudes<sup>6</sup>) are included to account for the fact educational groups are exposed to varying messages from political elites, interpret these

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<sup>3</sup>Only responses to vote choice items from BESIP waves immediately post-contest are included to prevent recall issues distorting conclusions.

<sup>4</sup>While immigration's "economic threat" may be thought to capture the economic political dimension, Häusermann and Kriesi (2015) and Wheatley (2016) show that this actually loads on the cultural dimension – driven by distrust of "others" and nation-based conceptions of deservingness.

<sup>5</sup>Outlets' political leaning was coded using an *ad hoc* process guided by endorsements of political parties (see McKee (2017)).

<sup>6</sup>Populist attitudes are captured by the item: "politicians [do not] care about what people like me think."

differently and rely on them to dissimilar extents, in determining their vote choices.<sup>7</sup> Whilst one cueing indicator captures information received and the other a more general political orientation, both constitute “informational shortcuts” which help electors decide how to vote.

This study’s independent variables typically represent item responses from the wave of vote choice data collection. As BESIP data were used cross-sectionally, readers should be cautious about inferring causal conclusions from this study.

### ***Missing data***

Item non-response is common across the BESIP. Ignoring this by analysing only complete cases may engender bias (Graham 2009). Two strategies were combined to tackle this. Where BESIP items displayed high proportions of missing data in a given wave, respondents’ values from earlier waves were substituted. A multivariate imputation by chained equations approach estimated values for non-substitutable missing cases and items with less missing data. For details of this procedure and diagnostics, see Appendices D and E.

### ***Analytical approach***

The effect decomposability properties of linear models do not straightforwardly extend to non-linear models. In non-linear models, both mediating effects and coefficient re-scaling effects will engender changes in the reported coefficient(s) of a given independent variable, as mediators are added – making it impossible to identify the “true” size of independent variables’ indirect effects (Karlson, Holm, and Breen 2012). Clearly then, using a standard logistic regression-based method (either as in existing studies or as part of a structural equation model) would prevent this study from drawing accurate inferences around how education’s total effect on vote choice is decomposed into (in)direct components and to what extent particular mechanisms mediate this association. This study, therefore, uses the Karlson–Holm–Breen (KHB) methodology, which was explicitly designed to eliminate this identification problem, to test its’ hypotheses. See Appendix F for discussion of alternative methodologies.

H1 is tested by adding all controls and mediators to three KHB vote choice models simultaneously – to reveal precisely how much of education’s total effect on voting in the 2016 referendum, 2017 and 2019 General Elections was direct and indirect. H2 is then tested by producing

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<sup>7</sup>Including leadership evaluations, which Clarke et al. (2009) show determine vote choices, was considered but ultimately ruled out, owing to endogeneity concerns outlined by Holmberg et al. (2013).

KHB statistics which record the portion of educations' total effect on vote choice transmitted via each set of hypothesized mediators. As the KHB Stata package (Kohler and Karlson 2010) is not fully compatible with imputed data, disentanglement statistics used to test H2 were calculated separately for each imputed data set and then combined to form single-point estimates, using Rubin's (1986) rules. Sensitivity analyses confirm that results vary little when estimated on complete and imputed data (see Appendix G).

The results of three, sequentially built, logistic vote choice regression models are also presented to illustrate how conclusions drawn about why politics divide along educational lines are distorted if this oft-used, but sub-optimal, technique is used, rather than the KHB method.

## Results

Preliminary analyses explored the nature of the educational divide in British electors' vote choices. Table 1 presents educational odds reported across three logistic, vote choice, regression models and demonstrates how educational odds change as different combinations of variables are included in each model block (full results in Appendix E). This analysis replicates the regression-based strategies existing studies have used to explain the "educational gap" in voting.

Block 0 captures the "raw" education–vote choice association. It shows moderately and highly educated electors had statistically significantly lower odds of voting to Leave the EU, in 2016, or voting Conservative, in the 2017 and 2019 General Elections, than the least educated. A stark educational divide is observed in all contests, although vote choices divided more strongly along educational lines in the 2019 election, than in the 2017 contest. Taking the most dramatic example, highly educated Brits had over three times the odds of voting Labour, rather than Conservative, than the least educated. This educational divide shows gradation. The moderately educated always vote more like the least educated than the highly educated.

After accounting for socio-demographic controls (Block 1), the strength of all education–vote choice associations was considerably reduced. This indicates that politics divide along educational lines in Britain today partially because high and low educated persons are "different types" of people. However, education's total effect on electors' vote choices remained strong, and statistically significant, after controls. This unconfounded total educational effect is now dissected using results obtained via the KHB methodology and presented in Tables 2 and 3. In each political contest considered, KHB statistics describe the education–vote choice association for the moderately and highly educated compared to the low education reference group.

**Table 2** shows that educational attainment had large and highly statistically significant indirect effects on electoral behaviour in all contests. Fully 67–91% of education’s total effect on British electors’ vote choices was transmitted indirectly. Across all contests, and educational contrasts, after accounting for controls and hypothesized mediators, education’s direct effect on vote choice constituted no more (and often much less) than 33% of its’ total effect. This provides clear support for H1.

For six of the 10 education–outcome combinations, **Table 2** shows that net of controls and mediators, education had a statistically significant direct effect on British electors’ vote choices, at the 5% threshold. These six cases where the “educational gap” in voting could not be explained entirely by indirect effects are concentrated in high–low education contrasts and the starkest cases of educational division observed. It, therefore, seems fair to conclude that whilst this study’s hypothesized mechanisms explain much of the educational divergence in the British electorate’s recent vote choices, they cannot explain the full extent of this in all contests. These same general conclusions can be drawn from **Table 1**.

These findings provide implicit support for H2, demonstrating that more educated British electors made different vote choices to the least educated, in recent political contests, largely because they exhibited different economic orientations, cultural attitudes and political cue-taking behaviours. The KHB method’s ability to disentangle mediating effects is now utilized to examine H2 in detail.

**Table 2** shows the portion of education’s total effect on vote choice transmitted indirectly via economic, cultural and cue-taking mechanisms. In the referendum model, and for the high–low contrast in the 2019 Labour versus Conservative model, **Table 2** shows indirect economic, cultural and cue-taking effects all make positive contributions to the total effect, meaning they narrow the “education gap” in vote choices. Accounting for the varying educational distribution of these attitudes, interests and behaviours explains why more educated British electors less often voted Leave in 2016, and more often for the Labour party in 2019, than the least educated.

In all other election models, **Table 2** shows the indirect effect of education transmitted via economic mechanisms makes a substantial negative contribution to education’s total effect on vote choice. Net of all other influences, education shapes British electors’ economic orientations in ways that make the highly and moderately educated slightly more likely to vote Conservative than their less educated counterparts. This indirect “economic” education effect generally has a different, and counteracting, explanatory power to the others in election voting. It acts to dilute the overall, and far larger, positive mediating effects of cultural and cue-taking mechanisms, whereby more educated voters are considerably less likely to vote Conservative than the least educated.

**Table 1** . Educational odds in logistic vote choice regressions.

Reference: Low Education		2016: Leave versus Remain	2017: Labour versus Conservative	2017: Other versus Conservative	2019: Labour versus Conservative	2019: Other versus Conservative
(0) Education	Moderate	0.438*** (0.400–0.479)	1.480*** (1.346–1.628)	1.343*** (1.185–1.522)	1.712*** (1.541–1.903)	1.695*** (1.529–1.880)
	High	0.204*** (0.184–0.225)	2.254*** (2.034–2.501)	2.276*** (1.984–2.611)	3.596*** (3.232–4.001)	3.213*** (2.859–3.610)
(1) Education + controls	Moderate	0.533*** (0.486–0.584)	1.229*** (1.113–1.357)	1.263*** (1.109–1.439)	1.391*** (1.243–1.556)	1.478*** (1.333–1.639)
	High	0.286*** (0.257–0.318)	1.886*** (1.684–2.112)	2.065*** (1.772–2.408)	2.862*** (2.546–3.217)	2.620*** (2.319–2.961)
(2) Education, controls and economic orientation	Moderate	0.566*** (0.515–0.622)	1.499*** (1.326–1.694)	1.431*** (1.249–1.639)	1.551*** (1.369–1.757)	1.571*** (1.408–1.753)
	High	0.310*** (0.278–0.345)	2.413*** (2.092–2.783)	2.370*** (2.016–2.787)	3.100*** (2.720–3.533)	2.740*** (2.403–3.125)
(3) Education, controls and cultural attitudes	Moderate	0.828*** (0.733–0.935)	0.911 (0.815–1.018)	0.993 (0.863–1.142)	0.939 (0.825–1.069)	1.092 (0.974–1.224)
	High	0.622*** (0.537–0.719)	0.965 (0.847–1.099)	1.179* (0.995–1.396)	1.286*** (1.118–1.480)	1.397*** (1.222–1.597)
(4) Education, controls and political cues	Moderate	0.540*** (0.490–0.594)	1.234*** (1.110–1.372)	1.276*** (1.117–1.456)	1.329*** (1.177–1.499)	1.449*** (1.304–1.609)
	High	0.309*** (0.277–0.346)	1.701*** (1.505–1.924)	1.945*** (1.662–2.276)	2.417*** (2.128–2.746)	2.350*** (2.076–2.659)
(5) Education, controls and all mediators	Moderate	0.851** (0.751–0.963)	1.105 (0.965–1.264)	1.131 (0.976–1.311)	1.048 (0.911–1.207)	1.210*** (1.071–1.367)
	High	0.662*** (0.571–0.769)	1.149* (0.978–1.351)	1.311*** (1.093–1.573)	1.424*** (1.217–1.667)	1.556*** (1.343–1.802)
<i>Observations</i>		23,716	18,885		24,526	

Note: Weighted odds ratios presented with 95% confidence intervals in parentheses. \* $p < .1$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

**Table 2.** Decomposing education's effect on vote choices.

Reference: low education	2016: Leave versus Remain	2017: Labour versus Conservative	2017: Other versus Conservative	2019: Labour versus Conservative	2019: Other versus Conservative
Moderate education					
Total effect	−0.894*** (0.062)	0.336*** (0.067)	0.374*** (0.074)	0.504*** (0.071)	0.587*** (0.061)
Direct effect	−0.162** (0.063)	0.099 (0.069)	0.123 (0.075)	0.047 (0.072)	0.190*** (0.062)
Indirect effect	−0.732*** (0.065)	0.236*** (0.080)	0.250*** (0.061)	0.457*** (0.077)	0.397*** (0.056)
% Total which is direct	18.10%	29.62%	32.97%	9.36%	32.42%
% Total which is indirect	81.90%	70.38%	67.03%	90.64%	67.58%
% Total via economic orientation	4.44%	−54.18%	−27.53%	−22.77%	−12.53%
% Total via cultural attitudes	73.74%	121.91%	93.83%	104.71%	75.71%
% Total via political cues	3.71%	2.65%	0.73%	8.70%	4.39%
High education					
Total effect	−1.843*** (0.074)	1.050*** (0.077)	1.083*** (0.087)	1.742*** (0.080)	1.533*** (0.074)
Direct effect	−0.412*** (0.076)	0.139* (0.082)	0.271*** (0.093)	0.354*** (0.080)	0.442*** (0.075)
Indirect effect	−1.431*** (0.072)	0.911*** (0.085)	0.812*** (0.070)	1.388*** (0.085)	1.091*** (0.066)
% Total which is direct	22.35%	13.24%	25.04%	20.31%	28.84%
% Total which is indirect	77.65%	86.76%	74.96%	79.69%	71.16%
% Total via economic orientation	3.60%	−11.51%	−4.97%	0.01%	−2.50%
% Total via cultural attitudes	68.62%	87.82%	74.29%	69.17%	65.55%
% Total via political cues	5.43%	10.46%	5.64%	10.51%	8.11%
Observations	23,716		18,885		24,526

Note: Weighted coefficients presented with constituency-clustered standard errors in parentheses. \* $p < .1$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

**Table 3.** Absolute contribution of mediators.

Reference: low education	2016: Leave versus Remain	2017: Labour versus Conservative	2017: Other versus Conservative	2019: Labour versus Conservative	2019: Other versus Conservative
Moderate education, % indirect effect via ...					
Economic orientation	5.42%	(-)30.31%	(-)22.55%	(-)16.72%	(-)13.53%
Cultural attitudes	90.05%	68.21%	76.85%	76.89%	81.73%
Political cues	4.53%	1.48%	0.60%	6.39%	4.74%
High education, % indirect effect via ...					
Economic orientation	4.64%	(-)10.48%	(-)5.85%	0.01%	(-)3.28%
Cultural attitudes	88.37%	79.99%	87.50%	86.80%	86.07%
Political cues	6.99%	9.53%	6.64%	13.19%	10.65%

This economic suppression effect, seen in most election models, is masked in the logistic regression results presented in [Table 1](#). As the educational odds of voting for Labour, or another party, versus the Conservatives, are only subtly larger in Block 2 (after economic variables are added), than in Block 1 (controls only), and both sets of coefficients exhibit identical significance levels and overlapping confidence intervals, [Table 1](#) suggests education may either have a small negative indirect effect on voting transmitted via economic mechanisms or that this is merely a chance finding. If the contribution of indirect economic mechanisms was ignored, and only positive indirect paths considered, the true size of education's total (positive) shaping effect on voting would be concealed. If underestimated, understandings of precisely how this shaping process occurs would be distorted. Clearly then, relying on the results presented in [Table 1](#) would lead to mistaken inferences about the reasons why politics divide along educational lines. Using the KHB method, which resolves the issue of conflating mediation effects with variable re-scaling effects in logistic regression analyses (Karlson, Holm, and Breen 2012), holds the key to producing fuller, and more accurate, understandings of the modern British educational divide.

The relative strength of economic, cultural and cue-taking mechanisms' indirect roles in explaining the education-vote choice association, across contests and educational contrasts is now explored. [Table 3](#) reports the absolute contribution each mediator makes to the total indirect effect to facilitate this comparison. These figures are used, rather than the KHB statistics presented in [Table 2](#), as the presence of counteracting indirect effects in some models, and not others, means the size of total effects transmitted via indirect mechanisms are not comparable across models, as their sum does not always equal 100%.

In the referendum, cultural attitudes accounted for 88–90% of education's indirect effect on voting – explaining much of the reason why highly, and moderately, educated Brits voted Remain more often than the least educated.

In comparison, economic orientations and cue-taking had lesser roles, capturing just 5–7% of education's indirect effect. In the General Elections, we see a different pattern. Whilst cultural mechanisms had the greatest explanatory power in these contests too – capturing 68–88% of education's indirect effect on voting – other mechanisms also typically had considerable power in explaining why voting divided along educational lines. For example, economic mechanisms accounted for as much as 30% of education's indirect effect on voting Labour, over the Conservatives, and political cue-taking behaviours accounted for over 10% of education's indirect effect in the 2019 elections' high–low contrasts. In relation to H2, this highlights that whilst the educational divide in EU Referendum voting was predominantly driven by educational groups' divergent positions along a single, cultural, dimension, the educational divide in General Election voting was more complex, driven by multiple mechanisms.

In the elections studied, there was considerable consistency in the way each mechanism drove the education–vote choice relationship. Firstly, in both contests, political cues accounted for a greater portion of the indirect education–vote choice association seen for the high–low education contrast, than for the moderate–low contrast – 7–13% of the former indirect effect compared to just 1–6% of the latter. This suggests British electors' vote choices divided along educational lines in recent elections to a small, but non-negligible, extent because educational groups, and particularly the low–high groups, exhibited asymmetric political cue-taking behaviours.<sup>8</sup> Secondly, [Table 3](#) highlights that economic mechanisms almost always had stronger effects in mediating the educational divide over Labour/Conservative voting, than Other/Conservative voting, with the reverse true of cultural attitudes. The only exceptions were the 2019 high–low contrasts. Finally, [Table 3](#) shows economic mechanisms always carried more power in explaining why low and moderately educated electors' vote choices varied, than for low and high educated persons, with the reverse again true for cultural attitudes. Illustratively, economic mechanisms accounted for 14–30% of education's indirect effect on General Election vote choice in the low–moderate contrast and just 0–10% in the high–low contrast. For cultural attitudes, these same figures stood at 68–82% and 80–88%, respectively.

All considered, it seems fair to conclude that the educational divisions observed in 2017 and 2019 General Election voting can generally be explained in the same way – being driven broadly to the same extent by educational groups' divergent economic orientations, cultural attitudes and political cue-taking behaviours.

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<sup>8</sup>Except for the moderate–low education contrasts of 2017 election voting, where cues accounted for <2% of education's indirect effect.



## Discussion and conclusion

This paper goes beyond the scope of existing work firstly, by specifying an encompassing theoretical model of educational attainment's shaping effects on voting, which includes roles for economic orientations, cultural attitudes and political cue-taking as mediators, and subsequently, by conducting a robust empirical test of this model, using mediation analysis. Results hold regardless of the subset of cases used for analyses (with or without Scots, non-voters and imputation, see Appendices B and G, respectively) and offer novel insights – providing a more complete picture of the reasons why British politics divide starkly along educational lines today.

Firstly, this study reveals a large and statistically significant portion of educational attainment's total effect on British electors' recent vote choices (67–91%), was transmitted indirectly. This finding not only corroborates the broad conclusions drawn by existing studies, which indicate that “much of” education's total effect on electoral behaviours is conveyed through indirect attitudinal pathways but also expands on these by documenting the relative magnitude, and statistical significance, of education's direct and indirect effects on British electors' vote choices, for the first time. In doing so, this study lends some credence to Bovens and Wille's (2017) and Stubager's (2010) theories that education cleavage-style explanations of electoral behaviour are fitting across Western Europe. Findings verify this is indeed the case in contemporary Britain and confirm that the works of Fieldhouse et al. (2019) and Goodwin and Heath (2016), which implied the same, did not draw this conclusion simply because they had used analytical tools not explicitly designed for effect decomposition.

Intriguingly, this paper finds education had statistically significant direct effects on electors' vote choices in just over half of the education–outcome combinations studied. In these cases, accounting for socio-demographic controls and hypothesized mediators could not provide a full account of why more educated British electors voted differently to their less educated counterparts. That this pattern occurred in instances where the initial “educational gap” in voting was starkest is unsurprising, as it seems logical that a wider range of factors would need to be accounted for to explain larger gaps in electoral behaviours.

Social network effects might constitute the “missing link” in explaining why the most educated members of the British electorate vote differently to the least educated. Given that social contacts influence voting (Newcomb 1978; Sinclair 2012) and universities are ideal sites for forming strong, new friendships (Brooks 2002), it stands to reason that graduates may have disproportionately voted to Remain, and for the Labour and Other parties, as they experienced greater influences to do so from within their networks, than the least educated. Thinking of the referendum

specifically, this result might be explained by Allport's (1954) contact theory. Given Meleady, Seger, and Vermue (2017, 804–805) found “positive inter-group contact [with EU immigrants] was associated with increased support for Britain remaining in the EU ... as a consequence of its prejudice-reducing effects,” it seems possible that graduates more often voted Remain, than the least educated, as attending university exposed them to, and allowed them to interact (positively) with, EU students. Future work should assess such possibilities.

This study's other key discoveries are that cue-taking behaviours generally have relatively small, but non-negligible, (indirect) effects in explaining education–vote choice associations and that economic orientations typically have negative mediating effects in General Elections (in contrast to other mechanisms' positive mediating effects). Failure to account for either of these indirect pathways in analyses of education's influence on electoral behaviours would produce a distorted picture of the extent to which, and reasons why, education shapes vote choices. These findings clearly imply that a broader theoretical framework of the education–vote choice association, which includes indirect effects of political cues and economic orientations, as well as cultural attitudes, must be adopted, and tested robustly using effect decomposition methods, if deeper understandings of the educational (re)alignment of modern Western democratic electoral politics are sought.

Perhaps most interestingly, this article shows no single pattern of educational division exists in modern British politics. Whilst cultural attitudes explained the largest portion of the “educational gap” in voting in all contests considered – a fact expected given that Häusermann and Kriesi (2015) stress cultural, rather than economic, concerns dominate support for mainstream parties in Western Europe – only in the referendum could this divide in voting be explained by educational groups' possession of asymmetric cultural attitudes alone. In recent General Elections, multiple indirect educational mechanisms exhibited considerable explanatory power, and did so in consistent ways. For example, in both elections, economic drivers had a relatively larger role in explaining the “educational gap” between low and moderately educated electors' vote choices, than for the high and low educated groups, whilst cultural drivers always carried relatively more explanatory power in the latter contrast. The reason for this is simple and is illustrated clearly when considering the gulfs in educational groups' left–right (economic) and libertarian–authoritarian (cultural) attitudes. The economic orientations of moderately and low educated British electors are, on average, somewhat less similar than high and low educated British electors', whilst their cultural attitudes are far more similar (see Appendix H). As would be expected, each mechanism explains a relatively larger portion of education's indirect effect on General Election vote choices for educational contrasts in which a deeper initial divide in these orientations is observed.

Taken together, these discoveries considerably advance our understanding of the educational divide in modern British politics – demonstrating that, at least when it comes to General Elections, educational divisions in vote choices are not only observed because educational groups possess divergent cultural attitudes, which shape their vote choices. Rather, education's "liberalizing", "stratifying" and "information internalization" functions all play roles in explaining why modern British politics divide along educational lines. The weight carried by indirect economic and cue-taking mechanisms in driving the educational division of British electors' General Election vote choices may reflect a specific national character of this conflict. For example, the former result may have materialized only as the British class cleavage was historically stronger than other Western democracies' (Goldberg 2020). Exploring whether these patterns continue in upcoming British elections, and can be generalized to other Western democratic contexts, will be fruitful areas for further research.

This paper's novel findings have the potential to be impactful beyond the academic setting. Only now we have a more comprehensive understanding of how educational attainment has shaped British electors' recent vote choices and developed a detailed explanation of why British politics divide along educational lines today, can we consider this divide's future impact. Insights from this study, for example, allow speculation about how shifts in parties' policies could alter educational allegiances, whether new parties might emerge to cater for unmet education-based preferences and how this divide will impact aggregate party support as graduates come to represent a greater share of the electorate. In furthering our knowledge of the sources and dynamics of educational polarization, this study also provides a basis for acting to reconcile these stark educational divisions.

To conclude, this study demonstrates that using mediation techniques, and fully encompassing theoretical models of education's shaping effects on voting, hold the key to gaining comprehensive understandings of why politics divide along educational lines. It forms a roadmap for future works seeking to explore how, and why, socio-demographic characteristics constitute bases for political division. More substantively, this paper provides novel insights, showing that a large portion of education's shaping effect on vote choices was transmitted indirectly in recent British political contests and that educational divisions over EU Referendum and General Election voting were driven by different mechanisms. In doing so, it provides provisional evidence to suggest an education cleavage-style understanding of the modern British educational divide over politics is appropriate. Scholars should now explore whether these findings are generalizable to other Western democracies and thus, are indicative of a wider educational re-alignment process.

## Acknowledgements

I would like to thank Gabriele Durrant, Will Jennings, Stuart Turnbull-Dugarte and Rune Stubager for providing invaluable feedback on earlier drafts of this article.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This work was supported by the Economic and Social Research Council [grant number: ES/P000673/1].

## Data availability statement

The data that support the findings of this study are openly available from the British Election Study website at: <https://www.britishelectionstudy.com/data/#.X5lujVP7QTU>.

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