The London School of Economics and Political Science

Intergenerational social mobility and political outcomes: the journey matters

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Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

I declare that my thesis consists of 62,932 words.

Statement of co-authored work

I confirm that Paper 1 was jointly co-authored with Dr. Charlotte Haberstroh and I am the lead author.

I confirm that Paper 4 was jointly co-authored with Prof. Neil Lee and Dr. Davide Luca, and I am the lead author,

Abstract

The political economic transformation of developed countries over the past half Century has resulted in widespread social mobility for many individuals. The context is a society where political consensus promoted 'fairness' as the potential to succeed through social mobility. For many individuals their aspirations have been fulfilled, for others there has been disappointment as they remain in the position of their parents or even experienced downward mobility. This resonates with the consensus explanation that 'winning' or 'losing' in the context of structural change polarises society through anti-system voting. Yet, the literature has failed to engage with the process of intergenerational social mobility.

In Paper 1, I test how individuals' social mobility affects the tendency to vote for 'Brexit', showing that one's social origins are nearly as important as current educational or occupational position. Paper 2 develops the analysis to show this origin effect extends to anti-system right support across Europe. Over and above origin and destination effects, the act of upward mobility decreases support for the anti-system right, whereas downward mobility increases support for the anti-system right. Contrastingly, I do not identify any impact from social mobility for those who support the anti-system left. In the second section, I explore the mechanisms behind why social mobility is important for political attitudes. Paper 3 uses panel data to show that going to university makes one less 'Eurosceptic'. However, this effect is at least as great for those from graduate parental backgrounds as for first generation students, ensuring that there remains a difference in attitudes by socio-economic background. Paper 4 investigates another aspect of political socialisation - birthplace unemployment conditions. I find that being born in a Local Authority with higher unemployment decreases adulthood earnings, makes one more economically 'left-wing', and increases the likelihood of voting for the Labour Party.

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1 Introduction

1.1 Overview

Over the past half Century, the political economy of developed nations has changed dramatically. The result of the linked processes of skilled-biased technological change, occupational upgrading, and educational expansion. For many individuals the structural change had implications for their life-paths, attaining a different socio-economic position than that of their parents. In most cases, this has been absolute upward intergenerational social mobility, but for a significant minority they are in a lower position than their parents, absolute downward social mobility. Given the individualisation of life-paths, in comparison to a more static experience of class in previous generations, it has been argued that attachment to a class identity diminished.

In addition to weakened cohesion within classes, the traditional redistributive shared interests that used to bind cross-class coalitions have dissipated (Iversen and Soskice 2015). In the UK, the result was, to a large extent, a lack of traditional social division in party choice by the latter part of the Twentieth Century. In part, this may also be a result of the 'promise' of future social mobility made by parties across the political spectrum. From the late Twentieth Century, there developed a cross-partisan commitment to an 'aspirational society', particularly in Britain, which invested in education with the aim to equalise opportunities to move more people up the social ladder (Andersson 2010). Political parties focused on social mobility as an ideology and policy tool to tackle inequality (Payne 2017). 'Fairness' was promoted as being about social mobility, or at least the perception of mobility (Snee and Devine 2018). There was in effect a new implicit social contract. The promise of upward mobility was the glue on which most individuals could agree, resulting in support of a cross-partisan economic policy consensus.

Yet, the UK has once again experienced dramatic societal polarisation, exposed most clearly through the 'Brexit vote', and then through the division and identities created in its aftermath, potentially even resulting in electoral realignment. Whilst the narrative here relates to Britain and the 'Brexit' vote, it is part of a broader wave of anti-system voting throughout Europe, where there has been similar political economic change.

The papers within my PhD explore if, how, and why individuals' experience of social mobility polarises society through anti-system voting. At the centre of the literature around anti-system voting, and particularly Brexit, are the 'left-behind'. There are many conceptualisations and potential causes of one being 'left-behind'. Most of these explanations rely on how an individual or group have 'lost out' in the context of political economic change – especially during periods of occupational upgrading and educational massification. However, these studies have not engaged with the intergenerational mobility that accompanied these processes. We know little about how social origins help to structure the polarisation in many advanced capitalist democracies.

There are repercussions from widespread social mobility for the way in which one conceives of socio-economic cleavages. First, the broadly defined 'left-behind': are those who have been downwardly socially mobile the same as those who have inherited that position from their parents? Similarly, are the clear 'winners' of skill-biased technological change, graduates, a homogenous group? Broadly, what happens when the working class disintegrates under political economic transformation? I argue, and show empirically, that these groups, based on socio-economic position, need to be nuanced, the socially mobile differ from their non-mobile counterparts. The social identity of an individual cannot be fully identified without understanding their destination, origin, and experience of social mobility. This has implications for our understanding of social cleavages. Moreover, there are consequences for trying to bind cross-class cleavages, which makes generating political consensus tougher than in previous generations.

I investigate these questions in depth in the first two papers of the PhD. First, with regards to Brexit. Second, whether these findings translate to anti-system right and anti-system left support across Europe.

The third and fourth papers of this PhD focus on the mechanisms as to why social mobility impacts political preferences. First, I analyse the extent to which university education affects preferences towards the European Union, and, more generally, economic attitudes, and cultural attitudes. It is widely accepted that graduates have different preferences to their non-graduate peers. However, there is not a consensus as to whether this is a sorting effect, whereby graduates already had different preferences prior to attending university, or that the act of attending university changes one's attitudes. For example, it may be that an individual is

influenced by their new social network, the type of knowledge and learning prevalent within an academic curriculum, or going to university alters one's perceptions of their future life-path and thus changes political preferences.

Moreover, there is no reason to expect a priori that any effect from university attendance will be the same for those from different socio-economic backgrounds. It may be that prior to attending university, individuals from lower socio-economic backgrounds have political preferences which are aligned with their origin socio-economic position. However, they experience a 'catch-up' through university. This would make their preferences in-line with those graduates that hail from more privileged socio-economic origins. In which case, there would be no impact of social mobility on political preferences. Rather, the entirety of political preferences attributed to socio-economic position could be explained by one's destination position. Alternatively, if the effect from university attendance is similar for all, independent of socio-economic origins, it would be a potential explanation for why the socially mobile have preferences that are no longer aligned with the immobile individuals in their origin position or the immobile in their destination position. Instead, their preferences are somewhere in-between.

The fourth paper investigates the importance of birthplace for adulthood earnings and political outcomes. There is an extensive literature examining the importance of 'place'. Particularly focusing on the urban-rural divide for earnings and 'cosmopolitan' attitudes. The debate of 'people' versus 'place' remains open, that is whether there is an effect from where one lives or if differences are compositional. I argue that this debate of 'people' versus 'place' is focused on the wrong part of an individual's life. Instead, the literature should be concentrating on childhood, a time when attitudes and preferences are formed and often held for life. The paper adds to a small but important literature, most prominently from the *Opportunity Insights* project in the United States, showing that birthplace is important for adult outcomes.

I investigate to what extent economic conditions, measured by unemployment rates, in one's local birthplace affect adulthood earnings, political preferences, and voting. Some of this effect is likely to be because individuals from less privileged backgrounds are also more likely to grow up in areas of higher deprivation, where the cost of living is lower. However, I also analyse if the effect of 'place' goes beyond sorting. It is a question which is most pertinent in the UK, a country with high and persistent levels of regional inequality. I argue that children

take their attitude forming cues from their experience of family and friend joblessness, house foreclosures, and rundown infrastructure. These are all observed at a local level rather than more abstract measures of national GDP or national unemployment rates.

The thematic contribution of the thesis is to show that in a society which developed a political consensus based on meritocracy (Shafik 2021), individuals' own experience of social mobility helped form political cleavages. When individuals feel 'let-down' by societal promises offered by the political mainstream, they backlash against those same parties who promoted the economic and cultural change (Hall 2021). The vision of an aspirational implicit contract was shared by both Labour and the Conservatives in the UK in the 1990s, potentially because of the changing support base of social democratic parties away from the traditional working class towards the middle class (Gingrich and Häusermann 2015). However, it is too simplistic to categorise individuals as 'winners' or 'losers' based only on their mobility. Those who inherited their low educational or occupational position from their parents are the most likely to vote 'Leave' in the Brexit vote or, more broadly, support the anti-system right. The importance of origin outweighs any effect from downward mobility. The immobile 'left-behind' are the group that behaves most strongly in line with the existing literature on the 'left-behind', rather than those who experienced relative loss. Research understanding political cleavages needs to be more nuanced and consider preferences based on socio-economic status, origins, *and* mobility in attaining that position. My work highlights the importance of origins beyond those countries, such as the UK, where political rhetoric was focused on social mobility, to other welfare regimes across Western Europe.

1.1.1 Outline of the introduction

The remainder of the introduction to the PhD is structured as follows. To frame the argument, I proceed with a description of the context of political economic change over the past half Century. Then, I summarise the 'death' of class literature and how there has been a rejuvenation in its salience, particularly regarding anti-system voting. Next, I outline the literature on how social mobility affects political preferences. Based on these two literatures, I then layout my argument as to why social mobility is crucial for our understanding of anti-system voting and outline the gap in our knowledge. The next section digs deeper into the mechanisms behind

social mobility and social origins, focusing on the effect of university and impact of birthplace. Next, I outline the methodology and data used across the papers. Finally, I summarise the specific research questions, findings, and contributions within each of the four papers.

1.2 The context of political economic change since the 1970s

Following World War II there was a period of unprecedented economic growth (Eichengreen 2008), commonly referred to as the 'Golden Age'. In the UK, as in most developed countries, this was accompanied by a period of near full employment. During the 1950s and 1960s the unemployment rate averaged 1.6% (Crafts 1995). Over the next half Century, there was dramatic political economic change. There are many explanations of the drivers of this transformation, ranging from globalisation, to an inevitable consequence of unconstrained capitalism (Piketty and Goldhammer 2014, 2020), to a technological regime change enabled by governmental policy (Iversen and Soskice 2019).

Irrespective of the underlying mechanism, it was not a smooth transition. As labelled by Elliot-Major and Machin (2020), the 1970s was a "decade of decline", followed by a "era of rising inequality", and post the financial crash "declining opportunity". The well documented increase in income inequality is often explained by an increasing bifurcation of labour markets, with a hollowing out of 'old middle class' jobs (Goos, Manning, and Salomons 2014). The demand for graduates driven by skill-biased technological change outpaced the supply, increasing the wage premium associated with education (Goldin and Katz 2009). Hence, the benefits from political economic transformation were unevenly spread. Yet, at the aggregate level, societal change was accompanied by the processes of educational expansion and occupational upgrading[1].

To take educational expansion in the UK, 14% of school leavers would attend university in 1972, by 1989 it had reached 17%, and then 34% as Tony Blair entered government in 1997 (Mayhew, Deer, and Dua 2004). Following Labour's push for 'Education, Education, Education', its target to have the majority entering Higher Education was achieved in 2018

[1] It could be argued that the causal mechanism is the other way round. Occupational upgrading and educational expansion led to more technological innovation and globalisation.

(Department for Education 2019)[2]. These patterns of Higher Education were repeated across developed countries, see data from the OECD (Supplementary Figure A.1 and Supplementary Figure A.2)[3].

At the same time, there was a complete change of shape in the occupational class structure. Using the categorical NS-SEC 7 classification[4], there was a movement out of the traditional working classes to professional occupations. In 1971, 42% of men and 45% of women were in routine (NS-SEC 7) or semi-routine occupations (NS-SEC 6). By 2011, this was 30% and 35% respectively. Similarly, those in the professional and managerial classes (NS-SEC 1 and 2) increased from 11% to 40% for men and from 8% to 30% for women (Bukodi and Goldthorpe 2019). This has two major implications for my research. First, the 'old' working class now make up a relatively small proportion of the population, and an even smaller proportion of voters (Larcinese 2007)[5]. Thus, the traditional voting base of social democratic parties, Labour in the UK, has shrunk significantly. Second, in contrast to earlier generations when the social structure remained relatively constant, there were many individuals who no longer had the same education and/or occupational class as their parents. For many, the result was absolute upward social mobility, although with more individuals starting in 'higher' positions there was more room to fall and thus also more downward mobility.

[2] Whilst the DfE and Mayhew et al., data is not directly comparable, it illustrates the broad trends. Mayhew data is all those under 21 entering a Higher Education institution. The Higher Education Initial Participation Rate (HEIPR) quoted from the DfE is an estimate based on a young person in the current cohort entering Higher Education by age 30.

[3] There are quite stark differences between HEIPR and OECD data – explanations include more vocational training included by the OECD, a greater age range in the OECD statistics, a focus on the UK rather than just England by the OECD.

[4] Class 1 = Higher managers and professionals; Class 2 = Lower managers and professionals; Class 3 = Ancillary professional and administrative; Class 4 = Small employers and own account workers; Class 5 = Lower supervisory and technical occupations; Class 6 = Semi-routine occupations; Class 7 = Routine occupations

[5] Abou-Chadi and Hix (2021) suggest that the proportion of the working class across Europe is even lower at 15-20%

Bukodi et al., (2015) show that total class mobility is around 80%; four-fifths of people are in a different occupational class than that of their parents[6]. Total mobility is relatively constant for those born from 1946 to 1984 (i.e., the generations that will be in adulthood during the period of economic change I am discussing). However, the composition of mobility has changed. In 1946 most individuals were upwardly mobile, whereas in the 1980-1984 cohort individuals were nearly equally split between those who were upwardly and downwardly mobile (see also Buscha and Sturgis 2018)[7]. There are very similar findings for intergenerational social mobility when measured by income. In recent years in the United States, only half of individuals from the most recent 'mature adult' cohorts earn more than their parents (Chetty et al. 2017). Whilst higher in other countries, there seems to be a downward trend in recent years (Manduca et al. 2020).

These descriptive patterns focus on absolute social mobility. For a discussion on the difference with relative mobility, and why I believe absolute social mobility is the key dimension for my work see the notes[8].

1.3 The 'death of class' and its rejuvenation?

The seminal work of Lipset and Rokkan (1967) outlined how political conflict was the result of competing interests across social groups, specifically relevant for this debate is their focus on the social class cleavage. The cleavage structure they identified was 'frozen' for most of the early to middle 20th Century. However, in the wake of structural transformations, previous cleavages and group identities untied and thus altered the demand side of political competition. For some authors, the ramifications are so dramatic that there has been a 'death of class', "classes are dissolving and that the most advanced societies are no longer class societies"

[6] Based on NS-SEC 7 class definitions

[7] The mobility statistics for the 1980-84 cohort are based on 27-year-olds. Mobility figures may change slightly as these individuals reach the peak of their careers.

[8] Relative mobility is the "relative chances of moving intergenerationally between difference class positions when these chances are considered net of all changes in the class structure" (Bukodi and Goldthorpe 2019, 52). This definition of social mobility is used widely in sociology to capture one's prospects independent of structural change across time and place. I argue absolute social mobility is closer to what individuals' experience rather than this more abstract societal notion of social mobility.

(Pakulski and Waters 1996). At a minimum, the explanatory power of class for political behaviour and preferences in the late 20th and early 21st Century diminished (Dalton 2002; Nieuwbeerta and de Graaf 1999). In the British context, the consensus model became one of appeal of party leaders and competence of parties (Denver and Garnett 2014; Surridge 2021).

In the long-standing and wide-ranging debate concerning the salience of class (see A. Heath, Curtice, and Elgenius 2009 for an overview), various hypotheses have been offered explaining why this structural change affects individuals' ties to a specific class or cleavage. Beck's (1992; 2002) thesis of individualisation hypothesises that individuals are now less bound to inherited and traditional ties. Rather, a categorical division of class within society is not useful with the multiple paths and interests one can take in modern society (Katz and Mair, 2009). Moreover, as aggregate income levels rise, class considerations lose their relevance (Clark and Lipset 1991, 2001) with fewer individuals identifying as working class.

The heterogeneity within class has been used as an explanation for the lack of cohesion within both lower and higher occupational groups. The traditional, more hierarchical measures of class (e.g., Erikson and Goldthorpe 1992), require more nuance, such as Oesch's (2006) additional horizontal division of class categorised by work logic. Even here, it may be that that there is too much diversity of experience within each class to bind the group together. To take the higher occupational classes, it may be that this group is so broad that inferring political preferences becomes a fruitless task. This is particularly relevant where political and market institutions do not compress wages (Ansell and Gingrich 2018 - regarding education rather than occupational class). Furthermore, some of the most dividing issues in society may be class cutting cleavages, including: post-materialistic values (Inglehart 1971), gender, and ethnicity (Jansen, Evans, and Graaf 2013 and references within the text).

Despite the consensus that the traditional class-based cleavage has weakened, there has been a renewed focus on polarisation and societal divisions because of the 'Brexit vote' in the UK, and anti-system voting across Europe. "In the shadow of the 2016 referendum stands one basic assertion that few would contest: Britain is now more divided than ever" (Goodwin and Heath 2016). A common theme runs through the literature explaining the mechanisms behind the vote for Donald Trump, Brexit, and anti-system voting across Europe and beyond; the 'left-behind'. Whilst this is somewhat of a fuzzy concept, identified by Calvert Jump and Michell (2021) as "shorthand for relative economic decline, for political neglect and policy failures, or for liberal

cultural shifts that have alienated socially conservative voters", the term implies a socio-economic division between those who have benefitted from the status quo political economy and those 'left-behind' or 'let down' (Watson 2018). It suggests that the individual is 'losing out' from societal change and has little hope for the future.

There are several potential explanations for this rejuvenated emphasis on a class or socio-economic based cleavage. First, it may be that 'death of class' was overemphasised, rather, the cleavage of classes has been suppressed through the supply side of political choice (Evans and Graaf 2013; Evans and Tilley 2017). This 'top down' approach emphasises the role of political elites and parties in dictating the political choice on offer to the electorate. Thus, as parties have converged becoming 'cartel' like (Katz and Mair 1995), there is no real mechanism for class cleavages to develop. In majoritarian systems, such as the UK, there is little opportunity for new parties to emerge with any realistic chance of success. The 'Brexit vote' offered an opportunity for these voters to express their frustration. Thus, according to this literature, the 'death of class' was predominantly political party convergence hiding a relatively consistent underlying cleavage of class values (Evans and Opacic 2021).

Second, it may be that the salience of class-conflict is no longer appropriately captured in the traditional single dimension of economic redistribution. The multi-dimensionality of individual values is now established (Kitschelt 1994). Most of the literature theorises a minimum of two axis: economics *and* 'culture'. The latter has various labels with subtle variations: liberal-authoritarian (Evans, Heath, and Lalljee 1996), post-materialism (Inglehart 1971), GAL-TAN (Green-Alternative-Libertarian and Traditional-Authoritarian-Nationalist), identity conservatives and identity liberals (Sobolewska and Ford 2020), and transnationalism cleavage (Hooghe and Marks 2018). The 'new' dimension partially explains the formation of anti-system right political parties who mainly compete on this 'cultural' dimension. These new parties are then able to further exploit and mobilise this political cleavage (Oesch and Rennwald 2018; Vries and Hobolt 2020). As the cultural dimension becomes more salient in modern politics, it has created a genuine avenue for cleavage, and potentially class-based, politics to re-emerge. Group identities, predominantly along this 'cultural' axis, are activated when there is a perceived threat from an outgroup – most often because of immigration (Sobolewska and Ford 2020).

Related to this transformation in the salience of 'economic' and 'cultural' values may be a shift away from class, as measured by occupational employment relations, to a focus on other socio-economic metrics. Whilst the most influential definition of class has been occupation (Evans and Opacic 2021), it has been operationalised through income (Bartels 2016), status (Chan and Goldthorpe 2007), subjective social status (Gidron and Hall 2017), and education (Gethin, Martínez-Toledano, and Piketty 2021; Piketty and Goldhammer 2020). My focus in much of the PhD is on education as a measure of socio-economic status. In line with Stubager (2013), I argue that education represents a cleavage distinct to that of occupation. Education fulfils the three criteria offered by Bartolini and Mair (1990) to constitute a societal cleavage. Groups with different educational attainments 1) hold different values, 2) these form part of a group consciousness, and 3) are mobilised by political choices.

If the 'cultural' element is the polarising aspect in society, particularly with regards to anti-system voting, this helps to explain the importance of the educational cleavage. In Stubager's (2013) study of Denmark, he shows that education is most clearly associated with authoritarian-libertarian values, over and above occupation. The 'old' single-dimensional political science left-right scale has limited predictive power when both sets of values are assumed to move in the same direction. In fact, there may be a negative correlation. In the context of the UK, Conservative Remain voters were more likely to have 'right' economic values and 'left' cultural values (Surridge 2021). More generally, this negative correlation between left-right economic and cultural values is found to exist in cross-country analysis (Malka, Lelkes, and Soto 2019).

The importance of the educational cleavage has been highlighted by Piketty and his co-authors (Gethin, Martínez-Toledano, and Piketty 2021; Piketty and Goldhammer 2020). He argues that mainstream politics is now dominated by elites. The 'Brahmin left', those high-educated elite voters, vote predominantly for social democratic, liberal, and green parties. The 'merchant right', high income elites continue to vote for the mainstream right. Piketty argues that the income gradient of voter support has been constant since the 1960s. Instead, the new divide is education, as the lower educated vote overwhelming for parties with 'conservative' cultural views. To an extent this includes the mainstream right but increasingly anti-system parties.

The most pertinent educational cleavage in developed democracies is graduates versus non-graduates (Iversen and Soskice 2019). It divides the most recent school-leaving age cohorts

roughly down the middle, thus polarising society. As graduates tend to co-locate within large cities, non-graduates are more likely to live in 'left behind' communities (Goodhart 2017). Therefore, there is potentially both a 'person' and 'place' aspect to this educational divide.

To place social mobility within this literature of cleavages in the context of political change, I now turn to the literature on social mobility and political preferences.

1.4 Literature on social mobility and political preferences

There is a wide-ranging literature on the effects of social mobility for behaviours and preferences, mainly from sociology and economics. A smaller subset of this literature focuses on political behaviour, although little attention has been paid to anti-system voting[9]. The scholarship on the effects of intergenerational mobility on political behaviour provides the theoretical framework for the first two papers of the PhD. This literature has important contributions for our understanding of class voting (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995; Jaime-Castillo and Marqués-Perales 2019; Nieuwbeerta 2000).

Theoretically, socially mobile individuals may associate with their position of origin, their position of destination, or some combination of the two. Additionally, the act of being socially mobile may affect their political preferences, over and above that of the origin and destination position. The first two papers of this PhD explore in depth the theoretical mechanisms as to why and how a socially mobile individual identifies with their non-mobile counterparts. Social origins matter for political preferences as individuals are shaped by ideologies formed within their childhoods (M. K. Jennings 2007; O'Grady 2019), cohort effects (Grasso et al. 2019), political socialisation through families, and childhood social networks (M. K. Jennings, Stoker, and Bowers 2009; Rico and Jennings 2012). These experiences ingrain habits, skills, and dispositions, which are long-lasting and retained through to adulthood (Bourdieu 1984).

Despite the extensive debate regarding the 'death of class' and its diminished explanatory power, destination socio-economic position remains a core variable included in research analysing political preferences. In terms of occupation, the type of work logic may influence political preferences as the "occupational experience itself that nurtures and reinforces political

[9] A recent addition to this literature is (Ciccolini and Härkönen 2021)

attitudes" (Kitschelt and Rehm 2014, 1678). Moreover, those of similar educational or occupational positions may be affected by their peers as they are more likely to form social networks, live in neighbourhoods together, and even marry.

Over and above these effects of origin and destination position, the experience of social mobility itself may influence political preferences. Being upwardly mobile may reinforce an individual's belief in the political status quo, as they perceive their own success as an indicator of a meritocratic society (Gugushvili 2020; Houle and Miller 2019). The downwardly mobile may blame the political system for their failure (Daenekindt 2017) as they struggle to deal with their "fall from grace" (Newman 1999). Alternatively, Sorokin (1959) proposes the dissociative theory, whereby social mobility causes a 'mental strain', as one struggles to integrate and identify with either their origin or destination position (Friedman 2016; Friedman, O'Brien, and McDonald 2021).

Empirically, it has been shown that the socially mobile tend to have preferences that are a combination of those immobile individuals in the origin position and the destination position. This has been shown in several contexts away from political behaviour, such as well-being (Schuck and Steiber 2018), self-rated health (Präg and Gugushvili 2020), and the likelihood of smoking (Gugushvili, Zhao, and Bukodi 2020). Similarly, origins seem to matter for voting turnout and party choice within the UK (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995), views towards immigrants (Paskov, Präg, and Richards 2020), antagonistic attitudes towards ethnic minorities (Tolsma, De Graaf, and Quillian 2009), and redistribution preferences (Jaime-Castillo and Marqués-Perales 2019). There is also evidence for a mobility effect, as Houle and Miller (2019) show that the upwardly mobile have a higher tendency towards democratic values than their immobile peers. Similarly, upwardly mobile individuals associate their success with capitalist democracy, creating a positive view of that regime (Gugushvili 2020).

1.5 Why is social mobility absent in the causes of anti-system voting literature?

Given the two literatures summarised above, it is surprising that individuals' social mobility has not been a focus for explaining anti-system voting. Individuals' social mobility is a core outcome from political economic transformation. For those individuals who have 'missed out'

on being upwardly mobile, or have been downwardly mobile, it resonates with being 'left-behind' or 'let down' by this process – the consensus explanation for anti-system voting. Moreover, an era of social mobility has resulted in heterogenous life paths, creating a lack of homogeneity within classes. Thus, we have a set of outcomes which are at the core of the 'death' and 'rejuvenation' of class, as well as the proposed mechanisms behind anti-system voting. Additionally, we have evidence that social mobility matters for political behaviour, including re-distributional preferences and democratic preferences. The political science literature has missed the opportunity to fully engage with the process of social mobility.

This is particularly relevant as the most recent anti-system literature has moved beyond a purely static cleavage analysis (Häusermann, Kurer, and Zollinger 2019). First, the idea of relative deprivation: whereby individuals care about their position not in an absolute sense, but rather compared to others within society (Rooduijn and Burgoon 2018). Relative position may go beyond economic conditions, with a focus on subjective social status (Gidron and Hall 2017). Other work analyses how one's own position has changed overtime relative to society. Burgoon et al (2019, 84) argue that 'positional deprivation', "how much a person's growth in disposable household income is outpaced by that of others in his or her country", spurs support for anti-system parties. This contemporary work attempts to place individual experiences within the context of position of societal change. Individuals' social mobility is at the core to how one has fared in a changing political economic backdrop.

In line with the above work, individuals' social mobility trajectory has both a static and dynamic aspect to it. One is analysing political preferences at t_1, the time of the event, say voting in the Brexit referendum. However, the hypothesis is that being socially mobile compared to those non-mobile peers affects political preferences. This is therefore a dynamic event which involves comparing one's situation at t_1 to their social origins at t_0 and any additional effect from the social mobility experience (t_1- t_0). Inherently this involves how actors respond in the context of political structures and institutions. But, also how those structural and institutional changes since their parents' generation have affected the individual's life-path.

Much of the anti-system literature focuses directly on the structural causes of anti-system voting, or alternatively concentrates on agents' political behaviour ignoring the institutional setting. Analysing the political preferences of socially mobile individuals, and in latter papers focusing on the effect of Higher Education and birthplace is closer to this political sociology

tradition. However, the institutional background helps to determine how many individuals have been socially mobile, and its importance for life outcomes.

Social mobility plays a particularly crucial role in understanding anti-system voting, beyond more traditional voting behaviour. The contestation of politics has shifted away from traditional redistributive grounds towards cultural identity (Sobolewska and Ford 2020). Many of the most highly educated younger voters they have switched away from the mainstream to green parties (Abou-Chadi and Hix 2021). Those in a more precarious position are often mobilised by anti-system parties, and agendas such as Brexit, through focus on this cultural dimension (Evans and Opacic 2021). It may even have brought back many of these discouraged non-voters into the fray. It has been argued that the class cleavage in mainstream politics is best captured by voters and non-voters, with the working class abstaining from voting in elections when there is no clear representation of their interests (Evans and Tilley 2017; O. Heath 2018).

I argue that cultural views, and particularly those on politically salient issues such as immigration, are most likely to be retained through socialisation. Redistribution issues have a greater degree of material self-interest and thus are more likely to be affected by one's destination position. I test this hypothesis in Papers 3 and 4, where I look at the importance of birthplace and university education for economic and cultural opinions in adulthood.

1.6 Mechanisms for social mobility affecting preferences

From the previous discussion and literature, we know that social mobility matters for an array of political preferences and behaviours. I have also outlined, as will be discussed in more detail in Papers 1 and 2, the theoretical expectations as to how social mobility should affect anti-system voting. The second section of the PhD, Papers 3 and 4, analyses two of the potential mechanisms behind why social mobility matters, the effect of Higher Education, and the importance of birthplace.

The literature on the effects of social mobility, and political socialisation more generally, often has much to say on outcomes without having the same conviction regarding the causal mechanism. A critique which can also be levelled at the first two papers of my thesis. Finding

that social mobility affects one's 'Brexit' voting and anti-system political preferences, does not identify the precise causal mechanism.

The political socialisation process could be through parents passing ideologies across generations. More generally, experiences in children's 'impressionable' years (O'Grady 2019) can cause individuals to revise their expectations for adulthood. This draws upon Bourdieu's idea of habitus where early-stage experiences - including through family, neighbourhoods, social networks, and schooling - ingrain attitudes, habits, and skills. In turn, the importance of each of these factors may be influenced by the economic and political conditions at the time (Grasso et al. 2019). These are just some of the causal mechanisms as to why political socialisation matters and how certain major life-events that result in social mobility can affect preferences. Whilst it is not possible to dissect fully any of the social mobility effects that I find in Papers 1 and 2, I analyse two of the, arguably, most important mechanisms in Papers 3 and 4, respectively Higher Education, and birthplace.

Education is often touted as the 'great leveller'. A philosophy adhered to by successive governments within many developed countries, supported by policy from across the political spectrum, particularly since the 1980s (Bukodi 2019). The extent to which this is true in terms of life outcomes is dependent on 1) the association between social origin and education and 2) the association between education and destination. Despite the massification of Higher Education, the evidence remains mixed as to whether education has had a 'levelling' effect (Blanden and Machin 2004; Bukodi and Goldthorpe 2019). As already discussed, education, and particularly university education is often also cited as the mechanism behind cleavages in society. Graduates tend to be less likely to vote for anti-system parties than non-graduates, potentially because of their more 'cosmopolitan', culturally liberal identities. Prima facie, the increase of Higher Education should then reduce the tendency for those individuals who attend university to vote for anti-system parties. Similarly, this would then act as a mechanism affecting those from lower socio-economic backgrounds, to 'catch-up' with their peers in terms of their political preferences. However, again evidence from the existing literature is not so clear. It may be that those who attend university *already* have different preferences to non-graduates (Kunst, Kuhn, and van de Werfhorst 2020; Lancee and Sarrasin 2015). This mechanism is investigated in Paper 3.

Perhaps the other mechanism that now receives the most political and academic attention is 'place'. From an anti-system literature perspective this is in the context of the 'places that don't matter' (Rodríguez-Pose 2018). These 'left-behind' areas are shown as affecting voter choice through processes such as exposure to austerity (Fetzer 2019), globalisation (Carreras, Irepoglu Carreras, and Bowler 2019; Colantone and Stanig 2018), and rising housing prices (Adler and Ansell 2020). Some of these place based explanations again rely on dynamic changes, for example those areas that are most exposed to globalisation, and specifically the import 'shock' from China's expansion into global markets (Colantone and Stanig 2018). Linked to this literature is the importance of where one was brought up. In the data rich *Opportunity Insights* projects, Chetty et al., (2014; 2016) show birthplace is important for one's chance of social mobility. There is evidence that birthplace matters for life chances in the UK as well, Overman and Bosquet (2019) show how those born in larger cities earn more as adults. However, this debate is far from settled as, again, it is argued that the difference in political views stems from compositional rather than some cosmopolitan effect of the 'city' (Maxwell 2019, 2020). Further, while there is evidence that conditions during childhood affect preferences, there is little evidence of the impact of birthplace. This is important for our understanding of the impact of social mobility on preferences. It may help to explain why some people are more likely to take on the views of their destination class than others.

1.7 Methodology and case selection

The papers in my thesis report findings from quantitative analysis using three large survey datasets, the *British Household Panel Survey* (BHPS), its successor *Understanding Society (University Of Essex 2022)*, and the *European Social Survey* (European Social Survey ERIC (ESS ERIC) 2020). In the case of the final paper, analysing the impact of birthplace, the BHPS is combined with regional data based on the UK census from the *Vision of Britain* (VoB) project.

To investigate the effects of social mobility on political preferences, the datasets require information on 'Brexit voting' in the case of Britain, or political party choice in the case of the European paper. I also require data on socio-economic and demographic characteristics, including parental status. In the UK, *Understanding Society* is the most appropriate source as other data miss vital components. For example, the *Birth Cohort Studies* have high quality data

on parental socio-economic status but lack the 'Brexit' vote data. Conversely, the *British Electoral Study* misses the same level of parental data (parental occupation has been collected but not coded). In Europe, the ESS offers the range of countries to understand the generalisability of the results from Paper 1, as well as extending the analysis to compare anti-system right and anti-system left support.

Regarding Papers 3 and 4, the BHPS offers data on birthplace at a Local Authority level (with Special Licence), current residence at Census Area Statistics Ward (CASWARD) (more granular than Local Authority – with Special Licence), high quality panel data covering 18 Waves, parental background, and an appropriate range of dependent variables. Thus, certainly in the UK, the BHPS was the only alternative. Most other studies in this field use the *BHPS/Understanding Society* or the *Swiss Household Panel*.

Overall, the quantitative approach fulfils the purpose of this PhD to investigate the effects of social mobility on anti-system voting, and specifically two of the potential underlying mechanisms. The regression technique used in Papers 1 and 2 are relatively commonly used within sociology, and political sociology. This research is aimed at a more general political science audience, adding to the increased emphasis placed on political socialisation and the importance of relative position and change for individuals' political preferences (Burgoon et al. 2019; Grasso et al. 2019; O'Grady 2019).

The quantitative work loses some of the conceptual clarity on underlying causal mechanisms that could be achieved through more qualitative work (e.g. Friedman 2016). I can only hypothesise about the mechanisms that underlay the findings on the importance of social mobility within Papers 1 and 2. I cannot claim the results as causal in Papers 1 and 2. In Paper 3, where I exploit fixed-effects regressions on panel data, there is a stronger claim to causality under various assumptions (Allison 2009). Similarly, I use panel data with fixed effects in Paper 4 along with an instrumental variable in the robustness tests to mitigate some of the issues of endogeneity.

The focus of three of the four papers is the UK. The UK is a country where class and particularly social mobility is highly salient across academic research, the political sphere, and the public domain (Bradley 2018; Gerteis and Savage 1998; Payne 2017). It has been at the centre of the 'death of class' debate. Moreover, it exemplifies the structural changes that I have

emphasised throughout this introduction. Clearly, there is a contemporary event, the 'Brexit vote', which provides a test for the hypotheses. Practically, there is also the high-quality data which allows the quantitative work on both the 'how' and 'why' questions asked in Papers 1, 3, and 4.

Paper 2 expands the analysis to Western Europe. Firstly, this tests the theoretical framework on a wider range of countries, from different welfare regimes (Esping-Andersen 1990). It is often assumed that the cleavage structure is magnified to a lesser extent in regimes other than liberal welfare states, such as the UK. The discussion of social mobility is less politically salient. However, there is a strong and growing anti-system support base (Hopkin 2020). Unlike the UK, it also allows me to test anti-system right compared to anti-system left support. Paper 2 introduces a comparative angle to the PhD, analysing the extent to which social origins matter across European countries.

1.8 Summary of the four Papers

Paper 1: Intergenerational social mobility and the Brexit vote: how social origins and destinations divide Britain (with Dr. Charlotte Haberstroh)

Research questions - Does social origin affect the likelihood of one voting 'Remain' in the UK Brexit referendum? Second, does upward (downward) social mobility, over and above origin and destination effects, increase or decrease one's likelihood of voting 'Remain' in the UK referendum?

The literature on the Brexit divide is characterised by the 'winners' and 'losers' of structural change, yet the debate has failed to engage with individuals' social mobility. Social mobility is a core feature of the skill-biased technological change, occupational upgrading, and educational expansion, resulting in gains and losses for individuals. Our paper assesses how intergenerationally mobile voters' position in the Brexit referendum differ from their non-mobile counterparts.

We use data from *Understanding Society* with a Diagonal Reference Model to separate the effects of origin, destination, and mobility. We model this separately based on occupational

class and educational attainment. In both cases social origins are nearly as important as one's current position for explaining the predicted probability of Brexit voting. In the case of the model based on educational mobility, we find that a socially upwardly mobile graduate is up to 10 percentage points less likely to vote 'Remain' than a graduate who has at least one parent with a degree. Absolute intergenerational social mobility matters for one's position on the Brexit divide.

The paper contributes to the literature on Brexit. It offers a perspective on 'winners' and 'losers' of political economic transformation, individuals' absolute intergenerational social mobility, that has to date been missed by the literature. Rather than a 'death of class' and cleavages, we document a return to the importance of class voting and social mobility that was found in the 1990s (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995; Nieuwbeerta 2000). We also highlight the importance of occupational class compared to educational cleavages in the polarisation of society through Brexit. Both continue to be relevant, even if the differences we observe through educational attainment are greater than the differentials for occupation.

Paper 2: Intergenerational social mobility and anti-system support: the journey matters

Research questions - How does an individual's social origins relate to anti-system party support across Western Europe? Is there a mobility effect, over and above origin and destination? Does the impact of origin and mobility vary between support for the anti-system left and the anti-system right? Finally, does one's social mobility trajectory impact the tendency to support anti-system parties differently across countries in Europe?

Having explored the impact of social mobility on Brexit, this paper moves to a wider context, Western Europe, and analyses the effects of social mobility on anti-system voting more generally. I again use Diagonal Reference Models, this time with the *European Social Survey*. The framing of this paper focuses on the mobility effects as well as the social origins. I draw upon theoretical work which explores the importance of mobility in establishing 'blame' or 'credit' of the political status quo for one's 'failure' or 'success' (Gugushvili 2020; Houle and Miller 2019).

I make two contributions to the existing literature on anti-system voting. First, the socially mobile differ to the non-mobile with regards to anti-system voting. However, this is only applicable to the anti-system right and not the anti-system left. Individuals' anti-system preference are in-between the immobile group with which they share their social origin and the immobile group of their destination position. I also find evidence of mobility effects. Upward (downward) social mobility decreases (increases) the likelihood of voting for the anti-system right, over and above origin effects.

Second, I introduce a comparative angle to the PhD. Contrary to my expectations, the effect of one's social origins is relatively consistent across Western European countries. The expectation that the cleavage-based model would be more likely to be seen in countries with greater inequality was not found empirically. Despite the political, academic, and public rhetoric around social mobility in the UK, the effect of social origins on anti-system right voting was in-line with the rest of Western Europe.

Paper 3: University education and European integration: a mechanism to explain the difference between the socially mobile and immobile?

Research questions – Does Higher Education affect preferences towards European integration, beyond sorting? If there is an effect, is there a difference by parental educational attainment? Are these impacts replicated in economic and cultural preferences, can this help to explain the effect of preferences towards European integration?

The literature has demonstrated political polarisation between graduates and non-graduates, especially regarding the recent Brexit referendum but more generally Eurosceptic attitudes. I have also demonstrated in Papers 1 and 2 that social mobility matters. The mechanisms behind these effects are difficult to decipher. One of the often-cited reasons is that education affects preferences. However, there is not a consensus within the literature as to whether this is a causal effect (Scott 2022), or rather those attending university already have different preferences to their peers (Kuhn, Lancee, and Sarrasin 2021; Lancee and Sarrasin 2015).

I use a fixed-effects panel regression with the *British Household Panel Survey* to track young people and analyse their preferences before and after university attendance, relative to their peers who do not go to university. I find that there is an effect from university, attending

university makes one more likely to support European integration. However, there is no evidence of 'catch-up', if anything the effect is greater for those individuals from graduate backgrounds compared to those with non-graduate parents. I replicate the analysis for individuals' cultural and economic attitudes. Individuals become more economically 'conservative' and more culturally 'liberal' because of university. I argue that this is the underlying mechanism for changes in views towards Europe. Moreover, there is a read-through for the 'Brexit vote', whereby education affects the cleavage in society, rather than just sorting. I provide evidence in the robustness section to support this claim.

This paper contributes to three literatures. First, it adds to the social mobility literature, providing evidence as to why the socially mobile have different preferences to the immobile. Second, there is no consensus as to whether education has a causal effect on attitudes, I add support, at least in the case of Britain, to the hypothesis that it is the case. Third, it contributes towards the cleavage literature on Euroscepticism and more loosely Brexit, whereby education may have a causal impact on polarisation.

Paper 4: The long shadow of local decline: Birthplace economic conditions, political attitudes, and long-term economic outcomes in the UK (with Prof. Neil Lee and Dr. Davide Luca)

Research question – How do economic conditions in one's birthplace affect adulthood earnings, attitudes, and political preferences?

There is a debate about the importance of 'people' versus 'place', that is whether living in, for example, cities has a causal impact on earnings (Glaeser 2012), and makes one more 'cosmopolitan' (Maxwell 2019, 2020). We argue that this debate fails to engage with the critical stage of attitude formation, childhood. 'Place' is at least as important at the time of birth as it is as in adulthood. We extend this analysis beyond the rural-urban divide, arguing that birthplace economic conditions, as measured by unemployment rates, affect adulthood outcomes. This develops on contemporary political socialisation literature which shows the effect of economic conditions and political ideologies in one's youth affect later life preferences (Grasso et al. 2019; Neundorf and Soroka 2018). However, this work focuses on national conditions. Yet, we know that individuals often take their cues from their immediate locality (Reeves and Gimpel 2012), particularly when it comes to future aspirations (Marzi

2017). Childhood attitude formation is likely to come from their experience of peers in their social network, which is most likely to be formed of people within their local area. That is, it is more observable and 'real' seeing friends and family lose their jobs, or foreclose on their house, rather than reading about more abstract concepts of national GDP or unemployment rates in the press.

We combine data from the *British Household Panel Survey*, and the census based historical local data from the *Vision of Britain*. Thus, we can track a large sample of individuals in the UK, with information on their birthplace unemployment conditions. Many of these individuals were born after the 'Golden Age' of near full employment. There were both high levels of unemployment nationally, and large variation in unemployment conditions depending on the fortune of where one happened to be born. We show that being born in an area of high unemployment is associated with lower earnings in adulthood, more left-wing economic attitudes, and a lower tendency to vote for the Conservative Party.

This paper contributes to two literatures. First, the 'place' versus 'people' literature in economic geography. We add to the growing evidence that birthplace is critical for future adult earnings (Chetty et al. 2014; Chetty, Hendren, and Katz 2016), and show that economic conditions are an important determinant. Second, we contribute to the political socialisation literature, which has overwhelming focused on national conditions. Birthplace conditions matter beyond earnings to attitudes and political preferences.

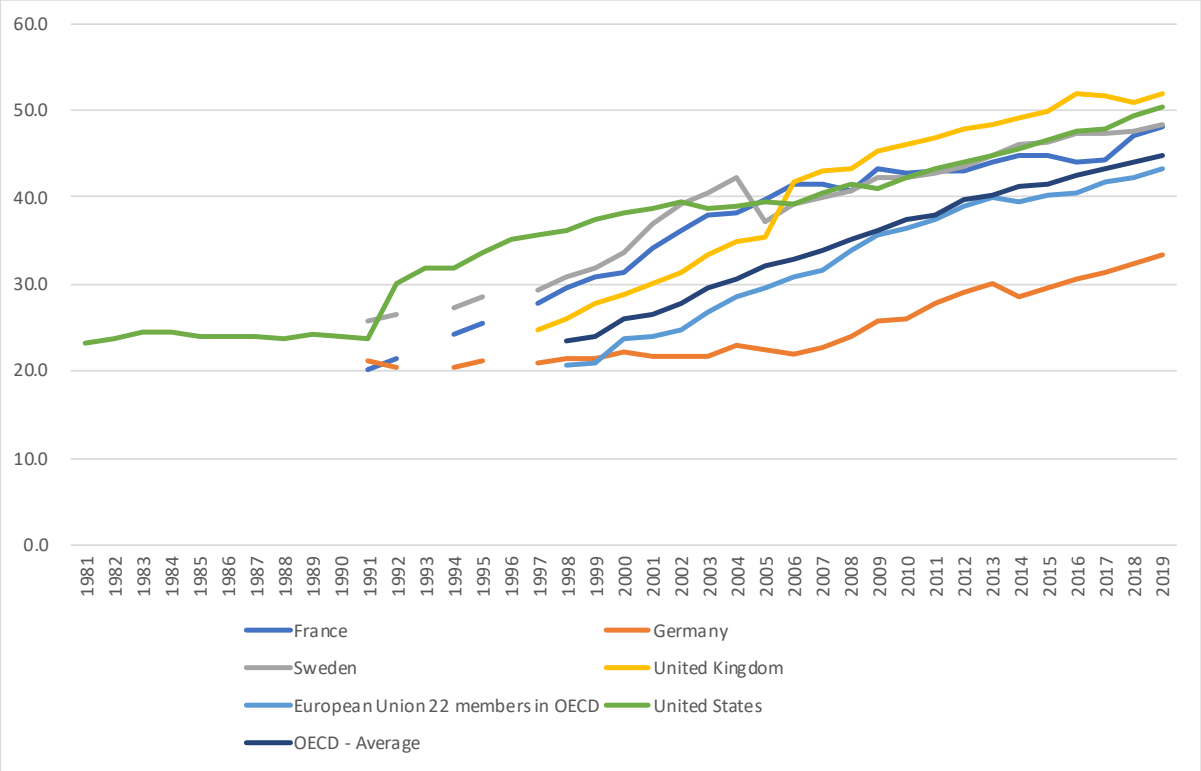
Table 1.1 Key research questions, variables, findings, and contributions from each paper

Paper	Co-author(s)	Research Question	Dependent Variable	Key Independent Variables	Data / Method	Findings	Contribution
Intergenerational social mobility and the Brexit vote: how social origins and destinations divide Britain	Charlotte Haberstroh	Does social origin affect the likelihood of one voting 'Remain' in the UK Brexit referendum? Second, does upward (downward) social mobility, over and above origin and destination effects, increase or decrease one's likelihood of voting 'Remain' in the UK referendum?	2016 Brexit Vote - Remain or Leave	Parental origins (measured by education or occupation); Upward / Downward Social Mobility	Understanding Society (UK); Diagonal Reference Model	Social origins as measured by education or occupation are nearly as important as destination for predicting an individual's Brexit vote	Introducing social mobility as a key variable to Brexit
Intergenerational social mobility and anti-system support: the journey matters		How does an individual's social origins relate to anti-system party support across Western Europe? Is there a mobility effect, over and above origin and destination? Does the impact of origin and mobility vary between support for the anti-system left and the anti-system right? Additionally, does one's social mobility trajectory impact the tendency to support anti-system parties differently across countries in Europe?	Anti-system right (left) party support	Educational origins; Educational mobility	European Social Survey; Diagonal Reference Models; Feasible generalised least squares regression	Social mobility impacts anti-system right support, but not anti-system left support. Individuals are in-between their immobile social origin group and their immobile destination group. There is an upward and downward mobility effect, over and above origin and destination. Origin effect is consistent across countries.	Social mobility matters for anti-system voting across Europe. The comparative exercise shows this is relatively consistent across countries

University education and European integration: a mechanism to explain the difference between the socially mobile and immobile?		Does Higher Education affect preferences towards European integration, beyond sorting? If there is an effect, is there a difference by parental educational attainment? Are these impacts replicated in 'economic' and 'cultural' preferences, can this help to explain the effect on European integration?	Views on European integration; Economic attitudes; Cultural attitudes (views on homosexuality)	Attending university	British Household Panel Survey; Fixed-effects / random-effects panel regression	University has an effect beyond sorting on attitudes. Going to university makes one more European, more culturally liberal, and more economically conservative.	1) Mechanism to explain the difference between the mobile and immobile; 2) Lending weight to the causal vs sorting effect of education debate; 3) An explanation of Euroscepticism within Britain (and potentially Brexit)
The long shadow of local decline: Birthplace economic conditions, political attitudes, and long-term economic outcomes in the UK	Neil Lee; Davide Luca	How do economic conditions in one's birthplace affect adulthood earnings, attitudes, and political preferences?	Earnings; Economic values; Cultural values; Voting	Birthplace Local Authority unemployment rate	British Household Panel Survey; Vision of Britain; Fixed effects; Instrumental Variable	Higher birthplace unemployment is associated with lower earnings, more left-wing economic values; and less Conservative voting	1) 'Place' versus 'People' debate; 2) Political socialisation of local level economic conditions

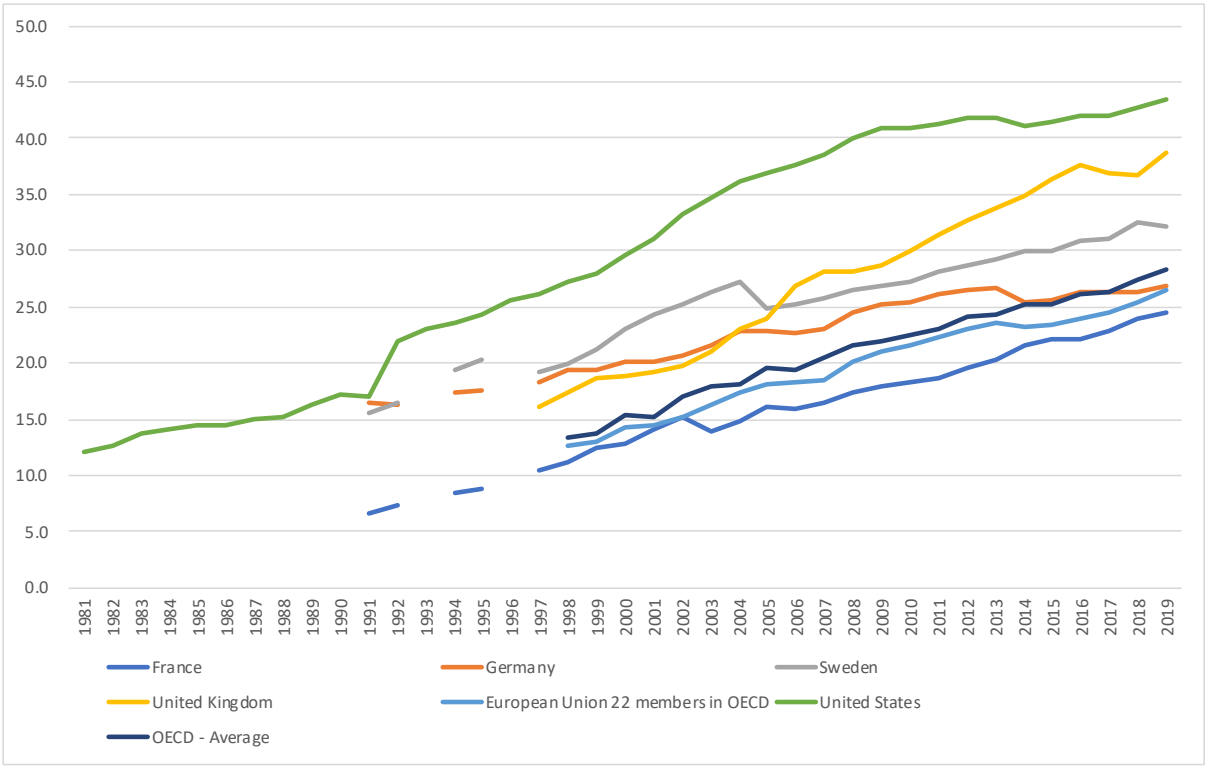
A Supplementary material

Supplementary Figure A.1 Tertiary participation rates for 25-34-year-olds (%)



Source: Author's calculations from OECD data: *educational attainment and labour-force status*

Supplementary Figure A.2 Tertiary participation rates for 55-64-year-olds (%)



Source: Author's calculations from OECD data: *educational attainment and labour-force status*

2 Intergenerational social mobility and the Brexit vote: how social origins and destinations divide Britain[10]

Co-author: Charlotte Haberstroh[11]

Abstract

To explain political divisions within British society, the current scholarship highlights the importance of the 'winners' and 'left-behind' of political economic transformations. Yet, the impact of widespread absolute intergenerational social mobility in the past half century, which resulted in socio-economic gains or losses for many, has not been systematically addressed. Our paper assesses how intergenerationally mobile voters' position in the Brexit referendum differ from their non-mobile counterparts. We differentiate between the effects of social origins, social mobility, and destination position. To do so, we model data from *Understanding Society* with a Diagonal Reference Model. We show that origins are nearly as important as current socio-economic position for predicting the probability of voting to 'Leave' or 'Remain' in the Brexit referendum. We find that a first-generation graduate would be up to 10 percentage points less likely to vote 'Remain' than a graduate whose parents also went to university.

2.1 Introduction

The transformation of the British political economy over the past half century has changed society's cleavage structure (Ford and Jennings 2020). The 2016 referendum on the UK's membership of the European Union (the Brexit vote) exposed a new cleavage through a binary division of 'Leavers' and 'Remainers' (Evans and Tilley 2017). It created new political identities that have entrenched the new cleavage in British politics and remain salient beyond individuals' positions on Brexit (Hobolt, Leeper, and Tilley 2020). The political science literature has consistently shown that 'winning' or 'losing' in the context of structural change are strong predictors of one's position on Brexit (Adler and Ansell 2020; Colantone and Stanig 2018; Fetzer 2019; Hopkin 2017; Iversen and Soskice 2019; W. Jennings and Lodge 2019;

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Lee, Morris, and Kemeny 2018). However, it is unclear how absolute intergenerational mobility contributes to the structure of this cleavage. In the context of educational expansion and occupational upgrading, a large part of the population moved away from their parents' position in society (Bukodi et al. 2015; Buscha and Sturgis 2018). In most cases, individuals have been upwardly mobile, but a significant minority have experienced downward mobility. Our paper's contribution is to identify how the positions of intergenerationally mobile voters in the Brexit referendum differ from those of their non-mobile counterparts.

We draw on theoretical and methodological contributions from political sociology that have studied the effect of intergenerational social mobility on political behaviour and voter preferences. A socially mobile individual may (1) relate to their destination position (assimilation); (2) relate to their origin position (socialisation) or (3) the experience of mobility itself could have an effect (mobility effect). This distinction is rarely made in political science where the literature tends to either focus on one's intragenerational experience of gain or loss (Ares 2019; Burgoon et al. 2019; Margalit 2013), or instead highlight the importance of socialisation (Neundorf and Soroka 2018; O'Grady 2019). We thus have two research questions. First, does social origin affect the likelihood of one voting 'Remain' in the UK Brexit referendum? Second, does upward (downward) social mobility, over and above origin and destination effects, increase or decrease one's likelihood of voting 'Remain' in the UK referendum?

Our empirics confirm the need to differentiate between origins, mobility, and destination effects to make sense of how socio-economic change has transformed the cleavage structure in Britain. It is based on a diagonal reference model (DRM), a model grounded in sociological theory, comparing mobile individuals to the immobile (Sobel 1981, 1985). The DRM allows us to separate out the effects of one's origins and destination to mobility effects, which is not possible in conventional OLS models. We use data from *Understanding Society*, a large annual panel survey in the UK, with more than 40,000 households. We find that the predicted probability of a mobile individual voting to 'Remain' in the Brexit referendum is substantially different compared to that of non-mobile individuals. This finding is consistent for both of our measures of absolute intergenerational social mobility: education and occupation. Reaching a high occupational status or high education position via upward mobility, if compared to inheriting this position from one's parents, decreases the likelihood of voting 'Remain'. Falling to a lower position via downward mobility, compared to having stood still in this destination

position, increases the likelihood of voting 'Remain'. These results are driven by one relating to their origin position, rather than any independent mobility effect. To highlight the magnitude of these effects, we find that an upwardly mobile university graduate would be 10 percentage points less likely to vote 'Remain' than a graduate whose parents also went to university.

The paper is structured as follows. The next section presents the theoretical foundations of our analysis. Next, we describe the data used from the *Understanding Society* dataset (section 3) and set out the methodological approach (section 4), followed by outlining the main findings from our analysis (section 5). In our concluding section, we discuss the implications of these findings for the polarisation in Britain today.

2.2 Socioeconomic change and the Brexit cleavage

In the past decades, new cleavages have emerged across Europe. These reflect changes in the composition of the electorate following developments such as the expansion of higher education, mass immigration, increasing size of older cohorts, and increasing inequalities of geographical opportunities (Ford and Jennings 2020). In the case of Britain, the Brexit vote exposed this new dimension of political conflict, which had been suppressed by the limited choice between partisan policy platforms in prior general elections (Evans and Tilley 2017). Crucially, beyond exposing such divisions, Brexit also further entrenched them and thus transformed the political landscape. It created new political identities of 'Leaver' and 'Remainer', which transcend partisan lines (Hobolt, Leeper, and Tilley 2020).

Socio-economic changes, which have 'left-behind' an increasing share of citizens, play a central role for explanations of the success of anti-system movements across advanced capitalist democracies, such as Brexit. Those individuals who have lost out in an era of political economic change are overwhelmingly more likely to vote for 'Leave'. Some studies conceptualise 'left-behind' voters in Britain on the individual level. Individual-level measures include age, education (Alabrese et al. 2019; Hobolt 2016), occupation (Evans and Tilley 2017), income (Goodwin and Heath 2016), residential mobility (Lee, Morris, and Kemeny 2018), and subjective social status (Gidron and Hall 2020). Others, instead, see such voters as nested in regions which have been 'left-behind' by processes such as exposure to austerity (Fetzer 2019), globalisation (Carreras, Irepoglu Carreras, and Bowler 2019; Colantone and

Stanig 2018), or housing prices (Adler and Ansell 2020). Campaigners for leaving the European Union successfully tapped into the sense of 'losing out' (W. Jennings and Lodge 2019). Often disappointment materialised through voters' authoritarian values (Ballard-Rosa, Jensen, and Scheve 2021), which were particularly prone to the right-wing populist discourse that underpinned the Brexit project and its campaign.

Occupational and educational positions are important determinants of individuals' position on Brexit (Evans and Tilley 2017; Hobolt 2016). However, the literature is less clear in its conceptualisation of the 'winners' and the 'left-behind' of occupational upgrading and educational expansion. The role of education has become more prevalent in recent scholarship on preference formation (Abou-Chadi and Hix 2021; Gethin, Martínez-Toledano, and Piketty 2021), with skill-biased technological change altering the returns to education investment, leading to a reconfiguration of welfare support coalitions (Ansell and Gingrich 2018; Cavaille and Marshall 2019; Gelepithis and Giani 2020; Gingrich and Häusermann 2015; Häusermann, Kurer, and Schwander 2015; Marshall 2016). That said, many individuals have reached their destination position through intergenerational social mobility. As a consequence of socio-economic change, more than two thirds of the population have been *occupationally* mobile, of which the majority are upwardly mobile (Bukodi et al. 2015; Buscha and Sturgis 2018).[12] Over 70 percent of graduates have been upwardly *educationally* mobile, that is their parents did not attend university (authors' calculations, *Understanding Society, Wave 8 2016/17*). Whilst both these processes are linked, educational mobility is not perfectly correlated with occupational mobility (see section 3 and Supplementary Table B.1).

Beyond individuals' destination socio-economic position, we therefore propose to add a second dimension of variation, which distinguishes between intergenerationally mobile and immobile individuals. Table 2.1 represents variation on these two dimensions in simple binary terms (high vs low destination status; mobile vs immobile). This clarifies our understanding of the beneficiaries of socio-economic change and those 'left-behind'. Amongst the highly educated, some 'gained' by reaching the new position via mobility (Group 3 in Table 2.1), whilst others achieved the same position as their parents (Group 4). In parallel, there are two different groups of 'left-behind' voters, who may have experienced loss in different ways: some have stood still

[12] Based on 5 class NS-SEC.

in a low position whilst their peers moved upwards (Group 2), others have moved down the social ladder (Group 1).

Table 2.1 Varieties of social mobility in the context of occupational upgrading and educational expansion

	Low status destination	**High status destination**
Mobile individual: Origin ≠ destination	1: *Fallen down* the ladder	3: *Climbed up* the ladder
Immobile individual: Origin = destination	2: *Standstill* in low destination	4: *Inherited* high destination

2.2.1 Theoretical expectations

Scholarship on the effects of intergenerational mobility on political behaviour provides the basis for our expectations on whether and how intergenerational gains and losses of position affect the new cleavage in British society. This literature has brought important contributions to political science literature on class voting (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995; Nieuwbeerta 2000).[13] Following Jaime-Castillo and Marques-Perales (2019, 139), the main message of that scholarship is that "mobile individuals are attached to two different social milieus: their origins and destination classes. As a result, they forge their personal views in a different way than those who are born and die in the same social class." Accordingly, the literature has proposed two main hypotheses: the assimilation hypothesis, where social origin does not, or mostly not, matter; and the socialisation hypothesis, where social origins may be as important as an individual's destination position.

Political socialisation literature highlights how and why social origins may have long-term effects on political behaviour, that is, the "possible persistence of orientations derived from the

[13] The literature on the effects of intergenerational mobility extends beyond voting. A broad consensus has emerged that individuals' social origins, and to a lesser extent mobility, matter in many contexts. This includes political distrust (Daenekindt, van der Waal, and de Koster 2018), well-being (Schuck and Steiber 2018), self-rated health (Präg and Gugushvili 2020), and extending to the likelihood of smoking (Gugushvili, Zhao, and Bukodi 2020).

impressionable years" (M. K. Jennings 2007). Individuals with different social origins vary in their long-standing attitudes and ideologies that were shaped in their childhood and early years (for an overview see O'Grady 2019). The process of early years' political socialisation include the effects of education and schooling (Gingrich 2019; Holbein 2017; Holbein et al. 2020) and childhood social networks including family (M. K. Jennings, Stoker, and Bowers 2009; Rico and Jennings 2012).

As well as an individual's preferences being conditioned by their origin and destination, the experience of social mobility itself may be important. There are two theoretical approaches to the intergenerational mobility effect. One approach in the literature sees a positive effect of upward mobility on individuals' well-being and preference for the status quo, and a corresponding negative effect of downward mobility (Gugushvili 2020; Gugushvili, Zhao, and Bukodi 2019). Indeed, the upwardly mobile may view their success as an indicator of the meritocratic nature of society, which may lead to their positive outlook and underpin their preference for the maintenance of the status quo. The downwardly mobile, in turn, are expected to blame this 'failure' on the lack of opportunities in society.

A second approach, the dissociative hypothesis (Sorokin 1959) instead leads to expectations of negative effects of either upward or downward mobility. Here, both upward and downward social mobility cause a 'mental strain', as individuals are not fully integrated into either their origin or destination class. Upwardly mobile individuals may struggle with the 'complexities' of integrating into a new class (Friedman 2016; Friedman, O'Brien, and McDonald 2021). Downwardly mobile individuals, in turn, may struggle to handle their "fall from grace" (Newman 1999). Hence, the literature does not draw a unanimous picture on the effect of social mobility.

Two recent strands within political science grapple with related questions. First, the recent 'loss' literature closely relates to both the dissociative theory and the role of 'blame' effects of downward mobility. Whilst this literature conceptualises changes in individuals' position over time, it does not explicitly discuss intergenerational mobility. Individuals whose own position or whose group's position in society has declined over time are more likely to support the anti-system right. 'Loss' has been hypothesised to exist in several guises, including declining relative social status (Gidron and Hall 2017), perceptions of increased deprivation (Gest, Reny, and Mayer 2018), and positional deprivation (Burgoon et al. 2019). Second, the field of

intragenerational mobility analyses how people's preferences change as they move between classes within their working lifetime. Intra-generationally mobile individuals tend to have economic preferences in-between immobile individuals in their class of origin and immobile individuals in their class of destination (Ares 2019). For example, upwardly mobile individuals become more economically 'conservative' (Langsæther, Evans, and O'Grady 2021). The findings of such intragenerational mobility studies are mostly consistent with those of the intergenerational mobility literature. By contrast, the 'loss' literature focuses on the impact of decline and its positive association with anti-system voting (or Brexit 'Leave' voting). From that perspective, the extent to which individuals retain the preferences of their (higher) social origins is of secondary importance.

In sum, this discussion allows us to clarify our expectations of how intergenerational social mobility affects individuals' attitudes towards Brexit. First, we can expect to observe variation in Brexit voting between individuals who have experienced a change in status when compared to their peers who have not moved away from their social origin position. Second, the literature invites us to decompose intergenerational mobility into the origins effect on the one hand, and the mobility effect on the other hand.

If we take Group 3 from Table 2.1, upwardly mobile individuals with a high-status destination position, we expect these individuals to strongly identify as 'winners' because of their high-status position. In turn, this group would have a higher tendency to vote 'Remain'. However, if their social origins matter, they might also identify with the 'left-behind', which can push them towards 'Leave'. For example, an upwardly mobile individual's social network likely will compose of friends and family from their origin, who have remained in the 'stand-still' group, which could lead to socio-tropic preference formation. A second mechanism relates to individuals' perceptions of their place in society, which is crucial in a political context that frames 'the establishment' vs 'the people', and can be linked to early years' political socialisation. Irrespective of political socialisation, those with lower socio-economic origins may be in a materially different situation than others in their same destination position. They may have fewer family resources to draw upon than their peers, and thus be economically less secure (Friedman and Laurison 2020). Similar mechanisms could lead to individuals in Group 1, Table 2.1, to be more likely to vote 'Remain' due to their high origins position, if compared to their immobile peers (Group 2).

Hypothesis 1) An individual's position on Brexit is affected by social origins. Socially mobile individuals from a lower educational (occupational) parental origin are more likely to vote 'Leave' than their immobile peers. Socially mobile individuals from higher educational (occupational) parental origins are less likely to vote 'Leave' than their immobile peers.

There are no clear expectations on a potential effect of upward mobility. If there is one, it could go in two directions: the upwardly mobile (Group 3) could have enhanced their positive beliefs in a meritocratic society, fostering their acceptance of the status quo. An individual's experience of directly benefiting from positive status change may push them towards 'Remain'. Alternatively, following the dissociative theory, upward mobility could have a negative effect on their propensity to vote 'Remain'. They may question whether their investments to move up the rungs of the ladder have paid off, and not see themselves as 'winners' of educational expansion or occupational upgrading. Examining the effect of mobility is particularly important for the downwardly mobile (Group 1), as this is the group we could most clearly identify as experiencing negative change, which could lead to the sense of loss that the literature on the 'left-behind' has highlighted. The social mobility literature leads us to a clear expectation that downward mobility increases the propensity to vote 'Leave'. Downward mobility (Group 1) might enhance negative beliefs in a meritocratic society. The dissociative theory points in the same direction, with the lack of full integration into origin or destination class providing a further sense of loss.

Hypothesis 2) Over and above origin and destination effects, downward mobility will increase the tendency for an individual to vote 'Leave' in the EU Referendum.

Hypothesis 3a) Over and above origin and destination effects, upward mobility will increase the tendency for an individual to vote 'Leave' in the EU Referendum.

Hypothesis 3b) Over and above origin and destination effects, upward mobility will decrease the tendency for an individual to vote 'Leave' in the EU Referendum.

2.3 Data

Data are drawn from *Understanding Society*, a large-scale household panel survey in the UK covering members of approximately 40,000 households. *Understanding Society* has run since 2009 and is a nationally representative sample survey with all adults (individuals aged 16 and over) interviewed annually. Around 8,000 households were also members of the predecessor study, the British Household Panel Survey. We utilise information from Wave 8, where data was collected in 2016 and 2017. As described below, we control for the fact that some individuals were surveyed prior to the European Union referendum on 23rd June 2016, and others afterwards. We have included only those aged 28 and over, as young adults below this age may not have reached their highest educational or occupational status. Our results are substantively similar for other choices of age cut-off.

We capture absolute intergenerational mobility with two measures: educational mobility and occupational class mobility. The need for these two routes of mobility is described in more detail below. The respondent's highest qualification is recorded according to 16 available categories ranging from "Higher Degree" through to GCSEs (a school level qualification typically taken at age 16). The respondent also provides their mother's and father's educational attainment, this time on a 5-point scale, ranging from not attending school to "university degree or higher degree". We amalgamate the parental qualifications to use the highest of either parent – only including in the sample observations where both the mother's and father's educational attainment is available. Re-running the models based purely on father's educational attainment or occupational status, where there are fewer missing datapoints, produces substantively similar results. To operationalise occupational class, we use the NS-SEC 5-point scale: 1. Managerial and professional, 2. Intermediate, 3. Small employers and own account, 4. Lower supervisory and technical, 5. Semi-routine and routine. Again, we take the highest social status parental occupation, which is derived from the respondent's own recollection of their mother's and father's jobs when the respondent was 14 years old.

The stylised social mobility groupings we developed in Table 2.1 are refined by further dividing the educational and occupation groupings into 'low', 'middle', and 'high' (for both parents and respondents). This grouping keeps our model as simple as possible whilst also allowing a logical categorical breakdown of education and occupation. We categorise highly educated individuals as those with a degree or above (also includes diploma in HE), middle education as any respondent with a school level qualification, and finally, low education as "no qualifications". Similarly, occupational class is ranked from low through high for both

respondents and their parents. We categorise high class as NS-SEC 1, middle class as NS-SEC 2-4, and low class as NS-SEC 5.

To analyse our dependent variable, the Brexit vote in 2016, we use the variable in Understanding Society where respondents answered, "Should the United Kingdom remain a member of the European Union or leave the European Union?". As illustrated in previous work using *Understanding Society* (Lee, Morris, and Kemeny 2018), there is an overstatement of 'Remain' voting in the sample (59.5% in the educational mobility Models; 57.7% in the occupation mobility Models), compared to the actual result in the EU Referendum (48.1%). Our results use sample weights provided by *Understanding Society* to make the results representative of the UK population.[14]

2.3.1 Education and occupation as the mobility variable

We test our hypotheses in relation to two separate routes of social mobility: occupation and education (see distribution of individuals' destination positions in Table 2.2). These two measures are needed because individuals have experienced intergenerational social mobility in Britain in different ways. Educational and occupational mobility often go hand in hand, but there is a significant proportion of the population that has been mobile on one dimension without being mobile on the other dimension. This is the case both for upward and downward mobility. Table 2.3 illustrates this for individuals in the highest of our socio-economic position classifications: with a degree *and* a managerial or professional destination position. 27.5% have *inherited* their high educational and occupational status from their parents. A small minority, 3.0%, have inherited their high education position but have been upwardly occupationally mobile compared to their parents. 34.9% are first-generation graduates but are from high status occupational parental backgrounds. 34.6% of individuals have been upwardly mobile on both dimensions.

Similar patterns can be observed in the remaining categories of individuals' destination positions, i.e. in lower levels of education and/or occupational destinations. An extended version of Table 2.3 is available in Supplementary Table B.1. There are some other notable patterns. First, of the educationally upwardly mobile, several individuals have been

[14] Using the whole Wave 8 sample from Understanding Society, 55.0% of voters support 'Remain'.

occupationally immobile or downwardly mobile. Second, there is a significant share of those with a low to intermediate occupation and low to intermediate education who have been educationally immobile but occupationally downwardly mobile. Third, a small but significant minority have been occupationally upwardly mobile whilst their low to intermediate educational status is the same as their parents'.

In summary, educational mobility is not perfectly correlated with occupational mobility and thus the requirement for two separate analyses by education and occupation. This is perhaps not surprising given the mass university expansion in the UK of the early 1990s. Before this time, it was much more likely to have a managerial or professional occupation without being a graduate. The variation in mobility trajectories will have impacted different age cohorts to various degrees. We address this in our robustness tests at the end of the findings section. Whilst we think separating out mobility by education and occupation is important, it may be that there is a further nuance whereby there is a difference between those who are mobile on both measures compared to just one. We cannot incorporate this into the model below and it represents a potential limitation.

Table 2.2 Percentage of respondents by level of occupation and educational qualification

	Management	**Intermediate**	**Routine / Semi-routine**
Degree	31.9%	10.2%	3.9%
School	13.5%	14.6%	11.0%
None	4.1%	5.1%	5.8%

The sample is all individuals in our educational mobility model

Table 2.3 Social mobility of those with a degree and in a managerial or professional occupation

		Management		
		Strongly Upward	**Upward**	**Same**
Degree	**Strongly Upward**	2.8%	4.2%	2.4%
	Upward	5.4%	22.2%	32.5%

Same	0.5%	2.5%	27.5%

The sample is all individuals in our model with data available for both occupational and educational mobility. 'Strongly' upwardly mobile individuals have a 'low' origin position, upwardly mobile individuals have a 'middling' origin position.

2.4 Methodology - Diagonal Reference Model

To test the effect of social mobility on individuals' preferences or behaviour, much of the existing literature uses conventional OLS regression. Specifically, there would be three ways in which to account for intergenerational mobility (Schuck and Steiber 2018). Firstly, one could estimate mobility effects while controlling for origin (but not destination). Secondly, one could control for destination and mobility, excluding origin. Finally, one could include mobility, origin, and destination all in one model. The first of these options is possible but conflates the effect of mobility with destination (i.e., own occupation or education levels). Similarly, the second option would not be able to separate out the effects of mobility from origin. Thus, this conventional analysis does not correctly disaggregate destination, origin and mobility effects (Sobel 1981, 1985). It is not clear whether the effect is from one's origins or the mobility effect of making a transition between education (occupation) levels. These two models are in effect under-identified. The final option described above is most problematic, based on an over-identified model. Mobility effects are linearly dependent on both origin and destination; they should, therefore, not all be included within one model (Blalock, 1967).

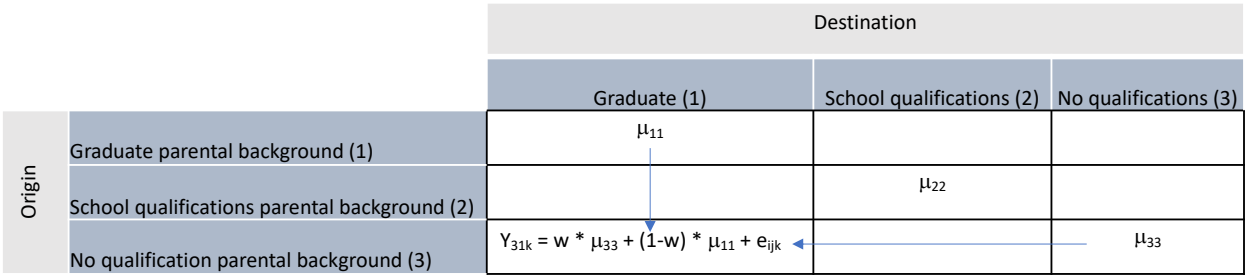
Given the imprecision associated with a conventional model, we use a Diagonal Reference Model (DRM). We use the DRM to separate out mobility effects from origin and destination without overidentifying the model. This model uses the key reference point as individuals who have been immobile. Those individuals are on the diagonal of a mobility table, with the same educational (occupational) status as their parents. It is a model that compares mobile individuals to only the non-mobile (Billingsley, Drefahl, and Ghilagaber 2018; van der Waal, Daenekindt, and de Koster 2017). DRMs have been used relatively extensively within social mobility research to overcome the issue of separating out mobility effects from origin and destination (Clifford and Heath 1993; Nieuwbeerta 2000). For a thorough overview of the methodological difficulties of approaches other than the DRM see Hendrickx et al. (1993). The DRM can be specified as follows:

DRM Equation 1:

$$Y_{ijk} = w * \mu_{ii} + (1\text{-}w) * \mu_{jj} + \sum ß\, x_{ijk} + e_{ijk}$$

Where Y_{ijk} is the dependent variable in cell ij of the mobility table of respondent k. Subscripts i and j refer to the position of origin and destination respectively, that is parental education (occupation) and respondent education (occupation). The group of individuals with the same status as their parents, i.e. those that are non-mobile, are in the diagonal cells of the mobility table. The DRM compares mobile individuals to the immobile group with the same origin, μ_{ii}, and the immobile group with the same destination, μ_{jj}. It calculates the weighting of origin (w) and destination (1-w): w and (1-w) must sum to one. The $\sum ß\, x_{ijk}$ term allows for the covariates with the model, which are detailed in the following section. The DRM setup is best demonstrated by Figure 2.1, adapted from van der Waal, Daenekindt, and de Koster (2017).

Figure 2.1 Illustration of the origin and destination effects, and weighting parameter within a DRM



In our analysis, we run a binary logistic DRM including dummies for upward mobility (up) and downward mobility (down). We calculate a mobility variable separately for occupation and education. The DRM restricts us to study one mobility variable at a time, hence the need to separate out models in terms of educational and occupational mobility. The mobility variable is simply a comparison of the respondent's education (occupation) to their parent's education (occupation). This then can take the form upwardly mobile (i.e. parental education is lower than the respondent's education), inherited (same education) or downwardly mobile (i.e. parent education is higher than the respondent's education). π_{ijk} is the probability of voting 'Remain' for the *k*th individual, with educational (occupational) destination j and social origin i. Thus:

DRM Equation 2:

$$Y_{ijk} = \log(\pi_{ijk} / [1-\pi_{ijk}]) = w * \mu_{ii} + (1-w) * \mu_{jj} + ß_1 up + ß_2 down + \sum ß\, x_{ijk} + e_{ijk}$$

We now wish to explore if there are different effects of origin and destination depending on the level of education (occupation) of the respondent. We can incorporate this by allowing the weight, w, to vary by the destination position. Essentially, this allows the relative salience of origin versus destination to vary between levels of destination status (Zhao and Li 2019).

DRM Equation 3:

$$Y_{ijk} = \log(\pi_{ijk} / [1-\pi_{ijk}]) = w_{des.j} * \mu_{ii} + (1-w_{des.j}) * \mu_{jj} + ß_1 up + ß_2 down + \sum ß\, x_{ijk} + e_{ijk}$$

The models are run in STATA using the *drm* package (Kaiser 2018).

2.4.1 Control Variables

The control variables are included in the $\sum ß x_{ijk}$ term in the formulae above. We control for demographic characteristics, and broadly follow the strategy of similar work on Brexit (for example Lee, Morris, and Kemeny 2018). Controls include gender, age, age squared, and an ethnicity variable. The Understanding Society fieldwork for Wave 8, in which the question on EU membership was asked, was undertaken over a two-year period spanning the Brexit vote. To mitigate any influence of the result on one's response to the survey question, we include a dummy to indicate whether the respondent was interviewed prior to, or after 23rd June 2016.[15]

We control for the individual's current occupational class when we are studying educational mobility. Similarly, we control for the respondent's education level in the occupational mobility models. We also provide a version of the models in the supplementary materials without occupational (educational) controls when we study educational (occupational) mobility Supplementary Table B.8. This is to alleviate any concerns that occupation may be mediating the effect of education. The results in both cases are substantively in line with our main analysis, and we comment further in the robustness test section below. We also have a

[15] We only have access to the month in which the respondent was surveyed; we include all those surveyed in June 2016 as prior to the referendum. The referendum was on June 23rd. Less than 5% of respondents were sampled in June 2016. Thus, we likely misclassify a very small proportion of the respondents (circa 1%).

categorical variable for labour market status, which separates out those who are inactive, unemployed, active, on maternity leave, a student, and retired. This is largely redundant given that we have used the NS-SEC occupational definitions, so the individual should be working. However, it may be that the individual is, for example, also a student. Finally, we include the area of the UK in which the individual resides given that there are clear differences between regional votes for Brexit. This is at NUTS 1 regional level, i.e. Scotland, Northern Ireland, Wales, and 9 regions of England. A full summary of the descriptive statistics is shown in Supplementary Table B.2.[16]

2.5 Findings

We now produce our DRMs for each dependent variable, separately for educational and occupational mobility. There are three models within each analysis, as explained in detail above. Model 1 is the standard DRM (as outlined in DRM Equation 1 above), including the controls. Model 2 adds upwards and downwards mobility dummies (DRM Equation 2); and Model 3 allows the origin weight to differ by destination position (DRM Equation 3).

2.5.1 Education as the mobility variable

We find that a higher level of education for non-mobile respondents is associated with an increased probability of voting 'Remain'. The diagonal intercepts, that is estimated log odds for immobile individuals at each level of educational attainment, decrease as the level of education decreases. In particular, the highly educated immobile group are much more likely to vote 'Remain' compared to the middle and low immobile education groups. These diagonal intercepts are the basis for estimating origin and destination effects for those individuals that are mobile.

Table 2.4 DRM Binary Logistic Regression based on educational mobility - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. 'Leave' EU 1, 'Remain' (coefficients are log odds)

[16] We exclude missing responses via listwise deletion. See Supplementary Table B.9 for analysis and discussion regarding missing data.

	Model 1		Model 2		Model 3	
Diagonal Intercepts						
μ_{11}: High education	0.937	***	0.937	***	0.973	***
	(0.064)		(0.062)		(0.072)	
μ_{22}: Middle education	-0.389	***	-0.363	***	-0.350	***
	(0.050)		(0.052)		(0.054)	
μ_{33}: Low education	-0.548	***	-0.574	***	-0.622	***
	(0.066)		(0.066)		(0.072)	
Weight of origin	0.421	***	0.416	***		
	(0.040)		(0.073)			
Weight of origin (high education dest)					0.431	***
					(0.079)	
Weight of origin (mid education dest)					0.278	**
					(0.141)	
Weight of origin (low education dest)					0.587	***
					(0.199)	
Mobility (Base same)						
Upwardly Mobile			0.059		0.060	
			(0.094)		(0.097)	
Downwardly Mobile			0.151		0.168	
			(0.094)		(0.129)	
Controls	Yes		Yes		Yes	
N	9,019		9,019		9,019	
Log Likelihood	-5810.203		-5807.950		-5805.817	
AIC	11680.407		11679.901		11679.634	
BIC	11893.620		11907.327		11921.275	

*Notes: * p<0.1 ** p <0.05 *** p<0.01. Unreported controls: age, age^2, UK region, sex, ethnicity, occupation, job status, surveyed prior or after referendum. Weighted data. Coefficients are log odds.*

Across all three models, there is a statistically significant and substantial weighting to one's origins – in fact, the weighting to one's origin is nearly as important as destination. In Model 1 the origin weighting is 0.421 [95% CI: 0.342, 0.500] and in Model 2 it is 0.416 [95% CI: 0.274, 0.558]. When including mobility effects in Model 2, we find no evidence of a statistically significant effect of upward or downward mobility over and above the impact of origin and destination. Model 3 would suggest that the effect of origins is most important for those ending up with a high or low level of educational attainment. For an individual who ends up with a middle education, origin is least important (w=0.278). However, for all educational destinations, the weight of origin is statistically significant. Thus, the main finding from all three models is that parental origins, measured in terms of education, have a significant and substantial effect on the position individuals took on the Brexit vote. However, there is no statistically significant association of upwards or downwards mobility, over and above origin and destination, with the likelihood of voting 'Remain'.

In Supplementary Table B.7, we also test whether there is a difference of origin weight for individuals who are upwardly mobile compared to those who are downwardly mobile. The weight for the upwardly mobile is marginally higher, albeit this difference is not statistically significant. This also applies when we use occupation as the mobility variable.

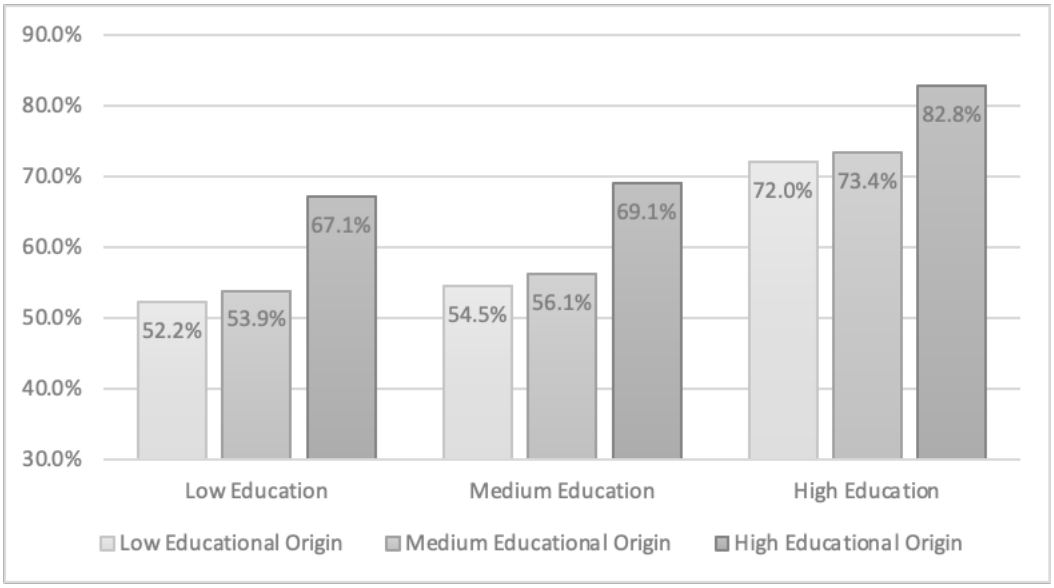
The effects from our models are most clearly illustrated using predicted probabilities. We use Model 1 given that it was the 'best goodness of fit' and mobility effects were not significant[17]. Predicted probabilities for all the models are available in Supplementary Figure B.1 material, but they are substantively similar. We show predicted probabilities using a hypothetical individual based around choosing a characteristic for each variable in our model. Our example is a 40-year-old white English female from the North-East of England who is active in the labour market with a high-level occupation. The predicted probabilities for this individual are reproduced in Figure 2.2. We now discuss how the probability of supporting 'Remain' varies by social origin for this hypothetical individual.

In the case in which our individual is also a graduate and inherited their position (Group 4 in Table 2.1), there is a very high predicted probability that they voted 'Remain' in the EU

[17] There is no improvement of fit using log likelihood ratios and comparisons through a Chi-squared test as we move from Model 1 to Model 2 or from Model 2 to Model 3. Similarly, Model 1 is the best fit using Bayesian Information Criterion (BIC) and Akaike Information Criterion (AIC).

referendum (82.8%). If this individual had instead reached her high education destination via upward social mobility (Group 3), she would be around 10 percentage points less likely to vote 'Remain'. In the case in which our hypothetical individual has not participated in education beyond her school level qualification, origins are also crucial. There is very little difference as to whether one has the same educational status as their parents (i.e. 'middle' – school level qualifications) or has been upwardly mobile from a low educational origin (56.1% vs 54.5%). However, should this hypothetical individual have at least one graduate parent and thus experienced downward mobility ('fallen down the ladder' – Group 1), they would be a full thirteen percentage points more likely to vote 'Remain'. Finally, our hypothetical individual would be the least likely to vote 'Remain' should this person have stood still (Group 2) without educational qualifications or educational social mobility.

Figure 2.2 Predicted probability of voting 'Remain' for our 'hypothetical individual' based on educational mobility



2.5.2 Occupation as the mobility variable

We now run the same models based on occupation. There is a similar dynamic. A higher level of occupational status is associated with an increased probability of voting 'Remain'. Occupational origin is an important factor, it is of a similar magnitude to our education model.

However, compared to the education model, there is less of a difference between immobile individuals from a high occupational category versus a low occupational category (note we control for one's own educational status in this model). When we move to Model 3, allowing weights to vary by destination, we find a similar pattern as in the education model. Origin is least important for those that end up in the middle. We do not find statistically significant mobility effects over and above those effects of origin and destination.

Table 2.5 DRM Binary Logistic Regression based on occupational mobility - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. 'Leave' EU, 1. 'Remain' (coefficients are log odds)

	Model 1		Model 2		Model 3	
Diagonal Intercepts						
μ_{11}: High occupation	0.666	***	0.660	***	0.677	***
	(0.062)		(0.063)		(0.070)	
μ_{22}: Middle occupation	-0.183	***	-0.175	**	-0.157	**
	(0.063)		(0.074)		(0.071)	
μ_{33}: Low occupation	-0.484	***	-0.485	***	-0.520	***
	(0.075)		(0.081)		(0.083)	
Weight of origin	0.384	***	0.444	***		
	(0.055)		(0.169)			
Weight of origin (high occupation dest)					0.435	***
					(0.160)	
Weight of origin (mid occupation dest)					0.321	
					(0.242)	
Weight of origin (low occupation dest)					0.486	**
					(0.241)	
Mobility (Base same)						
Upwardly Mobile			0.031		0.016	
			(0.151)		(0.146)	
Downwardly Mobile			-0.078		-0.040	
			(0.148)		(0.200)	

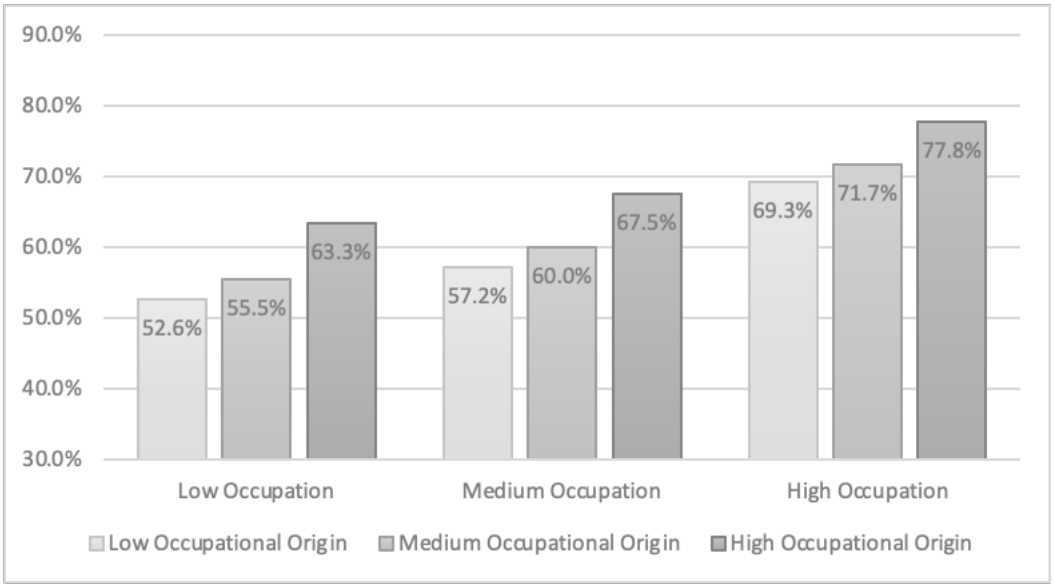
Controls	Yes	Yes	Yes
N	5,977	5,977	5,977
Log Likelihood	-4066.3941	-4066.147	-4065.4688
AIC	8192.788	8196.294	8198.9376
BIC	8393.658	8410.556	8426.59052

*Notes: * p<0.1 ** p <0.05 *** p<0.01. Unreported controls: age, age^2, UK region, sex, ethnicity, education, job status, surveyed prior or after referendum. Weighted data. Coefficients are log odds.*

According to all the measures of 'goodness of fit', Model 1 is the best. This again reiterates our lack of confidence in additional mobility effects. We thus use predicted probabilities based on Model 1. In substance, the predicted probabilities are very similar across models (see Supplementary Figure B.2).

We provide predicted probabilities for our hypothetical individual, Figure 2.3, a 40-year-old white English female from the North-East of England who is active in the labour market. We now keep a high level of education constant and examine variation in occupational origin and destination. One's occupation is important but so are one's origins. 'Inherited high position' (Group 4) individuals, those with high occupations and parents within the same class, are more likely to vote 'Remain' than those who have achieved their position through upward social mobility – 'climbed up the ladder' (Group 3). Should this hypothetical individual have been downwardly mobile into the middle or low occupations, there is an origin effect, and they are more likely to vote 'Remain' than an immobile individual. However, there is a limited differential if one maintains their occupational class in the middle compared to those who have made the jump from a low to middle occupation.

Figure 2.3 Predicted probability of voting 'Remain' for our 'hypothetical individual' based on occupational mobility



2.6 Model Extensions

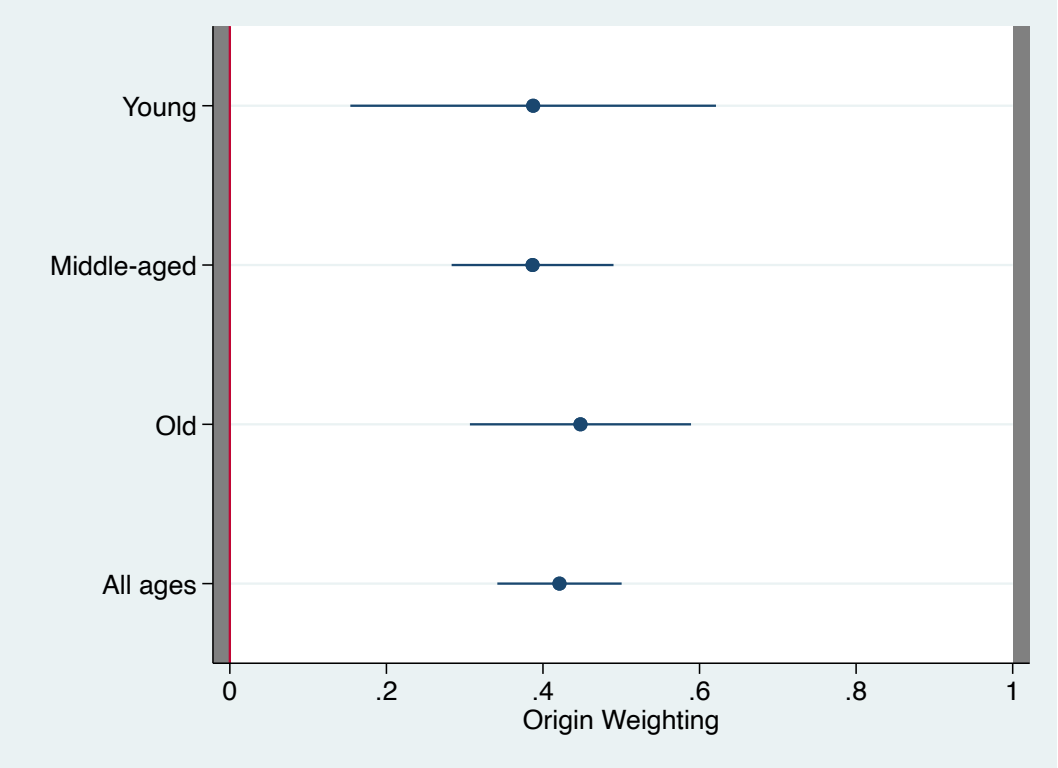
2.6.1 Age Effects

The literature posits that the effects of origin may become less important with age (De Graaf, Nieuwbeerta, and Heath 1995; Jaime-Castillo and Marqués-Perales 2019). Intuitively as one spends more time in their destination class, one may increasingly share preferences with that class. Additionally, as we discussed in the data section, age might also matter for the effects of social mobility via the cohort effect. On that basis, it may be too much of a simplification to consider the immobile young as the same as the immobile old. Similarly, mobility experience may be important with reference to one's cohort's achievement.

To understand how age might affect our models, we conduct the following robustness test. We produce 3 DRMs based on educational mobility, for the young (35 years-old or younger), the middle-aged (36 to 55 years-old), and the old (over 55-years-old). Other age categorisations for the 'young', 'middle', and 'old' do not impact the results meaningfully. Moreover, these age bands approximate to the times of significant educational and occupational expansion to which we have previously referred. For example, the 'young' group would have participated in the mass university expansion of the 1990s and 2000s. The full results are reported in Supplementary Table B.4. We do not find statistically significant mobility effects, over and above the effects of origin and destination, in any of the three models. The immobile groups

are similar for the 'young', 'middle', and 'old'. If anything, there is more of a disparity between the three groups of immobile individuals for the 'old' compared to the other two groups. This is not surprising given that the university educated are a smaller group for the oldest age group, forming more of an elite. The coefficients of the origin weights are plotted below, along with the estimate of origin from the main analysis above. There is no statistically significant difference between the three age groups. The point estimates would suggest that origins are most important for the old. Whilst the nuances from this analysis may be interesting, we believe the similarities justify the pooled analysis in the main section of this paper.

Figure 2.4 Origin effects based on educational mobility by age group



Note: Unlike the main analysis, the young also includes those aged between 23 and 27

Supplementary Table B.6 also provides an alternative version of this age analysis. We interact the 'young', 'middle', and 'old' age categories with the origin weight. In this case, the diagonal intercepts i.e., the means of the immobile groups, remain the same for all ages. Once again, the interaction term is not statistically significant for any of the age groups, thus, justifying the pooled analysis by age groups. Both above analyses are replicated for occupational mobility (Supplementary Table B.5 and Supplementary Table B.6).

2.6.2 Education / Occupation as potentially mediating variables

Supplementary Table B.8 presents models without occupational controls in the educational mobility analysis and, correspondingly without educational controls in the occupational mobility analysis. This robustness test is added because it may be argued that occupation (education) mediates the effects of education (occupation) on Brexit voting and thus it should not be included in the model (Angrist and Pischke 2009). Secondly, this increases the number of observations as, for example, some individuals may be missing data on their occupational status and thus omitted from the educational mobility model. The results are substantively similar across both educational and occupational mobility models. However, upward mobility is now associated with a higher tendency to vote 'Remain' in the education model, but it is only weakly significant (p=0.063). Whilst we do not think this is enough evidence to definitively claim there are upward mobility effects, we call for additional research into this potential mobility effect with different datasets.

2.7 Discussion

Our findings confirm that intergenerational educational and occupational mobility have strong political consequences, affecting individuals' Brexit voting. Those individuals that are in the top socio-economic position, defined either by education or occupation, need to be more finely categorised by whether they have been socially mobile. Individuals who 'reached' their new position 'thanks to' upward mobility (Group 3 from Table 2.1, theory section) *are still different* from those who already had 'inherited' such a position (Group 4). They are more likely to vote 'Leave'. Our work further entrenches the idea that those 'standing still' have been 'left-behind' (Group 2), considering that even those who incurred a clear loss over time (the downwardly mobile - Group 1) in the same position are more likely to vote 'Remain'.

These results are driven by a substantial effect of individuals' socio-economic origins *(hypothesis 1)*, rather than any direct mobility effect *(hypotheses 2 and 3)*. The weighting for origin in the educational model is 0.421 [95% CI: 0.342, 0.500]. This shows a substantial origin effect and in fact we cannot be confident that destination is more influential than educational origins. Our findings are in line with the expectations we derived from intergenerational social

mobility (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995; Piketty 1995), intragenerational mobility (Ares 2019; Langsæther, Evans, and O'Grady 2021), and political socialisation research (Neundorf, Smets, and García-Albacete 2013; O'Grady 2019). Individuals' attachment to the social milieu in which they grew up plays a role on where they position themselves on the Brexit divide. This finding showcases the need to disentangle origins and mobility effects to analyse whether the gains and losses, connected with intergenerational mobility in the context of educational expansion and occupational upgrading have impacted the Brexit vote.

Whilst our findings resonate with the existing intergenerational and intra-generational mobility literature, there is a contrast to work highlighting declining, or 'loss' of, position (Burgoon et al. 2019; Gest, Reny, and Mayer 2018; Gidron and Hall 2017). Our findings confirm the expectation that those with lower status will have a higher tendency to vote for Brexit. However, in our findings, those downwardly mobile individuals retain part of their preferences in line with their social origins. This contrasts to the hypothesis that a decline in subjective social status, or socio-economic position more generally, results in a higher tendency to vote 'Leave'. That said, mobile individuals may well see their subjective social status, their place in society, as more than just a function of education and occupation. In line with our empirics, one's perception of class is a fuzzy concept going well beyond current status (Friedman, O'Brien, and McDonald 2021).

Our work highlights the need to challenge previous assumptions about the 'winners' as one homogenous group. The findings confirm the role of education for individuals' position on social cleavages and add a piece to this puzzle: the education effect persists over generations, as the group of graduates with highly educated origins differ in their attitudes towards Brexit from their first-generation graduate peers. Thus, our findings feed into the research on the preferences and partisan identities of university graduates (Ansell and Gingrich 2018; Gelepithis and Giani 2020; Gingrich and Häusermann 2015; Häusermann, Kurer, and Schwander 2015). In particular, our findings lend support to Ansell and Gingrich's (2018) expectation that heterogeneity between graduates may make it difficult to bind cross-class coalitions.

In summary, individuals' social mobility is an underappreciated variable for understanding the new cleavage structure of British politics. At the level of the individual, it is too simplistic to

define graduates as ‘winners’ and theorise their preferences on this basis. Moreover, the immobile ‘left-behind’ are the group that behaves most strongly in line with the existing literature on the ‘left-behind’. Analysis needs to be more nuanced and consider preferences based on socio-economic status, origins, *and* mobility in attaining that position.

The extent to which our findings on social origins can be generalised to other anti-system movements requires further empirical work. The importance of occupational and educational mobility may be specific to British voters given the centrality of the ‘aspirational society’ in forging a cross-class coalition in British politics (Andersson 2010). Moreover, our work has identified an important association between origin position and likelihood of Brexit voting, but is limited to identifying this association and leaves the question of mechanisms open theoretically and empirically. Specifically, our theory section suggested three possible mechanisms for this effect: one’s social networks, early years’ political socialisation of ‘the establishment’ against ‘the people’, and variation in resources from the parent generation. With this finding, we thus call for a research agenda to develop and empirically test explanations of the role of social origins in the current electorate’s cleavage structure.

B Supplementary Materials

Supplementary Table B.1 Full Mobility Table

		Management			Intermediate			Routine/Semi-routine		
		Strongly Upward	Upward	Same	Upward	Same	Downward	Same	Downward	Strongly Downward
	Strongly Upward	48	72	42	23	21	14	9	11	4
Degree	Upward	92	378	554	43	132	140	20	45	50
	Same	8	43	469	2	7	119	1	6	34
	Upward	40	56	28	68	59	22	76	40	17
School	Same	75	214	176	96	257	177	85	165	76
	Downward	1	11	74	3	9	37	3	4	27
	Same	6	5	6	24	27	7	48	26	4
None	Downward	6	10	13	18	29	14	20	45	24
	Strongly Downward	0	4	4	0	0	6	0	0	4

The sample is all individuals in our 'Brexit' model with data available for both occupational and educational mobility. N=4,633

Supplementary Table B.2 Descriptive Statistics

	Educational Mobility	Occupational Mobility
Voting intention		
Remain	59.54%	57.69%
Leave	40.46%	42.31%
Highest parents' education		
High	17.91%	18.50%
Medium	61.01%	63.87%
Low	21.08%	17.63%
Respondent's education		
High	45.91%	47.62%
Medium	39.08%	44.35%
Low	15.01%	8.03%
Intergenerational mobility		
Upwardly mobile	42.13%	28.83%
Immobile	45.49%	46.54%

Downwardly mobile	12.38%	24.63%
Highest parents' occupation		
High	45.65%	43.55%
Medium	36.47%	37.09%
Low	17.88%	19.36%
Respondent's occupation		
High	49.43%	49.87%
Medium	29.85%	29.46%
Low	20.72%	20.67%
Ethnicity		
White	92.52%	94.60%
Mixed	0.96%	0.95%
Asian	4.44%	2.49%
Other	2.08%	1.96%
Gender		
Female	51.52%	50.65%
Male	48.48%	49.35%
Government Region		
North-East	4.22%	4.36%
North-West	11.42%	11.72%
Yorkshire and Humber	8.38%	9.50%
East Midlands	7.67%	8.02%
West Midlands	8.86%	8.86%
East England	10.24%	10.40%
London	11.31%	10.93%
South-East	14.95%	15.37%
South-West	9.82%	9.73%
Wales	3.66%	3.05%
Scotland	7.48%	6.71%
Northern Ireland	1.98%	1.37%
Labour Market Status		
Active	97.52%	97.80%
Inactive	0.41%	0.38%
Unemployed	0.21%	0.17%
Retired	0.98%	0.69%
Maternity Leave	0.55%	0.65%
Student	0.23%	0.22%
Other	0.10%	0.09%
Age		
Years	47.10	45.81
Sample prior or after referendum		
Prior	27.12%	24.56%

	After	72.88%	75.44%
Sample Size			
	N	9,019	5,977

Notes: Data weighted with cross-sectional (Wave 8) Understanding Society weights

Supplementary Table B.3 AIC and BIC formulae

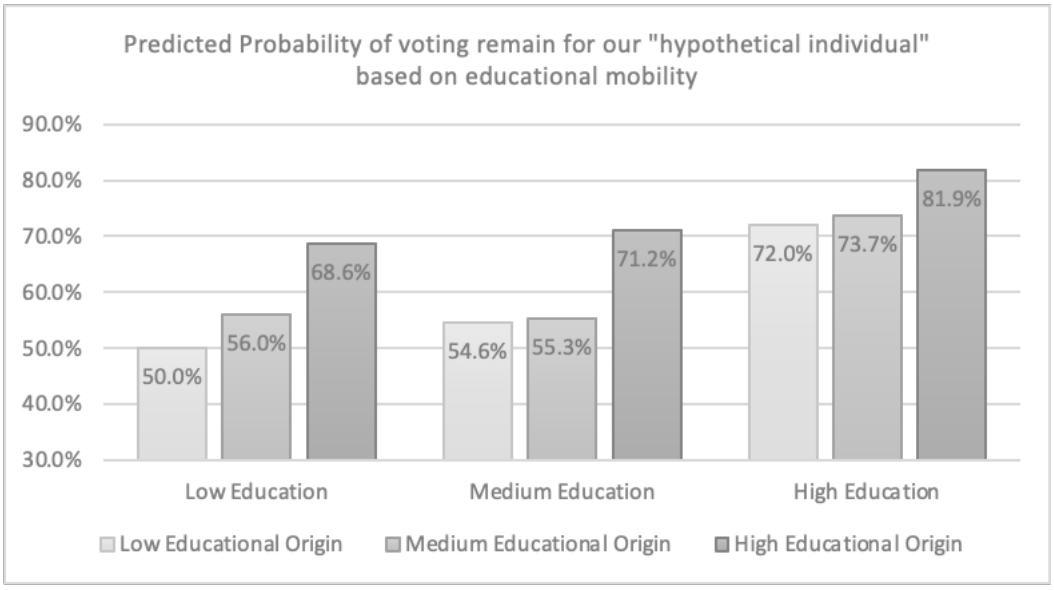
AIC = -2*ln(likelihood) + 2*k

BIC = -2*ln(likelihood) + ln(N)*k

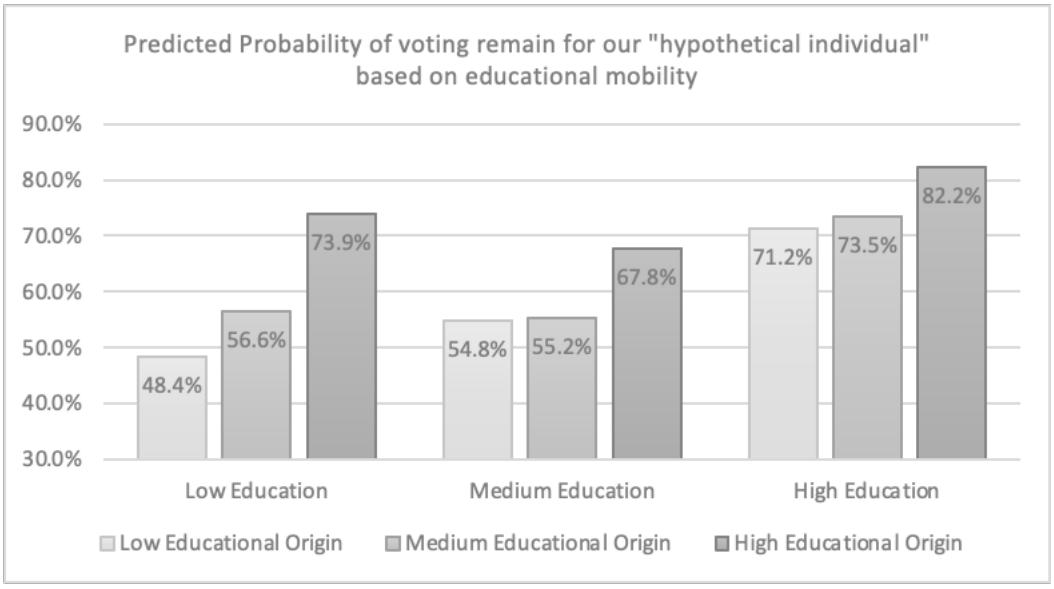
Supplementary Figure B.1 Brexit voting predicted probabilities – Education as the mobility variable

Notes: Graphs based on our hypothetical individual: 40-year-old white English female from the North-East of England who is active in the labour market with a high-level occupation and surveyed prior to the referendum.

Model 2



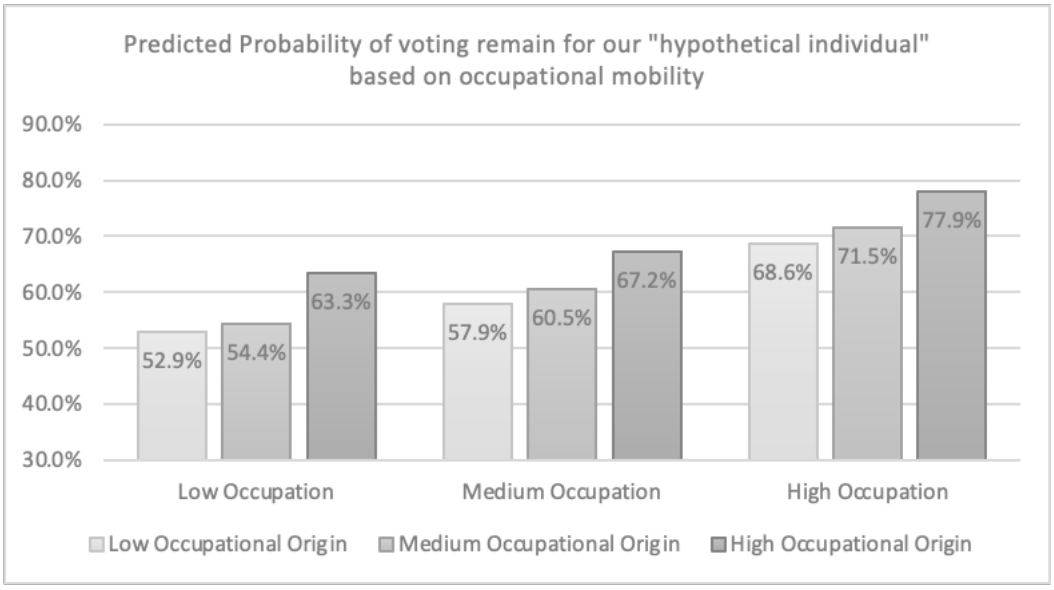
Model 3



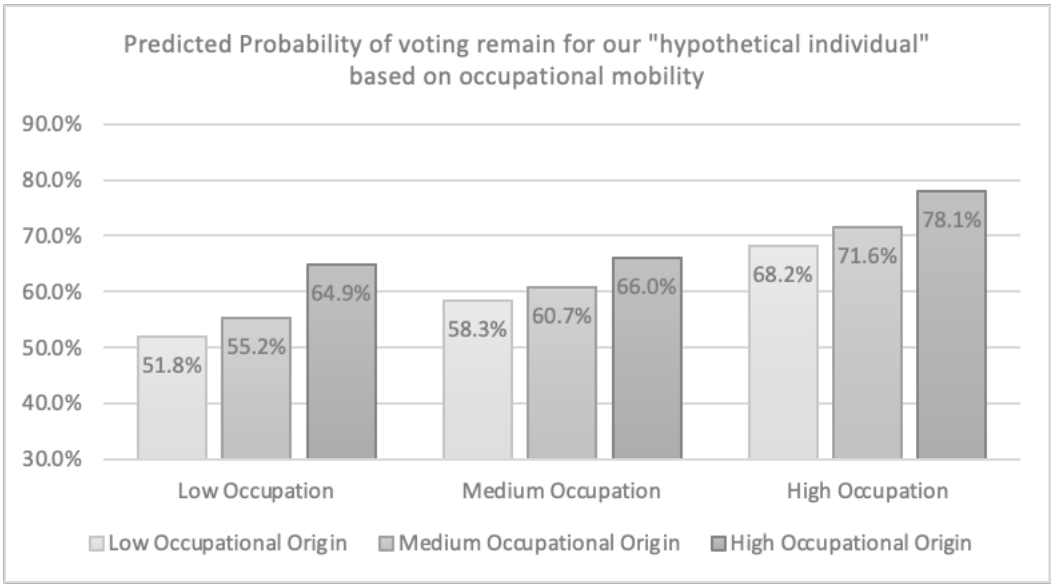
Supplementary Figure B.2 Brexit voting predicted probabilities – Occupation as the mobility variable

Notes: Graphs based on our hypothetical individual: 40-year-old white English female from the North-East of England who is active in the labour market with a high-level education and surveyed prior to the referendum.

Model 2



Model 3



Supplementary Table B.4 DRMs for the "young", "middle-aged", and "old" based on educational mobility

DRM Binary Logistic Regression based on educational mobility by age - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. Leave EU 1. Remain (coefficients are log odds)

	Young (23-35 years old)		Middle-Aged (36-55 years-old)		Old-Aged (>55 years-old)	
Diagonal Intercepts						
μ_{11}: High education	0.579	***	0.875	***	1.084	***
	(0.154)		(0.081)		(0.132)	
μ_{22}: Middle education	-0.414	***	-0.482	***	-0.166	
	(0.136)		(0.064)		(0.106)	
μ_{33}: Low education	-0.165		-0.393	***	-0.915	***
	(0.218)		(0.089)		(0.103)	
Weight of origin	0.387	***	0.387	***	0.448	***
	(0.119)		(0.053)		(0.072)	
Controls	Yes		Yes		Yes	

N	1,942	5,498	2,190
Log Likelihood	-1386.507	-3409.875	-1389.455
AIC	2833.013	6879.750	2834.910
BIC	3000.157	7078.114	2994.276

* p<0.1 ** p <0.05 *** p<0.01

Supplementary Table B.5 DRMs for the "young", "middle-aged", and "old" based on occupational mobility

DRM Binary Logistic Regression based on occupational mobility by age - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. Leave EU 1. Remain (coefficients are log odds)

	Young (23-35 years old)		Middle-Aged (36-55 years-old)		Old-Aged (>55 years-old)	
Diagonal Intercepts						
μ_{11}: *High occupation*	0.754	***	0.680	***	0.432	***
	(0.127)		(0.078)		(0.134)	
μ_{22}: *Middle occupation*	-0.343	***	-0.167	**	-0.101	
	(0.130)		(0.080)		(0.130)	
μ_{33}: *Low occupation*	-0.411	**	-0.513	***	-0.331	**
	(0.164)		(0.095)		(0.139)	
Weight of origin	0.312	***	0.348	***	0.569	***
	(0.106)		(0.068)		(0.183)	
Controls	Yes		Yes		Yes	
N	1,679		3,618		1,257	
Log Likelihood	-1207.946		-2392.890		-832.105	
AIC	2475.892		4843.781		1718.210	
BIC	2638.671		5023.397		1856.895	

* p<0.1 ** p <0.05 *** p<0.01

Supplementary Table B.6 Interacting age categories with the weight of origin

DRM Binary Logistic Regression, interacting age categories with the weight - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. Leave EU 1. Remain (coefficients are log odds)

	Educational Mobility - Origin/Age interaction		Occupational Mobility - Origin/Age interaction	
Diagonal Intercepts				
μ_{11}: *High education / occupation*	0.941	***	0.659	***
	(0.063)		(0.063)	
μ_{22}: *Middle education / occupation*	-0.361	***	-0.173	**
	(0.052)		(0.076)	
μ_{33}: *Low education / occupation*	-0.579	***	-0.486	***
	(0.066)		(0.082)	
Weight of origin for young (23-35 years-old)	0.456	***	0.435	**
	(0.111)		(0.219)	
Weight of origin interacted with middle aged (36-55 years-old)	-0.065		-0.014	
	(0.103)		(0.149)	
Weight of origin interacted with old aged (55+ years-old)	-0.010		0.113	
	(0.118)		(0.171)	
Mobility (Base same)				
Upwardly Mobile	0.055		0.035	
	(0.094)		(0.152)	
Downwardly Mobile	0.153		-0.080	
	(0.094)		(0.149)	
Controls	Yes		Yes	
N	9,019		5,977	

Log Likelihood	-5807.971	-4065.565
AIC	11685.941	8201.131
BIC	11934.689	8435.479

* p<0.1 ** p <0.05 *** p<0.01

Supplementary Table B.7 Interacting mobility with weight of origin

DRM Binary Logistic Regression based on educational mobility - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. Leave EU 1. Remain (coefficients are log odds)

	Interaction Model - Education		Interaction Model - Occupation	
Diagonal Intercepts				
μ_{11}: *High education / occupation*	0.959	***	0.671	***
	(0.071)		(0.068)	
μ_{22}: *Middle education / occupation*	-0.368	***	-0.180	***
	(0.052)		(0.069)	
μ_{33}: *Low education / occupation*	-0.591	***	-0.491	***
	(0.067)		(0.078)	
Weight of origin for downwardly mobile	0.341	***	0.378	*
	(0.129)		(0.215)	
Weight of origin interacted with upward mobility	0.117		0.137	
	(0.169)		(0.301)	
Mobility (Base same)				
Upwardly Mobile	0.098		0.089	
	(0.110)		(0.196)	
Downwardly Mobile	0.204	*	-0.025	
	(0.121)		(0.185)	
Controls	Yes		Yes	
N	9,019		5,977	

Log Likelihood	-5807.648	-4066.002
AIC	11681.296	8198.005
BIC	11915.830	8418.962

Supplementary Table B.8 DRM without additional occupation (education) controls

DRM Binary Logistic Regression - 'Should the United Kingdom remain a member of the European Union or leave the European Union?' 0. Leave EU 1. Remain (coefficients are log odds). Excluding occupation controls in the educational mobility model. Excluding education controls in the occupational mobility model. A robustness test to show the mediating effect of the respective controls.

	Educational Mobility		Occupational Mobility	
Diagonal Intercepts				
μ_{11}: *High education / occupation*	1.067	***	0.961	***
	(0.048)		(0.058)	
μ_{22}: *Middle education / occupation*	-0.334	***	-0.245	***
	(0.037)		(0.066)	
μ_{33}: *Low education / occupation*	-0.733	***	-0.716	***
	(0.043)		(0.072)	
Weight of origin	0.422	***	0.435	***
	(0.053)		(0.104)	
Mobility (Base same)				
Upwardly Mobile	0.131	*	0.068	
	(0.070)		(0.140)	
Downwardly Mobile	0.116		-0.107	
	(0.072)		(0.137)	
Controls	Yes (not occupation)		Yes (not education)	
N	15,350		6,073	
Log Likelihood	-10168.923		-4218.015	

AIC	20397.846	8496.030
BIC	20627.012	8697.378

* p<0.1 ** p <0.05 *** p<0.01

Supplementary Table B.9 Missing Data

Observations with missing data are excluded from the analysis. For control variables such as age, gender, region of residence, race, and month of sample, this represents a relatively small proportion of the sample – less than 2% in each case. By excluding those without a job, we are restricting the sample to the working population. Approximately 12% of the Wave 8 sample do not record a highest qualification. The largest concern is that 32% of respondents miss values for both parents' education. Below we address those concerns by showing the balance between the sample with both parents' education and the sample with only one or nether parents' educational attainment. There is a small difference between the two populations. Namely, the sample with data on parental education is more likely to vote 'Remain', have a higher status job, and higher educational attainment. Models with just one parent's occupation / education is available on request.

		With parental education	**Without parental education**
Voting intention			
	Remain	59.54%	51.03%
	Leave	40.46%	48.97%
Respondent's education			
	High	45.91%	36.61%
	Medium	39.08%	46.96%
	Low	15.01%	16.43%
Respondent's occupation			
	High	49.43%	38.23%
	Medium	29.85%	31.10%
	Low	20.72%	30.67%
Ethnicity			
	White	92.52%	91.64%
	Mixed	0.96%	1.33%
	Asian	4.44%	4.18%

	Other	2.08%	2.85%
Gender			
	Female	51.52%	41.39%
	Male	48.48%	58.61%
Government Region			
	North-East	4.22%	5.02%
	North-West	11.42%	11.35%
	Yorkshire and Humber	8.38%	9.76%
	East Midlands	7.67%	8.32%
	West Midlands	8.86%	8.25%
	East England	10.24%	10.10%
	London	11.31%	11.59%
	South-East	14.95%	12.81%
	South-West	9.82%	9.71%
	Wales	3.66%	4.43%
	Scotland	7.48%	7.06%
	Northern Ireland	1.98%	1.59%
Age			
	Years	47.10	44.58
Sample prior or after referendum			
	Prior	27.12%	28.78%
	After	72.88%	71.22%
Sample Size			
	N	9,019	5,977

Note: The 'without parental education' statistics are based upon data when all other variables within the 'Brexit' Model are available. Data weighted with Understanding Society's cross-sectional weights.

3 Intergenerational social mobility and anti-system support: the journey matters

Abstract

Seminal sociological works propose that a high level of social mobility within a society underpins democracy. The salience of this relationship is particularly poignant in contemporary politics. Fewer individuals are upwardly mobile and more downwardly mobile than in previous generations. There is now also a political outlet for dissatisfied voters, anti-system parties. I analyse the European Social Survey with diagonal reference models, which separate origin and destination effects from mobility effects. My findings show that one's origins, measured by parental educational attainment, are an important predictor of anti-system right support. Mobile individuals with lower educated parents are more likely to vote for the anti-system right than their immobile counterparts. There is an additional mobility effect, upward social mobility reduces support for the anti-system right whereas downward mobility increases support. Contrastingly, anti-system left support derives from a wider cross-section of society, and there is no evidence that parental origin or social mobility is statistically significant. Finally, I show that origin effects are consistent across Western European countries.

3.1 Introduction

The idea that a high level of social mobility within a society underpins democracy has its origin in seminal social science literature (Blau and Duncan 1967; Tocqueville 1838). This relationship has once again become particularly poignant in the 21st Century (Kurer and Van Staalduinen 2022). Two forces are colliding: an electorate disappointed with their social mobility trajectory, and now also a political outlet, anti-system parties, through which dissatisfied voters can mobilise. There is evidence that upward absolute social mobility has slowed. In the USA, only half of those entering the labour market today can expect to earn more than their parents compared to 90% of individuals born in 1940 (Chetty et al. 2017). Similarly, occupational downward mobility in Europe is more prevalent than previously estimated (Bukodi, Paskov, and Nolan 2019). Second, establishment political parties have converged ideologically becoming "cartel" like (Katz and Mair 1995), creating a political gap for anti-system parties (Hopkin 2020). Whilst anti-system parties maintained a presence in Western Europe 30 years ago, there has been a clear increase post the financial crisis (Hopkin

2020)[18]. So much so that approximately one in four voters supported anti-system parties in 2018, spread across most Western European countries.

Given these two empirical facts, I test to what extent mobile individuals differ from their non-mobile counterparts regarding anti-system support. Here, mobile individuals may associate with their social origin and destination position, as well as experiencing a separate effect from upward (downward) mobility. How does an individual's social origins relate to anti-system party support? Is there a mobility effect, over and above origin and destination? Whilst anti-system parties, by definition, oppose the establishment, expressing uncompromising opposition to the political and economic order (Hopkin 2020), there is variation in underlying beliefs between those who support anti-system right and anti-system left parties. Does the impact of origin and mobility differ between support for the anti-system left and the anti-system right? Finally, given the differences between socio-economic groups outcomes varies dramatically between countries within Europe, there is no reason to assume that any effect will be consistent across countries. Does one's social mobility trajectory impact the tendency to support anti-system parties differently across countries in Europe?

Empirically, I test my hypotheses analysing the European Social Survey (ESS) using a diagonal reference model (DRM). The DRM separates origin, destination, and mobility effects which is not possible in conventional OLS models (Sobel 1981, 1985). My analysis focuses on Western European countries because of the differences in the underlying drivers of anti-system support in Eastern Europe (Santana, Zagórski, and Rama 2020). I use education as the indicator of socio-economic position, and thus also of absolute social mobility. As I later argue, education is now a key cleavage in society, distinct to that of occupational class (Gethin, Martínez-Toledano, and Piketty 2021; Stubager 2013).

This article has three key findings. Theoretically, it is not clear as to whether socially mobile individuals should be more or less likely to support anti-system parties compared to their immobile counterparts. I argue and show empirically that socially mobile individuals differ in their tendency to vote for anti-system parties compared to the non-mobile. I find socially mobile individuals retain part of their political preferences in line with their social origins. The act of upward mobility reinforces the belief in capitalist democracy and meritocratic society,

[18] See also author's calculations in Supplementary Figure C.1 and Supplementary Figure C.2.

reducing the tendency to vote for anti-system parties. Conversely, the act of downward mobility increases the tendency to vote for anti-system parties. I explain these findings by drawing upon literature analysing the impact of an individual's social mobility trajectory on: polarising British society; hostility towards immigrants and; democratic values (Gugushvili 2020; Houle and Miller 2019; McNeil and Haberstroh 2022; Paskov, Präg, and Richards 2020).

My second finding is that social mobility matters only for anti-system right support, not the anti-system left. The underlying drivers for anti-system right and anti-system left support are not the same (Hopkin 2020; Rooduijn and Burgoon 2018). Cultural attitudes such as negative views towards immigration and high importance of the nation state are prevalent across anti-system right parties (Golder 2016; Mudde 2007). These attitudes, on average, vary according to one's current socio-economic position and are likely to be transmitted across generations. By contrast, anti-system left support is driven by a view that capitalism creates untamed inequality (Golder 2016; Kriesi and Schulte-Cloos 2020). An attitude that is more evenly spread across individuals from across socio-economic positions, thus the relevance of social origins is less important.

Third, the empirics show similarity in the magnitude of origin effects across countries. This is somewhat surprising given the emphasis placed on welfare regime type and varieties of capitalism within the comparative political economy literature (Esping-Andersen 1990; Hall and Soskice 2001). Moreover, studies focusing on redistribution preferences and well-being find a relationship between country level variables and the importance of social origins (Jaime-Castillo and Marqués-Perales 2019; Schuck and Steiber 2018). I show that broadly the associations I describe above hold when sub-dividing the dataset by country. Given the reduced sample size, I form tentative conclusions when ranking the importance of social origins by country. I show that there is not a statistically significant correlation between income inequality and influence of social origins.

Despite the seminal literature theoretically outlining the relationship between social mobility and democracy, there is limited contemporary testing of this hypothesis. Notable exceptions include the impact of individuals' social mobility on Brexit support (McNeil and Haberstroh 2022), voting in Europe (Ciccolini and Härkönen 2021), and democratic values (Gugushvili 2020; Houle and Miller 2019). This work contributes two important new dimensions. First, I investigate the research questions using education as the mobility variable, a crucial

determinant of political cleavages (Gethin, Martínez-Toledano, and Piketty 2021; Stubager 2013). Second, I introduce a comparative angle demonstrating the importance of social origins across countries within Europe.

The paper proceeds as follows. First, I outline the literature on how social mobility affects voting behaviour and preferences more generally, arguing that this is also relevant to anti-system support. The following section outlines the theoretical expectations and hypotheses. I then describe the data and methodology used for the research. Next, I outline the main results, followed by robustness tests and extensions to the theoretical framework. Finally, I conclude and describe potential implications.

3.2 Social mobility and voting behaviour

Classic sociological works such as Durkheim (1893) and Tocqueville (1838) argue that social mobility is key to social cohesion. Social class solidarity and differences between respective classes emerges if there is a lack of social fluidity, that is infrequent moving between classes across generations. Social immobility generates intense economic grievances for those stuck at the bottom and a tendency to want to hold on to power for those at the top (Houle and Miller 2019). A theory formally modelled by Acemoglu et al., (2018).

Recent empirical literature has attempted to revive this hypothesis, causally linking social mobility within a society to reduced support for anti-system parties. Iversen and Soskice (2019) argue that the aspirational vote is key. The hypothesis is that even if one is not a beneficiary of the knowledge economy, one would still support the status quo in capitalist democracies, not anti-system parties, if one perceives that their children will be beneficiaries. Thus, aspirational voters quash populism. Aspirations and consequentially voting behaviours are driven by the belief that social mobility is possible or even probable. Iversen and Soskice provide evidence that countries with higher levels of social mobility, which they proxy through educational opportunity, tend to have less anti-system voting. Further examining the link between absolute social mobility and anti-system voting, Kurer and Staalduinen (2022) argue that absolute upward intergenerational social mobility has fallen overtime (see evidence from Bukodi et al. 2015; Buscha and Sturgis 2018; Chetty et al. 2017), which in turn is one of the drivers of increased anti-system voting. A similar mechanism, albeit from a different perspective to that proposed by Iversen and Soskice. Houle (2019) goes further showing that low levels of social

mobility can have dire consequences, leading to political unrest, including riots, demonstrations, and revolutions.

Whilst the theory is convincing, it is difficult to provide compelling evidence as to its validity. There are many potentially confounding variables which may conflate the association between social mobility and anti-system political support. In particular, there is an often-cited close relationship between social mobility and social equality, as described by the "Great Gatsby Curve" (Corak 2013). Furthermore, data overtime and across countries on social mobility is rarely comparable, if it is available at all. Thus, this study uses individual level mobility trajectories to understand political preferences for anti-system parties. Analysing the effect of social mobility on preferences has a well-defined literature, although there is limited evidence regarding anti-system voting. Two recent papers have started to explore this further, McNeil and Haberstroh (2022) regarding Brexit and Ciccolini and Härkönen focusing on Europe and occupational mobility (2021).

In a similar vein, Kurer and Staalduinen (2022) use micro foundations to support their argument, conceptualising 'status discordance', that is a measure of childhood expectations compared to realised position in adulthood. They show that those with higher levels of status discordance are more likely to support anti-system parties. Based on individual level mobility experiences, Houle and Miller (2019) using data from sub-Saharan Africa and Latin America find that individuals who have been upwardly mobile are more likely to have strong democratic values compared to the immobile. Similarly, Gugushvili's (2020) study of post-socialist countries finds that upwardly mobile individuals have stronger democratic values than non-mobile individuals. The context is important, upwardly mobile individuals have more democratic values in countries with a developed democracy when compared to those in authoritarian regimes. It follows the "cui bono?" logic, whereby one is more likely to be attracted to a regime that has benefited oneself. Whilst these studies on democratic values help to build our understanding of how social mobility affects anti-system voting, they are not one and the same (Hopkin 2020). Despite the rise in anti-system politics in Western Europe, there is no evidence of a corresponding decline in support for democracy (Alexander and Welzel 2017).

From this individual's perspective, the literature has proposed four main mechanisms through which social mobility may affect political preferences. The classic division is between whether

individuals vote in a self-interested manner or rather as a social act (Jaime-Castillo and Marqués-Perales 2019; Nieuwbeerta 2000). The former, the acculturation hypothesis, is derived from Downs's (1957) economic theory of political behaviour, it theorises that there will be a class division based on economic interest. Therefore, lower socioeconomic groups are more likely to favour left-wing parties with a greater redistributive focus. Hence, parental background is unimportant, or at least much less important than one's own status. A complementary mechanism for the dominance of destination is that individuals respond by mimicking the attitudes of their new class position for their own psychological well-being (De Graaf, Nieuwbeerta, and Heath 1995).

The counter hypothesis is the expressive theory (De Graaf, Nieuwbeerta, and Heath 1995) or similarly the socialisation hypothesis. One's upbringings are important in formulation of political views (O'Grady 2019). This draws upon Bourdieu's (1984) idea of habitus where early-stage experiences such as family upbringing, neighbourhoods, and schooling ingrain habits, skills, and dispositions. Here, origin has a much more significant part to play than argued from an acculturation perspective. The existing evidence suggests that for a wide range of preferences and outcomes, one's experience is a mixture of both origin and destination effects. For example, political preferences on a pure left-right scale (De Graaf, Nieuwbeerta, and Heath 1995), redistribution preferences (Jaime-Castillo and Marqués-Perales 2019), and even well-being (Schuck and Steiber 2018).

The above outlined the potential mechanisms as to why parental origin may be important. It is also argued that there may be an additional effect from upward or downward mobility. The dissociative theory states that the act of social mobility causes a 'mental strain', a disruptive and detrimental experience for the individual concerned (Sorokin 1959). Friedman (2016) shows how in many cases the 'success' of being upwardly mobile may not in fact be so 'beneficial' for the individual given the complexities of the experience. This could be translated into voting behaviour, the act of being socially mobile leads to a dissociative effect, which in turn leads to a greater dissatisfaction with society and increases the propensity to vote for anti-system parties. Similarly, downward mobility may have an impact over and above the summative elements of origin and destination. It may lead to feelings of failure, which may in turn be blamed on the neoliberal capitalist system (Daenekindt 2017).

However, theoretically the effect of upwardly mobility may work in the opposite direction. Experiencing upward social mobility may create a positive viewpoint of capitalism and in fact reduce the tendency to vote for anti-system parties. Upwardly mobile individuals associate their success with capitalist democracy, creating a positive view of that regime (Gugushvili 2020; Houle and Miller 2019). Houle and Miller (2019) also outline how upward social mobility can affect values that in turn are more likely to be make one have more democratic ideals. This can be translated into an explanation for why one would be less likely to vote for anti-system parties. Upward mobility results in a stronger belief in personal autonomy and a meritocratic society, thus a higher inclination to vote for the establishment parties. Such mechanisms would work in the opposite direction for the downwardly mobile, as they blame their own social decline on their perception of a non-meritocratic society, becoming less trusting of government and society. Much like the idea that those individuals who have experienced declining relative social status turn to anti-system parties (Gidron and Hall 2017) or, similarly, those whose own income growth has been outpaced by others society face 'positional deprivation' and again spurs anti-system support (Burgoon et al. 2019).

3.3 Theoretical Framework

Socio-economic status, and correspondingly social mobility, is measured predominantly through occupation, income, or education. I choose the latter as the main variable in this study for theoretical and practical reasons, which I now explain further. Education has been shown to be especially important in anti-system voting (Lee, Morris, and Kemeny 2018; Norris and Inglehart 2019), polarising graduates and non-graduates (Iversen and Soskice 2019). Anti-system views, mainly on the right, are often politically expressed on the 'cultural' rather than 'economic' axis of values, particularly in attitudes towards immigration. Moreover, education is now widely seen as the most important cleavage in society (Gethin, Martínez-Toledano, and Piketty 2021; Piketty and Goldhammer 2020), driving social status and esteem, as well as being the "last acceptable prejudice" (Goodhart 2020; Sandel 2020a, 2020b). In line with Stubager (2013), I argue that education represents a cleavage distinct to that of occupation. Education fulfils the three criteria offered by Bartolini and Mair (1990) to constitute a societal cleavage. Groups with different educational attainments 1) hold different values, 2) these form part of a group consciousness, and 3) are mobilised by political choices. Even if one does not think of education and occupation as distinct cleavages, we know that education plays a pivotal role in

determining occupation and income through labour market outcomes (Ashenfelter and Rouse 1998; Goldin and Katz 2009).[19]

I make two key arguments regarding individual social mobility trajectories and anti-system voting. First, given that existing studies on social mobility and left-right voting preferences suggest that voting behaviour is a combination of one's current socio-economic status and one's origins, this should also apply to the anti-system right. As Hopkin (2020) argues, anti-system voting is likely a combination of economics and culture. Those voters with authoritarian tendencies often stick with the mainstream until 'triggered'. The activation mechanism is economic hardship, hence the recent rise in anti-system voting would have been triggered by the financial crisis and later the austerity measures seen across Europe. Given the literature's findings of large differences in support between the socio-economic positions, these origin and destination effects should be clear.

Moreover, the anti-system right is based on cultural attitudes that the nation state and its citizens should be prioritised over foreigners and immigrants, creating an authoritarian system ordered by "natural" differences in society (Golder 2016; Mudde 2007). These attitudes are likely to be formed through a combination of one's upbringing and current socio-economic status (see evidence on immigration attitudes in Paskov, Präg, and Richards 2020). Preferences are formed during the formative years of childhood, through families, schooling, neighbourhoods (M. K. Jennings 2007). These social networks effects persist in adulthood, as one is likely to form social networks with individuals from both their new socio-economic position and their socio-economic origins. Those friends and family from childhood with a low level education are more likely to be effected by economic precarity, creating both empathy and a fear that one 'could be next' (Liu, Kuo, and Fernandez-Albertos 2020).

Regarding the anti-system left, it is theoretically unclear as to whether one's social origins should have an effect. The core beliefs of the anti-system left are against the neoliberal ideals of the market economy producing artificially high levels of inequality, rather than expressing

[19] From a practical perspective, using education as the mobility variable increases the dataset given that the ESS has less missing information on parental education background. In Supplementary Table C.5, I provide a robustness test by substituting in occupation for education as the mobility variable, the results are broadly consistent.

anti-migration or racist attitudes (Golder 2016; Kriesi and Schulte-Cloos 2020). Existing evidence suggests that origin position matters for economic views (Jaime-Castillo and Marqués-Perales 2019; O'Grady 2019; G. Wilson et al. 2021). However, we know the variation between different socio-economic positions in level of support for the anti-system left is much smaller (Kriesi and Schulte-Cloos 2020; Santana and Rama 2018).[20] As a result, the magnitude of any origin effect will be small, if it exists at all. One cannot differentiate between the effect of origin compared to destination if there is little variation in voting behaviour between the non-mobile groups from different socio-economic statuses.

Origin hypotheses:
Hypothesis 1a) 'Lower' social origin, measured by parental educational attainment, increases the tendency for individuals to support anti-system right parties
Hypothesis 1b) Social origins, measured by parental education, does not affect the tendency for individuals to support anti-system left parties

The second hypothesis is regarding individual mobility trajectories and how mobility effects will impact anti-system left and right support. These effects are in addition to those of origin and destination. Given that I argue the anti-system right is driven by cultural attitudes (albeit triggered by economic circumstances), the effect of moving from one social status to another may have the dissociative effect earlier described. This could be triggered through absolute upward or downward mobility. The potential dissociative effect must be balanced against the perception of democracy creating meritocratic conditions conducive for the opportunity to be upwardly mobile, and more generally affecting the values of those individuals that are upwardly mobile. It is an empirical question as to which of these effects is greater. However, I would expect the meritocratic effect to dominate in line with previous studies analysing democratic values (Gugushvili 2020; Houle and Miller 2019).

As anti-system left support is primarily a protest vote against the neoliberal idea of the market economy and the resultant inequality in society, I would expect mobility effects to be predominantly influenced by one's experience of capitalism. If one has been upwardly mobile, I would expect an increase in one's meritocratic view of society. An individual may thus update

[20] See also the supplementary material showing the association between educational position and anti-system left support based on ESS data (author's calculations).

their view of society to have more equality of opportunity and a greater role for individual effort (Gugushvili 2020; Piketty 1995), reducing their likelihood of voting for the anti-system left.

Under both the meritocratic and dissociative hypotheses, downward mobility is associated with a greater tendency to support anti-system parties on the right or left. It is not possible to disentangle whether the mechanism is dissatisfaction with capitalist society, or the dissociative effect associated with not belonging to either class. In either case the hypothesised effect is a greater likelihood of anti-system support.

Mobility hypothesis:
Hypothesis 2) Upward (downward) mobility has an additional effect to origin and destination which reduces (increases) an individual's chance of supporting the anti-system parties, on both the right and left

The importance of social origins on political preferences may vary according to the institutional and social context (Jaime-Castillo and Marqués-Perales 2019). Regarding the importance of social mobility across countries, I would expect those countries which are more equal in terms of outcome to place less emphasis on social origins. Social mobility means less in terms of life outcomes, when the outcome differentials between socio-economic positions is smaller. Thus, one is less likely to be shaped by their social origins when society is less polarised in terms of living standards. This follows in a line of research arguing that class identity is likely to be stronger in countries where inequality is greater (Hout 2008; Stubager et al. 2018). More generally, the logic fits into the welfare state literature on the conceptualisation of class, building on the seminal work of Esping-Andersen (1990).

Country hypothesis:
Hypothesis 3) Social origins are more important in countries with higher levels of inequality of outcome

These hypotheses are restricted to Western Europe, despite the availability of data for Central and Eastern Europe (CEE), for two main reasons. Firstly, it has been shown that explanations of support for anti-system parties in Western Europe do not hold well when transported to CEE (Santana, Zagórski, and Rama 2020). It would be problematic when pooling the data from the

two regions. Moreover, in many CEE countries anti-system parties are stronger and in some cases part of government[21]. This is not the case in most Western Europe countries and when these anti-system parties are in government, they have tended to play the role of junior coalition members[22]. The fact that many anti-system parties are in power may theoretically reverse the mobility effects, over and above that of origin and destination. If one was upwardly mobile, the meritocratic hypothesis shows that one believes that society has played its part in this transition. When the government is controlled by anti-system parties, it may be that individuals believe that the anti-system party has created conditions conducive to social mobility. In such a scenario, upward mobility would be associated with a greater chance of voting for the status quo, anti-system parties. The theory resonates with the findings from Houle and Miller (2019) and Gugushvili (2020), where upwards mobility has a greater effect on support for democratic values when the country one resides in is a democracy.

3.4 Data

I use data from the European Social Survey (ESS), creating a consolidated dataset from across the 9 waves. It is a bi-annual, cross-sectional, representative survey, the first data was collated in 2002 and the latest in 2018. The ESS surveys 33 countries, I eliminate some of these countries based on data availability (participated in at least 4 Waves), population size (minimum 1 million), and being in Western Europe – I thus use data from 16 countries. It should be noted that data is not necessarily available for every country in each wave. I utilise only those respondents where there is information available for both parents' educational background. Data is weighted using the ESS's post-stratification weights.

I operationalise parental and respondent education using the International Standard Classification of Education (ISCED). I create a 4-level categorical variable, splitting the level of educational attainment by tertiary, advanced vocational (sub-degree), school level qualifications, and no qualifications.

From the parental and respondent's levels of educational attainment, I calculate a social mobility trajectory. This is simply 'upwardly mobile' if the respondent's education is higher

[21] Examples of ruling parties include Fidesz in Hungary, Law and Justice in Poland, and ANO 2011 in Czechia – explored in detail by Santana, Zagórski, and Rama (2020).
[22] The obvious exceptions are the Lega and Five Star Movement in Italy and Syriza in Greece.

than their parents' and 'downwardly mobile' if the respondent's educational attainment is lower than their parents'. I take the parents' educational attainment as the highest of either the mother or father.

I code anti-system parties using *The PopuList* (Rooduijn et al. 2019), a now widely utilised peer-reviewed dataset, for example Lührmann et al. (2019). *The PopuList* codes European parties as populist, far right, far left, and/or Eurosceptic for all parties that have won 1 seat or at least 2% of the votes in a parliamentary election. *The PopuList* dataset starts in 1989 and hence covers the whole of my analysis (i.e., from 2002). I also complement this with additional coding for several of the smaller parties, for a full list of amendments see Supplementary Table C.1. Using *The PopuList* categorisation, I class all parties as anti-system right which are "far-right". For the anti-system left I include "far-left" parties and those which are populist but not designated "far-left" or "far-right". Thus, my anti-system left measure is a left and catch all anti-system measure. The results do not differ substantively should one include just "far-left" parties. Where *The PopuList* classifies a party as "border-line", "far-left" say, I still include it in the appropriate measure – again it makes no substantive difference to results should one exclude "border-line" cases. To measure support for anti-system left and anti-system right parties, I follow Burgoon et al (2019), using the ESS survey question where the respondent answers which party they "feel closest to". It is more appropriate than the party the respondent last voted for given the potential time lag between elections and surveys. Approximately 20% of the sample support anti-system parties, which is evenly split by the anti-system left and anti-system right respectively. Although, as shown in Supplementary Figure C.1 and Supplementary Figure C.2, anti-system support has increased overtime.

As control variables, I loosely follow the individual level controls specified by Inglehart and Norris (2016). Specifically, the covariates I build into the model are gender[23], age, occupation – categorically coded using Oesch's 5 level schema, a dummy for each wave of the ESS, a dummy for the country one resides, whether one belongs to the minority ethnic group in the country in which one lives, and how religious one is – measured on a Likert scale from 0, not very religious, to 10, very religious. In Supplementary Table C.9, I provide a version of the model without occupational controls. Some would argue that one's occupation is a 'bad

[23] In the supplementary material, I also split the sample by gender. The effects of origin and mobility are marginally stronger for women than men.

control' as it mediates the effect of education (Angrist and Pischke 2009). The results are substantively similar.

I include only those aged 24 or over, to ensure that most respondents will have reached their highest educational status. When analysing the country level bivariate relationship between importance of social origins and level of equality, I use the latest available Gini coefficient from the OECD database. Descriptive statistics for the sample are below.[24]

Table 3.1 Descriptive statistics

Closest party		
	Anti-system left	10.14%
	Anti-system right	9.20%
	System	80.66%
Highest parents' education		
	Tertiary	17.01%
	Advanced vocational	8.78%
	Secondary education	44.21%
	No qualifications	30.00%
Respondent's education		
	Tertiary	28.27%
	Advanced vocational	13.61%
	Secondary education	47.82%
	No qualifications	10.30%
Intergenerational mobility		
	Upwardly mobile	40.96%
	Immobile	48.86%
	Downwardly mobile	10.18%
Gender		
	Female	46.28%
	Male	53.72%
Age		
	Years	52.7
Respondent's occupation		
	Higher-grade service class	22.55%
	Lower-grade service class	24.84%
	Skilled workers	35.85%

[24] Missing data is excluded through listwise deletion.

	Unskilled workers	16.76%
Belong to Minority Ethnic Group		
	Yes	3.58%
Religiosity		
	Mean on scale 1-10	4.55
Sample Size		
	N	60,629

3.5 Methodology

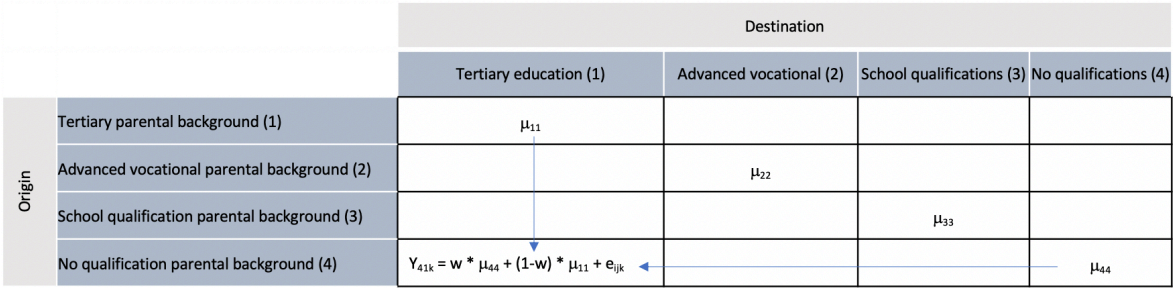
Given that my key independent variable is social mobility trajectory, a conventional OLS regression would be inappropriate. Specifically, such a model does not allow a separation of mobility effects from origin and destination. If one was to control for all 3 variables within one model, it would be over-identified. Mobility effects are by definition linearly dependent on both origin and destination (Blalock, 1967). The model proposed by Sobel (1981, 1985) to overcome this issue is known as the diagonal reference model (DRM) or diagonal mobility model. Hendrickx et al (1993) provides a comprehensive review as to the suitability of DRMs compared to more conventional methods for studying social mobility. DRMs have now been used extensively in sociology and are becoming more frequently used in analysing political variables (Clifford and Heath 1993; Jaime-Castillo and Marqués-Perales 2019).

The DRM compares mobile individuals to those individuals who have been immobile only. For example, in the diagram I have adapted below (van der Waal, Daenekindt, and de Koster 2017), each mobile group is referenced to an immobile group on the diagonal. The mobile, off-diagonal, groups are then represented by "weights" of their origin (w) and destination (1-w). This must sum to 1 and it is usually assumed that both the origin and destination effect should be non-negative. Thus, in the simplest version of the model:

$$Y_{ijk} = w * \mu_{ii} + (1-w) * \mu_{jj}$$

Where Y_{ijk} is the dependent variable, i.e., a measure of anti-system voting, in cell ij of the mobility table of respondent k. Subscript i and j refer to the position of origin and destination respectively, that is parental education and respondent education. μ_{ii} is the average anti-system voting for non-mobile individuals in group i.

Figure 3.1 Illustration of the workings of the DRM



The simple form of the DRM can be expanded to include mobility effects with the introduction of upward and downward mobility dummies. I include other covariates into the model as previously described, these are included in the $\sum \beta x_{ijk}$ term below. Standard errors are clustered according to country grouping. The dependent variables are binary, i.e., the probability of voting anti-system (Π_{ijk}) or a mainstream system vote ($1-\Pi_{ijk}$). Thus, adding these components into the mode, the DRM equation becomes:

$$Y_{ijk} = \log (\Pi_{ijk} / [1-\Pi_{ijk}] = w * \mu_{ii} + (1-w) * \mu_{jj} + \beta_1 up + \beta_2 down + \sum \beta x_{ijk} + e_{ijk}$$

The models are estimated in Stata using the *drm* package (Kaiser 2018).

3.6 Findings

3.6.1 Anti-system right support

The first analysis is a binomial logistic DRM coding those individuals whose closest party is anti-system right as "1" and those who support a 'mainstream' party as "0". I also include in Supplementary Table C.2, a version comparing anti-system right support to those who support either a 'mainstream' party or the anti-system left. I include only those countries where there is a meaningful anti-right support. Hence, the analysis excludes Ireland, Portugal, and Greece. If these countries were included, the results are substantively similar. As previously described, Model 1 is the baseline model including origin and destination effects, Model 2 adds in the impact of upward and downward mobility. Both models include the full list of controls.

Table 3.2 Binary logistic DRM of anti-system right support, based on educational mobility (coefficients are log odds)

	Model 1		Model 2	
Diagonal Intercepts				
μ_{11}: *Tertiary education*	-1.070	***	-1.127	***
	(0.067)		(0.067)	
μ_{22}: *Advanced Vocational*	-0.056		-0.033	
	(0.081)		(0.091)	
μ_{33}: *School qualifications*	0.553	***	0.577	***
	(0.077)		(0.067)	
μ_{44}: *No qualifications*	0.573	***	0.583	***
	(0.091)		(0.097)	
Weight of origin	0.224	***	0.361	***
	(0.053)		(0.040)	
Mobility (Base Immobile)				
Upwardly Mobile			-0.131	**
			(0.052)	
Downwardly Mobile			0.214	***
			(0.077)	
Age	-0.017	***	-0.016	***
	(0.003)		(0.003)	
Sex (Base Male)				
Female	-0.418	***	-0.422	***
	(0.056)		(0.057)	
Occupation (Higher-grade service base)				
Lower-grade service	0.229	***	0.230	***
	(0.064)		(0.064)	
Skilled workers	0.644	***	0.646	***
	(0.060)		(0.060)	
Unskilled workers	0.793	***	0.796	***
	(0.065)		(0.066)	
Belongs to Ethnic Minority	-0.610	***	-0.597	***
	(0.185)		(0.186)	

Religiosity	-0.053	***	-0.052	***
	(0.013)		(0.012)	
Country Dummies	Yes		Yes	
ESS Round Dummies	Yes		Yes	
Constant	-1.927		-1.938	
N	49,545		49,545	
Log Likelihood	-13898.995		-13890.784	
AIC	27861.99		27849.568	
BIC	28143.93037		28149.12965	

***p<0.01 ** p<0.05 * p<0.1

Notes: Cluster robust standard errors in brackets

Holding all other explanatory variables constant, the estimates of μ_{11}, μ_{22}, μ_{33} and μ_{44} indicate the log odds of immobile individuals in the respective groups supporting anti-system right parties. Across both models, these diagonal intercepts show a clear pattern. Immobile individuals with a higher level of education are significantly less likely to view their closest party as anti-system right compared to immobile individuals from lower categories. Immobile individuals with a tertiary education are especially unlikely to vote for the anti-system right. There is no statistically significant difference, in either model, between the two lower categories of immobile individuals, with school qualifications and no qualifications. This is in line with previous studies suggesting that the anti-system right support is not just from the lowest socio-economic class (Norris 2005).

I find significant origin effects in both models. In Model 1, without additional mobility effects, the weight of origin is 0.224 ($p<0.001$). To take Model 2, origin has a substantial weighting, 0.361, and highly significant effect ($p<0.001$). According to the estimate, educational destination is more important than origin - but only just.

When introducing mobility effects in Model 2, being upwardly mobile decreases the odds of one's closest party being anti-system right by 12.3% ($p=0.011$). There is a statistically significant effect over and above destination and origin; being upwardly mobile reduces the

tendency to support the anti-system right, supporting the "meritocracy" hypothesis. As would also be predicted by both the "meritocracy" and "dissociative" hypotheses, downward mobility increases the odds of voting for the anti-system right, over and above origin and destination effects. Being downwardly mobile increases the odds of supporting the anti-system right by 23.8% ($p<0.001$).

These two components of social mobility, origin effects and mobility, work in opposite directions regarding impact on anti-system support. To take an upwardly mobile individual, they retain some preferences from their origin position, which is more likely to support the anti-system right. However, the act of upwardly mobility reduces support. Thus, mobile individuals are not just a mixture of their old and new status. Rather, they are a group of their own.

3.6.2 Anti-system left support

I produce the two same models as previously, this time for the anti-system left analysis. I include only countries that have a meaningful anti-system left party, which excludes the UK and Austria. Again, there is no substantive change if all countries are included in the model. The main change compared to the anti-system right models is that there seems to be very little difference between support across the immobile education groupings when compared to the anti-system right models. There is no statistically significant difference between any groups in all three models.

Table 3.3 Binary Logistic DRM of anti-system left support, based on educational mobility (coefficients are log odds)

	Model 1	Model 2
Diagonal Intercepts		
μ_{11}: *Tertiary education*	0.144	0.052
	(0.132)	(0.198)
μ_{22}: *Advanced Vocational*	0.025	-0.099
	(0.038)	(0.079)
μ_{33}: *School qualifications*	-0.042	-0.017
	(0.059)	(0.067)

μ_{44}: No qualifications	-0.127		0.064	
	(0.100)		(0.122)	
Weight of origin	-0.375		0.731	
	(0.713)		(0.760)	
Mobility (Base same)				
Upwardly Mobile			0.085	
			(0.121)	
Downwardly Mobile			0.020	
			(0.084)	
Age	-0.010		-0.015	
	(0.004)		(0.004)	
Sex (Base Male)				
Female	0.154		0.092	
	(0.099)		(0.101)	
Occupation (Higher-grade service base)				
Lower-grade service	0.158	*	0.198	*
	(0.079)		(0.090)	
Skilled workers	0.214	***	0.267	***
	(0.069)		(0.080)	
Unskilled workers	0.466	***	0.486	***
	(0.070)		(0.078)	
Belongs to Ethnic Minority	0.249	**	0.273	**
	(0.114)		(0.113)	
Religiosity	-0.164	***	-0.162	***
	(0.033)		(0.028)	
ESS Round Dummies	Yes		Yes	
Country Dummies	Yes		Yes	
Constant	-1.281		-1.082	
N	50,103		50,103	
Log Likelihood	-17720.1		-17719.4	
AIC	35510.3		35512.8	
BIC	35819.0		35839.2	

***p<0.01 ** p<0.05 * p<0.1
Notes: Cluster robust standard error in brackets

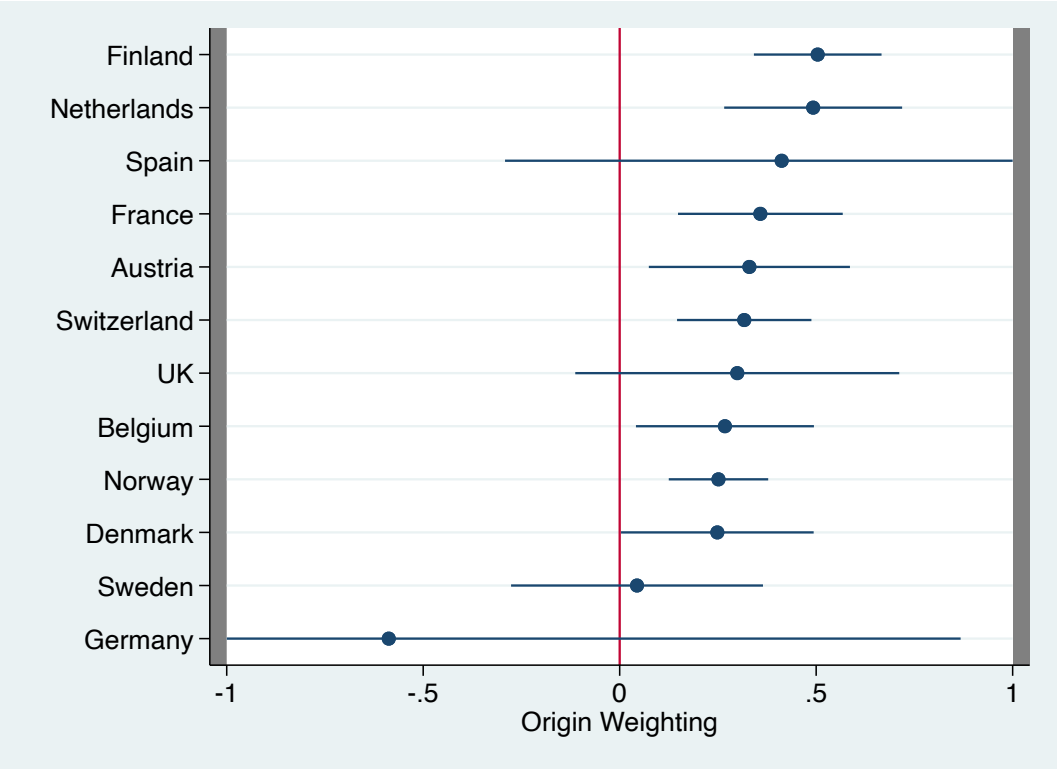
The weight of origin is not statistically different from zero, that is I cannot reject the null hypothesis that it is solely one's current educational attainment that matters. Given the much smaller difference between the immobile groups, the weight of origin is in any case much less important. Finally, there appears to be no significant mobility effect in addition to origin and destination.

3.6.3 Country analysis

First, I test to what extent the pooled analysis is replicated at the country level. Given the reduced number of observations when running a DRM for each country, I simplify the model. I reduce the number of controls to just age, gender, and ESS round. Whilst mobility effects are still included in my model, confidence intervals are wide given the sample size, thus I concentrate on how origin effects vary between countries.

As shown in the graphic below, when analysing anti-system right support, origin is statistically significant in 8 of the 12 countries sampled, and positive origin coefficient point estimates for a further 3. I have excluded from the analysis any country without any meaningful anti-system right party. It seems that it is more a story that origins matter throughout rather than a clear pattern between countries. However, the confidence intervals are wide when analysing data at the country level because of the smaller sample sizes.

Figure 3.2 Anti-system right origin weighting by country specific DRMs, based on educational mobility



Notes: Bars represent 95% confidence intervals. Sweden data unweighted. Italy removed due to non-convergence. Model controls: age, sex, mobility, ESS round.

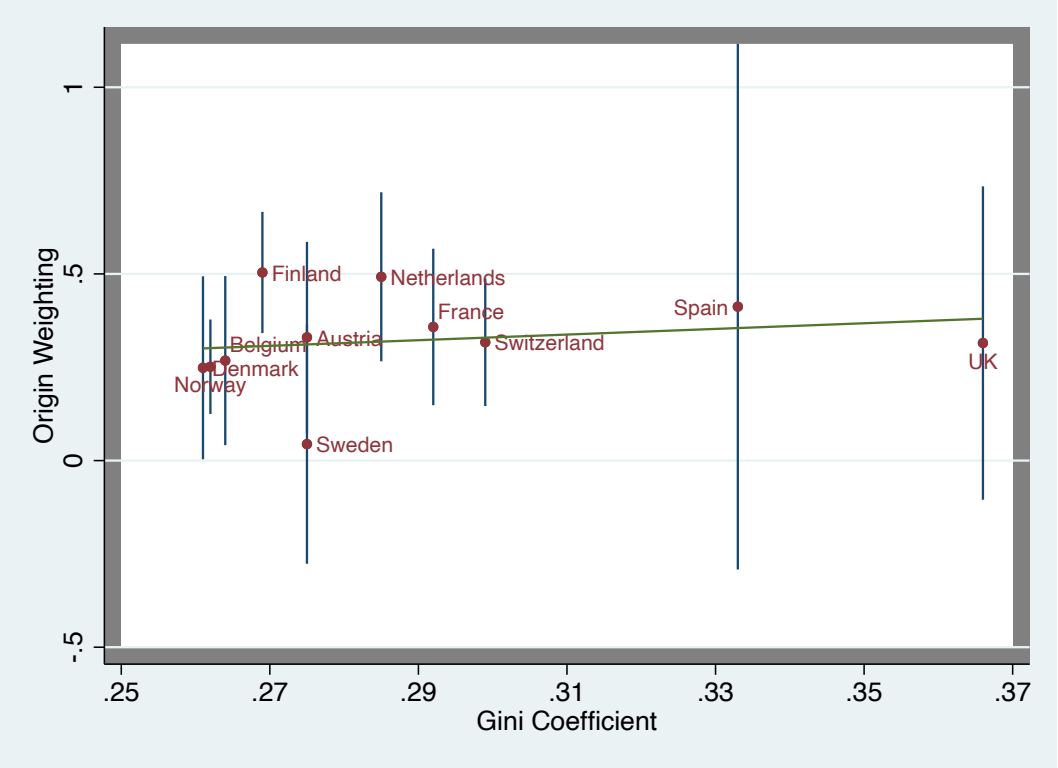
The same analysis for the anti-system left provides a significant origin effect in only 3 of the 14 countries (Finland, Ireland, and The Netherlands). Of these, The Netherlands has small differences between immobile groups, thus the magnitude of the origin effect is small. Full results by country are available in Supplementary Figure C.3.

In hypothesis 3, I expect countries with higher levels of income inequality to have a greater influence of social origins on anti-system political preferences. There seems to be no obvious relationship, I produce a simple bivariate relationship to explore this further. I only perform the analysis for the anti-system right given that there is a significant origin effect in only 3 countries for the anti-system left. As can be seen in the bivariate graphic relationship below, contrary to my expectation income inequality does not matter for the influence of social origins. Moreover, there does not seem to be a clear grouping in terms of region or type of welfare regime. For graphic simplicity I have excluded Germany and Italy. As shown in Figure 3.2 Germany has a very large confidence interval, and the model does not converge for Italy. If I include only West Germany in the German regression the origin point estimate is 0.12 (95%

C.I. -0.067,0.313), which may be more appropriate given the difference in social mobility between East and West Germany (Müller and Pollak 2004).

I complement the bivariate relationship with a Feasible Generalised Least Squares (FGLS) regression. Given that that the origin weights are estimates derived from single country regressions, it would be inappropriate to use an OLS with origin weight as the new dependent variable. The estimates would be affected by heteroscedasticity (Jaime-Castillo and Marqués-Perales 2019). The FGLS weights observation in the second step regression to correct for heteroscedasticity. In the second stage, the level of income inequality, measured by the Gini coefficient, does not have a statistically significant effect on origin weight. The full FGLS model is available in Supplementary Table C.3.

Figure 3.3 Bivariate relationship between Gini coefficient and origin weighting by country for the anti-system right



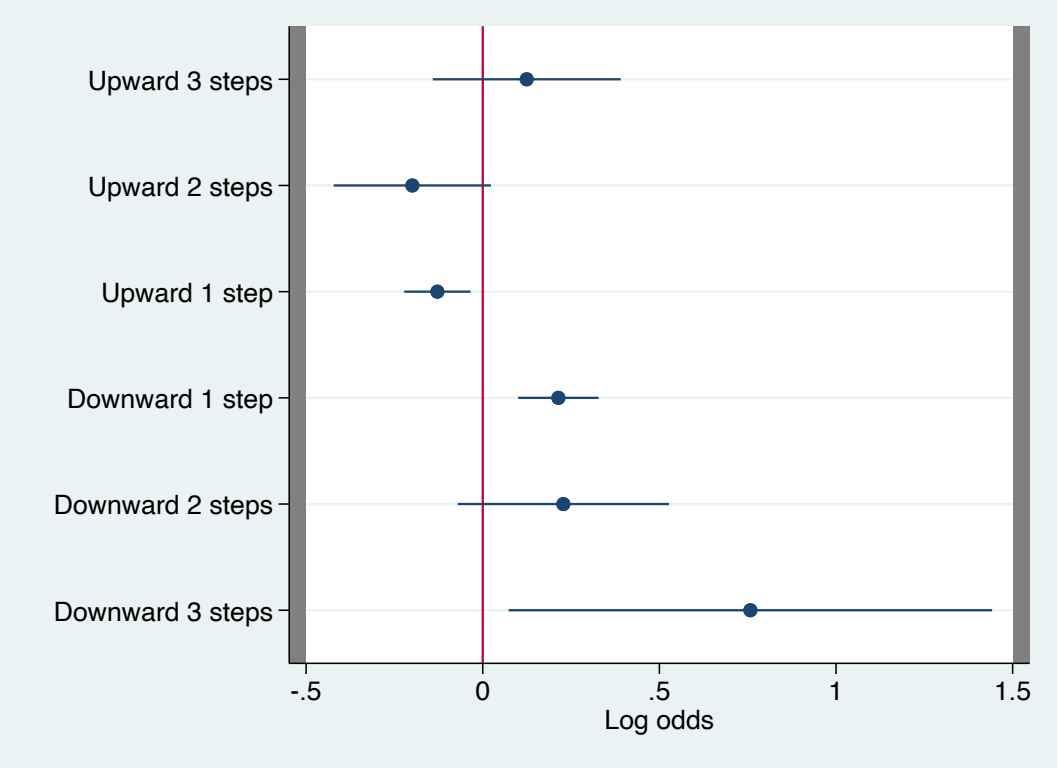
Notes: Bars represent 95% confidence intervals.

3.7 Model Extensions

3.7.1 Decomposing the mobility effect

I further split the mobility effects identified in the anti-system right pooled country model to allow for different ranges of mobility. I divide mobility into steps, for example 3 steps upwardly mobile would equate to one's parents having no formal education and the respondent having a university degree. As can be seen from the coefficient plot in Figure 3.4, being long range downwardly mobile most strongly affects the probability of anti-system right support. It increases the odds of voting for the anti-system right by 113% compared to the non-mobile ($p=0.03$), over and above origin and destination effects. There does not appear to be such a gradient for the upwardly mobile, short range upward mobility is strongly statistically significant ($p<0.01$) and medium range weakly statistically significant ($p<0.1$). The full model is again available in the supplementary materials, Supplementary Table C.4.

Figure 3.4 Mobility effects decomposed into the "range" of the move. Log odds with 95% confidence intervals from anti-system right pooled sample DRM



Notes: Bars represent 95% confidence intervals. Model controls: occupation, age, sex, mobility, ESS round, country dummy, whether ethnic minority, religiosity.

3.7.2 Cross-Wave Analysis

Included in Supplementary Table C.8 and Supplementary Table C.9, I have also sub-divided the pooled analysis separately for each of the nine Waves for anti-system left and anti-system right support respectively. Unsurprisingly, the constant becomes less negative over-time for both anti-system right and left support. The likelihood of supporting anti-system parties increases between 2002 and 2018. When analysing anti-system right support, the origin effect is statistically significant ($p<0.05$) for every wave apart from Waves 1 ($p=0.067$) and 2. By contrast, origin effects are only present in three waves for the anti-system left and this is based on very small differences between log odds ratios for immobile individuals. Thus, in substance the impact of origin is small across all waves when analysing the anti-system left.

3.7.3 Age variable

In the main analysis, I have used a simplistic version of age, treating it as a continuous variable. I have rerun the models with age as a categorical variable, splitting the sample into 10-year cohorts, for example those aged 41-50. As shown in Supplementary Table C.7, the linear approximation seems reasonable. Moreover, it may be that the weighting varies by these cohorts, a hypothesis often posited within the literature (De Graaf, Nieuwbeerta, and Heath 1995; Jaime-Castillo and Marqués-Perales 2019). The idea is that one's origin becomes less important as one spends a greater amount of time in the destination class. I test this by interacting the categorical age variable with the weight. The point estimates suggest an interesting trend, namely that the origin weight is high for young adults (less than 28 years-old), lowest at the traditional peak of one's career (41-50) and then increases again for those over 70. However, these weightings are not statistically different from each other, and the model does not improve the 'goodness of fit'. The full model is available in Supplementary Table C.7.

3.7.4 Occupation as the mobility variable

I have used education as the variable of mobility, in part given its importance in predicting anti-system voting previously demonstrated in the literature (Lee, Morris, and Kemeny 2018).

The most used social mobility variable in sociology is occupational status. I have rerun the models based on a 3-level categorical occupation variable using Oesch's (2006) class schema. The full models are available in Supplementary Table C.5, broadly the results are as with the education model. The weighting of origin is 0.556 (95% C.I. 0.348; 0.764) for the anti-system right but not significantly different from zero for the anti-system left. Again, the mobility effects are in the same direction as the education models, albeit not significant when using cluster robust standard errors.

3.8 Discussion

The major finding is that social mobility matters for anti-system support. It is important in terms of social origins and additional mobility effects. However, this is only true for the anti-system right. Parental origins and mobility experience are not statistically significant for analysing anti-system left support. Regarding hypothesis one, parental educational is nearly as important as one's own education as a predictor for anti-system right support. These are substantial effects given that there are large differences in tendencies to vote for the anti-system right by immobile groups of educational attainment. Turning to hypothesis two, the effect of mobility over and above origin and destination class is generally smaller than the weighting component but still meaningful. There is only a statistically significant mobility effect for the anti-system right models, which supports the "meritocratic" hypothesis. The act of being upwardly mobile reduces the likelihood of an individual supporting the anti-system right. There is therefore not evidence of a dissociative impact of mobility, or at least it is outweighed by the meritocratic effect. Downward mobility increases the likelihood of voting for the anti-system right, here one cannot identify the mechanism. This is consistent with both the "meritocratic" and the "dissociative" hypothesis.

In terms of national differences, the findings suggest that the general pattern of importance of origins holds across countries. Parental origins are statistically significant for anti-system right support in the majority of the countries despite a much smaller sample size than the pooled sample. There is no clear explanation for the ranking of country by weight of origin, and no clear bivariate relationship between the income inequality and influence of social origins. Only two countries show a significant and substantial origin weighting towards anti-system left

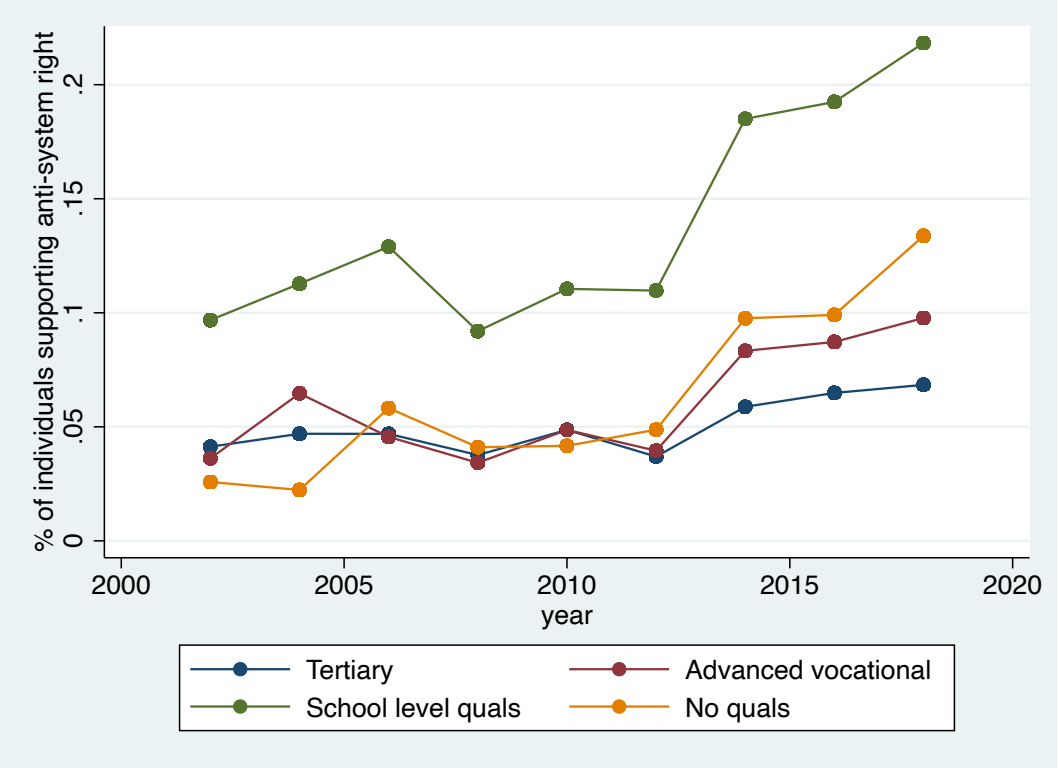
voting, Ireland and Finland, which lends further support to the argument of this paper that social mobility trajectories are only relevant for the anti-system right.

These findings at the individual level leads to somewhat tentative conclusions for the macro puzzle: whether social mobility is key for a stable democracy and reducing the tendency for a large anti-system vote. Upward social mobility is supportive of the stability of democracy. The upwardly mobile share a large proportion of their anti-system preferences in line with their destination position (they are less likely to vote for the anti-system right), and the act of upward mobility reduces the tendency to support the anti-system right. That said, there is evidence that fewer people, as measured by income mobility, are now upwardly mobile (Chetty et al. 2017). More concerningly, larger proportions of individuals measured in terms of occupation, are now downwardly mobile. Bukodi et al. (2019) suggest that it may be as much as a quarter to half of the population that are now downwardly occupationally mobile. Whilst these downwardly mobile individuals retain less anti-system right tendencies in line with their origin, there is a downward mobility effect increasing their anti-system right support. Thus, a society with high rates of absolute upward social mobility and low rates of downward social mobility reduces anti-system voting and support democracy.

The policy implications of these findings are complex. If one assumes that the findings in this paper are not affected by the size of the Higher Education system i.e., it does not dilute the impact of having a degree, then increasing the number of people that go to university will reduce the anti-system right support. However, these newly educated families will still be more likely to vote for the anti-system than individuals who have parents with degrees. However, to what extent individuals care about their absolute versus relative position may be important (Rooduijn and Burgoon 2018). If having a tertiary education is no longer able to make one stand out in society, given the overall number of graduates, it may no longer reduce the tendency to vote anti-system right. This leads to a further research agenda in understanding the extent to which educational upgrading of a population will increase the stability of democracy.

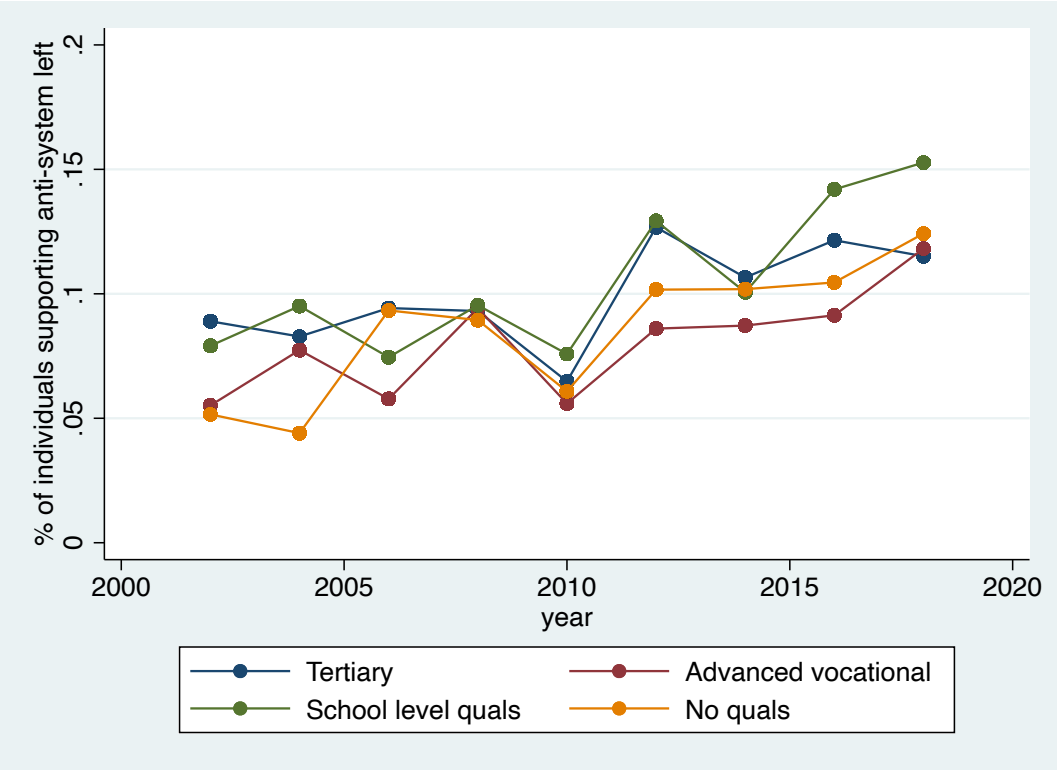
C Supplementary Material

Supplementary Figure C.1 % of individuals supporting anti-system right parties by educational attainment



Notes: Author's calculations from ESS. Data weighted.

Supplementary Figure C.2 % of individuals supporting anti-system left parties by educational attainment



Notes: Author's calculations from ESS. Data weighted.

Supplementary Table C.1 Own party classifications in addition to The Populist

Country	Party	Anti-system right or left
Austria	PILZ	Left
Finland	Communist Party	Left
Finland	Change 2011	Right
Germany	Republikaner	Right
Germany	NPD	Right
Ireland	United Left Alliance	Left
Italy	Potere al Popolo	Left
Italy	Casapound Italia	Right
Portugal	POUS	Left
Portugal	PNR	Right
Portugal	PPV/CDC	Right
Spain	ICV	Left
Sweden	Annat Parti	Left
Switzerland	Alternative Left	Left
Switzerland	Swiss Nationalist Party	Right
UK	BNP	Right
UK	Workers Party (NI)	Left

Supplementary Table C.2 Binary Logistic DRM of anti-system support, based on educational mobility (coefficients are log odds), binary choice between anti-system party and all other parties

For example, this analysis includes the anti-system left supporters when analysing the anti-system right

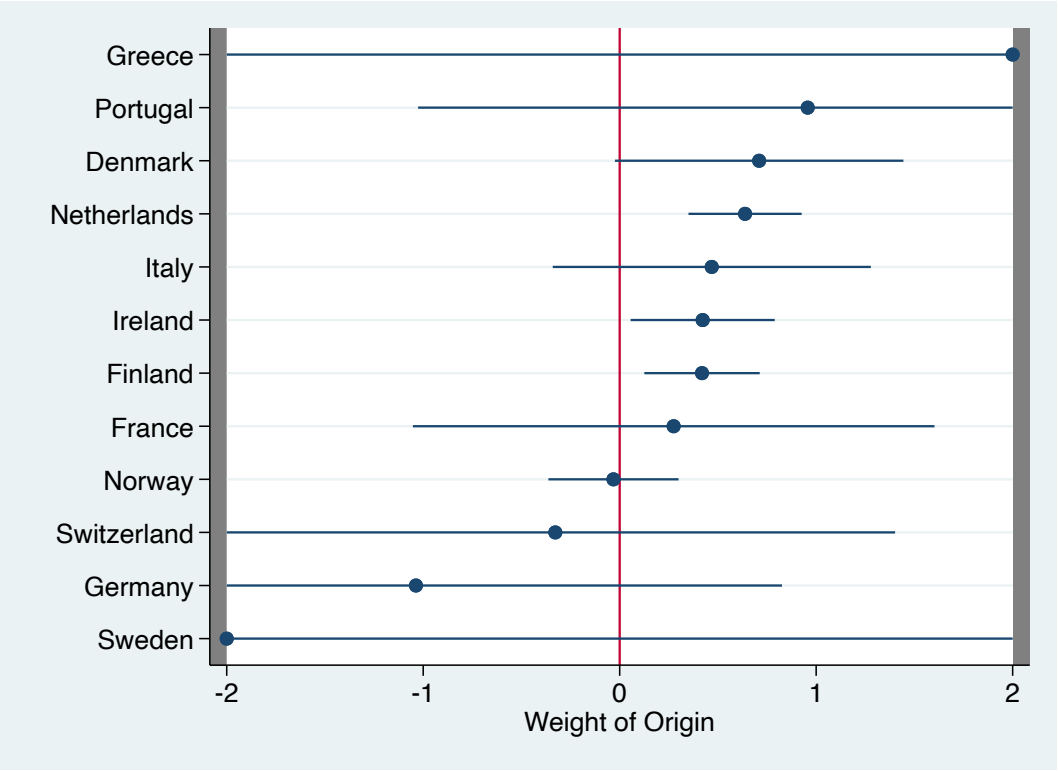
	Anti-system left		Anti-system right	
Diagonal Intercepts				
μ_{11}: *Tertiary education*	0.153		-1.134	***
	(0.139)		(0.066)	
μ_{22}: *Advanced Vocational*	-0.085		-0.027	
	(0.070)		(0.095)	
μ_{33}: *School qualifications*	-0.078		0.581	***
	(0.083)		(0.063)	
μ_{44}: *No qualifications*	0.010		0.580	***
	(0.128)		(0.091)	
Weight of origin	0.511	***	0.366	***
	(0.183)		(0.041)	
Mobility (Base Immobile)				
Upwardly Mobile	0.118	*	-0.132	***
	(0.063)		(0.049)	
Downwardly Mobile	0.006		0.216	***
	(0.090)		(0.070)	
Age	-0.013	***	-0.014	***
	(0.003)		(0.003)	
Sex (Base Male)				
Female	0.128		-0.417	***
	(0.104)		(0.060)	
Occupation (Higher-grade service base)				
Lower-grade service	0.181	**	0.210	***
	(0.086)		(0.065)	
Skilled workers	0.226	***	0.601	***
	(0.076)		(0.064)	
Unskilled workers	0.434	***	0.698	***

	(0.071)		(0.084)	
Belongs to Ethnic Minority	0.317	***	-0.596	***
	(0.108)		(0.186)	
Religiosity	-0.155	***	-0.042	***
	(0.029)		(0.012)	
Country Dummies	Yes		Yes	
ESS Round Dummies	Yes		Yes	
Constant	-1.277		-2.186	
N	54,908		54,865	
Log Likelihood	-16118.337		-14600.198	
AIC	32310.674		29268.396	
BIC	32640.470		29571.425	

***p<0.01 ** p<0.05 * p<0.1

Notes: Cluster robust standard errors in brackets

Supplementary Figure C.3 Anti-system left origin weighting by country specific DRMs, based on educational mobility



Notes: Graph truncated at origin weighting +/-2. Bars represent 95% confidence intervals. Belgium and Spain models excluded due to non-convergence.

Supplementary Table C.3 Gini Coefficient as a Determinant of Origin Weight for anti-system right, Feasible Generalised Least Squares

	Model 1
Gini Coefficient	0.565
	(0.732)
Constant	0.144
σ	0.115
ω (average)	0.192
N	12

Supplementary Table C.4 Decomposing mobility effects, DRM of anti-system right support, based on educational mobility (coefficients are log odds)

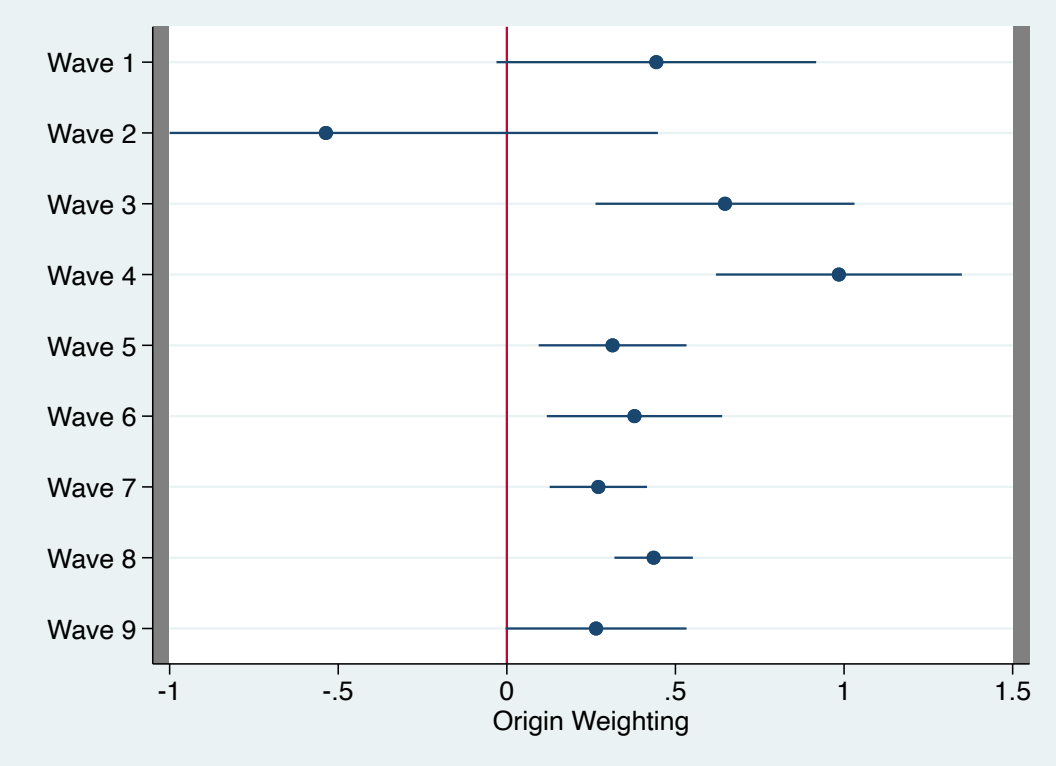
	Model 1	
Diagonal Intercepts		
μ_{11}: *Tertiary education*	-1.133	***
	(0.074)	
μ_{22}: *Advanced Vocational*	-0.023	
	(0.104)	
μ_{33}: *School qualifications*	0.582	***
	(0.067)	
μ_{44}: *No qualifications*	0.574	***
	(0.094)	
Weight of origin	0.372	***
	(0.042)	
Mobility (Base Immobile)		
3 Steps Upward	0.124	
	(0.136)	
2 Steps Upward	-0.199	*
	-0.114	
1 Step Upward	-0.128	***
	(0.048)	
1 Step Downward	0.214	***
	(0.058)	
2 Steps Downward	0.228	
	(0.152)	
3 Steps Downward	0.758	**
	(0.349)	
Age	-0.016	***
	(0.003)	
Sex (Base Male)		
Female	-0.422	***
	(0.056)	
Occupation (Higher-grade service base)		
Lower-grade service	0.230	***
	(0.065)	
Skilled workers	0.646	***
	(0.060)	
Unskilled workers	0.797	***
	(0.066)	

Belongs to Ethnic Minority	-0.603 (0.185)	***
Religiosity	-0.052 (0.012)	***
Country Dummies	Yes	
ESS Round Dummies	Yes	
Constant	-1.940	
N	49,545	

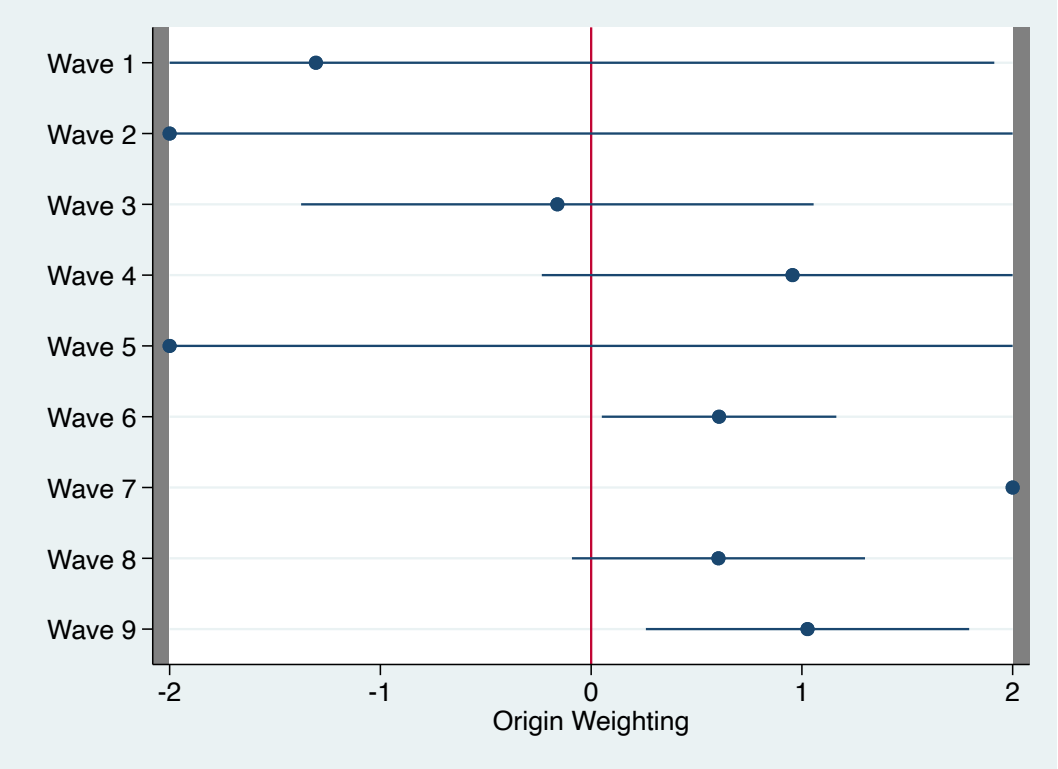
Log Likelihood	-14596.902
AIC	29193.804
BIC	29193.804

Notes: Cluster robust standard errors in brackets

Supplementary Figure C.4 Anti-system right origin weighting by ESS wave, based on educational mobility



Supplementary Figure C.5 Anti-system left origin weighting by ESS wave, based on educational mobility



Notes: In Wave 7, the immobile groups are so similar in their anti-system left tendencies that the origin weighting is virtually meaningless.

Supplementary Table C.5 Binary Logistic DRM of anti-system support, based on occupation mobility (coefficients are log odds)

	Anti-system left	Anti-system right	
Diagonal Intercepts			
μ_{11}: *High occupation*	-0.090	-0.642	***
	(0.058)	(0.105)	
μ_{22}: *Middle occupation*	-0.030	0.331	***
	(0.032)	(0.074)	
μ_{33}: *Low occupation*	0.120	0.310	***
	(0.077)	(0.077)	
Weight of origin	-0.534	0.556	***
	(0.570)	(0.106)	

Mobility (Base same)				
Upwardly Mobile	0.009		-0.114	
	(0.096)		(0.101)	
Downwardly Mobile	-0.074		0.117	
	(0.157)		(0.081)	
Age	-0.008	*	-0.018	***
	(0.004)		(0.004)	
Sex (Base Male)				
Female	0.183		-0.468	***
	(0.120)		(0.060)	
Education (Tertiary base)				
Advanced Vocational	-0.089		0.874	***
	(0.107)		(0.084)	
Secondary Education	-0.064		1.444	***
	(0.146)		(0.085)	
No quals	-0.332		1.507	***
	(0.233)		(0.144)	
Belongs to Ethnic Minority	0.137		-0.652	**
	(0.172)		(0.279)	
Religiosity	-0.170	***	-0.041	***
	(0.030)		(0.016)	
ESS Round Dummies	Yes		Yes	
Country Dummies	Yes		Yes	
Constant	-1.286		-1.899	
N	22,150		23,010	
Log Likelihood	-6925.4868		-6548.967	
AIC	13918.9736		13163.934	
BIC	14191.1638		13429.3756	

***p<0.01, **p<0.05, *p<0.01

Notes: Cluster robust standard errors in brackets

Supplementary Table C.6 Details of occupation coding

Occupation categories based on Oesch's 5 class schema:

High = Class I – Higher grade service class

Middle = Class II Lower grade service class + Class III Small business owners + Class IV Skilled workers

Low = Class V – Unskilled workers

Parental Occupation coding waves 1-3:

High Occupation:

Traditional professional; Modern professional; Senior manager or administrators

Medium Occupation:

Clerical and intermediate; Technical and craft; Middle or junior managers

Low Occupation:

Semi-routine manual/service; Routine manual and service

Parental Occupation coding waves 4-9:

High Occupation:

Professional and technical; Higher administrator

Medium Occupation:

Clerical; Sales; Service

Low Occupation:

Semi-skilled worker; Unskilled worker; Farm worker

Supplementary Table C.7 Binary Logistic DRM of anti-system support, based on educational mobility (coefficients are log odds), interacting age with origins

	Anti-system left	Anti-system right	
Diagonal Intercepts			
μ_{11}: *Tertiary education*	0.076	-1.105	***
	(0.122)	(0.069)	
μ_{22}: *Advanced Vocational*	-0.029	-0.027	
	(0.070)	(0.083)	***
μ_{33}: *School qualifications*	-0.049	0.591	
	(0.074)	(0.067)	***

μ_{44}: No qualifications	0.003		0.542	
	(0.047)		(0.099)	
Weight of origin	1.159		0.397	***
	(1.020)		(0.085)	
Interaction weight and age categories				
Weight x 28-40	0.849		-0.049	
	(2.330)		(0.079)	
Weight x 41-50	-0.159		-0.147	**
	(1.316)		(0.071)	
Weight x 51-60	-0.847		-0.043	
	(1.199)		(0.125)	
Weight x 61-70	-2.690		0.035	
	(3.673)		(0.090)	
Weight x 71+	-3.686		0.137	
	(5.343)		(0.138)	
Mobility (Base same)				
Upwardly Mobile	0.086	**	-0.120	**
	(0.047)		(0.051)	
Downwardly Mobile	-0.029		0.215	***
	(0.108)		(0.079)	
Age (base <28 years)				
28-40	-0.074		-0.062	
	(0.081)		(0.109)	
41-50	-0.220	**	-0.203	
	(0.094)		(0.125)	
51-60	-0.177		-0.442	***
	(0.118)		(0.121)	
61-70	-0.475	***	-0.639	***
	(0.102)		(0.176)	
71+	-0.889	***	-0.717	***
	(0.148)		(0.175)	
Occupation (Higher-grade service base)				
Lower-grade service	0.219	**	0.238	***
	(0.086)		(0.064)	
Skilled workers	0.310	***	0.657	***
	(0.085)		(0.059)	
Unskilled workers	0.528	***	0.810	***
	(0.099)		(0.065)	

Belongs to Ethnic Minority	0.273	**	-0.591	***
	(0.114)		(0.187)	
Religiosity	-0.162	***	-0.053	***
	(0.029)		(0.012)	
ESS Round Fixed Effects	Yes		Yes	
Country Fixed Effects	Yes		Yes	
Constant	-1.566		-2.450	
N	50,103		49,545	
Log Likelihood	-15376.277		-13894.4	
AIC	30840.554		27874.9	
BIC	31228.7148		28253.7	

***p<0.01, **p<0.05, *p<0.1
Cluster robust standard errors in brackets

Supplementary Table C.8 Binary Logistic DRM of anti-system right support, based on educational mobility (coefficients are log odds), subset by gender

	Female		Male	
Diagonal Intercepts				
μ_{11}: *Tertiary education*	-1.286	***	-1.012	***
	(0.084)		(0.094)	
μ_{22}: *Advanced Vocational*	-0.084		-0.018	
	(0.102)		(0.122)	
μ_{33}: *School qualifications*	0.668	***	0.530	***
	(0.095)		(0.087)	
μ_{44}: *No qualifications*	0.702	***	0.501	***
	(0.049)		(0.141)	
Weight of origin	0.391	***	0.330	***
	(0.061)		(0.063)	
Mobility (Base Immobile)				

Upwardly Mobile	-0.213	**	-0.073	
	(0.090)		(0.048)	
Downwardly Mobile	0.268	*	0.176	
	(0.147)		(0.111)	
Age	-0.020	***	-0.015	***
	(0.003)		(0.003)	
Occupation (Higher-grade service base)				
Lower-grade service	0.309	***	0.220	***
	(0.076)		(0.080)	
Skilled workers	0.686	***	0.663	***
	(0.104)		(0.069)	
Unskilled workers	0.924	***	0.717	***
	(0.094)		(0.100)	
Belongs to Ethnic Minority	-0.434	*	-0.687	***
	(0.231)		(0.235)	
Religiosity	-0.032	**	-0.065	***
	(0.015)		(0.013)	
Country Dummies	Yes		Yes	
ESS Round Dummies	Yes		Yes	
Constant	-2.340		-2.020	
N	22,842		26,703	
Log Likelihood	-5586.916		-8261.5506	

***p<0.01 ** p<0.05 * p<0.1

Notes: Cluster robust standard errors in brackets

Supplementary Table C.9 Binary Logistic DRM of anti-system right / left support, based on educational mobility (coefficients are log odds), occupational controls removed

	Anti-system left	Anti-system right
Diagonal Intercepts		
μ_{11}: Tertiary education	-0.067	-1.381 ***

	(0.132)		(0.046)	
μ_{22}: Advanced Vocational	-0.056		-0.125	
	(0.128)		(0.082)	
μ_{33}: School qualifications	-0.004		0.704	***
	(0.047)		(0.053)	
μ_{44}: No qualifications	0.126		0.802	***
	(0.214)		(0.077)	
Weight of origin	1.366		0.301	***
	(2.006)		(0.023)	
Mobility (Base Immobile)				
Upwardly Mobile	-0.054		-0.088	
	(0.118)		(0.065)	
Downwardly Mobile	0.103		0.225	**
	(0.123)		(0.099)	
Age	-0.017	***	-0.017	***
	(0.004)		(0.004)	
Sex (Base Male)				
Female	0.109		-0.386	***
	(0.103)		(0.052)	
Belongs to Ethnic Minority	0.257	**	-0.480	***
	(0.109)		(0.131)	
Religiosity	-0.160	***	-1.678	***
	(0.030)		(0.317)	
Country Dummies	Yes		Yes	
ESS Round Dummies	Yes		Yes	
Constant	-0.714		-1.678	
N	67,760		65,866	
Log Likelihood	-20482.289		-17910.66	
AIC	41030.578		35881.32	
BIC	41331.661		36154.1813	

***p<0.01 ** p<0.05 * p<0.1

4 University education and European integration: a mechanism to explain the difference between the socially mobile and immobile?

Abstract

There is polarisation in political preferences between graduates and non-graduates. However, whether this divide is a result of going to university, or alternatively if those individuals entering Higher Education *already* have different preferences and attitudes to their peers, remains unclear. Moreover, there is no reason to assume that university has the same effect on individuals from different social origins. Existing literature shows that first-generation graduates have different preferences to those who inherit their position from their parents. I use the *British Household Panel Survey* (BHPS) to estimate how individuals' preferences towards the European Union are affected by attending university. I find that there is an impact from university attendance for all, making individuals more likely to support European integration. If anything, individuals with graduate parents experience a greater impact from university than first-generation students. Thus, university education acts as a mechanism to explain the difference in preferences between socially mobile and immobile individuals. I replicate this analysis for economic and cultural values. Individuals become more economically 'conservative' and more culturally 'liberal' because of university. I argue that this is the underlying mechanism for graduates to favour European integration. Whilst the data is based on the BHPS, a decade prior to the 'Brexit vote', this helps to explain the education cleavage observed in 'Leavers' versus 'Remainers'.

4.1 Introduction

Britain has become a polarised nation, highlighted most clearly through 'Brexit'. For many, one of the most prominent cleavages in society is educational attainment (Alabrese et al. 2019; Gethin, Martínez-Toledano, and Piketty 2021; Hobolt 2016). In the wake of educational expansion over the last three decades, the dividing line is now university graduates versus non-graduates (Iversen and Soskice 2019). In 2017, for the first time, more than half of the school-leaving age cohort started Higher Education (Department for Education 2019). The divide between graduates and non-graduates is not a temporary divide manifesting through the UK's membership of the European Union in 2016, the 'Brexit vote', but instead a cleavage with long-

term implications for British society. There is a wide range of literature which explains *how* graduates have different political preferences to their non-graduate counterparts (Becker, Fetzer, and Novy 2018; Fieldhouse et al. 2021; Hooghe and Marks 2018). Yet, whether this can be explained by the effect of university attendance, or alternatively if those individuals entering Higher Education *already* have different preferences and attitudes to their peers, remains unclear (Stubager 2008; Surridge 2016). Understanding the causal effect of university education is analytical interesting as political scientists endeavour to understand the educational cleavage within society. There are also important policy implications for governments regarding the continuing expansion of university education and the consequential impact on polarisation.

The importance of a university education for an individual's preferences ties into a developing literature within political science, examining the importance of social origins for behaviours and attitude formation (Neundorf and Smets 2017; O'Grady 2019). Upwardly socially mobile individuals tend to have political preferences which are a combination of those who remain immobile from their social origin position and immobile individuals in the destination position (Jaime-Castillo and Marqués-Perales 2019; McNeil and Haberstroh 2022). If, as many commentators argue, education is the key vector for social mobility (Bernardi 2016), then I would expect that education acts as a mechanism to change attitudes of the upwardly mobile closer to those immobile individuals in their destination position. Alternatively, it is plausible that there is no impact from university (Kuhn, Lancee, and Sarrasin 2021; Lancee and Sarrasin 2015), thus any pre-existing variation between those from high status origins and low status origins remain after university education.

I analyse the effect of university attendance on individuals' preferences towards 'Britain's place within the EU'. The data is from the British Household Panel Survey (BHPS), a decade prior to the 'Brexit' referendum in 2016. Whilst my estimates relate specifically to 'Euroscepticism' in the 2000s, I will argue that there is a readthrough for the present cleavage in British society, exemplified by the 2016 United Kingdom European Union membership referendum (the 'Brexit vote'). The issue of European integration was salient in Britain during the 2000s. However, given the intensification of polarisation over European integration in the following decade, I would expect the estimates to be conservative when compared to the present-day cleavage. I provide evidence that this is the case in the robustness analysis.

The core explanations of the 'Brexit vote' rely on economic and cultural explanations (Colantone and Stanig 2018; Hopkin 2017; W. Jennings and Lodge 2019; Norris and Inglehart 2019). This helps to explain why education may have a causal impact on Brexit voting or specifically in the case of this study, 'Britain's place within the EU'. Students are exposed to cosmopolitan values throughout university, which in turn makes one more tolerant to other cultures and have a more globalised outlook (Goodhart 2017; Keating 2009). Second, it may be that as education increases future earning potential, graduates are more open to integration with the EU as the benefits are likely to be greater for those in higher skilled occupations (Kriesi et al. 2008). Given these potential mediating mechanisms, I expand the empirics to analyse if university has an impact on individuals' economic and cultural preferences.

Data from the BHPS allows me to capture attitudes before and after university attendance. I use fixed-effects models, which account for all time-constant heterogeneity within individuals. In line with my hypotheses, I show that university affects individuals, making one more in favour of the EU. I claim that this effect is causal. University makes individuals more culturally liberal and more economically self-interested, indicating that these could be the mediating mechanisms for the attitudes towards the EU integration finding. University affects individuals from different socio-economic origins in a similar manner. If anything, individuals with graduate parents experience a greater impact from university than first-generation students. I also provide evidence that those individuals who have at least one parent with a university education have an attitudinal starting position which is different to first-generation graduates. These two pieces of empirical evidence combined suggest that there is an effect of university education for all, but social origins continue to matter for attitudes post university. This would help to explain why socially mobile individuals have preferences and attitudes that are in-between that of their origin and destination positions. I further support these findings with random-effects models, where I can introduce time-invariant variables into the model.

This paper makes three contributions to the existing literature. First, there is no clear consensus from the literature as to whether university has a causal impact on political behaviour and attitudes. The empirics offered here, at least in the case of the UK, add weight to the side of the debate arguing that university does have a causal impact on attitudes beyond sorting. Second, my research contributes to the literature on 'Euroscepticism' and has implications for the study of Brexit. It is well established that there is an educational cleavage, but I argue that it is, at least to some extent, caused by university education. Third, I contribute to the social

mobility literature, explaining one of the mechanisms as to why the socially mobile have different political preferences to the mobile. University affects all individuals from across socio-economic backgrounds, however there is no evidence of 'catch-up' for those from lower status origins.

The paper is structured as follows. Section 2 lays out the existing literature and the theoretical framework for the paper. Next, I outline the hypotheses grounded in my theoretical foundations. I then describe the data from the BHPS and the research design. Following that I produce the main empirics. In the discussion section, I assess the implication of these findings for the difference in attitudes between the mobile and immobile. I then discuss what this means for division between graduates and non-graduates in British society.

4.2 Theoretical Framework

Existing work shows that social mobility affects one's attitudes and behaviours. Mobile individuals tend to have preferences and behaviours which are a combination of that of the immobile group with which they share their origin position and the immobile group of their new destination position. That is, socio-economic status matters, but so also does the way in which one achieved that position. It has been shown to be the case for a wide range of political attitudes, ranging from: views on the left-right political spectrum (Clifford and Heath 1993; De Graaf, Nieuwbeerta, and Heath 1995), one's position on the Brexit divide (McNeil and Haberstroh 2022), to re-distributional preferences (Jaime-Castillo and Marqués-Perales 2019; Piketty 1995).

There are many potential theoretical mechanisms explaining this difference in political preferences of the mobile and non-mobile. Individuals' social network may vary by social origins. An individual from a low position socio-economic social origin will likely retain friends from their childhood and family members within their social network, as well as developing a new social network built on their destination position (Roberts and Dunbar 2015). The new social network members will include university friends, workplace colleagues, or adulthood neighbours (who are somewhat sorted by socio-economic position). Members of a social network from the individual's childhood may well have remained in that lower socio-economic position. Consequently, there may be a peer effect, making one more empathetic

towards the economic precarities experienced by those in a lower socio-economic position (Liu, Kuo, and Fernandez-Albertos 2020). More generally, family is an important vector in childhood political socialisation (M. K. Jennings, Stoker, and Bowers 2009; Rico and Jennings 2012). There is a wide literature showing that early years' political socialisation matters for later life political preferences (see O'Grady 2019 for an overview).

While the above mechanisms are undoubtedly crucial for our understanding of the importance of social mobility on political attitudes, this paper focuses on the role of Higher Education. Specifically, whether attending university affects individuals' attitudes towards the EU. This variable contributes to a wider literature on 'Euroscepticism', and it holds particular importance in the UK given the result of the 'Brexit vote' and the persistent cleavage it has created (Hobolt, Leeper, and Tilley 2020). I then model two of the mediating factors for this effect: economic, and cultural attitudes. Education is frequently cited as a potential vector for social mobility (Bernardi 2016). Yet, the extent to which education has a causal impact on one's attitudes is widely debated within the literature, as will be discussed in detail. Moreover, it is pertinent to our understanding of the difference between mobile and non-mobile individuals. There is no reason to assume a priori that the impact of university education, if one indeed exists, on individuals' preferences is the same for those with different social origins.

The focus on education and the way in which it changes political attitudes is crucial given the importance with which the literature treats education as a predictor of cleavages within society. To take the context of this study, Britain, an individual's educational attainment has been shown to influence polarisation through Brexit (Alabrese et al. 2019; Fieldhouse et al. 2021; Hobolt 2016; Inglehart and Norris 2016), one's cultural attitudes (Pew Research 2016; Surridge 2016), and economic preferences (Marshall 2016). Education creates a cleavage for an anti-system vote, such as Brexit, with the lower educated much more likely to vote anti-system, 'Leave', as a protest vote against the status quo. However, it has also started to become an increasingly telling marker of party choice (Fieldhouse et al. 2019).

Using my research design, I cannot specifically study if university attendance has a causal effect on the 'Brexit vote'. There was not a referendum in the UK in 2010 to measure individuals' vote choice prior to attending university. The data from the BHPS allows an explicit finding regarding the effect of university attendance on 'Euroscepticism', a decade prior to the EU referendum. However, I argue that there is a readthrough for the Brexit vote.

The salience of the European Union for politics in the UK has fundamentally changed in the decade preceding the 'Brexit vote'. The shock to the Euro following the financial crisis and the migration crisis raised the importance of immigration for the electorate and one's views on European integration emerged a fundamental cleavage (Hooghe and Marks 2018). In the case of the UK, there was a substantial increase in vote share for UKIP, which eventually pushed the Conservative Party to call the United Kingdom European Union membership referendum. That said, as summarised in Hooghe and Marks (2018), the 'transnational', specifically European integration, cleavage was in place by the 2000s. It was already highly salient and cross-cut the traditional left-right basis of voting by the 1997 UK election (Evans 1999), the importance increased dramatically from the 1990s to 2000s (Hakhverdian et al. 2013; Kriesi et al. 2012). If anything, this increase in salience, I would argue, results in the effects I observe a decade prior to the 'Brexit vote' being conservative estimates for the present-day cleavage. As the issue of Europe increases in importance to the electorate, it only furthers polarisation of 'winners' and 'losers' brought about by European integration (Kriesi et al. 2012). Moreover, the cultural and economic factors that I argue mediate the effect of university on preferences towards European integration will continue to be the underlying driver across time periods. In the robustness section, I include an empirical dimension to this argument, I link the BHPS to data from Understanding Society at the time of the 'Brexit vote'. Whilst there are limitations to this analysis, it indicates that the explanation I provide for Euroscepticism is valid for Brexit and the effects in my main models are conservative.

4.2.1 The causal effect of university attendance on preferences

There are opposing hypotheses offered in the existing literature as to how university education impacts political preferences. It may be that a university education has no causal impact on behaviour and attitudes. The correlation between educational attainment and political preferences is rather driven by a selection effect. Those individuals who will later become university graduates are already different from those who will not go to university in the future. This may be a result of one's social origins: namely children who will later go on to university are more likely to have come from higher socio-economic backgrounds than children who will not become graduates (Blanden and Macmillan 2016). Higher socio-economic status parents are likely to have different preferences, which may be transmitted across generations.

Similarly, the children from high status socio-economic backgrounds are more likely to live in neighbourhoods and go to school with other high-status individuals, ingraining attitudes through early years' political socialisation. Beyond one's social origins these children may have other characteristics that drive the correlation between political attitudes and university attendance. To give an example, it may be that future graduates are inherently more ambitious than future non-graduates. This clearly works as a determinant of university attendance, but it may also underscore one's belief in cultural and economic values. Ambition may lead to a belief in a meritocratic society and greater faith in one's prospects. Thus, increasing individuals' desire to have access to a wider labour market for future career development and perceive integration within the European Union as beneficial.

The self-selection argument is supported with evidence from the Swiss Household Panel. Lancee and Sarrasin (2015) find that there are strong differences in attitudes towards immigrants depending on individual's educational attainment, but there is very little change in opinions as individuals pass through university. Similarly, and most clearly related to this paper Kuhn, Lancee, and Sarrasin (2021) show that there is no causal effect from university on 'Euroscepticism' in Switzerland, again they argue that any correlation is predominantly a selection effect. Similar evidence from across Europe exists with regards to years of education. Quasi-experimental designs exploit schooling reform to provide evidence that increased schooling has no effect on immigration attitudes (Finseraas, Skorge, and Strøm 2018) and 'Euroscepticism' (Kunst, Kuhn, and van de Werfhorst 2020). Moreover, there is a large subsection of the literature which argues that social and political attitudes alter little over the course of university study (Mariani and Hewitt 2008; Rothman, Kelly-Woessner, and Woessner 2011).

The counter hypothesis is that education causally impacts political preferences, and specifically views on the European Union. The potential causal mechanism is that education changes individuals' economic and cultural views, which in turn has implications for views towards the EU (Kuhn, Lancee, and Sarrasin 2021 and references therein).

Going through university education may change one's future income expectations. Higher educational attainment is rewarded with higher wages (Angrist and Krueger 1991; Ashenfelter and Rouse 1998; Goldin and Katz 2009). Following a rational choice, self-interest logic, the effect of going to university will be to increase an individual's support of economic 'right-

wing' policy[25]. These individuals foresee less personal need to rely on tax redistribution (Alesina and La Ferrara 2005; Bean and Papadakis 1998). Marshall (2016) exploits compulsory school reform in the UK to provide causal evidence that this is the underlying mechanism. An additional year of school level education increases the probability of voting Conservative, the major centre-right party, by 12 percentage points. Similar evidence exists in the United States context, as more education is causally linked to less re-distributional preferences (Bullock 2020) and a greater tendency to vote for the Republican Party (Marshall 2019). These self-interested individuals are more likely to favour European integration as they appreciate that the benefits from coordination with Europe are not equally spread by occupation. Instead, those with higher education and professional occupations will have a wider range of career opportunities (Anderson and Reichert 1995; Kriesi et al. 2012). Individuals with lower educational attainment perceive competition from the EU as a threat with more immigration creating competition for low-skilled jobs (Kriesi et al. 2008; Scheepers, Gijsberts, and Coenders 2002) .

Conversely, the more consensual position is that education 'liberalises' students (Pew Research 2016; Weakliem 2002). Exposure to values such as freedom of speech and tolerance fundamentally alters political attitudes (Stubager 2008). These liberalising changes can come about through the material taught within the formal curriculum, learning from professors who tend to be more left-wing (Halsey and Trow 1971; Klein, Stern, and Western 2005), or through the social networks of friends they develop at university. This latter point is developed by Woessner and Woessner (2020) as they show that students 'drift to the left' at liberal art colleges, where their peer group are more likely to have liberal attitudes. I would expect university attendance to result in individuals having more cosmopolitan cultural values, which include a post-national sense of citizenship (Keating 2009). As Goodhart (2017) describes, the educated become the 'anywheres', comfortable and confident with new places and people. In turn, these cultural attitudes help to create a more positive attitude towards European integration.

The liberalisation mechanism could also work regarding economic values. Instead of the proposed shift in individuals in a rational choice self-interest model, the cosmopolitan values

[25] Particularly if the norm of affluence is embedded within the university which the individual attends (Mendelberg, McCabe, and Thal 2017)

gained through university may include altruistic ideals of redistribution and social inclusion. In which case, it should not act as a mediating mechanism for university to effect preferences towards the European Union.

I argue that education does not necessarily have a uniform 'liberalising' effect on economic and cultural attitudes. There is no reason to expect these two effects to act in unison, university could make one both more culturally liberal and economically 'conservative'. The classic left-right cleavage where one could intermingle economic and cultural factors is outdated (Evans, Heath, and Lalljee 1996; Inglehart and Flanagan 1987). To take the context of this research, the UK, the salience of cultural factors in politics, particularly immigration, has increased dramatically since the early 2000s. Education is highly correlated with ethnocentrism and liberal-authoritarian views, which in turn is a predictor of Brexit voting and party choice (Fieldhouse et al. 2019, 2021; Sobolewska and Ford 2020). The ramifications of this long-term shift in salience of cultural factors for vote choice have been stark (W. Jennings and Stoker 2017), as those with the lowest educational attainment have increasingly moved away from the Labour Party to vote Conservative (Fieldhouse et al. 2021). Yet, we also know that those individuals in 'managerial' positions remain more likely to vote for the Conservative party – more so than any other social class including 'professionals' (Fieldhouse et al. 2021). Potentially here the more traditional explanation applies, these individuals focus more on economic factors and thus overwhelmingly vote Conservative.

Existing studies in the UK focusing on how a change in social status impacts economic and cultural views lends some support to the idea that education can make one more culturally 'liberal' and more economically 'conservative'. Surridge (2016) analyses the 1970 Birth Cohort Study to show the impact of education on cultural and economic views. Surridge finds a liberalising cultural effect and a non-statistically significant but 'conservative' impact on economic views. Similarly, Scott (2022) with the same data shows how receiving a degree makes one more economically right-wing, less authoritarian, and less racially prejudice.

4.2.2 Differentiated impact from university by socio-economic origins

As I have already argued, children will be conditioned by their parents and early years' socialisation. Specifically, children from higher socio-economic backgrounds, measured by

whether one's parents have a university degree, will be more open to European integration, more culturally liberal, and more economically conservative than those individuals from lower socio-economic backgrounds. Thus, I would expect those with a higher socio-economic background to go into university with different preferences than those from a lower socio-economic background.

Second, I would expect to see a sorting effect. Individuals, independent of their social origins, who will later go on to university are likely to have a different attitudinal starting point than individuals who will not attain a university education. In line with the other expectations, future graduates will be more open to European integration, more culturally liberal, and more economically conservative than individuals who will not go to university.

Third, given that we observe empirically that one's destination status also matters, I would expect university to make one more open to European integration, more culturally liberal, and more economically conservative. This would be measured in comparison to their position prior to university attendance. I would not expect those students from non-graduate parental backgrounds views to change substantially more than those from graduate parental backgrounds. In other words, although students' political preferences from lower-socio-economic backgrounds will be affected by university participation, this will not be enough to fully 'catch-up' with students from higher socio-economic backgrounds. There will not be homogenous group of university graduates: social origins will continue to matter.

As detailed in the above, in both the cases of sorting and effect of university, I would expect the three dependent variables to move together, that is favouring more European integration, more liberal cultural values, and more 'conservative' economic preferences.

4.2.3 Hypotheses

To summarise, the hypotheses are as follows:

1) Prior to going to university, future graduates from university educated parental social origins will be more pro-European than future graduates from non-university educated parental origins

2) Prior to going to university, for those from non-graduate parental origins, future graduates will be more pro-European than future non-graduates
3) Attending university will causally affect individuals' attitudes – they will become more pro-European
4) This effect of university attendance will be similar for those from graduate and non-graduate parental backgrounds. Consequently, graduates from non-university educated parental origins remain different in their attitudes to graduates from university educated parental origins
5) I would expect hypotheses 3) and 4) to apply to cultural and economic values if they are to act as mediating factors from university attendance. I expect university to make individuals more culturally liberal and more economically self-interested ('conservative')

4.3 Data

Data is from the BHPS, an annual longitudinal dataset running from 1991 to 2008 in the UK. The dataset provides high quality data on individuals' socio-economic backgrounds, political preferences, and educational status. Regarding the respondents, I track new individuals as they enter the survey, including new entrants when they reach 16 years old from existing member households. At this stage I can follow these individuals' educational progress, identifying if and when they enter university education.

To capture individuals' positions on the European Union, I utilise a variable that appears in Waves 9 (1999), 12 (2002), and 16 (2006) asking the respondents' view on what 'UK long term policy should be' in relation to the European Union. Answers are on a 5-point scale: 1 "Leave EU", 2 "Stay in EU reduce EU's powers", 3 "Leave things as they are", 4 "Stay in EU increase EU's powers", 5 "Work for single European government". Thus, there is a clear scale from least to most European integration.

The dataset also regularly updates individuals' political economic preferences with a battery of six questions, which are asked in seven of the eighteen waves (Waves 1, 3, 5, 7, 10, 14, and 17). These questions were developed by Heath, Evans, and Martin (1994) and were designed to provide a socialist/laissez faire scale of core values. They were designed as measures of core

values that were general enough to remain relevant despite the significant political context change in Britain from 1991 to 2008. These questions are as follows: a) Ordinary people get their fair share of the nation's wealth; b) There is one law for the rich and one for the poor; c) Private enterprise is the best way to solve the UK's economic problems; d) Major public services and industries ought to be in state ownership; e) It is the government's responsibility to provide a job for everyone who wants one; f) Strong trade unions are needed to protect the working conditions and wages of employees. Respondents answer their perceptions of these statements on a 5-point Likert scale from 'Strongly Agree' to 'Strongly Disagree'. I flip the scales for questions a) and c) to make the scales congruent, an answer of 1) becomes the most economically and socially 'liberal' or 'left-wing'. I calculate an average response to these six questions for composite results. I also break down the analysis separately for each of these questions after the main findings. This set of questions has now been widely used in the literature to measure political core values (Ares 2019; Evans and Neundorf 2020; A. Heath, Evans, and Martin 1994).

Whilst the dataset is not as comprehensive regarding measures of cultural or 'cosmopolitan values' questions, I choose a variable that asks views on homosexuality, 'Homosexual relationships are always wrong'. Respondents again answer the question on a 5-point Likert scale 'Strongly agree' to 'Strongly disagree'. I flip the scale to make it in-line with the 'liberal' to 'conservative' ranking in the earlier battery of economic questions. This variable features in six versions of the BHPS (Waves 8, 10, 12, 14, 16, and 18). I accept that this is not a complete measure of cultural tolerance, rather an imperfect measure that is in my view the best available from the data source and appropriate for my research design. I think here of culturally liberal or tolerance as the popular conception, 'a catch-all phrase referring to all kinds of positive attitudes towards various minorities' (Janmaat and Keating 2019). Ideally, my measure of cultural tolerance would include a wider range of groups that have traditionally been thought of as marginalised or discriminated against. For example, Janmaat and Keating, include attitudes towards homosexuality, racial diversity, minorities, immigrants, and foreign workers.

Standard measures of parental origins include education, occupation, and income. This study uses education for theoretical and practical reasons. The sample size is small given that it requires the individual to be a relatively new, young, entrant to the BHPS and complete two rounds with the same question approximately six years apart. Thus, from a practical purpose, graduate versus non-graduate provides a simple yet intuitive bifurcation in terms of socio-

economic status. Theoretically, it is the most appropriate measure for at least two reasons. Firstly, it is congruent with the treatment used in this research, attending university. Secondly, it is argued that education is the key polarising cleavage within society (Alabrese et al. 2019; Gethin, Martínez-Toledano, and Piketty 2021; Iversen and Soskice 2019; Stubager 2008). Moreover, parental education is the appropriate measure of socio-economic background and often plays a more important role for social mobility than class or income (Bernardi 2016). The descriptive statistics are available in Supplementary Table D.1.

4.4 Methods

Individuals' views on Britain's future relationship with the European Union are captured at 3 points: Waves 9, 12, and 16. This allows me to track how respondents' attitudes change. Specifically, I capture how an individual responds when they are 22 or younger and have not yet attended university or will never attend university, T_0. I use 22 as the cut-off to mitigate the fact that university may impact political preferences differently for mature students. The starting point, T_0, for the majority is Wave 9. To increase the sample size, I also include a small number of new entrants who enter between Waves 10 and 12, in this case I use T_0 as measured at Wave 12. The end point for all, T_1, is Wave 16.

The battery of economic questions is asked over six waves and the attitudes towards homosexuality over seven waves. Again, I record an individual's response when they are 22 or younger and have not yet attended university or will never attend university. Next, I record the same individual's response to the question between six and nine years later for the economics variable (the battery of the economics questions is not uniformly spread across the BHPS), and six years later for the homosexuality variable.

This data collection allows me to measure any difference in opinion between the two time periods, T_0 and T_1, and to see if that differs between the groups who attend and do not attend university. I include all those individuals as university 'attenders' when they go to university for at least one year. Whilst I would also like to examine if there is a difference for those who complete a degree during the intervening period compared to 'attenders', the number of observations decreases substantially, thus making examining the difference by parental background statistically impractical. To fit into this category, an individual would have to be

22 or under, complete an initial response to the attitudinal questions (T_0), not have attended university at T_0, and complete their whole degree programme by the next set of attitudinal questions at T_1 around six years later. My research design keeps all these features, whilst relaxing the necessity to have completed the degree programme by T_1.

In the first step I provide a descriptive analysis of the results, with starting attitudes, end attitudes and changes between the two time periods. This descriptive analysis includes the individual's position on the EU, the composite of the economics questions, and the cultural attitude. The analysis is split into three groups: future graduates with at least one parent who attended university; future graduates whose parents did not attend university; future non-graduates.

Next, I move on to regression analysis. The first step is to estimate fixed-effects models. The fixed-effects model analyses within-individual variation in attitudes between the two time points, T_0 and T_1. The advantage of this model is that it controls for all observed and unobserved time-invariant predictors. The estimates of effects are causal under the assumption that all unobserved heterogeneity is time-invariant. Secondly, I include a random effects model. This allows the introduction of time-invariant controls into the model. Specifically, I am interested in the effect of parental background on preferences. I include dummies variables for gender and the wave in which the first response was taken. This is to control for the potential that there are cohort effects given that there are 4 potential starting points to measure attitudes. I do not include an age control given that these are all young adults (22 years-old or younger) at the time of first measurement, T_0.

The two main variables in which I am interested are: the dummy variable for whether an individual attends university in the intervening period of political attitude measures, and the parental socio-economic position measure. This I have operationalised as a dichotomous measure as to whether one's parents have attained a degree or not. In the fixed-effects model I cannot include the parental educational background measure directly as it is time invariant. However, I can include the interaction between parental background and the university dummy. The interpretation of this term is whether there is a different effect from university attendance by socio-economic background. Within the random-effects model, I also include an interaction term between graduate parents and the time-period. This then estimates whether graduate background has a significant impact and changes across the time-periods.

4.5 Findings: Descriptive Changes

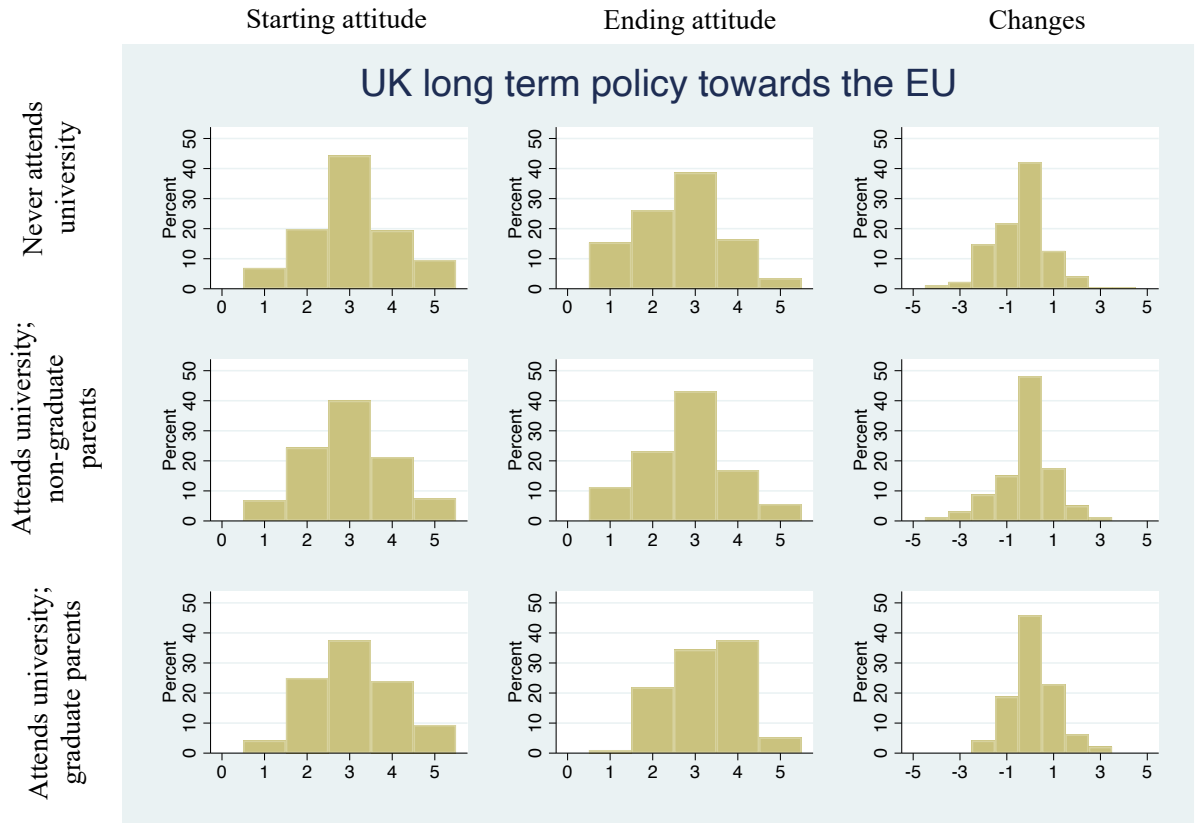
I graph the positions of individuals at the first time-period, T_0, that is when the individuals are under 23 years old and have never attended university. This is split by those individuals who will never attend university, future graduates with at least one parent who has a degree, and future graduates where neither parent went to university. I then show the end attitudinal position, at T_1, and the corresponding changes.

4.5.1 EU Integration

Regarding the main dependent variable, views on the UK's long-term policy towards the European Union, starting values are relatively similar for those who will not attend university and individuals who will later attend university from a non-graduate parental background. The mean starting value is actually slightly higher for those who will never attend university when compared to those who will later go to university from non-graduate backgrounds. If those from a graduate background who never attend university are excluded, these two values are almost identical. Contrastingly, those from a graduate background who will later attend university are most pro-European. The first evidence that there appears to be a selection effect.

The changes in attitudes between T_0 and T_1, indicate that those individuals who have not attended university become less pro-European. Contrastingly, those who attend university have a more balanced profile, slightly skewed towards more pro-European attitudes. That is, relative to non-university attenders, there is descriptive evidence that university attendance leads to more pro-European views. There also appears to be a greater affect from university for those from graduate backgrounds, making these individuals more pro-European.

Figure 4.1 Views on UK's long-term policy towards the European Union by group – prior to university, after university, and changes



Notes: (1 = Leave EU; 2 Stay in EU reduce EU's powers; 3 = Leave things as they are; 4 = Stay in EU increase EU's powers; 5 = Work for single European government)

4.5.2 Economic attitudes

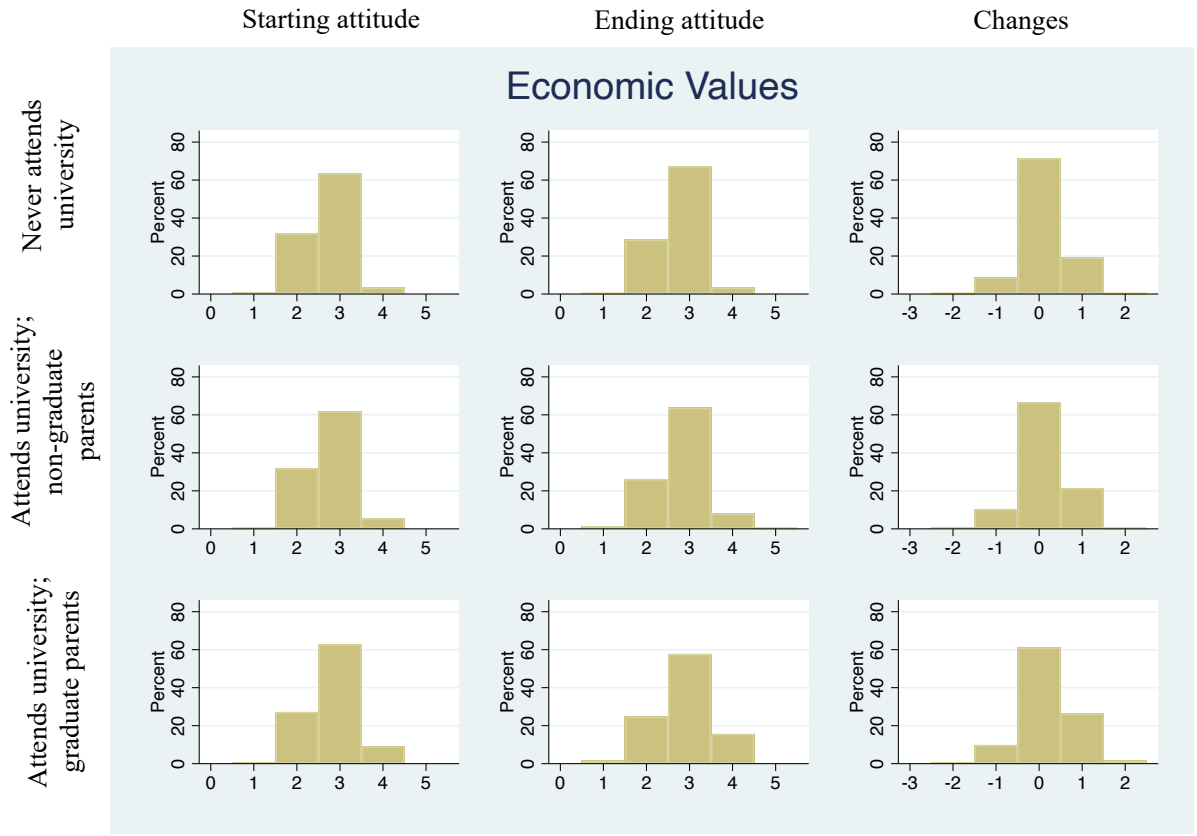
There is more similarity between the time periods and groups for the composite economic attitude measure when compared to the EU measure and homosexuality views (analysed in the next section). That said, there remain some subtle differences. The end values, and corresponding changes, show a shift to more economically 'conservative' measures. Whilst this takes place across all three groups, there is a larger shift for those who attend university. Hence, from this descriptive section, there is some early evidence that university attendance in and of itself is associated with increased 'conservative' or self-interested attitudes.

There is a starting value difference between those who later go to university based on parental background. Higher socio-economic origins would seem to correlate with more self-interested, 'conservative' economic values. However, there appears to be little difference in starting values between first-generation university attenders and those that never go to university. The sorting effect is not that individuals have different economic attitudes based on whether they later

attend university per se, rather through socio-economic origins (these differences in starting position are complemented with regression analysis in Supplementary Table D.3 – substantiating these differences).

For graphic simplicity I have combined all results in one-unit intervals. Given this is a consolidated average of six measures, the raw scores are no longer necessarily whole numbers.

Figure 4.2 Consolidated average 'economic' attitudes by group – prior to university, after university, and changes (1 = most economically liberal)



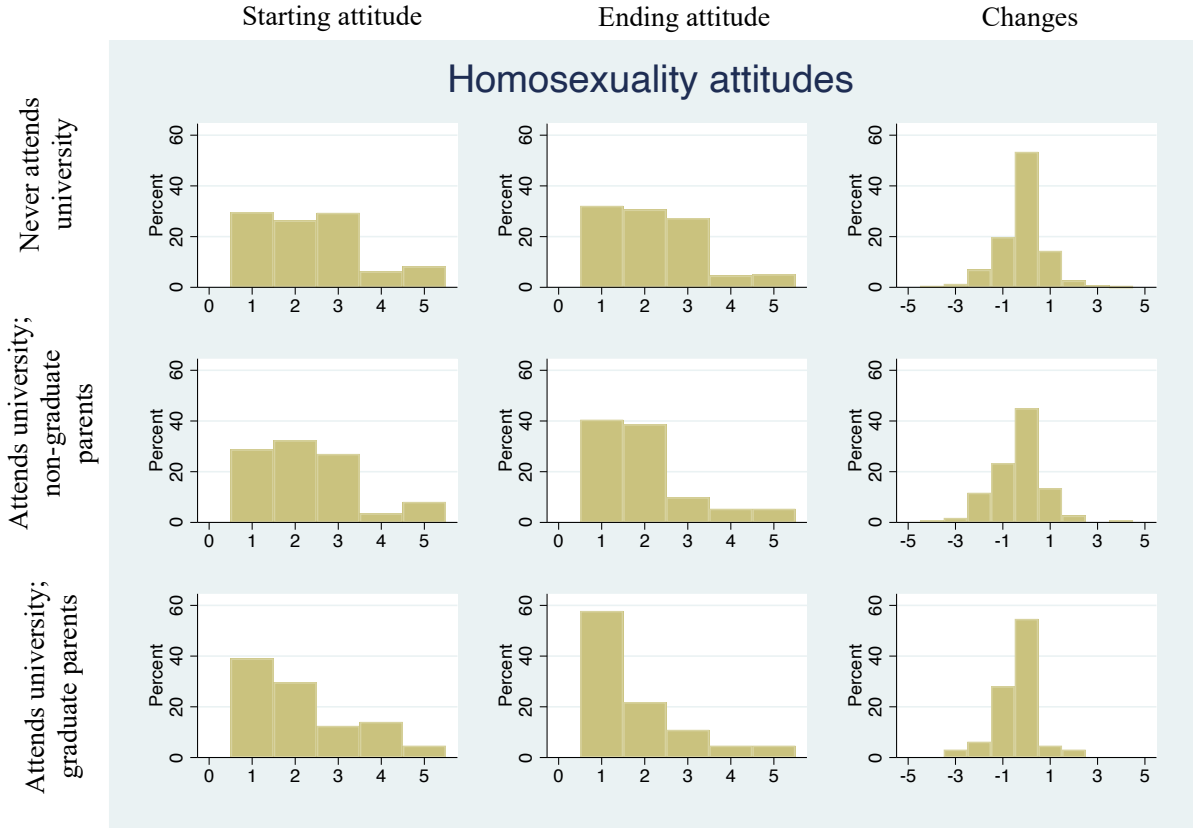
Notes: Economic attitudes are based on the mean of the six questions described in the data section. All questions are based on a 5-point Likert scale, where 1 is the most 'left-wing'.

4.5.3 Cultural attitudes

Descriptively the differences between these three groups of individuals are stark when analysing views towards homosexuality. There is clear evidence for sorting. Individuals from

graduate parental backgrounds who later go to university have more tolerant starting values than those from non-graduate backgrounds who go to university and those who never attend university. There also appears to be a wider range of views for those from graduate backgrounds. Attending university appears to have a large impact on views on homosexuality, with both those from graduate and non-graduate backgrounds more tolerant when measured in the second time-period.

Figure 4.3 Attitudes to homosexuality by group – prior to university, after university, and changes (1 = most culturally liberal)



Notes: Respondents answer their view to 'Homosexual relationships are always wrong' on a 5-point Likert scale. I flip the scale to make '1' the most tolerant

4.6 Regression findings

4.6.1 EU Integration

The fixed effects models (Table 4.1, Models 1 and 2) fully exploit the panel nature of the BHPS dataset. The model takes account of all observed and unobserved time-constant heterogeneity within individuals. The concerns over a potential sorting effect are mitigated by this fixed-effects design.

In Model 1, the fixed-effects model shows a highly significant ($p<0.01$) effect of university attendance on attitudes towards the EU. As hypothesised, university is associated with an increase of pro-European values. When I introduce an interaction effect, in Model 2, between attending university and whether one has come from graduate social origins, there is no evidence of a greater effect for those from a non-graduate origin. The opposite is observed, the effect from university is larger for those from a higher status parental background.

These main findings are replicated within the random-effects models. Here, I can include time invariant factors in the Model. However, the estimates are a combination of between and within-individual variation. When I introduce an indicator for the respondent's social origins, as observed within the descriptive results section, those with a graduate parent are more pro-European. As observed within Model 3, the effect of university remains highly significant and is of a similar magnitude to the fixed-effects Models. Again, when I introduce the interaction effect between background and university attendance, it appears that university has a greater impact on those from higher educational backgrounds.

Table 4.1 Fixed-effects and random-effects models on attitudes towards the European Union

	(1) FE	(2) FE origin int	(3) RE	(4) RE origin int	(5) RE origin/time int
T1 Dummy	-0.382***	-0.357***	-0.338***	-0.340***	-0.362***
	(0.0457)	(0.0503)	(0.0476)	(0.0475)	(0.0524)
Attends University	0.308***	0.201*	0.251***	0.181**	0.196**
	(0.0846)	(0.108)	(0.0733)	(0.0866)	(0.0880)
Uni * Grad Parents		0.302*		0.206	0.107
		(0.156)		(0.135)	(0.166)
Graduate Parent(s)			0.304***	0.261***	0.219***
			(0.0671)	(0.0728)	(0.0831)
T1 * Grad Parents					0.129

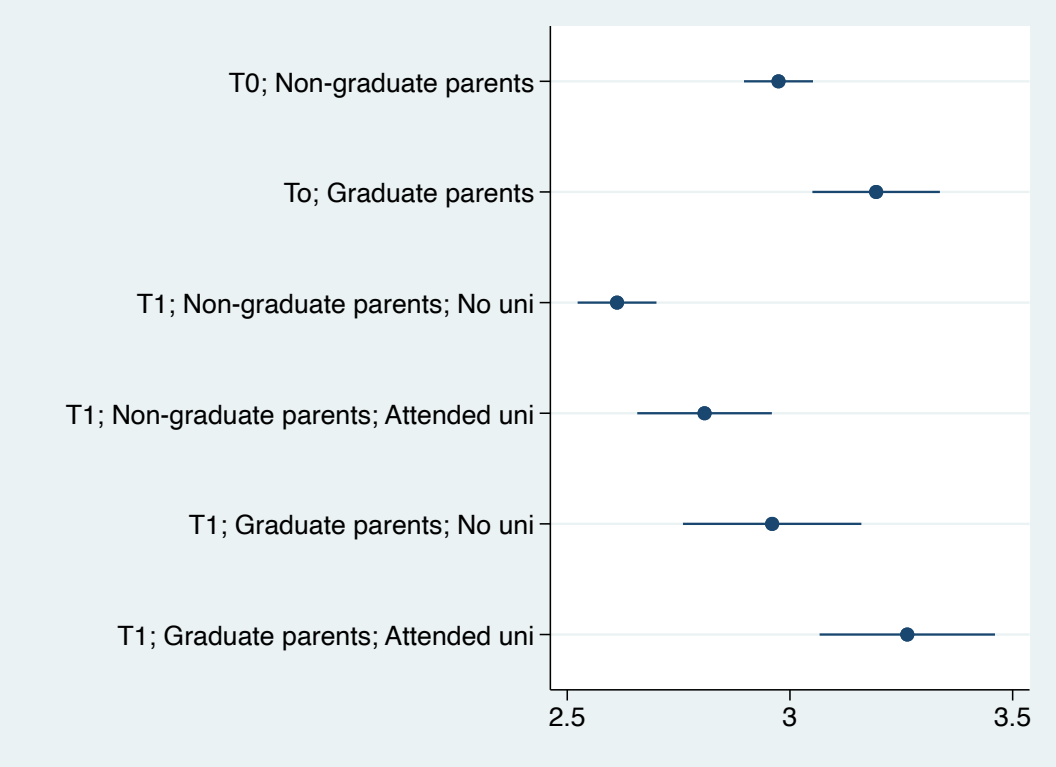
					-0.125
Sex			0.126**	0.127**	0.127**
			(0.0557)	(0.0558)	(0.0558)
Wave Dummies			0.305***	0.303***	0.304***
			(0.0563)	(0.0563)	(0.0563)
Constant	3.038***	3.024***	2.769***	2.779***	2.787***
	(0.0272)	(0.0296)	(0.0521)	(0.0525)	(0.0532)
Observations	1,946	1,666	1,666	1,666	1,666
Individuals	973	833	833	833	833

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The most compelling results are from Models 1 and 2 with the fixed-effects design. This is where I base the causal claim to this paper. That said, the effects from university by social background are most clearly illustrated through predicted attitudes, Figure 4.4. I take these from the random-effects Model 5. The immobile group without a university education are most likely to be anti-European. By contrast, educationally immobile individuals with graduate origins are the most pro-European.

Figure 4.4 Predicted attitude towards the European Union based on time-period, parental education, and university attendance



Notes: Bars are 95% confidence intervals. 5-point Likert scale. 1 "Leave EU", 2 "Stay in EU reduce EU's powers", 3 "Leave things as they are", 4 "Stay in EU increase EU's powers", 5 "Work for single European government"

4.6.2 Economic and Cultural Attitudes

With regards to economic attitudes, as hypothesised, university attendance increases how economically 'conservative' one is. This effect is statistically significant ($p<0.05$) although it is relatively small, 0.07 on the 5-point scale. When I interact social origins, measured by parental education, with the effect of university. There is no statistically significant effect, and the point estimate is substantively small. That is, there appears to be a relatively uniform effect of university for all individuals independent of parental background. I observe an overall time effect, that is controlling for other variables, individuals all become more economically 'conservative' between the two time periods.

I also use the fixed-effects model to estimate the impact of university on attitudes towards homosexuality. Individuals become more likely to disagree with the statement, 'Homosexual relationships are always wrong'. Thus, university makes individuals more culturally tolerant. This effect is statistically significant ($p<0.05$), and the magnitude (-0.198) is relatively large,

both absolutely and compared to the economic model. There is no statistically significant difference by parental education regarding the effect of university.

Table 4.2 Fixed-effects regression models on economic values and homosexuality values

	Economic Values		Homosexuality Values	
		Origin Interaction		Origin Interaction
T1 Dummy	0.0460***	0.0465**	-0.172***	-0.198***
	(0.0176)	(0.0195)	(0.0296)	(0.0321)
Attends University	0.0663**	0.0585	-0.198**	-0.162
	(0.0323)	(0.0404)	(0.0785)	(0.0991)
University * Graduate Origins		0.0289		0.0588
		(0.0576)		(0.156)
Constant	2.619***	2.621***	2.354***	2.348***
	(0.0104)	(0.0113)	(0.0194)	(0.0208)
Observations	2,310	1,970	2,702	2,244
Individuals	1,155	985	1,351	1,122

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

I complement this analysis with random-effects models. This has the additional benefit of allowing time-invariant variables to be incorporated. The model includes additional controls for the wave in which the measurements were taken, sex, and whether one has a graduate parent. For both the economic and cultural values the results are substantively similar. Within the initial models without interactions, it demonstrates that individuals with graduate parents are predicted to be more economically conservative and more culturally liberal in both time periods. When I allow for two sets of interactions between 1) graduate parents and university attendance; and 2) graduate parents and the time-period of measurement, I find no statistically significant effects. Intuitively, those with graduate parents start more economically 'conservative' and more culturally liberal. There is no difference in the effect of university between those with graduate parents and non-graduate parents.

Table 4.3 Random-effects regression models on economic values and homosexuality values

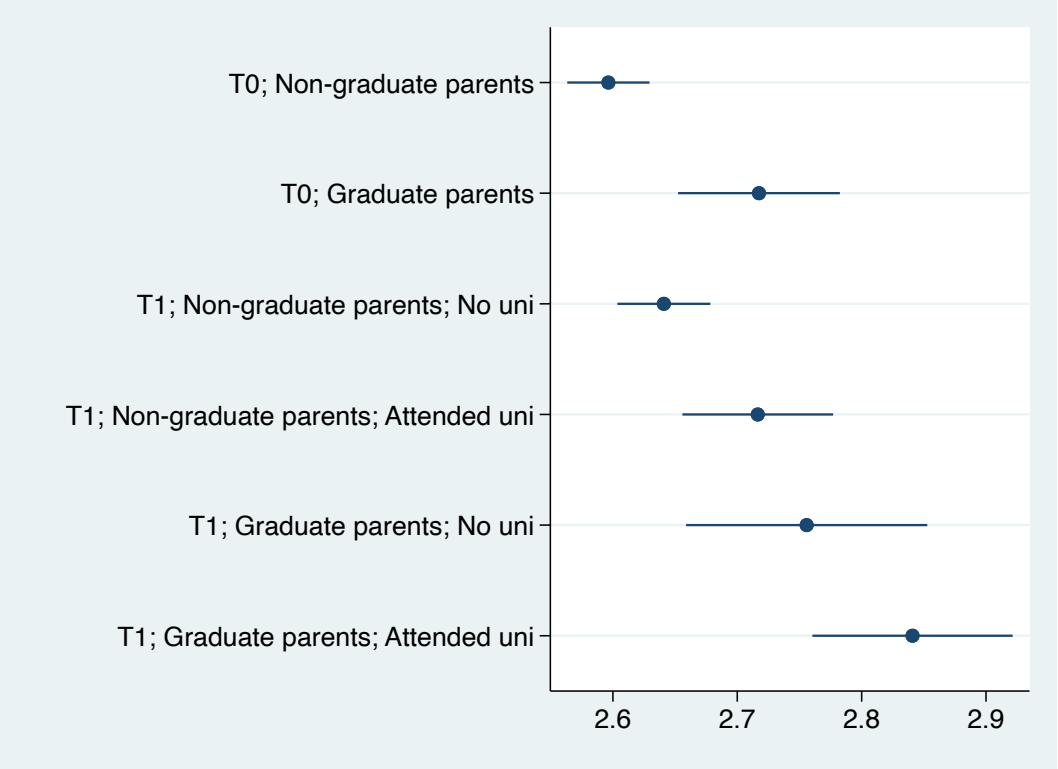
	Economic Values			Homosexuality Values		
		Origin int	Origin/Time int		Origin int	Origin/Time int
T1 Dummy	0.0438**	0.0438**	0.0446**	-0.192***	-0.192***	-0.177***
	(0.0186)	(0.0186)	(0.0200)	(0.0316)	(0.0316)	(0.0350)
Attends University	0.0776***	0.0761**	0.0755**	-0.184**	-0.190**	-0.202**
	(0.0292)	(0.0344)	(0.0348)	(0.0736)	(0.0893)	(0.0901)
Graduate Parent(s)	0.121***	0.119***	0.121***	-0.128*	-0.130*	-0.0985
	(0.032)	(0.0345)	(0.0373)	(0.0733)	(0.0749)	(0.0815)
Uni * Grad Parents		0.00426	0.00960		0.0154	0.0824
		(0.0525)	(0.0702)		(0.143)	(0.158)
T1 * Grad Parents			-0.00628			-0.0795
			(0.0546)			(0.081)
Female	-0.0934***	-0.0934***	-0.0935***	-0.567***	-0.567***	-0.567***
	(0.0256)	(0.0256)	(0.0256)	(0.0597)	(0.0598)	(0.0598)
Wave Dummies	Yes	Yes		Yes	Yes	
Constant	2.645***	2.645***	2.645***	2.690***	2.691***	2.684***
	(0.024)	(0.0242)	(0.0244)	(0.0535)	(0.0536)	(0.0541)
Observations	1,970	1,970	1,970	2,244	2,244	2,244
Individuals	985	985	985	1,122	1,122	1,122

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

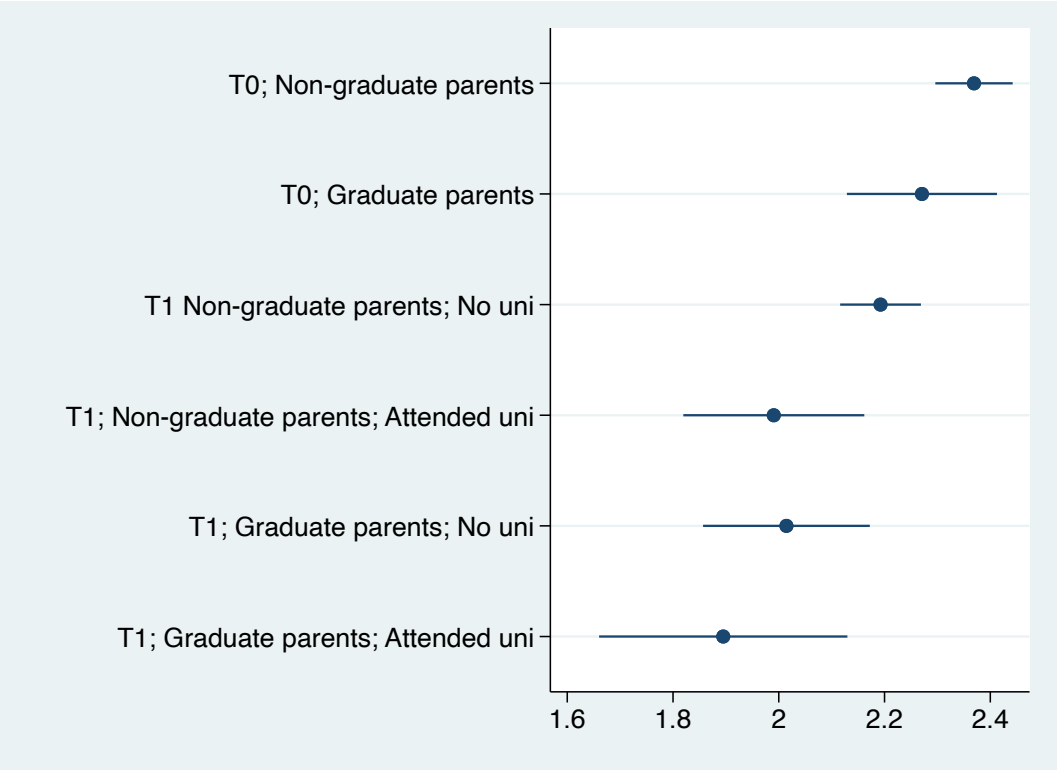
I again plot predicted values based on the random-effects estimates. These predicted scores are based on the third iteration of the models in Table 4.3. This demonstrates graphically what I have already described in relation to the regression table. The least economically 'conservative' are those at T_0, before university, with non-graduate parents. After attending university this group becomes more economically 'conservative'. The most economically 'conservative' group are those individuals from a graduate parental background who have been to university themselves. A similar analysis applies to views on homosexuality, albeit the effects are in the opposite direction, individuals become more tolerant from university attendance. This replicates the findings from the attitudes towards the EU variable.

Figure 4.5 Predicted economic attitude based on time-period, parental education, and university attendance



Notes: Bars indicate 95% confidence intervals. Economic attitudes measured on a 5-point Likert scale where '1' is the most 'left-wing'. It is a composite measure of six questions as described in the data section.

Figure 4.6 Predicted attitude towards homosexuality based on time-period, parental education, and university attendance



Notes: Bars indicate 95% confidence intervals. Homosexuality attitudes measured on a 5-point Likert scale where '1' is the most 'tolerant'.

4.6.3 Summary of findings

I find evidence for four of my five original hypotheses. Regarding hypotheses 1) and 2), at the first point of measurement, the descriptive evidence shows that those who would later go to university were already more pro-European than their counterparts who would not attend university. However, this was predominantly driven by social origins (see also supplementary regression tables for similar evidence). Those from non-graduate backgrounds were similar in attitudes independent of whether they would later go to university.

In terms of hypothesis 3), the effect of university was demonstrated in the fixed-effect models and supported by results from the random-effects models. University is associated with, and I would argue causes, more pro-European attitudes. Regarding 4) there was no evidence that there was 'catch-up' through university. The preferences of the those from non-graduate backgrounds did not change more than those from graduate social origins. If anything, I find that the opposite occurs. Thus, given the different starting points, individuals from a non-

graduate background remain different to those from graduate backgrounds even though university effects the attitudes of both groups.

The findings for the European integration variable are substantively replicated across the economics and cultural analysis. University attendance makes one more economically 'conservative' and more culturally tolerant, as measured by views towards homosexuality. In and of itself, this does not confirm that this is the mechanism behind the increase in pro-European attitudes. However, this does support my hypothesis 5) and theoretical framework, which is suggestive that these mechanisms may at least contribute towards the effect of university on European attitudes.

4.7 Robustness Tests

4.7.1 Decomposing the economic composite questions

In this section, I decompose the economic composite measure into its six components. This acts as both a robustness test but also the precise nature of the question leads to nuances to the overall findings. Table 4.4 details the estimates from the fixed-effects models (the alternative version of the models, fixed-effects with interactions and the two sets of random-effects models, are available in Supplementary Table D.5, Supplementary Table D.6, and Supplementary Table D.7). Attending university is associated with more economically 'conservative' views on all six measures. However, it is only statistically significant in Models 1) 'Ordinary people get their fair share of the nation's wealth' and 5) 'It is the government's responsibility to provide a job for everyone who wants one'. In these two cases, the effect is also substantive, a shift of 0.166 and 0.148 respectively on the 5-point scale.

In my view, the significance of these two questions highlights a further interesting dimension. These questions target two specific aspects that would play further into the theoretical underpinning of individual self-interest. Most obviously, with regards to the question that asks about the government obligation to provide jobs, this question acts as a proxy for re-distributional preferences. Here, an individual who has gone through university increases their future employment prospects and hence expects a lower chance of needing governmental assistance in finding a job in the future. Hence, they become more 'conservative' or 'anti-

statist' on this metric. The mechanism would be subtly different for model 1). Instead, this question asks about the *fairness* of distribution of resources. Embedded within the statement is a sense of the meritocratic nature of society. Individuals who have been to university are more likely to have seen themselves as hard-working and achieved their academic attainment because of a meritocratic society. They thus perceive themselves and other people 'like them' to be 'worthy' of a greater share of the 'nation's wealth'. Contrastingly, the other questions have less of an emphasis on self-interest and are more abstract. Specifically, for the role of private enterprise, state ownership, and trade unions it is not clear that there is a self-interest economic motivation as to why university would change individuals' attitudes. I believe this again is supportive of economics as one of the mediating mechanisms behind the effect of university on individuals' preferences towards European integration.

Table 4.4 Fixed-effects estimates decomposing the six economics questions

	(1) Nation's wealth	(2) Law for rich	(3) Private enterprise	(4) State owned	(5) Gov obligation for jobs	(6) Strong trade unions
T1 Dummy	-0.142***	0.0113	-0.0116	0.00456	0.237***	0.148***
	(0.0343)	(0.0344)	(0.0314)	(0.0346)	(0.0370)	(0.0313)
Attends University	0.166***	0.0231	0.0344	0.0527	0.148**	0.00210
	(0.0644)	(0.0651)	(0.0582)	(0.0638)	(0.0697)	(0.0588)
Constant	2.597***	2.593***	2.852***	2.863***	2.603***	2.179***
	(0.0205)	(0.0207)	(0.0187)	(0.0206)	(0.0222)	(0.0187)
Observations	2,650	2,700	2,422	2,490	2,678	2,624
Individuals	1,325	1,350	1,211	1,245	1,339	1,312

Standard error in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.7.2 'Euroscepticism' in the 2000s and the 'Brexit vote'

The analysis applies to 'Euroscepticism' in the 2000s, I have argued that it is reasonable to assume that this would apply to the 'Brexit vote' a decade later. The fixed-effects model are within-subject estimates and thus inferring implications for a vote a decade later, when the

salience of European integration has increased, may be problematic. I provide a robustness test by linking up the BHPS with its successor *Understanding Society*. I use the same research design but this time taking the initial view from the three waves of the BHPS where respondents were asked their view on the 'Views on UK's long-term policy towards the European Union'. I then match the individual using the longitudinal data to a question in 2016 (the year of the UK referendum), 'Should the UK remain a member of the EU' 1. 'Remain a member of the European Union'; 2. 'Leave the European Union'. This is not without limitations, given the time gap between the questions is quite large, expanding the effect of university into 'allocation' effects. For example, it may be that university has been a contributing factor to entering a high-status occupation, which in turn has influenced views on the European Union. There are other issues: the questions are no longer complete matches, and there is attrition between the BHPS and Understanding Society. That said, the estimates from the fixed-effects model are substantively similar to the models from my main empirical exercises. Moreover, the effect size of university graduation is much larger (given the expanded time window, I can include anybody who graduated rather than just 'attended' university). These results support the inference to the present-day cleavage and further add weight to the main estimates within this paper. See Supplementary Table D.8, Supplementary Table D.9, and the notes for full discussion of these findings.

4.8 Discussion

The main finding from this research is that university education is associated with, and I would argue causes, more pro-European attitudes. This effect is beyond the pure sorting mechanism whereby those who would later attain a university education *already* have more pro-European attitudes prior to going to university. Whilst this effect of university exists for both those from graduate and non-graduate backgrounds, rather than 'catch-up' in preferences, university affects those from graduate origins more. I have also provided evidence that the mechanism behind this effect is that university makes individuals more economically 'conservative' and more culturally liberal.

This finding has two major implications for the existing literature. Firstly, this would help to explain why socially mobile individuals are different to the non-mobile. It seems from the descriptive statistics that those from non-graduate backgrounds shared similar preferences

prior to university whether or not they later go on to university. University affects preferences, moving attitudes of university 'attenders' away from those that remain in a lower educated position and closer to the immobile university educated group. However, given that university does not affect preferences more for those from a non-graduate background relative to a graduate background, they remain different to the immobile graduate group. Thus, it is unclear who this large group of first-generation graduates will form political coalitions with (Ansell and Gingrich 2018).

Secondly, these findings contribute to the literature on Brexit. The data is a decade before the 'Brexit vote', yet there is no reason to believe that the underlying mechanism should have changed. The existing literature acknowledges the importance of the educational divide for 'Brexit' and anti-system voting more generally (Iversen and Soskice 2019). The findings here suggest that this cleavage is not just correlational but in part caused by university education. There are policy implications for the UK government and beyond. The UK has been following a policy of university massification since the late 1980s, the result of which is now a polarised nation. The furthering of this policy and increasing beyond current levels the proportion of school-leavers who attend university can be viewed from a glass half-empty or glass half-full philosophy. The former sees those individuals who do not participate in university education as further marginalised, even more 'left-behind', and their social status denigrated (Gidron and Hall 2017). However, if university has a causal impact on attitudes, increasing the proportion of individuals graduating will allow for a more tolerant society.

The BHPS is a valuable resource for this study, allowing me to exploit the longitudinal nature of the dataset within a recent time-period. However, there are a few limitations. The cohort sizes are limited compared to other studies such as Kuhn et al (2021) in Switzerland and those using the 1970 Birth Cohort Study in the UK (Scott 2022; Surridge 2016). I am also not able to further separate individuals into the specific institution where one studied or the subject taken, which has shown to be important (Surridge 2016; Woessner and Kelly-Woessner 2020). Some nuances would be possible when using the BHPS dataset, but the sample size here would then be an issue. For example, I would like to be able to separate those individuals who have graduated from university compared to those who have only attended or in the process of completion. Additionally, ideally one would take the T_1 attitude measurement immediately after the individual has finished university. It may be that the individual has already started work and thus captures some of the effect from joining a workplace. In this case, Higher

Education has an ‘allocation effect’ (Stubager 2008), whereby university influence selection into the workplace based on graduate level qualifications. I have attempted to minimise this difficulty by keeping the window between T_0 and T_1, as small as possible.

Further work would be to establish this causal mechanism of education on anti-system voting more generally. My work reflected on individuals’ views on ‘Britain’s place within the EU’, albeit a decade earlier than the pivotal ‘Brexit vote’. My finding of an effect of Higher Education is in contrast to similar work in Switzerland on ‘Euroscepticism’ (Kuhn, Lancee, and Sarrasin 2021). I do not necessarily see the findings from my work in contrast to the research in Switzerland. It may be that the different educational and political contexts result in varying importance for university experiences. To take just one factor, it is much more likely that a student in the UK will stay away from home to undertake university study than in most other countries (Donnelly and Gamsu 2018; Hauschildt et al. 2021), which may result in a difference in the attitude formational role of universities. This opens a research stream to understand the importance of national context for the causal impact of education on political preferences.

D Supplementary material

Supplementary Table D.1 Descriptive Statistics

Graduate Parents	
At least one graduate parent	22.69%
No graduate parents	77.31%
Sex	
Male	54.16%
Female	45.84%
University	
Will attend university before aged 23	23.33%
Will not attend university before aged 23	76.67%
Start Wave	
Wave 9	57.25%
Wave 12	42.75%
Attitudes towards EU at start (See also main text)	
Leave the EU	6.78%
Stay in, cut EU power	20.76%
Leave things as they are	43.27%
Stay in, more EU power	20.25%
Form single EU government	8.94%
Attitudes towards EU at Wave 16 (See also main text)	
Leave the EU	13.26%
Stay in, cut EU power	25.28%
Leave things as they are	38.95%
Stay in, more EU power	18.60%
Form single EU government	3.91%
Observations	
Start wave	973
End wave	973

Notes: Descriptive statistics are based on the EU model with fixed effects (no interaction) – Table 4.1 *in the main text*

Supplementary Table D.2, Supplementary Table D.3, and Supplementary Table D.4 provide evidence of sorting. Coming from a family with at least one parent who is a graduate, is associated with a higher tendency to support the EU and more 'right-wing' economic attitudes. Whilst the coefficient points towards more tolerant attitudes towards homosexuality for those from graduate backgrounds, this is not statistically significant.

Similarly, those individuals who will later go on to attend university, are more likely to support the EU, have more 'right-wing' economic views, and have significantly more tolerant attitudes towards homosexuality.

Supplementary Table D.2 OLS regression, sorting by parental background and future university attendance – attitudes towards the EU

	Parental background	Future university	Parent*Uni interaction
Graduate parent	0.223***		0.325***
	(0.0831)		(0.103)
Will attend uni		0.173**	0.305***
		(0.0782)	(0.0986)
Graduate Parent # Attend uni			-0.400**
			(0.177)
Sex (Base: male)	0.130*	0.0888	0.113
	(0.0698)	(0.0650)	(0.0699)
Wave Dummy	Yes	Yes	Yes
Constant	2.762***	2.812***	2.691***
	(0.0596)	(0.0557)	(0.0637)
Observations	833	973	833
R-squared	0.041	0.030	0.052

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Graduate parent is operationalised by either parent going to university. Attitude towards the EU is captured from respondents' view on what 'UK long term policy should be'

in relation to the European Union. Answers are on a 5-point scale: 1 "Leave EU", 2 "Stay in EU reduce EU's powers", 3 "Leave things as they are", 4 "Stay in EU increase EU's powers", 5 "Work for single European government"

Supplementary Table D.3 OLS regression, sorting by parental background and future university attendance – economic attitudes

	Parental background	Future university	Parent*Uni interaction
Graduate parent	0.119***		0.155***
	(0.0361)		(0.0544)
Will attend uni		0.0497*	0.0377
		(0.0294)	(0.0374)
Graduate Parent # Attend uni			-0.0812
			(0.0753)
Sex (Base: male)	-0.124***	-0.117***	-0.124***
	(0.0291)	(0.0269)	(0.0292)
Wave Dummy	Yes	Yes	Yes
Constant	2.662***	2.669***	2.651***
	(0.0258)	(0.0240)	(0.0278)
Observations	985	1,155	985
R-squared	0.044	0.031	0.046

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Graduate parent is captured by either parent going to university. Economic attitude is a composite of six variables as described in the main text (see also notes to Supplementary Table D.5*).*

Supplementary Table D.4 OLS regression, sorting by parental background and future university attendance – homosexuality attitudes

	Parental background	Future university	Parent*Uni interaction

Graduate parent	-0.0984		0.0748
	(0.0854)		(0.105)
Will attend uni		-0.545***	-0.558***
		(0.0763)	(0.0990)
Graduate Parent # Attend uni			-0.121
			(0.180)
Sex (Base: male)	-0.620***	-0.658***	-0.602***
	(0.0699)	(0.0623)	(0.0684)
Wave Dummy	Yes	Yes	Yes
Constant	2.727***	2.851***	2.813***
	(0.0601)	(0.0531)	(0.0611)
Observations	1,122	1,351	1,122
R-squared	0.067	0.111	0.109

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Graduate parent is captured by either parent going to university. Dependent variable is 'Homosexual relationships are always wrong'. Respondents answer the question on a 5-point Likert scale 'Strongly agree' to 'Strongly disagree'. I flip the scale to make it in-line with the economic variable, 'liberal' to 'conservative'

Supplementary Table D.5 Decomposing the six economics questions, alternative specification – Fixed effects with interaction

	Nation's wealth	Law for rich	Private enterprise	State owned	Gov obligation for jobs	Strong trade unions
T1 Dummy	-0.122***	0.0245	-0.0128	-0.00423	0.239***	0.120***
	(0.0380)	(0.0386)	(0.0349)	(0.0393)	(0.0414)	(0.0344)
Attends University	0.205**	-0.0198	-0.0117	0.0559	0.180**	0.0285
	(0.0805)	(0.0826)	(0.0734)	(0.0817)	(0.0882)	(0.0727)
Uni * Grad Parents	-0.105	0.123	0.121	0.0407	-0.0406	-0.0260
	(0.116)	(0.118)	(0.105)	(0.116)	(0.127)	(0.104)
Constant	2.580***	2.597***	2.854***	2.855***	2.604***	2.210***

	(0.0222)	(0.0227)	(0.0204)	(0.0228)	(0.0243)	(0.0201)
Observations	2,224	2,254	2,058	2,104	2,230	2,198
Individuals	1,112	1,127	1,029	1,052	1,115	1,099

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The dependent variables are as follows: a) Ordinary people get their fair share of the nation's wealth; b) There is one law for the rich and one for the poor; c) Private enterprise is the best way to solve the UK's economic problems; d) Major public services and industries ought to be in state ownership; e) It is the government's responsibility to provide a job for everyone who wants one; f) Strong trade unions are needed to protect the working conditions and wages of employees.

Supplementary Table D.6 Decomposing the six economics questions, alternative specification – Random effects

	Nation's wealth	Law for rich	Private enterprise	State owned	Gov obligation for jobs	Strong trade unions
T1 Dummy	-0.102***	-0.0124	-0.0176	0.00656	0.257***	0.0974***
	(0.0359)	(0.0368)	(0.0326)	(0.0368)	(0.0394)	(0.0328)
Attends University	0.102*	0.146**	0.0492	0.0382	0.108*	0.0892*
	(0.0549)	(0.0578)	(0.0482)	(0.0547)	(0.0615)	(0.0520)
Graduate Parent	0.0741	0.300***	0.0403	0.0180	0.159**	0.146***
	(0.0527)	(0.0585)	(0.0434)	(0.0510)	(0.0620)	(0.0553)
Sex	-0.0470	-0.0816*	-0.171***	-0.0261	-0.0979**	-0.101**
	(0.0418)	(0.0464)	(0.0344)	(0.0405)	(0.0493)	(0.0439)
Wave Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.625***	2.643***	2.915***	2.889***	2.597***	2.165***
	(0.0405)	(0.0444)	(0.0338)	(0.0395)	(0.0470)	(0.0416)
Observations	2,224	2,254	2,058	2,104	2,230	2,198
Individuals	1,112	1,127	1,029	1,052	1,115	1,099

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes in Supplementary Table D.5

Supplementary Table D.7 Decomposing the six economics questions, alternative specification – Random effects with interaction version 2

	Nation's wealth	Law for rich	Private enterprise	State owned	Gov obligation for jobs	Strong trade unions
T1 Dummy	-0.102***	-0.0126	-0.0187	0.00629	0.258***	0.0987***
	(0.0359)	(0.0368)	(0.0326)	(0.0369)	(0.0394)	(0.0329)
Attends University	0.110*	0.139**	0.0257	0.0326	0.133*	0.132**
	(0.0645)	(0.0682)	(0.0565)	(0.0641)	(0.0725)	(0.0612)
Graduate Parent	0.0802	0.295***	0.0231	0.0139	0.177***	0.176***
	(0.0580)	(0.0636)	(0.0485)	(0.0567)	(0.0674)	(0.0596)
Uni * Grad Parents	-0.0258	0.0197	0.0714	0.0169	-0.0743	-0.123
	(0.101)	(0.106)	(0.0899)	(0.101)	(0.113)	(0.0944)
Sex	-0.0471	-0.0816*	-0.171***	-0.0261	-0.0980**	-0.101**
	(0.0418)	(0.0464)	(0.0344)	(0.0405)	(0.0493)	(0.0438)
Wave Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2.624***	2.645***	2.919***	2.890***	2.593***	2.158***
	(0.0409)	(0.0447)	(0.0342)	(0.0399)	(0.0474)	(0.0419)
Observations	2,224	2,254	2,058	2,104	2,230	2,198
Individuals	1,112	1,127	1,029	1,052	1,115	1,099

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes in Supplementary Table D.5

Supplementary Table D.8 and Supplementary Table D.9 show regressions where I link individuals from the BHPS to Understanding Society. I use attitudes towards the EU in the same way to main text and then link it to voting in the 2016 United Kingdom European Union membership referendum ('Brexit'). Given the referendum vote was binary 'Leave' versus

'Remain', I recode the 5-point Likert scale for EU attitudes in the BHPS as a binary variable. Two alternative operationalisations of this are offered below. The specification is a fixed effects linear probability model. The model suggests that university attendance increases the likelihood of voting 'Remain'. In the first specification this is by 15.9 percentage points and 19.4 percentage points in the latter.

These effects are somewhat larger than in the attitudes towards the EU, main analysis. This is perhaps unsurprising as discussed in the main text.

Supplementary Table D.8 Fixed effects model linking individuals' attitudes to Brexit voting (coding alternative 1)

	Brexit
T1 Dummy	-0.350***
	(0.0248)
Attends University	0.159***
	(0.0418)
Constant	0.926***
	(0.0141)
Observations	1,306
Individuals	653

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Brexit support is from wave 8 of Understanding Society, coded as: 0 'Leave'; 1 'Remain'. I operationalise EU support from the BHPS to a binary coding 0 'Leave' as 'Leave the EU', and 1 'Remain' as any of the following response 'Stay in, cut EU power', 'Leave things as they are', 'Stay in, more EU power', or 'Form single EU government'

Supplementary Table D.9 Fixed effects model linking individuals' attitudes to Brexit voting (coding alternative 2)

	Brexit

T1 Dummy	-0.163***
	(0.0306)
Attends University	0.194***
	(0.0516)
Constant	0.727***
	(0.0174)
Observations	1,306
Individuals	653

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Brexit support is from wave 8 of Understanding Society, coded as: 0 'Leave'; 1 'Remain'. I operationalise EU support from the BHPS to a binary coding 0 'Leave' as 'Leave the EU', or 'Stay in, cut EU power' and 1 'Remain' as any of the following response, 'Leave things as they are', 'Stay in, more EU power', or 'Form single EU government'

5 The long shadow of local decline: Birthplace economic conditions, political attitudes, and long-term individual economic outcomes in the UK

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Abstract

Does growing up in a high-unemployment area matter for individual economic and political outcomes? Despite a significant focus upon the links between place of residence, life outcomes and political attitudes of individuals, there is less evidence on how local economic conditions at birth shape individual wages and political attitudes over the long-term. This paper links the British Household Panel Survey (BHPS) micro data from English and Welsh respondents with historic localised information on unemployment. Our results, which control for composition effects, family background, and sorting of people across places, show that being born into a high-unemployment Local Authority has a significant, long-term impact on individual's economic outcomes, decreasing earnings in adulthood. Even accounting for individual economic outcomes, being born into a Local Authority of high unemployment makes individuals more economically left-wing, with a greater belief in an obligation for the government to provide jobs, but also less culturally tolerant. These results underline the importance of policy solutions which address the geographical concentration of economic disadvantage.

5.1 Introduction

There is widespread concern about high levels of spatial inequality in income and employment across the advanced world (Evenhuis et al. 2021; McCann 2017). Since the end of the Twentieth Century, many rich countries have experienced a growing divergence in employment patterns and income differentials, with economic growth and jobs increasingly concentrated in a few 'successful areas' where workers can benefit from agglomeration

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economies and better opportunities. Similarly, a growing amount of research cutting across social sciences has highlighted the importance of place in shaping political attitudes and behaviours. Yet, despite the prevalent focus upon how 'place' correlates with income differentials (Baum-Snow and Pavan 2012; D'Costa and Overman 2014; Glaeser 2012; Iammarino, Rodriguez-Pose, and Storper 2019), individual attitudes (Abreu and Jones 2021; Kenny and Luca 2021), and voting preferences (Colantone and Stanig 2018, 2019; Dijkstra, Poelman, and Rodríguez-Pose 2020; Lee, Morris, and Kemeny 2018), less is known on the extent to which growing up in a 'lagging behind' or declining area impacts individuals' outcomes over the long term. Existing evidence tends to be based on the United States and focus on adulthood outcomes, such as earnings, college attendance, and marriage rates (Chetty and Hendren 2018). We contribute new evidence from the United Kingdom, going beyond adulthood outcomes to attitudes and voting behaviour.

Drawing on the literatures on neighbourhood effects and on political socialisation, which show that early-life experiences can significantly shape political preferences for an individual's whole life (Grasso et al. 2019; Holbein 2017; Neundorf and Soroka 2018; O'Grady 2019), we empirically explore whether being born in an area of high-unemployment has a long-term effect on an individual's economic and political outcomes. We contribute to a developing body of work that shows how birthplace affects labour market outcomes in adulthood, described by the Social Mobility Commission in the UK as the 'long shadow of deprivation' (Carneiro et al. 2020). For example, in the US, using rich administrative data, Chetty et al. (2014) show pronounced differences in children's social mobility across US Commuting Zones, in part determined by local factors such as ethnic segregation. Similarly, in the UK, Bosquet and Overman (2019) show how those born in large cities experience higher earnings than those born in other locations, such as smaller cities, towns, or the countryside.

Our empirics combine two datasets: the British Household Panel Survey (BHPS) and the Vision of Britain (VoB).[28] The high-quality individual-level panel data from the BHPS allows us to track a large sample of British individuals from 1991 to 2008. This strategy allows us to control for individual sorting (Combes, Duranton, and Gobillon 2008), and to disentangle 'compositional' from 'contextual' effects (Maxwell 2019). Importantly, we have information

[28] This work is based on data provided through www.VisionofBritain.org.uk and uses historical material which has been re-districted by the Linking Censuses through Time system, created as part of ESRC Award H507255151 by Danny Dorling, David Martin and Richard Mitchell.

on birthplace, which we combine with the VoB's historical census-based unemployment data using time-consistent Local Authority boundaries.

We focus on the UK, which has one of the highest levels of regional inequality of any developed country (McCann 2017). These disparities have persisted for decades, so those working and voting today grew up in heterogenous circumstances, depending on where they happened to be born. The UK has been frequently cited as a country where birthplace matters in the media and academic scholarship. Moreover, British politicians are acutely aware of the 'geography of discontent' (McCann 2020) and prioritise pledges to remove the perceived 'penalty' of birthplace as a barrier to success. This is only exemplified further by the latest Conservative government's promise to 'level-up' those areas which have been 'left-behind'.

Our results highlight how the effects of 'place' are engrained in the formative years of childhood, proxied by place of birth. A high level of unemployment in one's birthplace, captured at the level of Local Authority districts, decreases adulthood earnings, and makes one more 'economically left-wing' – that is, having a stronger belief in an obligation for the government to provide jobs – and to a lesser extent, less progressive on post-materialist cultural issues related to family life and individual freedoms. Potentially because of these mechanisms, survey respondents who grew up in high unemployment areas are less likely to support Britain's centre-right Conservative Party. In short, high levels of local unemployment at birth have a long-term impact over the life course.

Concerningly for current and future workers' earning prospects, these effects are most evident in the latter periods of our study – i.e., for those individuals born in the 1970s. This is an era when a mix of globalisation, technological change, and macro-policy choices have generated a 'new geography of jobs' (Moretti 2013), characterised by the concentration of opportunities in a few core areas – frequently large urban agglomerations – and a significant rise in unemployment across many former industrial regions. For example, accounting for a broad array of individual socio-demographic factors, geographic sorting, as well as current place of residence, our model predicts that an individual born in the 1970s in East Hertfordshire (a low unemployment district) would earn £2,500 more than their peer in Liverpool (a high unemployment district). The pattern of high unemployment and regional inequality in the 1970s continued through the next two decades (and to a lesser extent persists today). This

highlights a potentially worrying prospect for individuals born in the 1980s and early 1990s in areas of high unemployment, who are yet to reach the peak of their careers.

Overall, our research makes three main contributions. First, we add to the literature in economic geography and urban economics debating the importance of 'people' versus 'place', and discussing the rationales for 'place-sensitive' policies (Iammarino, Rodriguez-Pose, and Storper 2019). Concerns about regional inequality are not new, and have sparked a lively discussion on whether place-based policies to redress them are needed (Barca, McCann, and Rodríguez-Pose 2012; Ehrlich and Overman 2020; Iammarino, Rodriguez-Pose, and Storper 2019; Kline and Moretti 2014; Partridge et al. 2015). Disparities between rich and poor areas are increasingly seen as an important national economic problem, with lagging areas representing a 'waste' in terms of economic potential (Garcilazo and Oliveira Martins 2015), and regional economic divergence being a growing 'threat' to balanced economic progress (Iammarino, Rodriguez-Pose, and Storper 2019). Similarly, spatial inequality has ethical ramifications, because it undermines the principle of equality of opportunities, and it is also increasingly seen as a political problem. For example, the wave of political disenchantment experienced by many rich countries since the mid-2010s has been explained as a 'geography of discontent' (McCann 2020) or as a 'revenge of places that don't matter' any longer (Rodríguez-Pose 2018). Our analysis contributes to this debate and shows that the effects of living in 'places that don't matter' go beyond one's current residence, extending to birthplace. As far as we are aware, this is the first study to show that local unemployment at time of birth influences long-term economic outcomes and political attitudes, adding to a growing field analysing the importance of birthplace for adulthood outcomes.

Second, we contribute to the literature in political science and sociology on political socialisation, showing that the effects of birthplace extend both to earnings and to political attitudes and preferences. We build on these different strands of literature, and argue that, when exploring the effects of early-life experiences on later outcomes, it is important to consider both individual earnings *and* political attitudes together. Birthplace affects income and later life outcomes, which in turn may well influence attitudes and political behaviour. However, we find an additional effect even when controlling for income, occupation, and education. More generally, we contribute to the field of political socialisation, adding birthplace-based effects to a field which emphasises the importance of formative years, for example through

cohort effects (Grasso et al. 2019) and the welfare regime one grew up in (Neundorf and Soroka 2018).

Third, our results also provide new evidence for scholars and analysts interested in Britain's politics and its evolving electoral landscape, particularly in the light of the results of the 'Brexit' referendum to leave the European Union. A frequent narrative to explain the recent electoral advancements of the Conservative Party (the 'Tories') in former strongholds of the centre-left Labour party is that the Conservatives have tapped into the resentment of previously pro-Labour individuals living in 'left-behind' places. The current Conservative government's initiative of 'levelling up' territorial inequalities implicitly addresses the findings of this paper, as they target voters' discontent and attempt to become the party benefitting from the broader realignment of the electorate (W. Jennings, Mckay, and Stoker 2021).

The paper is structured as follows. The following section presents the debate within the context of the two literatures to which this paper speaks – the 'people' versus 'place' debate, and political socialisation – and then develops our theoretical foundations and hypotheses. In section 3, we discuss the case selection for this work, the UK. Section 4 outlines the data used, followed by the methodological approach in section 5. We then present our main findings, supported with a section of robustness checks. Finally, our concluding discussion outlines the implications of these findings in relation to 'place-based' policy debates and avenues for further research.

5.2 Birthplace and life outcomes: a conceptual framework

5.2.1 Place and contextual individual outcomes

In recent decades, different disciplines have explored potential links between place and contextual individual outcomes. With respect to socioeconomic outcomes, we draw on three key strands of research. The first one relates to the body of work carried out by geographers and other regional scholars on regional inequality. After decades of slow but progressive inter-territorial convergence in personal income and employment levels, since the end of the Twentieth Century spatial disparities have, across many advanced economies, been on the rise again (Ehrlich and Overman 2020; Evenhuis et al. 2021; Iammarino, Rodriguez-Pose, and

Storper 2019). While the geography of territorial inequality is complex (cf. McCann 2017) – that is, it depends on the scales of analysis and the countries being studied, many commentators have underlined how, across many rich economies, material prosperity and jobs are increasingly concentrated in a few 'successful areas' where workers can benefit from economies of agglomeration and network effects (McCann 2008). In policy discussions, different approaches to addressing regional inequality have led to a contraposition between 'space-neutral' and 'place-based' approaches to addressing territorial inequality (Barca, McCann, and Rodríguez-Pose 2012). While, recently, this stark divide has been bridged (cf. Iammarino, Rodriguez-Pose, and Storper 2019), a 'place-sensitive' approach assumes that the social, cultural, and institutional characteristics of the geographical context where individuals live are important in explaining the developmental potential of territories and, through the effect of externalities, of individual persons who live in them (Barca, McCann, and Rodríguez-Pose 2012).

Second, since the early 2000s a rich body of empirical work grounded in urban economics has specifically measured the positive effect of living in more productive places – primarily large urban agglomerations – on individual earnings (for a review, see Puga 2010; Rosenthal and Strange 2004). De la Roca and Puga (2017) further argue that such 'urban wage premium' is not static but, instead, is a function of the time spent in large cities. Exploiting Spanish data, they show that the longer workers live in more productive places, the more they accumulate valuable experience.[29] Importantly, this strand of literature has attempted to distinguish between composition and contextual effects, that is, between spatial heterogeneity in observed outcomes explained by the unequal distribution of individuals with different observable/unobservable characteristics, and the specific role of place in contextually shaping individual outcomes.

A third strand of research cutting across economics, sociology, and urban studies specifically explores the role of small-scale neighbourhoods in influencing residents' socioeconomic outcomes. Stemming from seminal contributions such as Wilson's (2012 [1987]) – who argues that neighbourhood influences are essential to understand the persistence of poverty in American inner cities, the literature trying to measure potential socioeconomic spill-over

[29] By contrast, D'Costa and Overman (2014) suggest that, in the British context, the 'urban wage growth premium' is not driven by the time spent in more productive places, but simply by the increase in wage occurring when workers move to a larger location.

effects at a micro-geographical scale has expanded significantly. This body of work has been frequently divided between qualitative and quantitative studies, with the former showing more consistent and stronger support in favour of the existence of neighbourhood effects (van Ham and Manley 2012). Quantitative studies, by contrast – and in line with the literature on 'urban wage premia', have engaged in a lively empirical debate on 'place' versus 'people', i.e. on how to disentangle contextual from composition effects (Bolster et al. 2007; Graham 2018). In spite of these empirical challenges – and with few contrasting views (e.g. Oreopoulos 2003) – small-scale neighbourhoods are overall assumed to affect their residents because of differences in local public finance, social networks, peer group pressure, and the influence of role models (Durlauf 2004).

More broadly, place has been associated not only with individual socioeconomic outcomes, but also with political attitudes and behaviours. If during much of the Twentieth Century political scientists frequently tended to explain political dynamics and the cleavages of industrialised democracies drawing on economic issues, class position, and attitudes towards the role of the state in society (Lipset and Rokkan 1967), the last decades have witnessed a resurgence of interest towards other forms of group identity and, in particular, the role of geography (inter alia: Glaeser and Ward 2006; Kenny and Luca 2021; Kriesi 2010). The recent wave of political disenchantment experienced by many established democracies has indeed been explained as a 'geography of discontent' (McCann 2020) or as a 'revenge of places that don't matter' any longer (Rodríguez-Pose 2018). Where one lives has been shown to correlate with voting patterns, particularly the tendency to vote for anti-system parties. The areas that are 'left-behind' are the mainstay of anti-system voting, highlighted, for example, through the case of Brexit in the UK (Goodwin and Heath 2016). Where studies differ is on what factors determine 'feeling left-behind', varying from suffering because of relative economic decline (Dijkstra, Poelman, and Rodríguez-Pose 2020; McCann 2020), import competition (Colantone and Stanig 2018), exposure to austerity (Fetzer 2019), and rising house prices (Adler and Ansell 2020). However, these studies all draw on the hypothesis that individuals express resentment because of poor or declining local conditions, rather than the national context (Reeves and Gimpel 2012).

Beyond anti-system voting, there is increasing evidence on the correlation between place of residence and attitudes. Residents of large cities are more 'cosmopolitan' (Huijsmans et al. 2021; Iversen and Soskice 2019), most notably in their attitude towards immigration (W.

Jennings and Stoker 2019) and global integration (Kenny and Luca 2021). The importance of place is not just relevant for the urban-rural divide. For example, other spatial dimensions such as local deprivation have been linked to status anxiety and area-contextual grievances (Botton 2005). As described in detail in Salomo (2019), 'bad' socio-economic conditions, such as high unemployment rates, can lead to the feeling of 'one being next' inline to 'lose out', like many others already have in their local area. This anxiety is often expressed through ethnocentric attitudes and vented via political discontent (Sobolewska and Ford 2020).

While the literature on place and individual attitudes has grown substantially, there is still however a lively debate on whether the differences observed across places are contextual or if, instead, they are purely compositional. Exploring European's attitudes towards immigration, Maxwell (2019, 2020) finds that differences in cosmopolitan attitudes across urban and rural areas are rather a function of the type of people that live in cities. These individuals tend to be more highly educated and in professional occupations. In Maxwell's view, it is these compositional effects rather than any substantial 'place effect' per se.

Research from the US has suggested that composition effects may be amplified by demographic sorting, either because of the increased concentration of high-skill jobs in core areas (Keuschnigg, Mutgan, and Hedström 2019) – in turn attracting younger, more educated, and in general more progressive individuals – or because of 'political homophily', that is, voters' likelihood of moving to areas with a higher presence of people sharing similar political beliefs (Bishop and Cushing 2009; Gimpel 1999). In relation to vote choice in the UK, there is evidence that 'movers' have limited political assimilation into their new area (Gallego et al. 2016). Movers to Conservative 'safe' seats were more likely to vote Conservative but there was no similar effect when individuals move to Labour seats.

Overall, if a substantial amount of social science research has explored the contextual nexus between place and individual socioeconomic and political attitudes and outcomes, from a dynamic point of view territorial inequality and the geographical heterogeneity across places may have a significant self-perpetuating effect. The literature causally identifying this issue is, however, scarcer. Even among studies exploring 'neighbourhood effects' – which have explicitly tried to assess the extent to which small-scale areas affect individual socioeconomic variables, a frequent tendency is to analyse the instantaneous impact of single point-in-time measurements of neighbourhood environments on residents' outcomes. However, as reminded

by van Ham and Manley (2012), the *amount of time* an individual spent in an area is key to understand any potential effect of place. Drawing on the political socialisation literature, we argue that the debate over compositional versus place effects may be missing a key component, and that, instead, the effects of place may come from much earlier in one's life – e.g., from childhood – when one forms lifelong attitudes and preferences.[30]

There is a growing sub-field on the effect of birthplace. A prominent workstream based on large-scale access to historical US tax records, *Opportunities Insight*, has outlined the importance of birthplace for intergenerational mobility (Chetty et al. 2014; Chetty and Hendren 2018). There is also recent work finding similar variation in intergenerational social mobility based on birthplace in the UK (Bell, Bludell, and Machin 2019; Buscha, Gorman, and Sturgis 2021). In causal work based on the *Moving to Opportunities* project in the US, Chetty et al. (2016) show how young children who were randomly moved from high to low poverty neighbourhoods experienced higher earnings and higher college attendance than their peers who remained in the high poverty areas. Again, research in the UK has uncovered similar findings. Carneiro et al., (2020) show that, across Britain, there is a pay gap between those from the most and least deprived families. However, the extent of this gap varies greatly by where one grew up. Some of the area-based characteristics this report highlights are deprivation, lower house price, labour market opportunities, and quality schooling. Similarly, Bosquet and Overman (2019) argue that birthplace may be an important factor in explaining earning differentials, and show that higher birthplace population size is associated with greater adulthood earnings.

5.2.2 Birthplace and political socialisation

Political socialisation, that is, the "possible persistence of orientations derived from the impression years" (M. K. Jennings 2007, 35), has been somewhat rejuvenated in contemporary political science (Neundorf and Soroka 2018; O'Grady 2019). Whilst there is debate over how stable preferences are over one's lifetime (Neundorf and Smets 2017), there is now consensus that formative years are important (Bartels and Jackman 2014; M. K. Jennings 2007).

[30] In the case of this study, we focus on birthplace rather than the more general formative years of childhood due to data constraints. Of course, in many cases, birthplace and childhood residence will be one and the same. This is especially true across Europe, where people mobility is substantially lower than in contexts such as the US.

This formative experience may come from the macroeconomic context in which one grew up. Piketty's (1995) theoretical contribution suggests that growing up in a 'bad' environment changes individuals' perception of the role of luck compared to effort in success. Thus, those individuals who see more deprivation at a young age are more likely to believe that future success or failure is not necessarily due to merit, resulting in a tendency to support more redistribution. We also know that macroeconomic conditions when young impact job choice, and that individuals growing up in recessions tend to choose jobs with high monetary rewards whereas growing up in a boom increases the chance of finding a job with 'meaning' (Cotofan et al. 2021). Similarly, economic depressions in childhood influence the risk-taking propensity in later life (Malmendier and Nagel 2016). Relatedly, research in psychology has long tried to link cross-country variation in psychological traits to factors such as child-rearing practices, motives, and values (for a review, cf. Rentfrow, Gosling, and Potter 2008).

Whilst macro and cohort conditions are core to our argument, much of this existing work addresses country level effects. We argue that local and regional conditions are as important as the national macroeconomic backdrop. In many countries, and particularly the UK, national conditions are of somewhat secondary importance to individuals given the large underlying subnational labour market differentials. Moreover, the socialisation process comes not only from cohort political ideology (as in Grasso et al. 2019), but also from interactions with family, friends, peers at school, neighbours, and other social groups apparent at a meso-level geographical scale. These formative processes ingrain habits and dispositions (Bourdieu 1984) which, in turn, are crucial in the formation of attitudes and preferences for adulthood. Social interactions are overwhelmingly with those who live locally. Individuals may observe friends or families lose their jobs or homes. This is more observable and 'real' than abstract national GDP or unemployment rates reported in the press.

Building on these different strands of literature, primarily focused on the contextual effect of place on individual outcomes and on 'socialisation' respectively, we now turn to our theoretical expectations.

5.2.3 Theory and hypotheses

We see the unemployment rate in the local area as a key indicator of economic precarity. Within the UK's research and policy community, for example, it is used as a part of the method for constructing localised deprivation indices (McLennan et al. 2019) and formed part of the widely used Townsend (1980) deprivation index. There are several mechanisms through which unemployment in one's birthplace may transfer into adulthood outcomes and attitudes.

First, high unemployment in one's birthplace may impact adulthood outcomes through sorting, that is, an intergenerational transmission of characteristics. Parents with lower socio-economic status (measured by occupation or education) are more likely to move to areas with higher levels of unemployment. Most obviously, this may occur as the cost of living in deprived areas is likely to be lower. There is a correlation between parental and child income, and parental social origins and child attitudes (Blanden et al. 2004; Dinas 2014; Jaime-Castillo and Marqués-Perales 2019). Whilst this is undoubtedly a factor, our main analysis controls for parental background (see Supplementary Table E.11 for an assessment of how not including parental characteristics increases the magnitude of our findings).

Second, the impact of seeing those in a near vicinity – especially in one's social network – struggling financially may lead to a sense of affinity (Lupu and Pontusson 2011), or empathy with their plight (Liu, Kuo, and Fernandez-Albertos 2020). This may apply directly by experiencing unemployment in one's household or more broadly in one's area. These attitudes, developed in formative years, are held through to adulthood, making one more 'economically left-wing', that is, favouring redistributive economic policies. Similarly, individuals in these more deprived areas are less likely to develop post-materialistic cultural attitudes (Inglehart 1971; Norris and Inglehart 2019). They are rationally more concerned about economic precarity, and the idea of one 'being next' to succumb to the conditions surrounding them (Salomo 2019). In particular, we expect cultural intolerance to be channelled through attitudes towards gender roles. In those areas where jobs are scarce in childhood, economic 'threat' may result in a reversion to more traditional male 'breadwinner' attitudes. Ideals which again may be maintained in adulthood. In turn, this may have a direct effect on adulthood earnings for women. Countries where there is a greater tendency to believe that men should have priority access to scare jobs also tend to have larger gender pay gaps (Fortin 2005).

Third, areas with high levels of unemployment are also likely to be areas with poorer provision of public services and 'social infrastructure'. Children in these areas may 'miss out' compared

to their more fortunate peers. One can think here in terms of formal education and schooling facilities (Gingrich and Ansell 2014), but also more informally through family and friend networks. These social networks are often seen as crucial for securing 'good jobs' and hence associated with earnings (Friedman and Laurison 2020).

Fourth, it may be that high unemployment conditions changes individuals' perceptions of the importance of luck compared to effort (Piketty 1995). As more people in their local area and social network are unemployed, it may be that these individuals think this is due to 'bad luck' and that the role of effort is limited. In turn, these individuals reduce their effort, which may impact adulthood earnings. Similarly, these individuals would rationally demand more redistribution as they demand insurance given the perceived prominent role of 'bad luck' in labour market outcomes.

Finally, across many countries – and in the UK in particular, a large proportion of individuals are immobile. 32% of individuals within our sample always live in the same district as they were born (authors' calculations). To the extent that unemployment is persistent from childhood to adulthood, it may be that those born in districts with high unemployment face limited prospects as adults. Areas with high unemployment tend to stay that way over time (Figures 1 and 2). Moreover, physically immobile individuals tend to have different views than their mobile counterparts, including a higher tendency to vote for Brexit (Lee, Morris, and Kemeny 2018).

From this theoretical framework we formulate our hypotheses. Hypotheses H.1, H.2, and H.3 follow directly from the above causal mechanisms. Given these expectations, we would thus expect individuals born in high unemployment districts to:

H1: earn less;
H2: be more 'economically left-wing', that is, having a stronger belief in an obligation for the government to provide jobs;
H3: be less progressive on post-materialist cultural issues related to family life and individual freedoms;
H4: be less likely to vote for the Conservative Party than individuals born in low unemployment districts during adulthood.

5.3 Data

To test these hypotheses, we combine individual level data from the British Household Panel Survey (BHPS) with aggregate Local Authority level information from the Vision of Britain (VoB) dataset. The BHPS is an annual panel survey of British households starting in 1991 and running for a total of 18 waves. The BHPS is a nationally representative sample survey with all adult (aged 16 +) household members being interviewed annually. As some panel members leave the sample (either through death, emigration, or other forms of attrition) new panel members were incorporated through the survey period. Our models include both these individuals who were involved at the BHPS's origination and new entrants. Whilst we track individuals through the waves of the BHPS, there is some limited attrition and respondents may not answer every wave, or every question within a wave. Our sample includes all those individuals born and residing in England or Wales. We discard Scotland and Northern Ireland because we are unable to link individuals to Local Authority-level information with sufficient accuracy.

We identify four key dependent variables, namely future earnings, economic attitudes, cultural attitudes, and voting preferences, and operationalise them as follows. First, we observe individuals' gross pay in every wave (individual annual pre-tax income in 1000s of British pounds sterling, deflated to 2005 levels). This is used as one of our dependent variables, and as a control for other dependent variables.[31]

Our main dependent variable for 'economic values' is captured through respondents' views on the survey statement "Government has an obligation to provide jobs". This is answered on a 5-point Likert scale from 1 "Strongly Agree" to 5 "Strongly Disagree". We choose this as our measure of economic preferences for two reasons: first, it is closely aligned to our key independent variable, birthplace unemployment conditions. Second, and most importantly, attitudes towards welfare state support are conventionally treated as integral to left/right

[31] We use the variable *fivr* which includes all labour and non-labour income. We include only those with positive income, excluding those whose response is "proxy/missing" (6% of respondents) and "zero" (4%). We exclude those reporting zero income because we cannot tell for sure if theirs is a response bias or a genuine response. That said, our results differ only marginally when we include zero income responses. Results are available on request.

ideological divides. Furthermore, the other potential economic questions are somewhat dated and/or relate to social rather than economic values.[32]

We then measure post-materialist cultural attitudes through respondents' opposition to homosexuality and support for traditional gender roles (in a similar fashion to Langsæther, Evans, and O'Grady 2021). Both variables are again measured on a 5-point Likert scale. The questionnaire wording is respectively "Homosexual relationships are wrong", and "Husband should earn, wife stay at home". The homosexuality questions are available in six rounds, and the gender questions in nine rounds. To ease comparison, we re-order the scale of all value variables (i.e., some scales are flipped) so that 1 is the most 'left-wing' / 'tolerant' outcome.

Finally, we measure voting preferences as the party one supports. This is available in every round apart from wave 2. This is then coded as a binary variable, Conservative, the major centre-right party, versus any other party.[33] We choose the Conservatives as they were the dominant party in 1991 when the BHPS started, and use a binary outcome for clarity of analysis.

As will be explained in detail in the methodology section below, in the analysis we also include an array of individual-level controls available from the BHPS. Specifically, we consider gross income (when not the dependent variable), age, age squared, BHPS wave, occupation (NSSEC-8 categories), educational attainment (6 categories), parental background measured by father's occupation,[34] gender, year of birth, and ethnicity. The full sample within the BHPS consists of 32,380 individuals observed on average in 7.4 waves. However, after including only those for which we have information on birthplace, current residence, our full list of time-varying and time-variant controls, and participate in at least two waves we are left with a smaller sample. Our dependent variables are available in different rounds, and hence our sample size varies for

[32] In Supplementary Table E.10 we provide results replacing our selected question with the other three available in the BHPS to capture economic variables (A. Heath, Evans, and Martin 1994). Overall, economic variables are available in 7 rounds of the BHPS (Waves 1, 3, 5, 7, 10, 14, and 17).

[33] In Supplementary Table E.8 we replace this coding, replacing Conservatives with Labour versus any other party. The binary party operationalisation allows simple interpretation using a linear probability model.

[34] Alternatively, in Supplementary Table E.3 we provide results when replacing the measure of father's occupation with parental educational attainment. Also available in Supplementary Table E.9 is a version with parental occupation, using the dominance approach i.e. the highest status of either mother or father. Results are substantively similar but there is more missing information for mother's occupation compared to father's occupation.

each respective dependent variable. As an example, in the case of earnings, our main birthplace findings are based on 7,045 individuals observed an average of 8.3 times. Full descriptive statistics are presented in Supplementary Table E.16.[35]

5.3.1 Measuring local level unemployment over time

Our key independent variable is birthplace unemployment. We use data from the VoB project, which reconstructed historical census data to be consistent with modern district boundaries. We use data for England and Wales and, in total, we have information for individuals in 347 Local Authority districts, which are the most meaningful tier of local government across the two nations. We consider each individual Local Authority as a separate spatial unit.[36]

In spatial economics literature, it is common to measure the effect of place on individual earnings by analysing functional spatial units, such as Britain's Travel-to-work areas (TTWAs). It is important to stress however that, in our empirical setting, Local Authorities represent the most reliable spatial unit consistent over time. For instance, TTWAs significantly change across censuses, and attempts to overlap birthplace unemployment information on time-varying TTWAs would lead to distortions affecting the accuracy of our treatment measure.

VoB has unemployment data for every district at each census (which are 10 years apart) going back to 1931. (There is no available data for 1941.) Since we do not have reliable birthplace unemployment data prior to 1931, we exclude from the analysis those individuals born before 1926, in-line with our procedure in matching to other censuses. Importantly, the BHPS provides, for each respondent, their current residence (by Census Area Statistics Wards, which we map onto Local Authorities) as well as their place of birth.[37] We are hence able to input both the unemployment rate for one's current place of residence and birthplace. We use the unemployment rate from the closest census available in VoB. For example, to an individual

[35] For some birthplaces there are relatively few individuals. We check for this in Supplementary Table E.7 by including only those birth regions with more than 20 respondents. Our results remain robust.

[36] Supplementary Table E.13 includes a version of our main findings where we treat London as one single district. The results are similar.

[37] In some cases, nearby birthplaces are merged in the BHPS – presumably to preserve anonymity. There are also some boundary inconsistencies between birthplace districts and VoB due to boundary changes – details are available on request.

born in Tonbridge and Malling in 1957, we input the unemployment rate for that locality from the 1961 census.[38]

The VoB provides us with a relatively long-term perspective on UK regional disparities. Local unemployment rates have varied over time. The 1950s and 1960s were decades of virtually full employment, when the average unemployment rate averaged just 1.6% (Crafts 1995). Moreover, the range of unemployment rates across the Local Authorities within England and Wales was small. At the 1961 Census, the highest rate of unemployment in any Local Authority was 4.22% and only 10 Local Authorities had unemployment rates of over 3%. By contrast, in 1971 the mean unemployment rate across the Local Authorities was 3.66%, with Liverpool experiencing an unemployment rate of over 10%. The situation further worsened in 1981 and 1991 (although, for our empirics, the sample size of individuals born in these latter cohorts is much smaller – as they would be too young for wave 1 of the BHPS). Table 5.1 provides a summary of these unemployment statistics, while Figure 5.1 and Figure 5.2 show how some of the unemployment rates correlated over time.

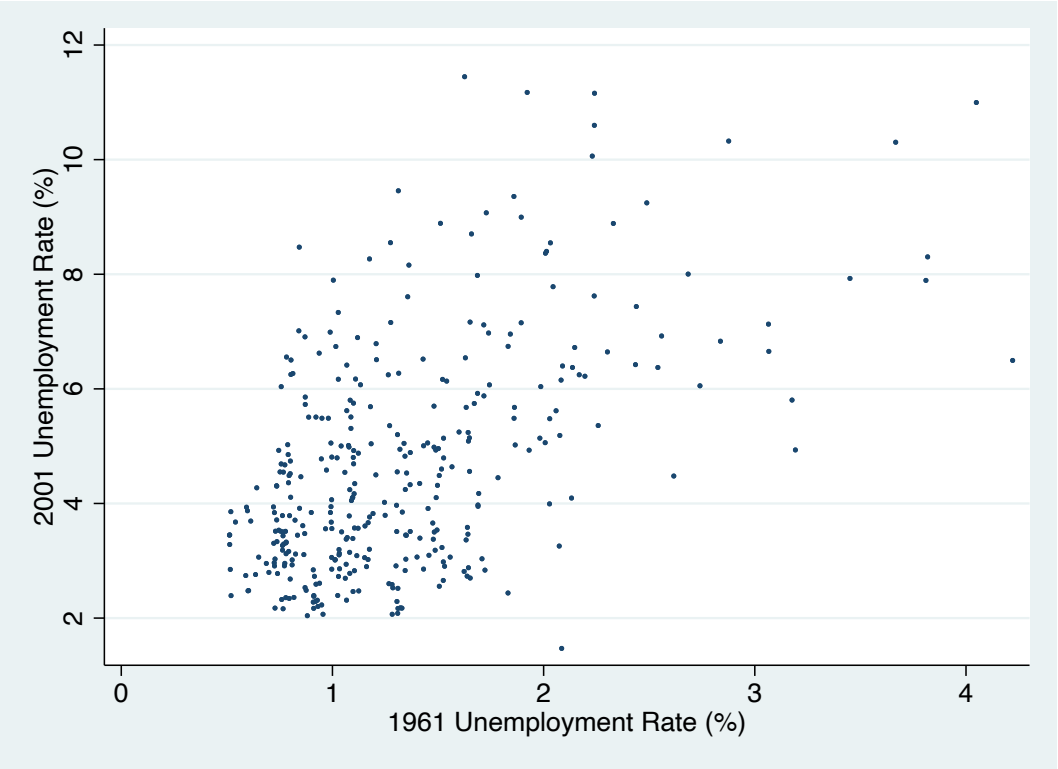
Table 5.1 Summary of unemployment rates, %, by Local Authority, 1931-2011

Census Year	Mean	Std.	Min	Max
1931	9.62	5.09	3.35	33.32
1951	1.85	1.01	0.51	6.91
1961	1.33	0.62	0.51	4.22
1971	3.66	1.29	1.80	10.14
1981	7.80	3.11	3.21	22.17
1991	9.47	3.79	3.04	24.73
2001	4.64	1.97	1.47	11.45
2011	5.77	1.94	1.35	12.00

Note: Based on 347 Local Authorities in England and Wales. Source: VoB.

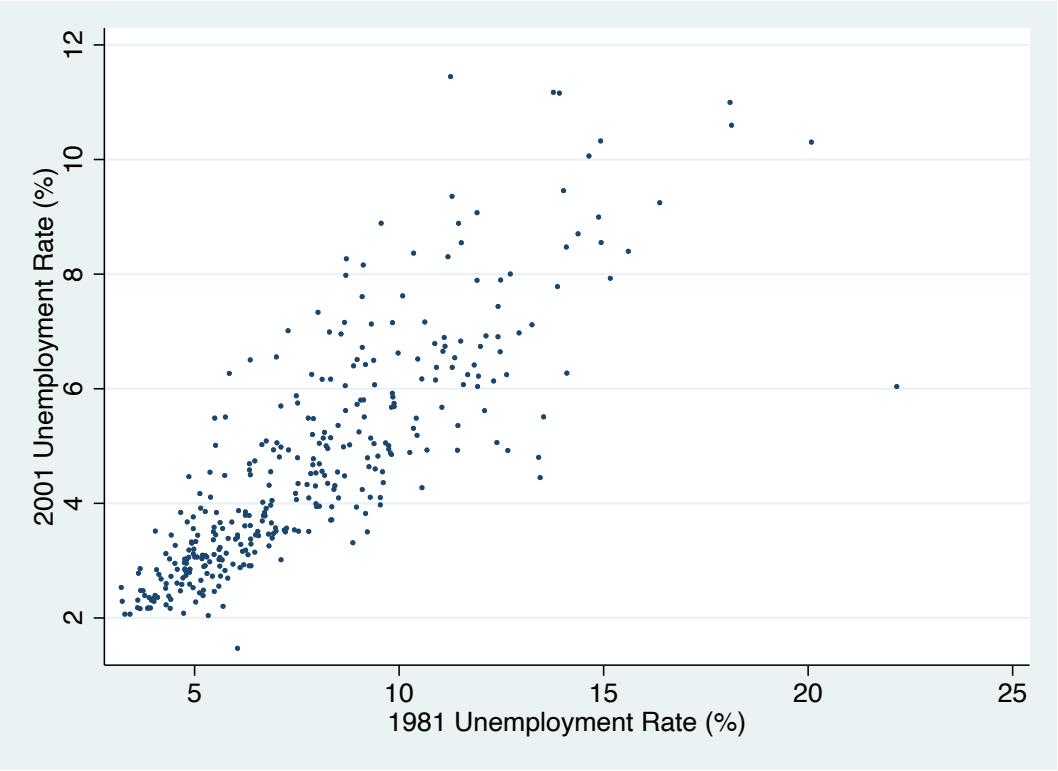
[38] As a robustness check, we also use Norman's (2017) alternative method for constructing consistent-boundary unemployment statistics. Whilst their data are only available back to the 1971 census, results (available on request) are substantively similar.

Figure 5.1 1961 vs 2001 Unemployment rates, by Local Authority



Source: our elaboration on VoB data.

Figure 5.2 1981 vs 2001 Unemployment rates, by Local Authority



Source: own elaboration on VoB data.

The existing literature highlights that the underlying macro environment may be important for political socialisation (Alesina and Fuchs-Schündeln 2007; Grasso et al. 2019). Neundorf and Soroka (2018) show that redistributive preferences are influenced not only by the economic backdrop during childhood but also by the national welfare-policy context at the time (see also Hansen and Stutzer 2021). In our case, the effect of unemployment may differ depending on the macro situation. Our main empirical findings include periods, specifically the years close to the 1961 census, when Britain experienced nearly full employment and low regional inequality. In our main empirical section, we account for this by cross-sectionally controlling for birth year. In the robustness checks, we will then consider how results vary across the decades.

5.4 Empirical strategy

5.4.1 Main analysis

We follow the urban economics literature (Combes and Gobillon 2015) and use a two-step approach, which allows us to estimate the impact of both current residence and birthplace on

our outcomes, while controlling for composition effects based on observables *as well as* unobservable individual characteristics.[39]

In the first-step we regress each of our dependent variables (part of the vector *E*) for individual *i*, currently living in area *a*, at wave *t*, on our vector of individual time-varying characteristics *X*, a wave dummy *W*, the unemployment rate in their current area *U*, an individual fixed-effect (FE) *I* – which, importantly, allows us to control for individual heterogeneity based on unobservable traits, and an error term *e*. We use a fixed value for current residence district unemployment, from the 2001 census (that is, the most recent census before the end of our panel). Thus, the effect of current unemployment is for 'movers' only. We include only those individuals in the regression who have participated in at least two waves, to have estimates of individual fixed-effects for the second-step regression. We regress:

$$E_{it} = \beta' X_{it} + \beta_1 U_{a(i)t} + W_t + I_i + e_{it} \quad (1)$$

This is followed by the second-step regression, where the predicted individual fixed-effects components $\hat{I}$ estimated from equation 1 (net of time-variant individual observables, including current place of residence characteristics) are regressed on the array of individual time invariant variables *T* (parental characteristics, gender, year of birth, and ethnicity), and unemployment at the time of birth in the individual's birthplace *Z*:

$$\hat{I}_i = \beta'^{T_i} + \beta_2 Z_{ai} + e_i \quad (2)$$

The coefficient β_2 is our main objective of interest, and it can be interpreted as the effect of a one percentage point increase in birthplace unemployment on our dependent variables. It's important to stress that including individual fixed-effects in the first step is essential to disentangle sorting effects based on unobservable characteristics, a process widely established in the urban economics literature (Combes and Gobillon 2015). In fact, regressing current outcomes on current place of residence and birthplace would lead to biased estimates, since people sort across space depending on unobserved traits. Even if those traits were uncorrelated

[39] Should we run a single regression with both current Local Authority and birthplace unemployment, the coefficients from our main analysis are substantively similar, and are reported in Supplementary Table E.14. However, the current residence coefficients increase in magnitude compared to the main results, which is in-line with the compositional reasoning for the two-step approach.

to place of birth – e.g. conditioning on parental characteristics, correlation between birthplace and current residence would make the estimation of β_2 inconsistent (Bosquet and Overman 2019).

Whereas the effect from current Local Authority unemployment rate is derived from 'movers' only (to control for sorting), the effect of birthplace is estimated from all individuals. We use linear OLS regression for each dependent variable, even for voting, despite its binary nature. We do so, rather than using logistic or conditional logistic specifications, due to the inherent problems with logistic models with fixed-effects. See Gomila (2021) arguing that linear models are the best strategy in these circumstances.

5.4.2 Cohort analysis

The analysis above aggregates all individuals within the BHPS sample if they are born after 1925. Within these models we include a continuous age control in the first-step regression and a continuous birth year control in the second step. This allows us to control for any idiosyncratic time effect linked to cohort differences, or for cross-sectional common shocks potentially biasing our main coefficient β_2. However, as outlined above, the macroeconomic context in which people are born may be important, and it may hence be useful to explore the heterogeneity of results across different cohorts. Absolute levels of unemployment, and ranges of unemployment between Local Authorities changed significantly depending on the time one was born. For example, the 1930s witnessed relatively high unemployment levels, followed by a "Golden Age" of low unemployment in the 1950s and 1960s, then followed again by a regionally-heterogenous increase in unemployment since the 1970s (Major and Machin 2020).

We argue that those born around 1971 represent the most relevant cohort for our analysis, because they grew up a period when, in comparison to the earlier decades of full employment, unemployment rates started showing a consistent geographical heterogeneity. Besides, given the structure of the BHPS – that is, the fact that it ran between 1991 and 2008 – those born around 1971 constitute a large sample and will have reached their earning peak during the survey. Finally, the 1970s are also more representative of the macroeconomic structural conditions and regional inequality experienced in the following two decades, that is, by those individuals who were born in the late 1970s through to the mid-1990s.

We hence nuance our second-step analysis to individual cohorts. We do this by dropping the year of birth from the list of control variables and, instead, introducing a dummy equal to one for the census year.[40] We then interact this dummy with the unemployment rate in the appropriate Local Authority. The second-step regression equation becomes:

$$I_i = \beta' T_t + \beta_3 Z_i + \beta_4 Z_i * Census_t + e_{it} \quad (3)$$

Where: *I* is the individual fixed-effect, *T* are the time invariant variables (not including birth year but, instead, the nearest census year), *Z* is the unemployment rate at the nearest census year in one's birthplace, and *Z*Census* is the interaction between birthplace unemployment rate and the nearest census year.

5.4.3 Addressing endogeneity in unemployment rates

The empirical approach discussed in Section 5.1 – and, specifically, the inclusion of individual fixed-effects – allows us to control for sorting dynamics. Yet, along with endogeneity in the heterogenous distribution of workers with different 'qualities', a second potential source of concern in the identification of coefficient β_2 relates to the 'quantity' of workers, which may affect labour supply in local labour markets and, hence, unemployment rates. To address this issue, we instrument local unemployment levels. In search of a valid instrument, we revert to historical data. Exploring the clustering of entrepreneurship across Great Britain, Stuetzer at al., (2016) show that the levels of employment share in large-scale industries in the 19th Century are closely linked to proximity to coalfields – once the main energy source for large-scale industrial activities. We draw on their work, and use (log) distance to coalfields to exogenously predict unemployment rates in the current place of residence. Building on the literature on entrepreneurship, Stuetzer at al., (2016) suggest that the presence of large-scale industries such as mining, iron and steel hamper entrepreneurial opportunities, key sources of economic dynamism in the 'post-Fordist' era. Relatedly, since the 1960s most of Britain's traditional large-scale industries have dramatically declined. First-stage estimates confirm our priors (cf. the first-stage F-tests in Supplementary Table E.4). This instrument works through its effect on

[40] Importantly, we still control for cross-sectional common shocks by keeping survey wave fixed-effects in the first-step.

local economic conditions, rather than a partial effect such as impacting directly on attitudes, so we argue it is plausibly exogenous from our dependent variables.

5.5 Results

5.5.1 Main findings

This section presents the first-step results. These regressions (Table 5.3) have an indirect effect on birthplace, as the individual fixed effects form the basis of the second-step regression. In and of themselves, the results have implications for the 'people' versus 'place' literature. An increase in 1 percentage point in the level of unemployment where one currently resides is associated with a reduction in £189 in earnings. However, confirming our priors, according to which any impact of local unemployment on individual attitudes would play through early-life impacts, current residence unemployment does not reach statistical significance at a threshold of $p<0.05$ for any of our other dependent variables. That is, once we control for an array of individual controls, the level of unemployment within one's residence does not affect economic and cultural views, nor the propensity to vote for the Conservative Party. Supporting this, many of the individual controls do reach statistical significance in the direction expected. (These full results are reported in Supplementary Table E.1.)

Table 5.2 First-step regression, effect of current residence unemployment rate: robust OLS results

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Current LA unemployment	-0.189***	-0.0114	-0.00698	-0.00829	-0.00131
	(0.0568)	(0.00768)	(0.00727)	(0.00576)	(0.00172)
Time varying controls	Y	Y	Y	Y	Y
Wave dummy	Y	Y	Y	Y	Y
Observations	84,516	29,309	27,708	40,184	58,677
Number of individuals	10,223	7,296	6,894	8,258	8,087

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculation based on BHPS and VoB.

Notes: The five dependent variables are: Gross income measured in £1000s per year; Government provides jobs; Homosexuality and Gender roles captured on 5-point Likert scale; Voting is binary 1=Conservative, 0=Any other. Unemployment rate is measured by 2001 Local Authority rates. Time varying individual controls include age, age squared, occupation, education (degree, other higher degree, A-Levels, GCSEs, other qualifications, none), income.

The second-step results are then presented in Table 5.3. Birthplace local labour market conditions affect a wide array of life-outcomes. These include earnings, but also economic and cultural attitudes, and political behaviour. Along with birthplace unemployment, in Table 3 we report father's occupation, another key regressor, to allow comparison in magnitude of effect size. The variable includes three categories: "High" are management and professional occupations; "mid" intermediate-level, self-employed and technical occupations; and "low" semi-routine, and routine jobs.[41] (The full regression results, reporting all covariates are available in Supplementary Table E.2).

Table 5.3 Second-step regression, effect of birthplace unemployment rate: robust OLS results

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.0904***	-0.00982**	0.000714	0.0164***	-0.00458**
	(0.0240)	(0.00389)	(0.00407)	(0.00259)	(0.00196)
Father's occupation (base "high")					
"Mid"	-2.702***	-0.177***	0.164***	0.121***	0.00111
	(0.286)	(0.0304)	(0.0329)	(0.0238)	(0.0131)
"Low"	-4.441***	-0.384***	0.258***	0.150***	-0.104***
	(0.299)	(0.0306)	(0.0341)	(0.0251)	(0.0143)
Other time invariant controls	Y	Y	Y	Y	Y
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculation based on BHPS and VoB

[41] Alternatively, in Supplementary Table E.3 we replace father's occupation with a variable capturing parental educational attainments. Results are overall qualitatively similar.

Notes: Dependent variables: Earnings measured in gross earnings in £1000s per year; Government provides jobs, Homosexuality and Gender roles captured on 5-point Likert scale. Voting is binary 1=Conservative, 0=Any Other. Other time invariant individual controls: Sex, birth year, ethnicity. Standard errors are clustered at the birthplace level.

First, a one percentage point increase in the birthplace unemployment rate is associated with a £90 decrease in adulthood annual earnings ($p<0.01$). To take an example, the model predicts that an individual born in Liverpool in 1971 (unemployment rate 10.1%) would earn £741 less than that same individual born in East Hertfordshire (unemployment rate 1.9%), accounting for current residence and our other individual level controls.

Importantly, birthplace unemployment also affects economic attitudes, as growing up in a district with higher levels of unemployment is associated with a greater belief in the government's obligation to provide jobs ($p=0.012$). The effect size is 0.0098 for each one percentage point change, on a 5-point scale. To put this effect size in context, if one was to use the Liverpool versus East Hertfordshire comparison above, the effect size would be approximately half of the difference between 'high' and 'mid' level father's background. 'High' occupations are management and professional occupations; 'mid' intermediate-level, self-employed and technical occupations; and 'low' semi-routine, and routine jobs.

The evidence towards cultural views is mixed. On average, an individual born in an area with high unemployment believes less in gender role equality ($p<0.001$), but we do not detect a statistically significant impact on views towards homosexuality. Regarding gender roles, the effect size of birthplace unemployment compares again, approximately, to the impact of father's occupation.

Finally, we analyse the effect on political party preferences. An additional percentage point in the unemployment rate is associate with a 0.46% reduction in the support for the Conservative party ($p=0.02$). Again, this effect is substantial and is comparable, in magnitude, to father's occupation.

In summary, our second-step regressions show that increased birthplace unemployment has a negative effect on individuals' life earning outcomes, and it also impacts their attitudes, making these individuals more 'economically left-wing' and culturally more traditional with respect to

gender roles. Potentially, these factors mediate their political preferences as well, considering how higher birthplace unemployment is associated with lower levels of support for the Conservative Party.

5.6 Robustness checks

5.6.1 Cohort effects

In this section we test the robustness of our main results. First, we introduce an interaction term between birthplace unemployment and the closest census year, to analyse if the macro-economic backdrop in which people were born impacts our main findings. Step one regression results are unchanged with respect to the main analysis (cf. Table 5.2). The new second-step results including the additional interaction terms, instead, are shown in Table 5.4.

Table 5.4 Second-step regression, effect of birthplace unemployment rate – testing for cohort effects: robust OLS results

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.0230	-0.0159*	-0.00542	0.00169	-0.0102***
	(0.0429)	(0.00822)	(0.0105)	(0.00616)	(0.00351)
Closest census year (1931 base)					
1951	-0.169	-0.513***	-0.0426	0.135	0.0500
	(0.699)	(0.116)	(0.155)	(0.0854)	(0.0512)
1961	-0.458	-1.031***	-0.0368	0.379***	0.0226
	(0.788)	(0.119)	(0.162)	(0.0944)	(0.0587)
1971	2.919***	-1.383***	-0.170	0.675***	0.168***
	(0.756)	(0.114)	(0.162)	(0.0882)	(0.0517)
1981	1.160	-1.774***	-0.247	1.238***	0.0920
	(1.306)	(0.205)	(0.235)	(0.160)	(0.0755)
1991	-8.745***	-0.314	-0.982	2.519**	0.630**
	(2.503)	(1.453)	(1.039)	(1.054)	(0.262)
Unemployment rate * Census interaction					
1951 * Unemployment rate	0.318	-0.0263	0.00468	0.0102	-0.0373***
	(0.208)	(0.0227)	(0.0306)	(0.0199)	(0.00997)
1961 * Unemployment rate	0.712**	-0.0379	-0.0337	0.00940	-0.0364*

	(0.322)	(0.0360)	(0.0432)	(0.0336)	(0.0211)
1971 * Unemployment rate	-0.286**	-0.00789	0.0149	-0.00440	-0.0235***
	(0.128)	(0.0153)	(0.0200)	(0.0126)	(0.00751)
1981 * Unemployment rate	-0.0821	0.00486	0.0176	-0.00915	0.00875
	(0.116)	(0.0192)	(0.0212)	(0.0144)	(0.00719)
1991 * Unemployment rate	0.252	-0.270	0.0664	-0.0743	-0.0239
	(0.203)	(0.220)	(0.105)	(0.0943)	(0.0172)
Other time invariant controls	Y	Y	Y	Y	Y
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations based on BHPS and VoB
Notes: See main analysis for dependent variables and controls. Standard errors clustered by birthplace.

Regarding the effect on earnings, in 1971 a 1 percentage increase in birthplace unemployment is associated with a reduction of gross earnings in adulthood of £309 (p=0.014). This is statistically significant but also large in magnitude. Returning to our East Hertfordshire and Liverpool comparison, this implies a difference in gross earnings over £2,500. In 1931 and 1981, the other eras of widespread unemployment, we also see negative coefficients, albeit not significant. (This is not surprising for 1981, given the small sample size within the BHPS.) By contrast, in 1951 and 1961 – the decades with low levels of unemployment and limited inter-regional variation – the association is no longer there. In fact, in 1961 the coefficient is positive, but this is in the context of very limited variation and a mean unemployment rate of 1.33%.

The coefficients are broadly similar across the census years for the effect of unemployment on attitudes towards "government's obligation to provide jobs". The magnitude of this effect is generally greater than in our aggregated model. For 1971, this equates to a 0.019-point left-wing shift on the 5-point scale for every 1% increase in unemployment, albeit it does lose significance when including the interaction term. Interestingly, attitudes towards homosexuality and gender roles show no trend and are not significant in any census year.

Birthplace unemployment is associated with a decreased tendency to vote for the Conservative Party in every time-period (not significant in 1981, when the wave sample size is smallest). In 1971, our birth wave of most interest, a 1 percentage point increase in unemployment is associated with a 3.4 percentage point decrease in votes for the Conservatives. We would once again highlight the economic impact of birthplace unemployment and the change in economic views as a potential mediating mechanism behind this finding.

5.6.2 2SLS Findings

As we discuss in section 5.3, we use a Two-stage-least-square estimator (2SLS) and the (log) distance to coalfields in 1891 as an instrument to predict levels of unemployment in respondents' current place of residence. This is to address the potential endogeneity of unemployment rates from one's birthplace to current residence. Results are reported in Table 5.5. (First-stage regressions for the 2SLS analysis and the first-step regression as in the main empirical strategy are respectively available in Supplementary Table E.4 and Supplementary Table E.5.) The results provide support for our main analysis. The earnings, economics, gender roles, and voting models are substantively similar to our main analysis. Unlike in our main model, where there was not a statistically significant relationship between birthplace unemployment rate and homosexuality values, we find that increased unemployment rates in one's birthplace are associated with an increased intolerance in attitudes towards homosexuality ($p<0.01$).

Table 5.5 Second-step regression, effect of birthplace unemployment rate: 2SLS estimates

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.0915***	-0.00850**	0.0145***	0.0139***	-0.00484**
	(0.0240)	(0.00388)	(0.00498)	(0.00264)	(0.00196)
Father's occupation (base "high")					
"Mid"	-2.705***	-0.174***	0.190***	0.115***	0.000471
	(0.286)	(0.0301)	(0.0341)	(0.0238)	(0.0131)
"Low"	-4.447***	-0.376***	0.330***	0.134***	-0.106***
	(0.300)	(0.0306)	(0.0359)	(0.0249)	(0.0144)

Other time invariant controls	Y	Y	Y	Y	Y
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations based on BHPS and VoB. Distance to coal mine from Stuetzer et al. (2016).[42]
Notes: See main analysis for dependent variables and controls. Standard errors clustered by birthplace. We use the transformation ln (distance to coalfield + 1) in the first-step to handle zeroes (i.e., those areas where a coalfield is in the district).

5.6.3 'Movers'

In our main model, the second-step includes both 'movers' and 'non-movers' (the first-step is from 'movers' only). We also address potential endogeneity through the separate analysis of lifetime 'movers' in the second-step, that is, individuals who at any point during in our sample live in a separate place compared to their birth district. Comparing this group with those from non-movers gives a good indication of the extent to which sorting is driving the results. Supplementary Table E.6 shows the second-step regression outputs. With the exception of the voting outcome – where the coefficient is now -0.00296 and loses significance, results are all of similar magnitude. In short, our results indicate that birthplace is as important for both 'movers' as 'non-movers'.

5.6.4 Birthplace population size

We have argued that birthplace unemployment affects later life chances and attitudes. We accept that the unemployment rate is one of several indicators that could be used to indicate the profile of the area in which one grows up. However, we view this as distinct from work on population sizes, as in Bosquet and Overman (2019). The mechanisms through which birthplace unemployment and birthplace population may affect later life views and attitudes are different. To test this empirically, we include (log) population in the second-step regression

[42] We are grateful to Michael Stützer for providing access to the historical coalfield data.

along with birthplace unemployment rate (see Supplementary Table E.12 for details). The unemployment coefficient remains similar to the main results. Interestingly, we also see a separate effect for population size, confirming the results from Bosquet and Overman (2019), whereby increased birthplace population size is associated with higher income. Higher birthplace population is also associated with more tolerance towards homosexuality and greater acceptance of gender equal roles, aspects which could be described as 'cosmopolitan' views. The implications of this 'population effect' clearly go beyond the aims of this current paper.

5.7 Discussion and conclusion

In our view, the debate as to whether place has a causal or compositional effect on outcomes and preferences fails to engage at the right point in an individual's life. Drawing on individual-level panel data from England and Wales, we show that birthplaces with large unemployment decrease adulthood earnings, as well as making one more 'left-wing' on economic issues related to the redistributive role of the state, and less likely to vote for the Conservative Party. There is also evidence that high birthplace unemployment is associated with more traditional views about gender roles, although we find no evidence that birthplace conditions are associated with views towards other post-materialist values, such as views towards homosexuality.

Overall, our findings complement a growing body of work interested in understanding the effects of 'place-based socialisation', and led by empirical investigations carried out in the United States by Chetty et al (2014; 2018). In particular, recent research has shown how place of birth and the context where individuals spend their 'impressionable years' – i.e., the period of late adolescence and early adulthood during which people form durable political attitudes (Jeannet and Dražanová 2019) – have a significant influence in moulding both observable characteristics such as education (Bosquet and Overman 2019) and unobservable cognitive characteristics and capacities (Rentfrow, Gosling, and Potter 2008).

We add to this body of work by showing that the effects of early-life socialisation – which, due to data availability, we proxy with birthplace – extend to different types of social attitudes and to political party support. Furthermore, we broaden the understanding of place beyond city-size or urban-rural typologies, to encompass key local socio-economic conditions. We

conclude that where individuals are born and grow up is one of the most important determinants regarding adulthood outcomes and attitudes of any citizen. Theoretically, we offered several explanations as to why birthplace unemployment matters. These included the influence of social networks on attitudes in formative years, the availability of public services and infrastructure in more deprived areas, the importance of perceptions of luck compared to effort, and regional immobility. However, we have not been able to differentiate between these mechanisms. Future work may want to focus on exactly why birthplace matters.

The findings of our analysis have direct implications for the longstanding debate on local and regional development policy. While the stark contraposition between proponents and critics of place-based policy interventions has recently reduced (cf. Ehrlich and Overman 2020; Iammarino, Rodriguez-Pose, and Storper 2019), a dominant narrative primarily driven by urban economists has argued, over the last 20 years, against the need for such type of policies (cf. Austin, Glaeser, and Summers 2018; World Bank 2009). A precondition for the need of place-sensitive policies is to show that, in absence of interventions, general spatial equilibria may lead to sub-optimal outcomes (Kline and Moretti 2014; Partridge et al. 2015). Our analysis contributes to such debate, by showing how being born in an area of high unemployment has life-long individual scarring effects.

There are also stark political implications from our findings which, in the current British political landscape, seem to have been recognised by the current Prime Minister Boris Johnson and the ruling Conservative Party. Those areas that have been 'left behind', have often been so for generations. As we have seen, many individuals tend to stay in these areas despite their relative underperformance. With the electoral realignment in British politics (Cutts et al. 2020; Sobolewska and Ford 2020), this has created an opportunity for the Conservative Party to shift tacks with more 'authoritarian values' and persuade voters they are the party of public investment. This is embodied in the politics of 'levelling up', offering voters living in neglected places a perception that the Conservative party have the solution and will restore their 'place' to its former glories (W. Jennings, Mckay, and Stoker 2021). From a more cynical perspective, if 'levelling up' turns out to be little more than photo opportunities and symbolic political gesturing (W. Jennings, Mckay, and Stoker 2021), then political policy has done little to tackle the underlying issue of regional inequality highlighted by this research. Instead, those individuals growing up in those 'economically lagging-behind areas' areas will continue to be plagued by their past for the next generation. They will earn less than their peers and have

different attitudes and political preferences than those who are born in places with low levels of unemployment.

E Supplementary materials

Supplementary Table E.1 Main analysis – full first-step regression table

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Current LA unemployment	-0.189***	-0.0114	-0.00698	-0.00829	-0.00131
	(0.0568)	(0.00768)	(0.00727)	(0.00576)	(0.00172)
Age	1.000***	-0.0175	-0.0149	0.0511***	0.00663
	(0.148)	(0.0220)	(0.0177)	(0.0155)	(0.00453)
Age squared	-0.0104***	-0.000238***	0.000320***	-0.000102***	2.39e-05*
	(0.000393)	(5.10e-05)	(5.54e-05)	(3.93e-05)	(1.24e-05)
Wave (Base 1 for income/economics/vote/gender; Base 8 for homosexuality)					
2	0.764***				
	(0.251)				
3	1.288***	-0.00118		-0.138***	-0.0917***
	(0.354)	(0.0456)		(0.0333)	(0.0105)
4	1.629***				-0.137***
	(0.480)				(0.0144)
5	2.448***	-0.0278		-0.189***	-0.152***
	(0.616)	(0.0879)		(0.0626)	(0.0186)
6	3.409***				-0.144***
	(0.749)				(0.0227)
7	4.027***	0.106		-0.265***	-0.202***
	(0.889)	(0.130)		(0.0919)	(0.0269)
8	4.377***				-0.192***
	(1.029)				(0.0312)
9	5.210***			-0.343***	-0.189***
	(1.163)			(0.121)	(0.0353)
10	6.403***	0.225	-0.117***		-0.168***
	(1.306)	(0.193)	(0.0357)		(0.0397)
11	7.551***			-0.412***	-0.218***
	(1.461)			(0.152)	(0.0444)
12	8.688***		-0.185***		-0.221***
	(1.604)		(0.0699)		(0.0488)
13	9.889***			-0.446**	-0.219***
	(1.751)			(0.183)	(0.0532)
14	11.14***	0.554**	-0.224**		-0.232***
	(1.895)	(0.281)	(0.104)		(0.0576)
15	12.60***			-0.503**	-0.228***
	(2.040)			(0.213)	(0.0620)
16	13.56***		-0.284**		-0.210***
	(2.183)		(0.138)		(0.0664)
17	15.21***	0.679**		-0.545**	-0.213***

	(2.329)	(0.346)		(0.244)	(0.0708)
18	17.32***		-0.338**		-0.164**
	(2.475)		(0.172)		(0.0753)
Occupation (Base: Large employers & higher management)					
Higher professional	-3.614***	-0.0738*	-0.0338	-0.0462	0.0175**
	(0.289)	(0.0400)	(0.0334)	(0.0296)	(0.00836)
Lower management & professional	-3.044***	-0.0325	-0.0353	0.00798	0.00852
	(0.237)	(0.0328)	(0.0274)	(0.0241)	(0.00686)
Intermediate	-4.229***	-0.0566	-0.0198	-0.0156	0.00578
	(0.262)	(0.0365)	(0.0306)	(0.0268)	(0.00772)
Small employers & own account	-5.496***	-0.0376	-0.0308	0.00865	-0.000962
	(0.304)	(0.0418)	(0.0367)	(0.0309)	(0.00908)
Lower supervisory & technical	-3.532***	-0.0264	-0.0418	-0.0235	-0.00569
	(0.280)	(0.0388)	(0.0330)	(0.0285)	(0.00835)
Semi-routine	-4.667***	-0.0430	-0.0196	-0.0202	0.00206
	(0.273)	(0.0380)	(0.0320)	(0.0278)	(0.00815)
Routine	-4.532***	-0.0243	-0.0156	-0.00334	0.00226
	(0.288)	(0.0401)	(0.0342)	(0.0294)	(0.00868)
Education (Base: Degree)					
Other higher degree	-1.097**	0.0230	-0.0182	0.0496	0.0417***
	(0.495)	(0.0658)	(0.0675)	(0.0495)	(0.0148)
A-level etc	-1.717***	-0.157***	0.0369	-0.00806	0.0186*
	(0.345)	(0.0482)	(0.0430)	(0.0353)	(0.0105)
GCSE etc	-1.001***	-0.0988*	0.1000**	-0.0356	0.00923
	(0.376)	(0.0522)	(0.0487)	(0.0388)	(0.0120)
Other qualification	0.593	-0.143**	0.197***	-0.0208	0.00860
	(0.525)	(0.0710)	(0.0692)	(0.0531)	(0.0173)
No qualification	1.435***	-0.0822	0.214***	0.0588	-0.0156
	(0.522)	(0.0713)	(0.0685)	(0.0529)	(0.0170)
Income (£1000s)		-0.000193	0.000564	6.57e-05	-8.26e-05
		(0.000566)	(0.000440)	(0.000339)	(0.000113)
Constant	-8.365*	4.034***	2.723***	0.798*	0.189
	(4.448)	(0.698)	(0.604)	(0.476)	(0.141)
Observations	84,516	29,309	27,708	40,184	58,677
Number of individuals	10,223	7,296	6,894	8,258	8,087

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: See full version of Table 5.2 *in the main text*

Supplementary Table E.2 Main analysis – full second-step regression table

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote

Birthplace unemployment	-0.0904***	-0.00982**	0.000714	0.0164***	-0.00458**
	(0.0240)	(0.00389)	(0.00407)	(0.00259)	(0.00196)
Birth year	0.0258***	-0.0433***	-0.00357***	0.0252***	0.00438***
	(0.00805)	(0.000902)	(0.00118)	(0.000764)	(0.000457)
Father's occupation (base "high")					
"Mid"	-2.702***	-0.177***	0.164***	0.121***	0.00111
	(0.286)	(0.0304)	(0.0329)	(0.0238)	(0.0131)
"Low"	-4.441***	-0.384***	0.258***	0.150***	-0.104***
	(0.299)	(0.0306)	(0.0341)	(0.0251)	(0.0143)
Female (Male base)	-6.989***	-0.203***	-0.513***	-0.302***	-0.0335***
	(0.242)	(0.0238)	(0.0286)	(0.0198)	(0.0108)
Race (White base)					
Mixed	-0.389	-0.346**	-0.252	0.186	-0.122**
	(1.511)	(0.174)	(0.157)	(0.171)	(0.0615)
Asian	-0.815	-0.350*	0.375	0.427**	-0.126*
	(1.116)	(0.199)	(0.283)	(0.184)	(0.0703)
Black	2.291**	0.0349	0.0735	-0.212	-0.216***
	(1.050)	(0.119)	(0.214)	(0.131)	(0.0439)
Constant	-44.58***	85.23***	7.127***	-49.48***	-8.523***
	(15.89)	(1.773)	(2.304)	(1.497)	(0.897)
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: See full version of Table 5.3 *in the main analysis*

Supplementary Table E.3 Second-step regression, replacing father's occupation with parental educational attainment

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.189***	-0.00924***	0.000592	0.0142***	-0.00348*
	(0.0265)	(0.00338)	(0.00388)	(0.00258)	(0.00205)
Parental Education (base: did not go to school)					
No qualifications	-1.235	-0.146	-0.105	-0.282	-0.206*
	(2.711)	(0.228)	(0.250)	(0.172)	(0.105)
Some school qualifications	1.079	0.0549	-0.141	-0.329*	-0.113
	(2.708)	(0.228)	(0.254)	(0.170)	(0.106)
Post school qualifications (non-degree)	1.615	0.121	-0.136	-0.317*	-0.124
	(2.743)	(0.228)	(0.254)	(0.170)	(0.107)
University	2.655	0.240	-0.399	-0.438***	-0.144
	(2.814)	(0.233)	(0.254)	(0.167)	(0.106)
	(17.92)	(2.029)	(2.481)	(1.476)	(1.050)
Other time invariant controls	Y	Y	Y	Y	Y

Observations	5,588	4,750	4,784	5,171	4,895

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Note: Parental education is the higher of either parent.

Supplementary Table E.4 First-stage regression for the 2 stage least squares (IV analysis)

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender roles	Vote
	Current dis. unemp.	Current dis. unemp.	Current dis. unemp.	Current dis. unemp.	Current dis. unemp.
(ln) 1891 distance to coal mine	-0.0994***	-0.121***	-0.0530***	-0.122***	-0.0950***
	(0.005)	(0.0094)	(0.0103)	(0.0080)	(0.0064)
Time varying controls	Y	Y	Y	Y	Y
Observations	84,516	29,309	27,708	40,184	58,677
F-stat of instrument in the first stage	350.99	162.38	26.52	230.99	218.12
Number of individuals	10,223	7,296	6,894	8,258	8,087

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Notes: This is the first-step regression for the 2 stage least squares. It is the basis for Supplementary Table E.*5, which in turn is the basis for the second-step IV analysis in the main text (*Table 5.4*). Current dis. Unemp = 2001 unemployment rate in district of residence. Distance to coal mine based on 1891 census – data from Stuetzer et al.*

Supplementary Table E.5 First-step regression for the IV analysis

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.177	-0.0272	-0.147	0.0216	0.00195
	(0.828)	(0.0897)	(0.205)	(0.0680)	(0.0263)
Time varying controls	Y	Y	Y	Y	Y
Observations	84,516	29,309	27,708	40,184	58,677

Number of individuals	10,223	7,296	6,894	8,258	8,087

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: First-step regression, upon which the second-step, Table 5.4*, in the main text is based.*

Supplementary Table E.6 'Movers' only - second-step regression

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.115***	-0.0120**	-0.00564	0.0179***	-0.00296
	(0.0336)	(0.00464)	(0.00444)	(0.00323)	(0.00231)
Time invariant controls	Y	Y	Y	Y	Y
Observations	4,893	3,835	3,425	4,202	4,165

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Individuals who have not moved from their birthplace for at least 1 wave are not included.

Supplementary Table E.7 Second-step regression removing birthplaces with small sample size

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.0956***	-0.00830*	-0.00276	0.0165***	-0.00338
	(0.0259)	(0.00437)	(0.00446)	(0.00278)	(0.00217)
Time invariant controls	Y	Y	Y	Y	Y
Observations	5,821	3,955	3,220	4,490	4,527

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Any individuals who were born in a birthplace where the sample is fewer than 20 individuals (in the main analysis) are excluded

Supplementary Table E.8 Second-step 'vote' regression – Labour versus 'any other'

	Vote
Birthplace unemployment	0.00203
	(0.00150)
Time invariant controls	Y
Observations	5,833

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Notes: Labour coded as '1', any other '0'

Supplementary Table E.9 Second-step regression - both parents' occupational background

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.140***	-0.0120**	0.00842	0.0201***	-0.00302
	(0.0334)	(0.00525)	(0.00597)	(0.00393)	(0.00270)
Parents' occupation (base "high")					
"Mid"	-1.949***	-0.141***	0.203***	0.156***	-0.00459
	(0.280)	(0.0322)	(0.0376)	(0.0267)	(0.0149)
Low"	-3.781***	-0.337***	0.290***	0.195***	-0.113***
	(0.352)	(0.0386)	(0.0474)	(0.0335)	(0.0194)
Other time invariant controls	Y	Y	Y	Y	Y
Observations	4,083	3,106	2,941	3,435	3,446

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Notes: Only includes respondents where data for both parents is available

Supplementary Table E.10 Second-step regressions – other economic variables

	Private enterprise solves probs	Public services	Gov. provide jobs	Trade unions	Economics combined
Birthplace unemployment	-0.00171	-0.00320	-0.00982**	-0.00961**	-0.00629**
	(0.00288)	(0.00290)	(0.00389)	(0.00413)	(0.00265)
Time invariant controls	Y	Y	Y	Y	Y

Observations	5,345	5,349	5,423	5,416	5,278

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: Economic variables are all answered on a 5-point Likert scale from 1 "Strongly agree" to 5 "Strongly disagree". Scales are flipped in the case of 'Private enterprise solve probs' to make '1' the most 'left-wing'. Full statements to which survey respondents respond: 1. Private enterprise solves economic problems; 2. Public services ought to be state owned; 3. Government has an obligation to provide jobs; 4. Strong trade unions protect employees. The 'Economics combined' variable is a simple arithmetic mean of the 4 economic variables.

Supplementary Table E.11 Second-step regression - removing parental background

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.211***	-0.0119***	-0.000135	0.0149***	-0.00517***
	(0.0212)	(0.00278)	(0.00351)	(0.00212)	(0.00148)
Time invariant controls	Y	Y	Y	Y	Y
Observations	9,840	7,102	6,668	7,997	7,852

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Supplementary Table E.12 Second-step regression – including (log) district population size

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.101***	-0.0100**	0.00184	0.0174***	-0.00417**
	(0.0250)	(0.00388)	(0.00402)	(0.00259)	(0.00199)
Birthplace (ln) population	0.475**	0.00904	-0.0438*	-0.0479***	-0.0194
	(0.204)	(0.0162)	(0.0233)	(0.0161)	(0.0120)
Time invariant controls	Y	Y	Y	Y	Y
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Population data from VoB

Supplementary Table E.13 Second-step regression – all London Boroughs as one district

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender roles	Vote
Birthplace unemployment	-0.0952***	-0.0100***	0.00113	0.0160***	-0.00466**
	(0.0296)	(0.00384)	(0.00400)	(0.00253)	(0.00192)
Time invariant controls	Y	Y	Y	Y	Y
Observations	7,045	5,423	4,873	5,976	5,883

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: We calculate total London unemployment rates for both birth period and current period from VoB, then amalgamate all the Boroughs and effectively count them as one district.

Supplementary Table E.14 Including both current residence and birthplace unemployment in one regression

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote
Birthplace unemployment	-0.0738***	-0.0101***	0.00494	0.0159***	-0.00663***
	(0.0266)	(0.00325)	(0.00448)	(0.00284)	(0.00172)
Current LA unemployment	-0.236***	-0.0365***	-0.00960	-0.0194***	-0.0314***
	(0.0575)	(0.00553)	(0.00695)	(0.00466)	(0.00316)
Time varying and invariant controls	Y	Y	Y	Y	Y
Observations	64,532	25,038	21,798	32,790	47,515
Clusters	8,372	7,522	6,339	7,922	7,540

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Controls: Age, age-squared, wave, occupation, education, birth year, father's occupation, sex, race. Clustered by individual.

Supplementary Table E.15 Second-step regression – interactions with father's employment status at age 14

	Income (£1000s)	Gov. provide jobs	Homosexuality	Gender Roles	Vote

Birthplace unemployment	-0.187***	-0.0104***	-0.00104	0.0163***	-0.00336**
	(0.0231)	(0.00319)	(0.00377)	(0.00240)	(0.00168)
Father's status (base: working)					
Father not working	-0.750	-0.0607	-0.0907	-0.00296	-0.0567
	(0.749)	(0.108)	(0.0990)	(0.0752)	(0.0444)
Father deceased	-2.113**	-0.0923	-0.139	0.110*	0.0569
	(0.833)	(0.0820)	(0.0903)	(0.0660)	(0.0386)
Father not living with respondent	-3.566***	-0.251	-0.0813	-0.0574	-0.0981
	(1.070)	(0.202)	(0.197)	(0.141)	(0.0869)
Interactions (Birthplace unemployment; father's status at 14)					
Unemp*father not working	-0.114	-0.0113	0.0265**	0.00738	-0.00411
	(0.0779)	(0.0135)	(0.0126)	(0.0106)	(0.00479)
Unemp*father deceased	0.280***	-0.00904	0.0386*	-0.0173	-0.0159***
	(0.102)	(0.0127)	(0.0222)	(0.0110)	(0.00571)
Unemp*father not living with	0.260**	0.00384	0.0128	0.0176	0.00561
	(0.129)	(0.0298)	(0.0302)	(0.0194)	(0.0130)
Other time invariant controls	Y	Y	Y	Y	Y
Observations	8,632	6,395	5,980	7,187	6,977

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Father's occupation control has been removed and replaced with father's activity status at age 14 (coded as working, not working, deceased, not living with the respondent). We also introduce an interaction with birthplace unemployment to test if there are separate effects depending on father's status. Whilst only the 'homosexuality attitudes' interaction is statistically significant, the others all show that the magnitude of the effect we observe is greater for those with unemployed fathers. That is, higher birthplace unemployment impacts earnings, economic attitudes, gender attitudes, and voting to a greater extent for those whose father was not working. We note that only 3.6% of the sample had a father who was not working at age 14, potentially explaining the lack of significance of the interaction terms.

Supplementary Table E.16 Descriptive statistics from first-step regression of income dependent variable

Sex	
Male	51.02%
Female	48.98%
Age (mean)	38.41

Income (£1000s) (Mean)	14.95
Occupation (NS-SEC 8)	
Large employers & higher management	3.64%
Higher professional	6.50%
Lower management & professional	25.40%
Intermediate	15.28%
Small employers & own account	8.95%
Lower supervisory & technical	10.58%
Semi-routine	16.98%
Routine	12.68%
Highest qualification	
Degree	14.29%
Other higher degree	8.83%
A-Level	23.47%
GCSE	29.59%
Other qualification	11.37%
No qualification	12.46%
Race	
White	98.41%
Mixed	0.35%
Asian	0.48%
Black	0.76%
Father's occupation	
"High" (NSSEC 1-3)	25.91%
"Mid" (NSSEC 4-6)	41.97%
"Low" (NSSEC 7-8)	32.11%

6 Conclusion and Implications

6.1 Introduction

The four papers in my thesis develop our understanding of how individuals' social mobility experiences have contributed to polarisation in society, manifesting in a significant anti-system vote. The traditional class-based cleavage has been complicated as the divisions within and between classes result in heterogenous preferences and difficulties in building electoral coalitions[43]. I have argued throughout that this is, in part, a result of the variation in individuals' social mobility, experienced in an era of political economic transformation.

My empirical findings lend some support to the 'winner' and 'losers' narrative, I find upward and downward mobility effects in my European analysis (Paper 2), and to a lesser extent in the 'Brexit' paper (Paper 1)[44]. However, mobile individuals also retain preferences in line with *both* their origin and destination position[45]. This poses a challenge to work highlighting declining, or 'loss' of, position (Burgoon et al. 2019; Gest, Reny, and Mayer 2018; Gidron and Hall 2017). Whilst there may potentially be a downward mobility effect, in most cases the origin effect dominates. Thus, my work further entrenches the idea that those 'standing still' have been 'left-behind', considering that even those who incurred a clear loss over time in the same position are more likely to vote 'Remain', in the case of Brexit.

Specifically, I show in Papers 1 and 2 how, in the cases of Brexit and European anti-system right support, mobile individuals are different to their non-mobile counterparts. However, there is no evidence that this effect exists for anti-system left support. Surprisingly there is little observable difference between countries in the importance of social origins for the anti-system right.

[43] I use the term 'class' here to refer to a cleavage defined by socio-economic position generally rather than either education or occupation per se.
[44] Upward mobility was not statistically significant in the main analysis with education as the mobility variable. However, the coefficient did indicate upward mobility, over and above origin and destination effects, were associated with a higher tendency to vote 'Remain'. Moreover, when I remove the potentially mediating control of occupation, the coefficient is weakly statistically significant.
[45] As captured by the immobile individuals within that socio-economic position.

The second section of the PhD explores two of the mechanisms behind these differences. First, regarding the effect of Higher Education, I show that going to university changes one's attitudes towards the European Union, over and above sorting effects (Paper 3). Second, I show that birthplace affects later-life outcomes through earnings, and, even account for earnings, attitudes and voting preferences[46]. Some of this is explained through parental origins and regional sorting[47]. However, there is also an effect directly from birthplace economic conditions, measured by unemployment rates (Paper 4).

The structure of the remainder of the conclusion to my thesis is as follows. I firstly summarise the contribution of each of the four papers. I then put this in the broader context of what that means for within and between class coalitions, building on the theoretical work in the introduction. In the following section I explore how this work could be expanded to think more broadly about an implicit social contract and how social mobility forms part of an implicit social contract with aspiration at its core. Next, I link this to potential policy implications. Finally, I address some of the limitations of the empirical analysis and suggest avenues for further work.

6.2 Findings

Paper 1 contributes to the Brexit literature. There is widespread consensus that structural transformation has resulted in individual 'winners' and 'losers'. This is a blunt categorisation and various explanations have been offered as to what makes one a 'winner' or 'loser' from political economic change (see for example Adler and Ansell 2020; Colantone and Stanig 2018; Fetzer 2019). We argue that the process of intergenerational social mobility, which has accompanied political economic change, has not been studied in detail and adds conceptual clarity. This is particularly relevant given the emphasis on 'Leave' voters having in some way been 'left-behind' or 'lost-out'.

The diagonal reference model, which has been used more widely in the proximate field of sociology, allows us to separate the effects of mobility from that of origin and destination. The results show that one's origin position, measured by either education or occupation, is almost

[46] Even when controlling for adulthood outcomes, specifically income, education, and occupation.
[47] Individuals from lower socio-economic backgrounds are more likely to be born in areas with higher unemployment rates.

as important as one's destination in estimating the tendency to vote for 'Brexit'. There is some evidence that upward mobility, over and above destination effects, increases 'Remain' voting, albeit this is only statistically significant in a specific version of the model.

These findings are supported in Paper 2, where I test these results on anti-system voting more broadly across Europe. There is evidence of both mobility effects and origins effects. However, social mobility is only important when analysing the anti-system right, not the anti-system left. I also introduce a comparative element, there is no obvious pattern in how the importance of origin varies by country or welfare regime.

The second section of the PhD investigates why there are differences between the socially mobile and immobile. Paper 3 investigates one of the transformative processes in an individual's lifetime, Higher Education. I find that attending university makes one more likely to support the European Union. I argue that this makes the educational cleavage seen in anti-system voting, including Brexit, more than just an association, but at least in part this polarisation is caused by the experience of going to university. Moreover, this effect of university is as great, if not greater, for those with graduate parents compared to non-graduate parents. Given that I also observe a sorting effect, whereby those from graduate origins start with more pro-European attitudes, there is no evidence that university attendance results in convergence in attitudes by socio-economic origin. In short, there remains a difference in European attitudes between the socially mobile and non-mobile.

Finally, in Paper 4, I show that birthplace unemployment conditions matter for life outcomes measured by earnings. An additional 1 percentage point of unemployment in one's birth Local Authority is associated with a decrease in adulthood annual earnings of £90. The effects of birthplace go beyond income. Even accounting for adulthood outcomes - such as occupational status, income, and educational attainment - higher birthplace unemployment makes one more economically 'left-wing', more culturally intolerant, and less likely to vote for the centre-right Conservative Party. These effects are greater when one removes parental origins. However, birthplace matters beyond parental origin.

6.3 Thematic Contribution

Structural change and the social contract

Whilst I believe the empirical findings from the individual papers develop on the respective literatures, there is a broader theoretical contribution. As has been shown, structural change has implications across generations, in terms of individuals' experience of social mobility. Particularly in the UK, political economic transformation changed how individuals could 'succeed' in society. In an era of greater income inequality, and the hollowing out of the middle tier of jobs (Goos, Manning, and Salomons 2014), occupational and educational upward social mobility were often key to life outcomes. Political parties largely moved away from 'class-based' interests towards a consensus that society should be 'aspirational'. A 'promise' whereby individuals from all social origins would be able to prosper. Parties from across the political spectrum hailed education as the 'great leveller' with the aim to equalise opportunities to move up the social ladder (Andersson 2010). A political consensus developed based on meritocracy (Shafik 2021). A 'fair' society was portrayed as one that promoted social mobility, rather than equality of outcome per se (Payne 2017; Snee and Devine 2018).

Inevitably, a generation after this political consensus emerged, the electorate judged establishment parties against their record according to this implicit social contract. Given the political economic change, many individuals fulfilled this promise. However, there are two sides of this same coin. For others, the promise of an aspirational society failed to materialise. I argue that individuals used their reference point as their parents' socio-economic position. For many individuals the promise from the implicit social contract was broken, either through downward mobility or remaining in 'stand-still'. The effect is intensified as individuals attribute personal welfare gains and losses in an asymmetric manner (Larsen 2021). Voters who have 'won' tend to see their success a result of a functioning meritocracy, they take personal responsibility for their own success, attributing it to their own hard work and skill. Yet, those individuals who 'miss out' blame governments for their personal welfare losses.

My findings in the first two papers highlight what happens in the context of this implicit social contract. Upward social mobility is supportive of the stability of democracy. Paper 2 (and to a lesser extent Paper 1) shows how the upwardly mobile share a large proportion of their anti-system preferences in line with their destination position (less anti-system right support), as well as their origin, and the act of upward mobility reduces the tendency to support the anti-system right.

However, there are also a minority of individuals who inherited their low educational or occupational position from their parents. These are the individuals who are most likely to vote 'Leave' in the Brexit vote or, more broadly, support the anti-system right. The importance of origin outweighs any effect from downward mobility. As discussed in Paper 1, it is a finding that somewhat contradicts the recent 'loss literature' (Gest, Reny, and Mayer 2018; Gidron and Hall 2017). The immobile 'left-behind' behave most strongly according to our expectations of the 'left-behind'. Similarly, a greater proportion of individuals than in previous generations have been downwardly mobile measured by occupation or income (Bukodi, Paskov, and Nolan 2019; Chetty et al. 2017). Whilst these downwardly mobile individuals retain less anti-system right tendencies in line with their origin, there is a downward mobility effect increasing their anti-system right support (Paper 2). These individuals test the repercussions of unfulfilled promises of social mobility, a generation or more after it was engrained into British politics and society. Those who bought into this contract but still found themselves in the same low socio-economic position of their parents tend to become disillusioned with the establishment and support anti-system politics.

It is no longer so simple as to state that those with the same socio-economic position exhibit the same preferences. To take the 'working class', those individuals who have been socially mobile into a higher position retain only some of their preferences in-line with their immobile peers. Likewise, those downwardly mobile individuals into that position remain different to those who have stood-still. Similarly, at the top of the socio-economic ladder, there is not one homogenous group.

Within a socio-economic position there are significant divergences in preferences towards anti-system voting, which has also been shown in other work regarding behaviours and preferences (Jaime-Castillo and Marqués-Perales 2019; Paskov, Präg, and Richards 2020; Schuck and Steiber 2018). In turn, this creates a lack of cohesion within classes. When this is accompanied by few cross-class coalition binding interests (Iversen and Soskice 2015), a lack of societal cohesion is inevitable. Moreover, the binding interest of aspiration, specifically of future social mobility, is now an unlikely promise for many families. Those individuals who have been 'left-behind' over generations, despite the societal promise or implicit social contract, are unlikely to believe in the same promise again. I would argue the implicit social contract of potential mobility no longer binds classes together as in previous generations. In fact, this may have wide-ranging implications for the policies these individuals are attracted to. As described

below, this may lead to a research agenda of itself, examining unfulfilled aspiration's role in electoral realignment.

Country differences and institutions

There are at least two surprising country contextual findings from my research. First, in contrast to work in Switzerland (Kuhn, Lancee, and Sarrasin 2021; Lancee and Sarrasin 2015), I find that attending university does impacts one's attitudes and preferences towards the European Union. Second, the importance of social origins for anti-system right voting are relatively consistent across countries.

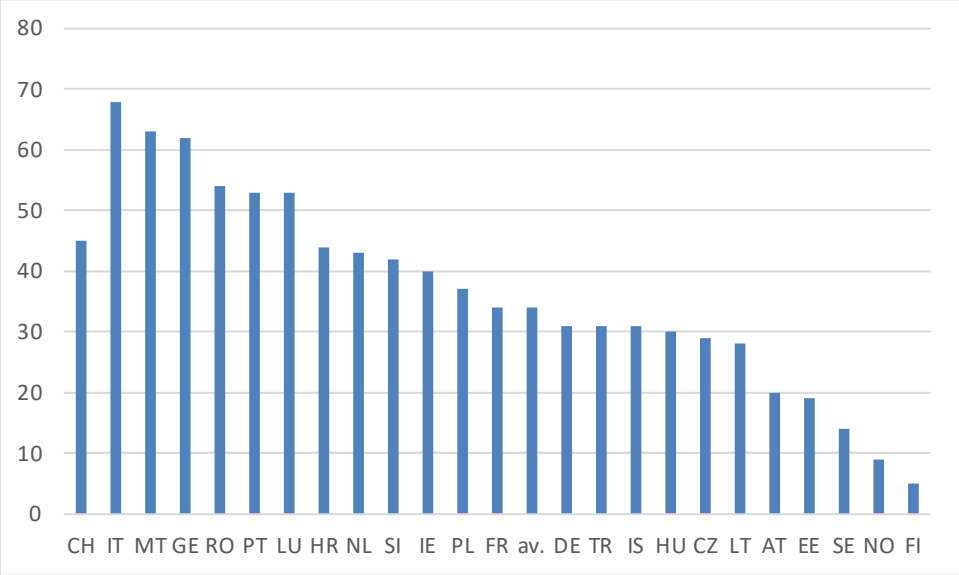
This raises the question regarding the importance of institutional differences between countries. Analysing education, and specifically university education, in the UK compared to other Western European countries, there are potential institutional differences which may explain these results. It would be a follow up project to investigate, thus I can only speculate as to a potential explanation. One hypothesis may be that there is a stratification of universities in the UK, which results in many students deciding to move out of the family home for university. In fact, for many moving away to university is seen as a 'rite of passage'. 75% of individuals do not live in the family home when studying at university, and 42% move over 90km (Donnelly and Gamsu 2018)[48]. For many students who decide to migrate for university, it is viewed as a 'finishing school', a place for personal development as well as academic study (Brown and Scase 1994). A perspective that is commonly pushed by politicians, schools, and the media[49].

The university system in Switzerland is less stratified. Switzerland has a total of 10 cantonal universities spread across the 26 cantons. A higher proportion of individuals tend to stay in their origin canton if there is a university and the subject they wish to study is available (Oggenfuss and Wolter 2019)[50]. A theme which is more common across most countries in Western Europe. As can be seen in Figure 6.1 a much smaller proportion of individuals tend to move out of the family home for university. In Switzerland, 45 percent of students live at home

[48] As an aside, it is important to note that as with my work, origins matter here too. Those from higher socio-economic backgrounds are more likely to move away from home.
[49] As pointed out by Holdsworth (2009), while this may be a common assumption in the UK, it is not necessarily the case, immobile students may have plenty of opportunities to learn responsibilities whilst being immobile and staying within the parental home.
[50] The data does not provide residence, only one's origin canton and the canton of the university

with their parents, and only 9 percent live in student accommodation (Hauschildt et al. 2021). It may follow that the process of attending university is less transformative when remaining in the same area as the parental home. For example, individuals are more likely to maintain more contact with their existing social networks.

Figure 6.1 Percentage of students living with parents in European countries



Source: Eurostudent VII, (Hauschildt et al. 2021)

Notes: Data collected in Spring 2019 except for DE, IT, PT, RO, TR during 2020/2021.

In a similar vein, in Paper 2 I expected to see a greater emphasis on social origins for those countries with higher levels of income inequality. Here, the direct mechanism was that social origins should be more important when there is a greater difference in social position between those with different levels of education. Of course, income inequality is also a function of the political and economic institutions within a country (Iversen and Soskice 2006), and the balance of economic institutions potentially even a cause of the institutions themselves (Cusack, Iversen, and Soskice 2007). Thus, income inequality was a symptom of a broader set of institutions. That said, there was no obvious groupings according to the standard welfare regimes. This is counter to my intuition, whereby I would expect those individuals living in Scandinavia without educational tracking, greater de-commodification, less family dependence, and lower income inequality to place less emphasis on social origins.

Again, this conflicts with other research analysing the importance of origins for other dependent variables. Specifically, there seems to be differences in origin weights for

redistributive preferences (Jaime-Castillo and Marqués-Perales 2019), attitudes towards immigrants (Paskov, Präg, and Richards 2020), and subjective well-being (Schuck and Steiber 2018). In each of these cases, however, the results are driven to a large extent by Eastern European countries. To take an example, in the work on attitudes towards immigrants the four countries with the highest origin weightings were Latvia, Lithuania, Ukraine, and Poland. In Paper 2, I purposely exclude Eastern Europeans countries given the differences in drivers of anti-system voting. I thus tentatively imply that the educational cleavage, and its multi-generational impact, is an important cleavage beyond those countries where this social implicit contract has been at the forefront of politics and society.

6.4 Policy Implications

I now consider policy and societal implications from the four papers of my PhD. They are aimed at policy makers, think-tanks, and for wider academic discourse. These implications come with somewhat of a caveat in that I am taking findings based on historical associations and applying them to an inherently dynamic situation, the future. They are thus intended as starting points for discussion as opposed to concrete recommendations.

Implication 1: A society with more upwardly mobile individuals decreases anti-system voting.

All being equal, a society with high absolute social mobility is conducive to less anti-system voting. Individuals take on a significant proportion of their voting tendency from their destination position, and there is some evidence for an additional effect of upward mobility. Albeit those recently upwardly mobile individuals still have a higher tendency to vote for the anti-system right than their immobile high-status peers. Moreover, I argue that there is a causal effect of Higher Education on attitudes, over and above sorting. Thus, it would seem prima facie that upward mobility should be positive for social cohesion and democracy.

However, there is an important caveat to this first implication. In a political context where social mobility is prioritised, individuals who do not achieve this goal may resent the establishment political parties from which this political promise originated. Rather than creating a society of voters who embrace the system and credit it with their own success, it may create further resentment for those who do not ‘succeed’ according to the norms of society.

When individuals perceive a greater proportion of their peers around them as able to fulfil the societal promise, it may fuel further resentment in line with the argument of positional deprivation and subjective status decline (Burgoon et al. 2019; Gidron and Hall 2017). In which case, rather than developing a society based on shared democratic values, it may serve to alienate a section of society, reducing overall solidarity and cohesion.

Implication 2: Following from Implication 1, is the solution further university educational expansion?

Closely linked to the above, is the idea that increasing the proportion of young people that go on to Higher Education will reduce anti-system voting and increase social cohesion. This would facilitate further educational absolute upward mobility and limit downward mobility. Moreover, assuming effects stay the same individuals would be less likely to vote for anti-system parties and be more culturally tolerant. The problem remains, as with *Implication 1*, that a small group of non-graduates, who would then be a clear minority, are likely to become even more disaffected. According to Goldin and Katz (2009), this solution would act to narrow the wage gap between graduates and non-graduates, as the expansion of graduates catches up with the demand led by technological advancement. However, creating 'good jobs' may not be as simple as Goldin and Katz assumes, given we already know there is significant mismatch of graduates to 'graduate' jobs (Ansell and Gingrich 2017).

This forms part of an ongoing debate within both the academic and wider literature, as commentators argue about the societal implications of a 'meritocracy'. Those individuals who do not pursue the traditional route of 'success' via university face stagnating pay and a loss of status compared to previous generations (Goodhart 2020). In Goodhart's view, this shows society's inability to accurately reward talents of 'hand' compared to 'heart' and creates a version of a meritocracy which is unpalatable for a large proportion of its citizens. Moreover, according to Sandel (2020b), it creates a legitimate grievance for those who fail to 'succeed', when society shifts the blame for failed aspirations squarely on to the shoulders of the individual.

Implication 3: The benefits of 'place' based policy may take a generation to have an effect.

In Paper 4 we go beyond parental origin as the mechanism of political socialisation, when we find that it is not only one's direct social origins which are important for political attitudes, but also one's birthplace. Birthplace has a formative effect on one's attitudes and adulthood earnings. The political salience of regional disparity of opportunity have clearly been recognised by policy makers, given the emphasis from politicians on 'place-based' policy. Nowhere is this more evident than the 'levelling up' agenda in the UK, the Conservative's policy to improve opportunities and infrastructure in some of the most deprived parts of the country. There are clear parallels between the 'levelling up' agenda of today's government with the aspirational political consensus of the 1990s. Perhaps the main difference was that aspirational politics was intended to bind classes together, as individuals across society could buy into the educational expansion benefitting their children. Contrastingly, 'levelling up' is targeted at those individuals and areas that have 'lost out' under political economic transformation.

As we argue, the effects of 'place' are more wide-ranging for where one is born rather than where one lives. Thus, there is an inevitable time lag between the positive consequences in terms of adulthood earnings and cultural tolerance to filter through. This creates an incentive difficulty for politicians, as any impact would be observable over generations rather than an electoral cycle. In turn, it is easy to see why there is cynicism concerning 'levelling up', particularly given its current opaque nature. The extent to which policy will rectify the underlying issue of local economic issues as opposed to a pure short-term vote winning tactic remains up for debate (W. Jennings, Mckay, and Stoker 2021).

Implication 4: Political parties will struggle to find cross-class support for policy agendas

Whilst my findings uncovered anti-system cleavages based on education, and to a lesser extent occupation, there were large differences within each destination position by social origin. Assuming this holds with respect to other political preferences, it is difficult for parties to offer a policy package that binds a 'class' of individuals together. Especially in majoritarian electoral systems which incentivise dual party systems, at least at the constituency level (Cox 1997; Duverger 1969). Perhaps more profoundly, it seems difficult to imagine that a policy platform could now emerge in the same way as the 1990s which could 'glue' together classes. For those individuals who accepted aspiration and the potential to 'succeed' as a societal promise, after

a generation of disappointment a policy package based on this same ideal is unlikely to seal votes.

Instead, political parties and campaigns explicitly target 'left-behind' voters. This comes through anti-system parties, specific campaigns such as for Britain to 'Leave' the EU, and mainstream parties. For example, anti-system right parties are not necessarily against redistribution, instead prioritise welfare chauvinism. Here, benefits are aimed to benefit the in-group, whereas the out-group, notably immigrants, will be de-prioritised (Ennser-Jedenastik 2018). Similarly, we see mainstream parties such as the Conservatives explicitly targeting regions and individuals in areas of decline through promises of 'levelling up'. Whilst this may ring true to an aspirational ideal, there is a clear diversion away from previous government's emphasis on the traditional university route. Instead, placing a greater emphasis on vocational careers and apprenticeships.

6.5 Limitations and Future Research

6.5.1 Methodological Challenges

At a methodological level, the diagonal reference model is not without criticism. For example, it relies on the assumption that mobility effects are homogenous, that is mobility effects are the same across origins and for all ranges of mobility[51]. There are other techniques currently being developed which also attempt to decompose origin, destination, and mobility, most notably the Mobility Contrast Model (Ciccolini and Härkönen 2021; Luo 2021). Moreover, there are inevitable limitations in claiming causality. The DRM remains an association only. In Papers 3 and 4, I have a more plausible claim for causality. The individual panel data fixed effects design mitigates a large source of bias, time invariant variables. Additionally, the robustness tests, including instrumental variable regressions in Paper 4 support the findings.

A further limitation of the analysis is that whilst my results highlight the difference between the mobile and immobile in terms of anti-system voting, there is more work required to explain the mechanisms behind this difference. I select what I believe is the life transformational stage of Higher Education and the formative effect of birthplace. Regarding university, my main

[51] I examine differences in range of mobility in Paper 2, Figure 3.4

results are regarding Euroscepticism rather than Brexit per se[52]. There are, of course, many other potential mechanisms through which the mobile may differ to the immobile. For example, one's social network, and even who one marries, may vary depending on one's origins. This may be a mediating mechanism through which birthplace or going to university operates. However, social networks may be acquired at many other stages of life which I have not considered.

Three out of the four papers focused this argument on the context of the UK. Whilst I tested the theory on aggregate data for Western Europe, I was only able with any confidence to estimate origin effects, not mobility effects, given the sample size by country. This restricted the comparative aspect of the project. Moreover, the effects of university and birthplace were again tested using British data, which is now over a decade old. Evidence on the effect of Higher Education from Switzerland is contradictory to my findings. Whilst I do not see this as incompatible given the institutional and cultural differences, it does lend to a whole new comparative piece of work (see below). Similarly, regarding birthplace we have detailed work from the US on the effects of birthplace from *Opportunity Insights*, but again there is no reason to assume that this is consistent across countries.

6.5.2 Future Research

The social contract

I have worked exclusively based on individuals' social mobility and argued that it is core to the social contract found within Britain. This is a simplified notion of the implicit social contract which warrants more in-depth understanding. First, I have captured social mobility through occupation and education. This reflects the traditional class based cleavage, and an educational cleavage that many now argue is the most polarising in society (Gethin, Martínez-Toledano, and Piketty 2021; Iversen and Soskice 2019; Stubager 2013). There are at least two other potential measures of social mobility. First, the measure used most frequently in the economics literature is income. Practically, I did not have the data available for parental income in either *Understanding Society* or the ESS. Education and occupation are themselves highly correlated to income. It would also be possible to study housing mobility, which has been

[52] That said, the robustness test shows similar results when Brexit is analysed.

emphasised by politicians and society as a signal of success, particularly in Britain. Again, there is limited data availability, and I would argue this is of secondary importance compared to education or occupation.

Second, and perhaps more importantly, the social contract is not a static concept. The implicit agreement between government and relevant societal groups may vary across countries and overtime. In this project, I have investigated the effects of social mobility, which embodies the 'aspirational' social contract of many advanced capitalist democracies since the 1980s. Of course, aspirations may go beyond personal social mobility, as measured by education or occupation. Whilst requiring more research, I can envisage at least three ways to conceptualise a broader 'aspirational' social contract: hopes for oneself, one's children, and one's local area. For many individuals, they have not been upwardly mobile (as in this project) and missed out on asset price inflation (most notably via home ownership), their children did not go to university (hailed by successive governments as the route to 'success'), and their local area stagnated.

There are several potential ways this political disenchantment may manifest itself. First, the demand for a new 'brand' of politics may be filled by the emergence of new parties. As in the work of my PhD, in some cases it may be that anti-system politics rise to meet this new demand. Alternatively, new 'system' parties may emerge with a rejuvenated version of the status quo social contract, such as La République En Marche! A second possibility is that existing parties acknowledge the broken promises of the past and deliberately shift policy positions, adopting a new social contract. This is a risky strategy; the party may lose credibility as they likely target a different electoral base and risk severing ties with their own core supporters. One may think in terms of electoral realignment in the UK, as the Conservatives penetrate the 'Red Wall' or as the 'Greens' become the party of choice for the educated across Europe. Finally, it can lead to civil unrest and political uprising as the population punishes those who it sees responsible for broken promises (Hinnebusch 2020).

Thus, this fuller conception of an implicit social contract involves a much wider project to understand how social implicit contracts have developed overtime and across countries. Then, to understand if there is a political backlash for those who are disappointed according to these societal norms. Moreover, understanding the reasons as to why political disappointment

manifests itself differently across countries. For example, there may be a political institutions argument, more or less clearly defined social contracts, or other country level factors.

Institutional differences

As I previously described, Papers 2 and 3 highlight institutional differences and similarities which are potentially surprising. This opens an avenue for further research. My work on the effects of university education on Brexit is clearly unique to the UK, but for anti-system voting there could be much wider implications. Other work based on Switzerland any my work in UK, provide very difference institutional backdrops. Whilst panel data is not available to the same extent in all other countries, there are still several potential datasets (such as SOEP) through which the institutional context could be analysed to a greater extent.

Similarly, the ESS is a valuable resource for country level analysis. However, for the DRM individual country level analysis produced wide confidence intervals for mobility effects. Thus, more fine-grained analysis by country into how social mobility effects anti-system voting could be conducted using country level datasets. Moreover, I have treated anti-system right and anti-system left parties as a coherent group, there are of course differences in policy position of anti-system parties across countries.

6.6 Final Conclusions

Overall, the papers within my thesis highlight the importance of social mobility as a variable within political science, particularly in the context of political economic change and the clear polarisation within society. Individuals' attachment to the social milieu in which they grew up plays a role on where they position themselves on the Brexit, and more generally anti-system, divide. The importance of origins is nearly as important as one's destination position. I also integrate insights from other disciplines, particularly the Higher Education literature (Paper 3) and economic geography (Paper 4). This helps to understand the mechanisms behind the difference between the mobile and immobile, as well as adding to the political socialisation literature.

My thesis opens further avenues of research into how individuals respond to disappointment in the wake unfulfilled political promises. This is particularly relevant as there is a large group of voters who have not progressed over two or more generations, and the stock response of ‘things can only get better’ from establishment parties is starting to fall on deaf ears. I have identified the importance of ‘place’ based policy for these individuals, but unfortunately there is no short-term fix as one’s formative years cast a long shadow into adulthood.

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