Appendix A: Analysis of British Election Study (BES) Data

This section provides an overview of the analysis carried out on the different waves of the British Election Study in Chapters 1, 3 and 4.

Chapter 1

The analysis of BES Wave 13 (June 2017) used in Chapter 1 used the weights *wt_new_W13* provided in the BES datasets from Wave 10 onwards. Despite the weighting, however, using the weights and then calculating the weighted proportions of respondents who reported having voted for each party (variable *generalElectionVote* in BES) in the election that had just gone by led to proportions that were slightly at odds with the result of the general election. The weighted proportions are Conservative 39.8%, Labour 40.4%, Liberal Democrat 9.1%, SNP 3.4%, Plaid Cymru 0.5%, UKIP 2.6% and Green 2.2%. Note, however, that the votes cast in England and Wales (Northern Ireland was not included in the BES) were Conservative 43.5%, Labour 41.0%, Liberal Democrat 7.6%, SNP 3.1%, Plaid Cymru 0.5%, UKIP 1.9% and Green 1.7%. For respondents who declared that they had voted for any of these seven parties I therefore multiply *wt_new_W13* by an error term that is equal to the proportion of the vote that their party actually obtained divided by the weighted proportions obtained from the data. I then use the new weights to calculate the following cross-tabulated proportions:

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https://doi.org/10.1007/978-3-030-03940-0

Reported vote versus education (degree or no degree)

For education, I use the BES variable *education* and use the two response categories "University or CNAA first degree (e.g. BA, B.Sc, B.Ed)" (education = 16) and "University or CNAA higher degree (e.g. M.Sc, Ph.D)" (education = 17) to signify that the respondent has obtained a degree and all other valid responses to signify that the respondent does not have a degree. After weighting the proportion of respondents found to have a degree was 28.1%. The responses "don't know" and "prefer not to say" are treated as missing values. The distributions obtained are as follows (Table A.1).

Reported vote versus age group

Using the same error terms and weights (*wt_new_W13*) that were used in the above analysis, I also explore reported vote intention by age category. The variable I use is the BES variable *age*. The results are shown in Table A.2.

Table A.1 Reported vote versus education

Party	*Degree (%)*	*No degree (%)*
Conservatives	34.7	46.9
Labour	46.4	38.4
Liberal democrats	11.0	6.3
SNP	3.3	3.0
Plaid Cymru	0.5	0.5
UKIP	0.8	2.3
Green party	1.8	1.6

Table A.2 Reported vote versus age group

Party	*18–24*	*25–34*	*35–44*	*45–54*	*55–64*	*65 and over*
Conservatives	18.3	26.8	36.6	44.0	50.5	62.4
Labour	65.7	57.1	46.9	40.2	32.8	23.5
Liberal democrats	7.9	8.8	8.2	7.1	6.9	7.0
SNP	3.3	3.0	3.6	3.1	3.6	2.3
Plaid Cymru	0.4	0.5	0.4	0.6	0.7	0.5
UKIP	0.8	0.9	1.5	2.2	2.6	2.4
Green party	2.8	1.7	1.8	1.7	1.6	0.9

Reported vote versus social grade

Once again using the same error terms and weights (*wt_new_W13*) that were used in the above analysis, I now explore reported vote intention by social grade. The variable I use is the BES variable *profile_socialgrade_cie*, which is a measure of the social grade of the chief income earner of the household. The results are reported in Table A.3.

Scotland

I repeat the above analysis for education and social grade in Scotland. Once again, there is a discrepancy between the proportion of respondents who reported as having voted for these parties, even after the weights *wt_new_W13* were applied, and the election results in Scotland. However, these discrepancies were rather smaller than they were in the UK as a whole. The weighted proportions are SNP 36.4%, Conservative 27.2%; Labour 27.3%, Liberal Democrat 6.5%, UKIP 0.6% and Green 0.4%, while the votes actually cast in Scotland were SNP 36.9%, Conservative 28.6%, Labour 27.1%, Liberal Democrat 6.8%, UKIP 0.2% and Green 0.2%. I therefore calculate error terms in the same way as I did for the UK as a whole to correct for these discrepancies. The relevant distributions after the weights and error terms have been taken into account are shown in Tables A.4 and A.5.

Table A.3 Reported vote versus social grade

Party	*ABC1*	*C2*	*DE*
Conservatives	44.2	45.7	38.3
Labour	39.6	40.5	45.4
Liberal democrats	8.9	5.6	5.4
SNP	2.6	3.2	4.5
Plaid Cymru	0.5	0.5	0.5
UKIP	1.3	2.3	3.2
Green party	1.8	1.3	1.4

Table A.4 Reported vote versus education (Scotland)

Party	*Degree (%)*	*No degree (%)*
SNP	41.1	35.1
Conservatives	24.8	30.1
Labour	24.7	27.9
Liberal democrats	8.8	6.0

Table A.5 Reported vote versus social grade (Scotland)

Party	*ABC1*	*C2*	*DE*
SNP	33.5	39.3	42.1
Conservatives	29.5	31.5	24.5
Labour	27.8	24.1	27.4
Liberal democrats	8.4	4.4	4.8

Chapters 3 and 4

Table A.6 shows the opinion variables from the British Election Study in the Mokken Scale Analysis that are used in Chapters 3 and 4. The left-hand column indicates the variable names that are used in the analysis (BES1 … 52), the middle column provides the actual names that were given to the variables in the British Election Study (see www.britishelectionstudy.com) and the right-hand column contains the questions that were given to respondents. Response categories are also included.

Table A.7 lists the variables taken from the British Election Study that are used in the party mapping and regression analyses in Chapters 3 and 4. The variable names are provided in the left-hand column, a description of the variable is provided in the middle column, while the response categories are provided on the right-hand side.

Finally, for Scotland in Chapter 4 I use two extra variables from BES Waves 1 and 11. The first is the variable *happyScotIndepResult*, which records respondents' attitudes to the question "How happy or how disappointed would you be if the 'yes' side won the referendum?" Responses varied from a minimum of 0 ("extremely disappointed") to a maximum of 10 ("extremely happy"), with a residual "don't know" category. The second is the variable *redist*, which records respondents' attitudes to the question:

Some people feel that government should make much greater efforts to make people's incomes more equal. Other people feel that government should be much less concerned about how equal people's incomes are. Where would you place yourself and the political parties on this scale?

Responses varied from a minimum of 0 ("Government should try to make incomes equal") to a maximum of 10 ("Government should be less concerned about equal incomes"), with a residual "don't know" category.

Table A.6 Opinion variables used from the BES in Mokken Scale Analysis

Item no.	*BES variable*	*Item*
BES1	lr1	Government should redistribute income from the better off to those who are less well off
BES2	lr2	Big business takes advantage of ordinary people
BES3	lr3	Ordinary working people do not get their fair share of the nation's wealth
BES4	lr4	There is one law for the rich and one for the poor
BES5	lr5	Management will always try to get the better of employees if it gets the chance
BES6	al1	Young people today don't have enough respect for traditional British values
BES7	al2	For some crimes, the death penalty is the most appropriate sentence
BES8	al3	Schools should teach children to obey authority
BES9	al4	Censorship of films and magazines is necessary to uphold moral standards
BES10	al5	People who break the law should be given stiffer sentences
Response categories for BES1–10: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree, Don't know		
BES11	immigEcon	Do you think immigration is good or bad for Britain's economy?
Response categories for BES11: max 7 (Good for economy), min 1 (Bad for economy), Don't know		
BES12	immigCultural	Do you think that immigration undermines or enriches Britain's cultural life?
Response categories for BES12: max 7 (Enriches cultural life), min 1 (Undermines cultural life), Don't know		
BES13–14: Do you think that Britain should allow more or fewer of the following kinds of people to come and live in Britain?		
BES13	asylumMore	asylum seekers

(continued)

Table A.6 (continued)

Item no.	*BES variable*	*Item*
BES14	euMore	workers from other EU countries
BES15	immigSelf	Do you think that Britain should allow more or fewer immigrants?
Response categories for BES13–15: max 10 (Many more), min 0 (Many fewer), Don't know		
BES16–18: Do you think that each of these has gone too far or not far enough?		
BES16	cutsTooFarNational	Cuts to public spending in general
BES17	privatTooFar	Private companies running public services
BES18	enviroProtection	Measures to protect the environment
Response categories for BES16–18: Not gone nearly far enough, Not gone far enough, About right, Gone too far, Gone much too far, Don't know		
BES19	EUIntegrationSelf	Some people feel that Britain should do all it can to unite fully with the European Union. Other people feel that Britain should do all it can to protect its independence from the European Union. Where would you place yourself and the political parties on this scale?
Response categories for BES19: max 10 Protect our independence, min 0 Unite fully with Europe, Don't know.		
BES20–22: Please say whether you think these things have gone too far or have not gone far enough in Britain.		
BES20	blackEquality	Attempts to give equal opportunities to ethnic minorities
BES21	femaleEquality	Attempts to give equal opportunities to women
BES22	gayEquality	Attempts to give equal opportunities to gays and lesbians

(continued)

Table A.6 (continued)

Item no.	*BES variable*	*Item*
Response categories for BES20–22: Not gone nearly far enough, Not gone far enough, About right, Gone too far, Gone much too far, Don't know		
BES23	ethno1	Britain has a lot to learn from other countries in running its affairs
BES24	ethno2	I would rather be a citizen of Britain than of any other country in the world
BES25	ethno3	There are some things about Britain today that make me ashamed to be British
BES26	ethno4	People in Britain are too ready to criticise their country
BES27	ethno5	The world would be a better place if people from other countries were more like the British
BES28	ethno6	I am often less proud of Britain than I would like to be
BES29	radical	We need to fundamentally change the way society works in Britain
BES30	harkBack	Things in Britain were better in the past
BES31	antiIntellectual	I'd rather put my trust in the wisdom of ordinary people than the opinions of experts
BES32	efficacyPolCare	Politicians don't care what people like me think
BES33	efficacyNoMatter	It doesn't matter which political party is in power
BES34	euFinancialHelp	Do you agree or disagree that in times of crisis, the United Kingdom should give financial help to another EU Member State facing severe economic and financial difficulties?

(continued)

Table A.6 (continued)

Item no.	*BES variable*	*Item*
BES35	euParlOverRide	The British Parliament should be able to override all EU laws
BES36	euLawsLevel	Some laws are better made at the European level
BES37	echr	European courts should be able to make decisions about human rights cases in Britain
BES38	euUndermineIdentity	Being a member of the European Union undermines Britain's distinctive identity
BES39	reasonForUnemployment	When someone is unemployed, it's usually through no fault of their own
BES40	immigrantsWelfareState	Immigrants are a burden on the welfare state
BES41	govtHandouts	Too many people these days like to rely on government handouts
BES42	polForTheRich	Politicians only care about people with money
BES43	prefTradeoff	The party I support shouldn't compromise on its values just to get more votes
BES44	beliefTradeoff	Parties are more likely to win elections when they stick to their principles
BES45	dutyToVote2	It is every citizen's duty to vote in an election
BES46	populism1	The politicians in the UK Parliament need to follow the will of the people
BES47	populism2	The people, and not politicians, should make our most important policy decisions.
BES48	populism4	I would rather be represented by a citizen than by a specialized politician
BES49	populism5	Elected officials talk too much and take too little action

(continued)

Table A.6 (continued)

Item no.	*BES variable*	*Item*
BES50	populism6	What people call "compromise" in politics is really just selling out on one's principles
Response categories for BES23–50: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree, Don't know		
BES51	scotDevoMax	Should the Scottish Parliament have more powers than it does at present, fewer powers, or should the Parliament's powers stay about the same as they are now?
Response categories for BES51: It should have many more powers; It should have some more powers; It should have about the same powers as it does now; It should have fewer powers than it does now; It should have many fewer powers; Don't know		
BES52	euPriorityBalance	Brexit priority: access to single market versus controlling immigration?
Response categories for BES52: max 10 (Control immigration), min 0 (Access to single market), Don't know		

Table A.7 Variables used from the BES used in regression analyses

Variable name	*Description*	*Response categories*
edlevel	Level of education	No qualifications
		GCSE D-G
		GCSE A*-C
		A-Level
		Undergraduate
		Postgraduate
gender	Gender	Male
		Female
generalElectionVote	General election vote intention (Wave 7), Recalled vote (Waves 6 and Wave 13).	Did not/will not vote
		Conservative
		Labour
		Liberal Democrat
		Scottish National Party (SNP)
		Plaid Cymru
		United Kingdom Independence Party (UKIP)
		Green Party
		British National Party (BNP)
		Other
		Don't know
gor	Government Office Region	London
		Twelve other categories provided by the BES
profile_gross_personal	Income (gross, personal)	Under £5000 p.a.
		£5000–£9999 p.a.
		£10,000–£14,999 p.a.
		£15,000–£19,999 p.a.
		£20,000–£24,999 p.a.
		£25,000–£29,999 p.a.
		£30,000–£34,999 p.a.
		£35,000–£39,999 p.a.
		£40,000–£44,999 p.a.
		£45,000–£49,999 p.a.
		£50,000–£59,999 p.a.
		£60,000–£69,999 p.a.
		£70,000–£99,999 p.a.
		£100,000 or over
		Prefer not to answer
		Don't know
profile_past_vote_2015	Recalled vote (2015)	Did not/will not vote
		Conservative

(continued)

Table A.7 (continued)

Variable name	*Description*	*Response categories*
		Labour Liberal Democrat Scottish National Party (SNP) Plaid Cymru United Kingdom Independence Party (UKIP) Green Party British National Party (BNP) Other Don't know
wt_full_W6	Full weight (Wave 6)	
wt_full_W7	Full weight (Wave 7)	
wt_new_W13	Updated YouGov weight (Wave 13)	

Appendix B: European Political Parties

The classification of French, German, Dutch, Danish, Swedish and British parties into four categories: (1) traditional right-wing parties, (2) traditional left-wing parties, (3) "closed" parties, and (4) "open" parties was based on the following classifications:

France

Sources Gougou and Labouret (2013); NSD (*Norsk Senter for Forskningsdata*), available at http://www.nsd.uib.no/european_election_database; French Interior Ministry, available at https://www.interieur.gouv.fr/Elections/Les-resultats/Legislatives/elecresult__legislatives-2017/(path)/legislatives-2017//FE.html. Both accessed 19 July 2018.

Traditional right-wing parties

In 1993 and 1997, this refers to the alliance led by the Rally for the Republic (*Rassemblement pour la République*) and the Union for French Democracy (*Union pour la Démocratie Française*). From 2002 it refers to 2012 the alliance led by the Union for a Popular Movement (*Union pour un Mouvement Populaire*).

Traditional left-wing parties

This refers to the alliance led by the Socialist Party (*Parti Socialiste*). It Included the French Communist Party (*Parti Communiste Français*) up to and including 2012, but excludes the Greens (*Les Verts*). It does not

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include the French Communist Party in 2017 as they were no longer in alliance with the socialists.

"Closed" parties
This refers to the National Front (*Front National*).

"Open" parties
From 1993 to 2002 This refers to the Greens (*Les Verts*) and other ecologist parties. In 2007 and 2012, it also includes the Democratic Movement (*Mouvement démocrate*) and in 2017 it includes Emmanuel Macron's party, *La République En Marche!*

Germany
Sources NSD (*Norsk Senter for Forskningsdata*); The Federal Returning Officer, *Ergebnisse Früherer Bundestagswahlen*, available at https://www.bundeswahlleiter.de/en/dam/jcr/397735e3-0585-46f6-a0b5-2c60c5b83de6/btw_ab49_gesamt.pdf; The Returning Officer, *Bundestag election 2017*, available at https://www.bundeswahlleiter.de/en/bundestagswahlen/2017/ergebnisse/bund-99.html. Both accessed 19 July 2018. Note that the figures used are for the party list votes (Zweitstimmen).

Traditional right-wing parties
This refers to the alliance between the Christian Democratic Union of Germany (*Christlich Demokratische Union Deutschlands*) and the Christian Social Union in Bavaria (*Christlich-Soziale Union in Bayern*).

Traditional left-wing parties
This refers to the Social Democratic Party of Germany (*Sozialdemokratische Partei Deutschlands*).

"Closed" parties
This refers to the Republicans (*Die Republikaner*), the National Democratic Party of Germany—The People's Union (*Nationaldemokratische Partei Deutschlands—Die Volksunion*) and from 2013 the Alternative for Germany (AfD).

"Open" parties
This includes Alliance '90/The Greens (*Bündnis 90/Die Grünen*). The Free Democratic Party (*Freie Demokratische Partei*) is not included as there is a degree of ambiguity as to whether it is an "open" party or a traditional right-wing party.

Netherlands

Sources NSD (*Norsk Senter for Forskningsdata*); Kiesraad, Uitslag van de verkiezing van de leden van de Tweede Kamer van 15 maart 2017, available at https://www.kiesraad.nl/adviezen-en-publicaties/rapporten/2017/3/kerngegevens-tweede-kamerverkiezing-2017/kerngegevens-tweede-kamerverkiezing-2017, accessed 19 July 2018.

Traditional right-wing parties

This refers to the People's Party for Freedom and Democracy (*Volkspartij voor Vrijheid en Democratie*) and the Christian Democratic Appeal (*Christen Democratisch Appèl*).

Traditional left-wing parties

This refers to the Labour Party (*Partij van de Arbeid*).

"Closed" parties

This refers to the Reformed Political Party (*Staatkundig Gereformeerde Partij*), the Conservative Democrats (*Conservatieve Democraten*), the List Pim Fortuyn (*Lijst Pim Fortuyn*), the Party for Freedom (*Partij voor de Vrijheid*) and the Forum for Democracy (*Forum voor Democratie*).

"Open" parties

This refers to the Democrats 66 (*Democraten 66*) and GreenLeft (*GroenLinks*).

Denmark

Sources NSD (*Norsk Senter for Forskningsdata*); Danmarks Statistik, FOLKETINGSVALG TORSDAG 18. JUNI 2015, available at http://www.dst.dk/valg/Valg1487635/valgopg/valgopgHL.htm, accessed 20 July 2018.

Traditional right-wing parties

This refers to the Liberal Party (*Venstre*), the Conservative People's Party (*Konservative Folkeparti*), Christian People's Party (*Kristelig Folkeparti*) and the Christian Democrats (*Kristendemokraterne*).

Traditional left-wing parties

This refers to the Social Democrats (*Socialdemokraterna*).

"Closed" parties

This refers to the Progress Party (*Fremskridtspartiet*) and the Danish People's Party (*Dansk Folkeparti*).

"Open" parties
This refers to the Danish Social Liberal Party (*Radikale Venstre*), the Socialist People's Party (*Socialistisk Folkeparti*) and the Alternative (*Alternativet*).

Sweden
Sources NSD (*Norsk Senter for Forskningsdata*); Valmyndigheten. Available at https://data.val.se/val/val2014/slutresultat/R/rike/index.html, accessed 20 July 2018.

Traditional right-wing parties
This refers to the Moderate Party (*Moderaterna*) and the Christian Democrats (*Kristdemokraterna*).

Traditional left-wing parties
This refers to the Swedish Social Democratic Party (*Sveriges Socialdemokratiska arbetarparti - Socialdemokraterna*).

"Closed" parties
This refers to the Sweden Democrats (Sverigedemokraterna).

"Open" parties
This refers to the Liberal People's Party (Folkepartiet Liberalerna), Green Party (Miljöpartiet de Gröna) and Feminist Initiative (Feministiskt Initiativ).

United Kingdom
Sources UK Parliament, *No. 61 General Election Results, 9 April 1992*, available at https://www.parliament.uk/documents/commons-information-office/m13.pdf; House of Commons Library, *General election results 1 May 1997*, available at http://researchbriefings.parliament.uk/ResearchBriefing/Summary/RP01-38; House of Commons Library, *General Election results, 7 June 2001, Research Paper 01/54 (Revised edition) 18 June 2001*, available at https://web.archive.org/web/20090325144621/http://www.parliament.uk/commons/lib/research/rp2001/rp01-054.pdf; BBC, Election 2005: Full National Scoreboard, available at http://news.bbc.co.uk/1/shared/vote2005/html/scoreboard.stm; BBC, Election 2010: Full National Scoreboard, available at http://news.bbc.co.uk/1/shared/election2010/results; BBC, Election 2015: Results, available at https://www.bbc.co.uk/news/election/2015/results; BBC, Election 2015: Results, available at

https://www.bbc.co.uk/news/election/2017/results. All accessed 20 July 2018.

Traditional right-wing parties
This refers to the Conservative Party.

Traditional left-wing parties
This refers to the Labour Party.

"Closed" parties
This refers to the United Kingdom Independence Party (UKIP) and the British National Party (BNP).

"Open" parties
This refers to the Liberal Party, the SDP-Liberal Alliance, the Liberal Democrats and the Green Party.

Appendix C: Cleaning and Preprocessing VAA-Generated Data

Cleaning

The aim of cleaning the raw datasets generated by Voting Advice Applications (VAAs) is to ensure that our data is not unduly influenced by inputs from users who either fill in the questionnaire very rapidly without paying attention to the items, or complete the questionnaire many times, or are not eligible to vote. During the cleaning process, I therefore remove: (1) all observations in which the time taken to complete the thirty issue statements of the VAA was less than 120 seconds; (2) all observations in which the time taken to respond to three or more issue statements was two seconds or less; (3) all observations in which the respondent answered ten successive issue statements in the same way; (4) all observations in which there are twenty or more "no opinion" responses to issue statements; and (5) all observations in which the user was under the age of 18 (on the grounds that he/she was too young to vote) or claimed to be aged 95 or over (on the grounds that he/she was probably entering incorrect data). To filter out repeat entries in the case of WhoGetsMyVoteUK (see Chapters 3 and 4), I use a cookie which determined whether or not it is the first time the website has been accessed on the user's computer; if it is not the first time I remove the entry on the grounds that it may be a repeat entry. For the EUvox VAA (see Chapter 5), the procedure is a little more complicated;

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all observations in which (i) an encrypted and anonymised code corresponding to the user IP address, (ii) date of birth, and (iii) gender are all identical to previous observations are removed. For EUvox, I also remove all observations in which the user self-identified with a citizenship other than that of the country in question and all observations in which the user completed the questionnaire by smartphone (this is because EUvox was designed in such a way that it may not have been intuitively obvious how to register "no opinion" by smartphone).

Preprocessing Data[1]

The preprocessing of the data is a crucial stage in making our VAA-generated data more representative of the target population. Such data can be, and usually is, heavily skewed towards certain groups such as young and politically interested individuals. Furthermore, depending on how a VAA is promoted it could also have strong ideological biases (e.g. mostly left-leaning or right-leaning respondents). In practice, the "unrepresentativeness" of a VAA dataset will depend on many factors such as the setting in which it is deployed and the degree to which such tools are commonly used during election campaigns. Here I use the terms "balancing" or "calibrating" to refer to the process of making a VAA dataset more "representative". To calibrate a VAA dataset there are various post-survey adjustment techniques that could be used, such as raking, a standard procedure in survey research. Raking relies on having reliable estimates of population parameters (for example, age, gender and voting intention), which a researcher wants to calibrate. The raking algorithm will then work iteratively with the marginal distributions of the selected variables to return a weighted dataset that best approximates the desired target population distributions. The post-survey adjustment approach draws on the logic of raking for generating datasets that can be analysed using techniques that do not allow for weighted observations, such as Mokken Scaling Analysis (see Appendix D).

The first step in the calibration approach is to be clear about what constitutes the target population. For WhoGetsMyVoteUK (see Chapters 3 and 4), the target population are voters in England, Scotland and Wales. Note that this population is not the same as the general population as

[1] For this section I would like to thank Fernando Mendez of the University of Zurich for his input.

obviously the voting population excludes minors and will therefore be older than the general population. For WhoGetsMyVoteUK data, I calculate the characteristics of the voting population from four sources:

i. The 2015 general election result. This allows me to calculate the desired distribution amongst WhoGetsMyVoteUK respondents for the supplementary question "In the last general election of 2015, for which party, if any, did you vote?" Given that those aged eighteen or nineteen in 2017 would not have been eligible to vote in 2015, I only consider respondents aged 20 years and from WhoGetsMyVoteUK and discard younger voters from the dataset before beginning calibration.
ii. The results of the EU referendum in 2016. This allows me to calculate the desired distribution amongst WhoGetsMyVoteUK respondents for the supplementary question "How did you vote in the European Union membership referendum of 2016?"
iii. (In Scotland only) The results of the 2014 Scottish independence referendum. This allows me to calculate the desired distribution amongst WhoGetsMyVoteUK (Scotland) respondents for the supplementary question "How did you vote in the Scottish independence referendum of 2014?"
iv. The British Election Study Wave 12 (2017) dataset. This dataset was obtained at exactly the same time as the WhoGetsMyVoteUK dataset (during the 2017 election campaign) and I derive from it the joint distribution for age by education (taking into account the weighting variable wt_new_W12) by dichotomising both variables: (1) for age, below versus above a particular age and (2) for education, degree versus no degree. In the case of England and Wales, the threshold age used is the median age (53 years) for BES (Wave 12) voters over the age of twenty, while for Scotland I use a threshold of 45 years (for reasons, see below).

Once the desired parameters were established these were supplied to the calibration algorithm which, as with raking, works iteratively to return a resampled dataset that best approximates the target population parameters. I made sure that the mean absolute error between the calibrated dataset and the original was less than 0.0025. Because I calibrate the Scotland dataset using four variables instead of three (including also the reported vote in the 2014 independence referendum) and because

there are anyway fewer Scottish users with the sample disproportionately favouring younger voters, I use a slightly lower threshold to dichotomise age. The result may be that there are a slightly lower proportion of voters over 55 in our calibrated sample than amongst the population as a whole, but I consider this a price worth paying in exchange for a sample that better reflects users' options (in terms of the critical issue of Scottish independence).

After cleaning, the number of observations remaining for WhoGetsMyVoteUK in England and Wales on the one hand and Scotland on the other are 44,764 and 15,559 respectively. After preprocessing, the respective figures are 5660 and 1142, respectively.

Obtaining a calibrated dataset from the EUvox dataset (see Chapter 5) was done a little differently. To derive parameter estimates for our target population of voters I rely on the European Social Survey (ESS) from the years 2012 or 2014 (for Greece only the year 2010 was available). Weighted distributions using the ESS weights are derived for three balancing variables and their subgroups. For the first variable, as previously I derive joint distributions for age and education (this time using ESS weights) and dichotomise both variables: (1) for age, below versus above the median age and (2) for education, degree versus no degree. The other two variables I use from ESS are gender and political interest. I do this because the EUvox dataset was skewed heavily both in favour of males and in favour of respondents expressing high levels of political interest. These biases were absent amongst WhoGetsMyVoteUK users. Lastly, I use the share of the vote that each significant party obtained in the 2014 elections to the European parliament (I define a significant party as one that garnered at least 4% of the vote) to estimate the vote intention of the overall voting population, which I matched against VAA users' responses to a question on how they intended to vote. I use vote intention, rather than past vote, because in some countries elections had been held up to four years previous to the VAA and some users may have found it difficult to recall their past vote. Since the VAA is a pre-election survey I also included an "undecided" category for calibrating. When checking the distributions for the undecided category I found a large variability between opinion polls not only across countries but within countries. I opted for 20% as a reasonable parameter to apply across countries.

In most cases, the calibration algorithm converged for the respective EUvox datasets without the need for further preprocessing. However, when a country dataset failed to converge satisfactorily, which I define as

Table C.1 Number of observations in each dataset (EUvox)

Country	*Raw dataset*	*Clean dataset*	*Replicated?*	*Calibrated dataset*	*Unique observations*
Austria	11,170	6860	No	666	666
Bulgaria	7544	5937	Yes	1185	495
Cyprus	5345	3395	Yes	780	356
Czech Republic	29,131	22,954	No	1362	1362
Denmark	138,991	90,056	No	17,711	17,711
England	131,040	80,137	No	8931	8931
Estonia	18,646	15,750	No	1383	1383
Finland	8422	6574	No	558	558
France	9144	6352	No	920	920
Germany	10,027	6378	Yes	1490	813
Greece	65,918	47,566	No	1990	1990
Hungary	7306	5967	Yes	788	262
Ireland	10,089	5677	Yes	1329	522
Italy	38,342	26,950	No	837	837
Poland	76,467	59,479	No	3076	3076
Portugal	56,980	41,927	No	1880	1880
Romania	9890	7956	Yes	2030	817
Slovakia	7496	5835	Yes	1197	499
Slovenia	4173	2664	Yes	689	332
Spain	295,495	169,538	No	4414	4414

less than 500 samples, two further steps were added. I first used standard raking with a truncated upper limit of 8. The raked fractional weights were rounded to the nearest integer and each respective observation was replicated a number of times corresponding to its (integer) weight. I then ran the calibration algorithm on the new dataframe to return a balanced, resampled dataset. I used this replicate weights approach in eight of the EUvox cases. The size of the datasets at various stages of cleaning and preprocessing (from the raw datasets to the calibrated datasets), as well as whether replication weights were used, are shown in Table C.1. The right-hand column in Table C.1 shows the number of unique observations in the calibrated datasets, which is lower than the total number of observations in the eight cases in which replication was used.

Appendix D: Mokken Scale Analysis

Procedure

Mokken Scale Analysis (MSA) is a psychometric method of data reduction that belongs to Item Response Theory. It is used to generate unidimensional scales of hierarchically ordered items. These scales are known as Mokken Scales, named after the Dutch political scientist, Rob Mokken, who invented them (Mokken 1971). For each scale, MSA generates a value H (also known as Loevinger's H) that is a measure of the consistency of the items in a given scale, as well as values H_j that measure the normed covariance between each item score and the rest score. A group of items is said to form a Mokken Scale if all H_j of each item satisfy $H_j > c$, where $c \geq 0.3$ and if all the items in the Scale satisfy the monotone homogeneity model (see below).

In this book I use the *R* package Mokken to determine whether these criteria are satisfied. The items used are user responses to the issue statements in WhoGetsMyVoteUK and EUvox, with a value of 4 assigned to the item if the user response is "completely agree", 3 if the response is "agree", 2—"neither agree nor disagree", 1—"disagree" and 0—"completely disagree". "No opinion" responses are treated as missing values. However, because items may point in opposite directions on the same ideological dimension, I also add dummy items with the hierarchy of the values reversed (i.e. with 0 representing "completely agree" and 4 representing "completely disagree").

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To constitute a scale in MSA (a) each variable V_j that belongs to the scale must covary with the total score of the other variables belonging to it (the rest score) with a normed covariance (or item scalability coefficient) H_j that is more than a certain lower bound c, and (b) the scale must satisfy the monotonicity requirement that as the value along the latent variable (as measured by the mean item score of the scale) changes, so the probability of a corresponding unidirectional change in each item of the scale changes accordingly and in the direction expected (Sijtsma and Molenaar 2002). In our case, the variables V_j are the responses of users to the VAA issue statements and the corresponding dummy items.

For the quasi-inductive part of the analysis (see main manuscript), I carry out the following procedure. First, following Emons et al. (2012) and Sijtsma and van der Ark (2017), I run what is known as an automated item selection procedure (AISP) in *R* (using the *R* package "mokken") on all the items V_j and all reversed (dummy) items $Vrev_j$, gradually increasing the lower bound c in increments of 0.05 for the coefficients H_j. In AISP I use a genetic algorithm that first identifies the longest scale that satisfies $H_j > c$ for all j in the scale by experimenting with all possible combinations of items and then begins the process again by identifying scales out of the remaining items (Straat et al. 2013). For very low values of c, we expect to find just two scales, with the second of these simply containing the same items as the first, but reversed. As we increase c we expect to see these scales break up into several separate scales that contain items that are substantively rather similar. Finally, as c increases further still, we expect the new scales to shrink and fragment further into idiosyncratic scales consisting of pairs of items. However, I stop the process when we reach the second stage (i.e. shortly after the single overarching scales have split into several distinct scales) providing c has reached a minimum threshold of 0.3. I then discard those scales that are merely the reverse of another scale and check that all items H_j in each scale satisfy the monotonicity criterion. To check whether the scales generated satisfy the monotone homogeneity model, I use the function summary (check.monotonicity) in the Mokken package. This function generates Diagnostic Crit ("crit") values to measure the number of violations to the model. I determine this criterion to be met if the "crit" value for each item is not greater than 80, as values more than 80 indicate serious violations of monotonicity (Sijtsma and Molenaar 2002). I remove all items that do not satisfy this condition and look for other items to

replace them that satisfy both the monotonicity criterion and the requirement that $H_j > c$. Next, I remove all ambiguous items from each scale, i.e. those that satisfy $H_j > c$ for more than one scale. Once again, if I remove items I look for viable substitutes that satisfy all conditions. The items that still remain in each scale are deemed to constitute a particular ideological dimension. A scale is considered weak if Loevinger's $H \geq 0.3$, of medium strength if $H \geq 0.4$, and strong if $H \geq 0.5$ (Mokken 1971). For the purposes of this analysis, only scales that contain three or more items are considered.

Results

The aim of this section is to provide in more detail the results of the analysis that is cited in Chapters 3 and 4. Table D.1 presents in detail the results of Mokken Scale Analysis on the BES Wave 7 dataset that is described in Chapter 3, while Table D.2 presents the results of MSA on WhoGetsMyVoteUK. For Chapter 4 Table D.3 presents the results of MSA on BES Wave 13 data, Table D.4 presents a similar analysis that only includes items that were also used in BES Wave 6 (2015) data, while Table D.5 provides the results of MSA on BES Wave 6 data, using only those items that were also used in Wave 13. The numbers provided are the values of H_j and the overall value of H (Loevinger's H). Note that for the analysis of Scotland data for WhoGetsMyVoteUK, two solutions are possible (see Table D.2). With $c = 0.3$ we have a single dimension that includes twenty-six out of thirty items. If we increase c to 0.4, distinct economic and cultural scales split off, but eight of the twenty-six items are no longer scaleable.

Table D.1 Mokken scale analysis, BES data, Wave 7 (2016)

	England & Wales			*Scotland*		
Item	*Ec. dimension*	*Cul. dimension*	*Pop. dimension*	*Ec. dimension*	*Cul. dimension*	*Pop. dimension*
BES1	0.514			0.523		
BES2	0.524			0.508		
BES3	0.542			0.548		
BES4				0.526		
BES5	0.439			0.419		
BES6		0.499		x	x	x
BES7		0.503			0.533	
BES8		0.439			0.450	
BES9						
BES10		0.497			0.507	
BES11		0.578			0.617	
BES12		0.590			0.624	
BES13		0.572			0.612	
BES14		0.533			0.573	
BES15		0.615			0.633	
BES16	0.474			0.466		
BES17	0.445			0.445		
BES18		0.379			0.416	
BES19		0.577			0.534	
BES20		0.527			0.569	
BES21		0.330			0.364	
BES22		0.431			0.483	
BES23		0.417		x	x	x
BES24				x	x	x
BES25				x	x	x
BES26				x	x	x
BES27		0.374		x	x	x
BES28				x	x	x
BES29				x	x	x
BES30		0.434			0.427	
BES31						0.450
BES32			0.472			0.417
BES33						
BES34		0.556			0.576	
BES35		0.574		x	x	x
BES36		0.558			0.560	
BES37		0.539			0.564	
BES38		0.579		x	x	x
BES39						
BES40		0.605			0.637	

(continued)

Table D.1 (continued)

	England & Wales			*Scotland*		
Item	*Ec. dimension*	*Cul. dimension*	*Pop. dimension*	*Ec. dimension*	*Cul. dimension*	*Pop. dimension*
BES41						
BES42						
BES43						
BES44						
BES45						
BES46			0.473	x	x	x
BES47			0.552			0.503
BES48			0.540			0.496
BES49			0.513			0.469
BES50						0.452
BES51	x	x	x	0.375		
H	0.490	0.517	0.512	0.475	0.545	0.465

Table D.2 Mokken scale analysis, WhoGetsMyVoteUK data (May–June 2017)

	England & Wales		*Scotland*		
Item	*Ec. dimension*	*Cul. dimension*	*Unidimensional*	*Ec. dimension*	*Cul. dimension*
1		0.616	0.510		0.650
2		0.626	0.521		0.655
3		0.629	0.482		0.638
4		0.587	0.496		0.616
5		0.446	0.353		0.468
6			0.450		0.514
7	0.482		0.411	0.507	
8			0.345		
9	0.362		0.361	0.421	
10					
11			0.327		
12	0.466		0.379	0.495	
13	0.451		0.358	0.478	
14	0.408				
15			x	x	x
16					
17			0.383		
18	0.438		0.322	0.427	
19		0.584	0.398		0.550

(continued)

Table D.2 (continued)

	England & Wales		*Scotland*		
Item	*Ec. dimension*	*Cul. dimension*	*Unidimensional*	*Ec. dimension*	*Cul. dimension*
20			0.421		
21			x	x	x
22		0.595	0.509		0.622
23		0.597	0.486		0.619
24		0.381	0.322		
25		0.540	0.396		0.527
26		0.489	0.444		0.515
27					
28		0.363	0.334		
29			0.311		
30			0.458		
31	x	x	0.492		
32	x	x	0.470		
H	0.437	0.547	0.420	0.466	0.585

Table D.3 Mokken scale analysis, BES data, Wave 13 (2017)

	England & Wales		*Scotland*	
Item	*Ec. dimension*	*Cul. dimension*	*Ec. dimension*	*Cul. dimension*
BES1	0.610		0.616	
BES2	0.641		0.662	
BES3	0.664		0.680	
BES5	0.553		0.556	
BES7		0.567		0.596
BES8		0.499		0.519
BES10		0.552		0.581
BES11		0.648		0.652
BES12		0.646		0.651
BES13		0.630		0.643
BES19		0.596		0.575
BES52		0.633		0.641
H	0.617	0.600	0.628	0.609

Table D.4 Mokken scale analysis, BES data, Wave 13 (2017), items common with Wave 6

	England & Wales		*Scotland*	
Item	*Ec. dimension*	*Cul. dimension*	*Ec. dimension*	*Cul. dimension*
BES1	0.610		0.616	
BES2	0.641		0.662	
BES3	0.664		0.680	
BES5	0.553		0.556	
BES6		0.630		
BES7		0.599		0.627
BES8		0.602		0.599
BES10		0.632		0.648
H	0.617	0.615	0.628	0.625

Table D.5 Mokken scale analysis, BES data, Wave 6 (2015), items common with Wave 13

	England & Wales		*Scotland*	
Item	*Ec. dimension*	*Cul. dimension*	*Ec. dimension*	*Cul. dimension*
BES1	0.616		0.598	
BES2	0.659		0.670	
BES3	0.673		0.679	
BES5	0.574		0.572	
BES6		0.599		
BES7		0.582		0.604
BES8		0.570		0.563
BES10		0.620		0.645
H	0.630	0.592	0.629	0.604

Appendix E: Regression Results

Tables E.1 and E.2 show the results of multilinear regression analyses carried out on BES (Wave 7, 2016) data using the function "lm" on the R software platform. The Wave 7 weighting variable wt_full_W7 was used in the regressions. The economic and cultural dimensions used are those identified from BES, Wave 7 (see Chapter 3). These results are described in Chapter 3.

Tables E.3, E.4, E.5, E.6, E.7 and E.8 show logistic regressions carried out on BES Wave 13 data using the function "glm" on the R software platform. The Wave 13 weighting variable wt_new_W13 was used in the regressions. The economic and cultural dimensions used are those identified from BES, Wave 13 (see Chapter 4). The economic and cultural dimensions used are those identified from BES, Wave 13 (see Chapter 4). These results are described in Chapter 4.

Tables E.9, E.10 and E.11 show the logistic regressions that were performed on BES Wave 13 data, in which respondents' positions on each dimension were calculated from their positions on items that were common with BES Wave 6 (2015).

Tables E.12, E.13 and E.14 show the logistic regressions that were performed on BES Wave 6 data, in which respondents' positions on each dimension was calculated from their positions on items that were shared in common between BES Wave 13 (2017) and BES Wave 6 (2015).

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Table E.1 Regression results, economic dimension

Dependent variable			
Ec. Dim			
	(1)	*(2)*	*(3)*
Age	−0.001*** (−0.001, −0.0005)	−0.001*** (−0.001, −0.001)	−0.001*** (−0.001, −0.001)
London	−0.011** (−0.018, −0.003)	−0.023*** (−0.031, −0.015)	−0.024*** (−0.032, −0.015)
Education	0.015*** (0.013, 0.017)		0.006*** (0.004, 0.009)
Income		0.014*** (0.013, 0.015)	0.013*** (0.012, 0.014)
Gender (F)	−0.007** (−0.013, −0.002)	0.006* (0.0001, 0.011)	0.007* (0.001, 0.013)
Constant	0.276*** (0.264, 0.288)	0.267*** (0.256, 0.277)	0.253*** (0.240, 0.267)
Observations	18,334	16,802	14,471
R^2	0.019	0.056	0.056
Adjusted R^2	0.019	0.055	0.055

Note *p < 0.05; **p < 0.01; ***p < 0.001; F = female

Table E.2 Regression results, cultural dimension

Dependent variable			
Cul. Dim			
	(1)	*(2)*	*(3)*
Age	−0.003*** (−0.003, −0.003)	−0.003*** (−0.004, −0.003)	−0.002*** (−0.003, −0.002)
London	0.018*** (0.010, 0.027)	0.029*** (0.019, 0.039)	0.022*** (0.012, 0.032)
Education	0.047*** (0.044, 0.049)		0.050*** (0.047, 0.052)
Income		0.003*** (0.002, 0.004)	−0.003*** (−0.005, −0.002)
Gender (F)	0.0004 (−0.006, 0.006)	0.008* (0.001, 0.014)	−0.002 (−0.009, 0.004)
Constant	0.380*** (0.367, 0.394)	0.528*** (0.515, 0.541)	0.372*** (0.356, 0.387)
Observations	15,831	14,604	12,553
R^2	0.185	0.079	0.172
Adjusted R^2	0.185	0.079	0.172

Note *p < 0.05; **p < 0.01; ***p < 0.001; F = female

Table E.3 Regression results 2017 (Labour vote), Wave 13 (2017) data

Dependent variable		
Labour		
	(1)	*(2)*
Ec. Dim	−4.856*** (−5.095, −4.618)	−4.701*** (−4.978, −4.423)
Cul. Dim	3.592*** (3.414, 3.770)	3.402*** (3.174, 3.631)
Age		−0.016*** (−0.019, −0.013)
London		0.042 (−0.094, 0.179)
Education		−0.039 (−0.081, 0.002)
Income		−0.026** (−0.043, −0.009)
Gender (F)		0.297*** (0.199, 0.396)
Constant	−0.634*** (−0.735, −0.533)	0.345** (0.105, 0.586)
Observations	15,503	11,647
Akaike Inf. Crit.	13,673.570	10,184.900

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.4 Regression results 2017 (Conservative vote), Wave 13 (2017) data

Dependent variable		
Conservative		
	(1)	*(2)*
Ec. Dim	5.472*** (5.234, 5.709)	5.265*** (4.985, 5.545)
Cul. Dim	−5.040*** (−5.263, −4.818)	−4.938*** (−5.218, −4.658)
Age		0.028*** (0.024, 0.031)
London		−0.158* (−0.310, −0.005)
Education		0.050* (0.008, 0.092)
Income		0.071*** (0.053, 0.089)
Gender (F)		0.0001 (−0.103, 0.103)
Constant	−0.528*** (−0.628, −0.429)	−2.434*** (−2.699, −2.169)
Observations	15,503	11,647
Akaike Inf. Crit.	13,671.180	9,664.048

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.5 Regression results 2017 (LibDem vote), Wave 13 (2017) data

Dependent variable		
LibDem		
	(1)	*(2)*
Ec. Dim	0.694*** (0.397, 0.991)	0.614*** (0.265, 0.963)
Cul. Dim	3.475*** (3.206, 3.744)	3.415*** (3.067, 3.762)
Age		0.010*** (0.006, 0.015)
London		−0.251* (−0.453, −0.050)
Education		0.111** (0.043, 0.178)
Income		0.020 (−0.003, 0.043)
Gender (F)		−0.126 (−0.271, 0.020)
Constant	−4.205*** (−4.412, −3.998)	−5.024*** (−5.421, −4.626)
Observations	15,503	11,647
Akaike Inf. Crit.	7,254.658	5,444.074

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.6 Regression results 2015 (Labour vote), Wave 13 (2017) data

Dependent variable		
Labour		
	(1)	*(2)*
Ec. Dim	−4.011*** (−4.252, −3.771)	−3.925*** (−4.202, −3.648)
Cul. Dim	2.456*** (2.286, 2.626)	2.487*** (2.266, 2.707)
Age		0.008*** (0.004, 0.011)
London		0.363*** (0.230, 0.496)
Education		0.005 (−0.037, 0.047)
Income		0.002 (−0.015, 0.020)
Gender (F)		0.182*** (0.082, 0.282)
Constant	−0.948*** (−1.055, −0.842)	−1.463*** (−1.710, −1.215)
Observations	15,425	11,603
Akaike Inf. Crit.	12,929.750	9,882.547

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.7 Regression results 2015 (Conservative vote), Wave 13 (2017) data

Dependent variable		
Conservative		
	(1)	*(2)*
Ec. Dim	4.783*** (4.570, 4.995)	4.556*** (4.307, 4.806)
Cul. Dim	−1.621*** (−1.798, −1.444)	−1.751*** (−1.980, −1.521)
Age		0.015*** (0.012, 0.018)
London		−0.111 (−0.251, 0.028)
Education		0.080*** (0.040, 0.120)
Income		0.060*** (0.044, 0.076)
Gender (F)		0.102* (0.006, 0.199)
Constant	−1.745*** (−1.851, −1.639)	−2.996*** (−3.251, −2.742)
Observations	15,425	11,603
Akaike Inf. Crit.	15,213.090	10,980.020

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.8 Regression results 2015 (LibDem vote), Wave 13 (2017) data

Dependent variable		
LibDem		
	(1)	*(2)*
Ec. Dim	−0.043 (−0.384, 0.298)	0.002 (−0.397, 0.400)
Cul. Dim	2.561*** (2.273, 2.849)	2.674*** (2.296, 3.052)
Age		0.020*** (0.015, 0.026)
London		−0.251* (−0.484, −0.018)
Education		0.172*** (0.096, 0.247)
Income		0.0004 (−0.026, 0.027)
Gender (F)		−0.019 (−0.183, 0.144)
Constant	−3.816*** (−4.031, −3.601)	−5.427*** (−5.877, −4.977)
Observations	15,425	11,603
Akaike Inf. Crit.	5,886.878	4,385.648

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.9 Regression results 2017 (Labour vote), Wave 13 (2017) data, using only items shared with Wave 6 (2015) data

Dependent variable		
Labour		
	(1)	*(2)*
Ec. Dim	−4.703*** (−4.909, −4.496)	−4.617*** (−4.861, −4.374)
Cul. Dim	2.860*** (2.702, 3.017)	2.395*** (2.200, 2.590)
Age		−0.020*** (−0.023, −0.017)
London		0.093 (−0.025, 0.212)
Education		0.056** (0.020, 0.091)
Income		−0.023** (−0.039, −0.008)
Gender (F)		0.274*** (0.188, 0.360)
Constant	−0.133** (−0.213, −0.053)	0.798*** (0.592, 1.004)
Observations	17,904	13,272
Akaike Inf. Crit.	18,107.810	13,050.500

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.10 Regression results 2017 (Conservative vote), Wave 13 (2017) data, using only items shared with Wave 6 (2015) data

Dependent variable		
Conservative		
	(1)	*(2)*
Ec. Dim	5.433*** (5.221, 5.645)	5.310*** (5.057, 5.564)
Cul. Dim	−4.039*** (−4.236, −3.842)	−3.667*** (−3.910, −3.425)
Age		0.034*** (0.031, 0.037)
London		−0.180** (−0.313, −0.048)
Education		−0.010 (−0.046, 0.027)
Income		0.060*** (0.044, 0.076)
Gender (F)		−0.053 (−0.144, 0.038)
Constant	−1.205*** (−1.290, −1.121)	−3.254*** (−3.490, −3.018)
Observations	17,904	13,272
Akaike Inf. Crit.	17,776.730	12,174.160

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.11 Regression results 2017 (LibDem vote), Wave 13 (2017) data, using only items shared with Wave 6 (2015) data

Dependent variable		
LibDem		
	(1)	*(2)*
Ec. Dim	0.115 (−0.154, 0.384)	0.079 (−0.235, 0.393)
Cul. Dim	2.308*** (2.084, 2.533)	2.046*** (1.764, 2.328)
Age		0.007*** (0.003, 0.012)
London		−0.157 (−0.340, 0.026)
Education		0.243*** (0.182, 0.305)
Income		0.024* (0.002, 0.045)
Gender (F)		−0.111 (−0.244, 0.022)
Constant	−3.331*** (−3.482, −3.179)	−4.382*** (−4.725, −4.039)
Observations	17,904	13,272
Akaike Inf. Crit.	8,965.549	6,595.374

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.12 Regression results 2015 (Labour vote), Wave 6 (2015) data

Dependent variable		
Labour		
	(1)	*(2)*
Ec. Dim	−5.159*** (−5.347, −4.972)	−4.989*** (−5.214, −4.764)
Cul. Dim	1.487*** (1.345, 1.629)	1.413*** (1.236, 1.591)
Age		−0.001 (−0.004, 0.001)
London		0.330*** (0.220, 0.440)
Education		−0.037* (−0.069, −0.005)
Income		−0.015 (−0.030, 0.0001)
Gender (F)		0.146*** (0.067, 0.224)
Constant	0.202*** (0.132, 0.272)	0.348*** (0.159, 0.538)
Observations	21,226	14,314
Akaike Inf. Crit.	22,000.920	15,675.510

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.13 Regression results 2015 (Conservative vote), Wave 6 (2015) data

Dependent variable		
Conservative		
	(1)	*(2)*
Ec. Dim	6.484*** (6.285, 6.683)	6.466*** (6.221, 6.711)
Cul. Dim	−3.047*** (−3.230, −2.863)	−3.052*** −3.281, −2.823)
Age		0.010*** (0.007, 0.013)
London		−0.050 (−0.175, 0.074)
Education		0.033 (−0.002, 0.068)
Income		0.036*** (0.020, 0.051)
Gender (F)		0.100* (0.015, 0.185)
Constant	−2.003*** (−2.086, −1.920)	−2.784*** (−2.997, −2.572)
Observations	21,226	14,314
Akaike Inf. Crit.	20,477.600	13,920.860

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Table E.14 Regression results 2015 (LibDem vote), Wave 6 (2015) data

Dependent variable		
LibDem		
	(1)	*(2)*
Ec. Dim	−0.016 (−0.235, 0.202)	0.155 (−0.111, 0.421)
Cul. Dim	2.458*** (2.259, 2.658)	2.127*** (1.872, 2.382)
Age		0.009*** (0.006, 0.013)
London		−0.326*** (−0.499, −0.153)
Education		0.258*** (0.206, 0.311)
Income		0.014 (−0.006, 0.034)
Gender (F)		−0.154* (−0.271, −0.037)
Constant	−3.184*** (−3.308, −3.060)	−4.287*** (−4.581, −3.993)
Observations	21,226	14,314
Akaike Inf. Crit.	12,351.660	8,584.485

Note *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; F = female

Bibliography

Achen, C. H., & Bartels, L. M. (2002). *Ignorance and Bliss in Democratic Politics: Party Competition with Uninformed Voters.* Presentation at the Annual Meeting of the Midwest Political Science Association, Chicago.

Anwar, M., Roach, P., & Sondhi, R. (2000). Introduction. In M. Anwar, P. Roach, & R. Sondhi (Eds.), *From Legislation to Integration? Race Relations in Britain*. Basingstoke and London: Macmillan.

Bakker, R., Jolly, S., & Polk, J. (2012). Complexity in the European Party Space: Exploring Dimensionality with Experts. *European Union Politics, 13*(2), 219–245.

Bakker, R., de Vries, C., Edwards, E., Hooghe, L., Jolly, S., Marks, G., Polk, J., Rovny, J., Steenbergen, M., & Vachudova, M. A. (2014). Measuring Party Positions in Europe. *Party Politics, 21*(1), 143–152.

Bale, T., Green-Pedersen, C., Krouwel, A., Luther, K. R., & Sitter, N. (2010). If You Can't Beat Them, Join Them? Explaining Social Democratic Responses to the Challenge from the Populist Radical Right in Western Europe. *Political Studies, 58*(3), 410–426.

Benoit, K., & Laver, M. (2012). The Dimensionality of Political Space: Epistemological and Methodological Considerations. *European Union Politics, 13*(2), 194–218.

Beramendi, P., Häusermann, S., Kitschelt, H., & Kriesi, H. (2015). Introduction: The Politics of Advanced Capitalism. In P. Beramendi, S. Häusermann, H. Kitschelt, & H. Kriesi (Eds.), *The Politics of Advanced Capitalism* (pp. 1–64). New York: Cambridge University Press.

Boggs, C. (1976). *Gramsci's Marxism*. London: Pluto.

J. Wheatley, *The Changing Shape of Politics*,
https://doi.org/10.1007/978-3-030-03940-0

Bornschier, S. (2010). The New Cultural Divide and the Two-dimensional Political Space in Western Europe. *West European Politics, 33*(3), 419–444.

Buckle, S. (2015). *The Way Out: A History of Homosexuality in Modern Britain*. London and New York: IB Tauris.

Budge, I., Klingemann, H. D., Volkens, A., Bara, J., & Tanenbaum, E. (2001). *Mapping Policy Preferences, Estimates for Parties, Governments and Electors 1945–1998*. Oxford: Oxford University Press.

Clery E., Curtice, J., & Harding R. (2017). *British Social Attitudes: The 34th Report*. London: NatCen Social Research. Available Online at: www.bsa.natcen.ac.uk.

Cram, L., Llewellyn, C., Hill, R., & Magdy, W. (2017). *UK General Election 2017: A Twitter Analysis*. arXiv preprint. Available at: https://arxiv.org/pdf/1706.02271.pdf. Accessed 16 July 2018.

Curtice, J. (2017). Has Brexit Reshaped British Politics? *What UK Thinks: EU*. Available at: https://whatukthinks.org/eu/wp-content/uploads/2017/12/EU-Briefing-Paper-12-Brexit-and-the-election_V2.pdf.

Dalkey, N., & Helmer, O. (1963). An Experimental Application of the Delphi Method to the Use of Experts. *Management Science, 9*(3), 458–467.

De Vries, C. E., & Marks, G. (2012). The Struggle Over Dimensionality: A Note on Theory and Empirics. *European Union Politics, 13*(2), 185–193.

Edles, L. D. (1998). *Symbol and Ritual in the New Spain: The Transition to Democracy After Franco*. Cambridge: Cambridge University Press.

Emons, W. H. M., Sijtsma, K., & Pedersen, S. S. (2012). Dimensionality of the Hospital Anxiety and Depression Scale (HADS) in Cardiac Patients: Comparison of Mokken Scale Analysis and Factor Analysis. *Assessment, 19*(3), 337–353.

Evans, G., Heath, A., & Lalljee, M. (1996). Measuring Left-Right and Libertarian-Authoritarian Values in the British Electorate. *British Journal of Sociology, 47*(1), 93–112.

Ford, R., & Goodwin, M. J. (2014). *Revolt on the Right: Explaining Support for the Radical Right in Britain*. Abingdon and New York: Routledge.

Forster, M., Chen, W., & Llenanozal, A. (2011). *Divided We Stand: Why Inequality Keeps Rising*. Paris: OECD.

Garzia, D., & Marschall, S. (Eds.). (2014). *Matching Voters with Parties and Candidates: Voting Advice Applications in a Comparative Perspective*. Colchester: ECPR Press.

Gemenis, K. (2013). Estimating Parties' Policy Positions Through Voting Advice Applications: Some Methodological Considerations. *Acta Politica, 48*(3), 268–295.

Goodhart, D. (2017). *The Road to Somewhere: The Populist Revolt and the Future of Politics*. London: Hurst.

Goodwin, M. J., & Heath, O. (2016). The 2016 Referendum, Brexit and the Left Behind: An Aggregate-Level Analysis of the Result. *The Political Quarterly, 87*(3), 323–332.

Gougou, F., & Labouret, S. (2013). Revisiting Data on the 2012 French Legislative Elections: Political Supply, Party Competition and Territorial Divisions. *French Politics, 11*(1), 73–97.

Gramsci, A. (2006). Hegemony, Intellectuals and the State. Cultural Theory and Popular Culture: A Reader, 1. In J. Storey (Ed.), *Cultural Theory and Popular Culture: A Reader* (3rd ed., pp. 85–91). Harlow: Pearson.

Hanretty, C. (2017). Areal Interpolation and the UK's Referendum on EU Membership. *Journal of Elections, Public Opinion and Parties, 27*(4), 466–483. https://doi.org/10.1080/17457289.2017.1287081.

Häusermann, S., & Kriesi, H. (2015). What Do Voters Want? Dimensions and Configurations in Individual-Level Preferences and Party Choice. In P. Beramendi, S. Häusermann, H. Kitschelt, & H. Kriesi (Eds.), *The Politics of Advanced Capitalism* (pp. 202–230). New York: Cambridge University Press.

Hechter, M. (2000). *Containing Nationalism*. Oxford and New York: Oxford University Press.

Henjak, A. (2010). Political Cleavages and Socio-economic Context: How Welfare Regimes and Historical Divisions Shape Political Cleavages. *West European Politics, 33*(3), 474–504.

Hix, S., Noury, A., & Roland, G. (2006). Dimensions of Politics in the European Parliament. *American Journal of Political Science, 50*(2), 494–520.

Hobsbawm, E. (1990). *Nations and Nationalism Since 1780: Programme, Myth, Reality*. Cambridge and New York: Cambridge University Press.

Hooghe, L., & Marks, G. (2018). Cleavage Theory Meets Europe's Crises: Lipset, Rokkan, and the Transnational Cleavage. *Journal of European Public Policy, 25*(1), 109–135.

Hooghe, L., Marks, G., & Wilson, C. J. (2002). Does Left/Right Structure Party Positions on European Integration? *Comparative Political Studies, 35*(8), 965–989.

Huber, J., & Inglehart, R. (1995). Expert Interpretations of Party Space and Party Locations in 42 Societies. *Party Politics, 1*(1), 73–111.

Inglehart, R. (1971). The Silent Revolution in Europe: Intergenerational Change in Post-industrial Societies. *American Political Science Review, 65*(4), 991–1017.

Inglehart, R. (1977). *The Silent Revolution: Changing Values and Political Styles Among Western Publics*. Princeton, NJ: Princeton University Press.

Jennings, W., & Stoker, G. (2016). The Bifurcation of Politics: Two Englands. *The Political Quarterly, 87*(3), 372–382.

Johns, R., & Mitchell, J. (2016). *Takeover: Explaining the Extraordinary Rise of the SNP*. London: Biteback Publishing.

Kitschelt, H. (1994). *The Transformation of European Social Democracy*. Cambridge: Cambridge University Press.

Kitschelt, H. (1995). Formation of Party Cleavages in Post-communist Democracies: Theoretical Propositions. *Party Politics, 1*(4), 447–472.

Kriesi, H., & Pappas, T. S. (Eds.). (2015). *European Populism in the Shadow of the Great Recession*. Colchester: ECPR Press.

Kriesi, H., Grande, E., Lachat, R., Dolezal, M., Bornschier, S., & Frey, T. (2006). Globalization and the Transformation of the National Political Space: Six European Countries Compared. *European Journal of Political Research, 45*(6), 921–956.

Kriesi, H., Grande, E., Lachat, R., Dolezal, M., Bornschier, S., & Frey, T. (2008). *West European Politics in the Age of Globalization*. Cambridge: Cambridge University Press.

Laakso, M., & Taagepera, R. (1979). "Effective" Number of Parties: A Measure with Application to West Europe. *Comparative Political Studies, 12*(1), 3–27.

Lipset, S. M. (1959). Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *American Political Science Review, 53*(1), 69–105.

Lipset, S. M., & Rokkan, S. (1967). Cleavage Structures, Party Systems, and Voter Alignments: An Introduction. In S. M. Lipset & S. Rokkan (Eds.), *Party Systems and Voter Alignments: Cross-National Perspectives* (pp. 1–64). New York: Free Press.

Marks, G., Hooghe, L., Nelson, M., & Edwards, E. (2006). Party Competition and European Integration in the East and West: Different Structure, Same Causality. *Comparative Political Studies, 39*(2), 155–175.

McCombs, M. E., & Shaw, D. L. (1972). The Agenda-Setting Function of Mass Media. *Public Opinion Quarterly, 36*(2), 176–187.

Mendez, F., & Manavopoulos, V. (2018). EUvox2014: Voting Advice Application Data for the 2014 European Parliament Elections [Data File and Codebook]. Available from *GESIS Datorium*. http://dx.doi.org/10.7802/1750.

Miranda, S. M., Young, A., & Yetgin, E. (2017). Are Social Media Emancipatory or Hegemonic? Societal Effects of Mass Media Digitization. *LSE Blogs*. Available at: http://eprints.lse.ac.uk/79744/1/blogs.lse.ac.uk-Is%20the%20digital%20media%20a%20panacea%20for%20the%20ills%20of%20mass%20media%20concentration.pdf. Accessed 16 January 2017.

Mokken, R. J. (1971). *A Theory and Procedure of Scale Analysis: With Applications in Political Research* (Vol. 1). The Hague: Walter de Gruyter.

Mouffe, C. (2005). *On the Political*. London and New York: Routledge.

Mouffe, C. (2018). *For a Left Populism*. London and Brooklyn, NY: Verso Books.

Mudde, C. (2004). The Populist Zeitgeist. *Government and Opposition, 39*(4), 541–563.

Otjes, S., & Katsanidou, A. (2017). Beyond Kriesiland: EU Integration as a Super Issue After the Eurocrisis. *European Journal of Political Research, 56*(2), 301–319.

Phillips, D., Curtice, J., Phillips, M., & Perry, J. (Eds.). (2018). *British Social Attitudes: The 35th Report*. London: The National Centre for Social Research. Available Online at: www.bsa.natcen.ac.uk.

Prosser, C., Fieldhouse, E. A., Green, J., Mellon, J., & Evans, G. (2018, January 28). *Tremors But No Youthquake: Measuring Changes in the Age and Turnout Gradients at the 2015 and 2017 British General Elections*. Available at SSRN: https://ssrn.com/abstract=3111839 or http://dx.doi.org/10.2139/ssrn.3111839.

Samuel, R. (1992). Mrs. Thatcher's Return to Victorian Values. *Proceedings of the British Academy, 78*, 9–29.

Seargeant, P., & Tagg, C. (2014). Introduction: The Language of Social Media. In P. Seargeant & C. Tagg (Eds.), *The Language of Social Media: Identity and Community on the Internet*. Basingstoke and New York: Palgrave.

Sijtsma, K., & Molenaar, I. W. (2002). *Introduction to Nonparametric Item Response Theory* (Vol. 5). Thousand Oaks, CA: Sage.

Sijtsma, K., & Van der Ark, L. A. (2017). A Tutorial on How to Do a Mokken Scale Analysis on Your Test and Questionnaire Data. *British Journal of Mathematical and Statistical Psychology, 70*(1), 137–158.

Standage, T. (2013). *Writing on the Wall: Social Media—The First 2,000 Years*. London: Bloomsbury.

Stockemer, D., & Amengay, A. (2015). The Voters of the FN Under Jean-Marie Le Pen and Marine Le Pen: Continuity or Change? *French Politics, 13*(4), 370–390.

Stoll, H. (2010). Elite-Level Conflict Salience and Dimensionality in Western Europe: Concepts and Empirical Findings. *West European Politics, 33*(3), 445–473.

Straat, J. H., Van der Ark, L. A., & Sijtsma, K. (2013). Comparing Optimization Algorithms for Item Selection in Mokken Scale Analysis. *Journal of Classification, 30*(1), 75.

Sunstein, C. R. (2006). *Infotopia: How Many Minds Produce Knowledge*. Oxford: Oxford University Press.

Teney, C., Lacewell, O. P., & De Wilde, P. (2014). Winners and Losers of Globalization in Europe: Attitudes and Ideologies. *European Political Science Review, 6*(4), 575–595.

Van der Eijk, C., & Rose, J. (2015). Risky Business: Factor Analysis of Survey Data—Assessing the Probability of Incorrect Dimensionalisation. *PloS One, 10*(3), e0118900.

Wheatley, J. (2015). Restructuring the Policy Space in England: The End of the Left-Right Paradigm? *British Politics, 10*(3), 268–285.

Wheatley, J., & Mendez, F. (forthcoming). Reconceptualising Dimensions of Political Competition in Europe: A Demand Side Approach. *British Journal of Political Science*.

Wheatley, J., Carman, C., Mendez, F., & Mitchell, J. (2014). The Dimensionality of the Scottish Political Space: Results from an Experiment on the 2011 Holyrood Elections. *Party Politics, 20*(6), 864–878.

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J. Wheatley, *The Changing Shape of Politics*,
https://doi.org/10.1007/978-3-030-03940-0