

A Choice-Based Measure of Issue Importance in the Electorate ^{*}

Chris Hanretty *Royal Holloway, University of London*

Benjamin E Lauderdale *University College London*

Nick Vivyan *Durham University*

Measuring how much citizens care about different policy issues is critical for political scientists, yet existing measurement approaches have significant limitations. We provide a new survey-experimental, choice-based approach for measuring the importance voters attach to different positional issues, including issues not currently contested by political elites. We combine information from (i) direct questions eliciting respondents' positions on different issues with (ii) a conjoint experiment asking respondents to trade-off departures from their preferred positions on those issues. Applying this method to study the relative importance of 34 issues in the UK, we show that British voters attach significant importance to issues like the death penalty which are not presently the subject of political debate and attach more importance to those issues associated with social liberal-conservative rather than economic left-right divisions.

Introduction

How much do citizens care about different policy issues? This question is crucial for political scientists. Answering it can help us better understand electoral competition, since differences in party or candidate issue positions only matter for election outcomes insofar as voters attach importance to the issue and sanction those with positions far from their own preferred position (Butler and Stokes, 1974). Learning about the importance the public attaches to different issues also enables us to better assess the quality of substantive representation in democracies and identify representational deficits. A rich literature empirically evaluates representation as the degree to which the policy positions of political representatives match the positions of those they represent (Miller and Stokes, 1963; Converse and Pierce, 1986; Kstellec, Lax and Phillips, 2010; Lax and Phillips, 2012; Krimmel, Lax and Phillips, 2016; Hanretty, Lauderdale and Vivyan, 2017), but to evaluate representation synoptically we need to know whether such congruence

^{*}This version: April 04, 2019

happens for issues that voters care about most (Jones and Baumgartner, 2004, 2). This is particularly important for accounts of recent political upheavals, such as Brexit, which have been argued to result from a failure to provide voters with meaningful choices on issues they care about (Evans and Menon, 2017).

Despite the centrality of issue importance to political science – and in contrast to the increasingly sophisticated approaches developed to measure issue attention among political *elites*¹ – there have been few recent advances in measuring the relative *importance* of different issues to voters. This is not because this is a solved problem. As we discuss in more detail below, methods currently in use suffer from severe limitations in terms of both what they measure and what they demand of survey respondents.

In this paper we provide a new choice-based, survey-experimental approach for measuring the importance voters attach to different positional issues. We show how issue importance can be measured by combining questions about respondents' preferred policy positions with a conjoint experiment involving hypothetical candidate platforms. By asking about respondents' preferred positions, we measure what respondents would ideally want on several different issues. By asking respondents to choose between candidate platforms adopting a random combination of positions on these issues (in the conjoint experiment), and by conditioning our analysis of the resulting choices on candidate-responder disagreement, we can infer how respondents trade-off positional disagreement across different issues. We learn about the relative importance of an issue from how much, on average, positional disagreement on that issue (as compared to positional disagreement on other issues) reduces voters' support for a candidate. We then calculate a population-level issue importance statistic that averages these causal effects of disagreement over the distribution of actual disagreements on each issue within the electorate, summarizing how much potential there is for each issue to affect voting decisions.

We apply this method to a new national survey of British voters to estimate the relative importance of 34 policy issues. Consistent with the suggestions of studies focusing on the determinants of vote choice in the 2017 general election (Mellon et al., 2017; Curtice, 2017) we find that the most important issues for the UK public are those that divide opinion along social

¹See analyses of, variously, press releases (Grimmer, 2013) or legislative agendas (John et al., 2013).

liberal-conservative lines rather than along economic left-right lines. We also show that this phenomenon includes not only currently salient issues like the UK's relationship with the EU and migration, but also issues like the death penalty which are not currently the subject of elite political debate. Existing research has noted that UK public opinion on these issues is more divided than elite opinion (e.g., [Heath, Jowell and Curtice, 1985](#); [Heath et al., 1991](#)). A novel contribution enabled by our method is that we can demonstrate that voters disagree with one another and also care a lot about departures from their preferred position on these currently uncontested issues, and that the issues would therefore be highly contentious if they became the subject of national political debate. Finally, we also show how the method can be extended to produce estimates of issue importance that vary as a function of citizen characteristics. We use this to show how voters' priorities vary by age, attention to politics, gender and education.

Approaches to measuring issue importance

In this section we discuss existing measures of issue importance, problems with these measures, and how our proposed approach addresses those problems. Our discussion is premised on a *causal* conception of issue importance at the individual level: we define an issue as important to a citizen to the extent that she accords weight to agreement or disagreement on that issue in their decision calculus, such that her support for candidates or policy platforms are reduced by their departures from her preferred position on that issue. This causal conception of issue importance matches that used in some existing studies (e.g., [Wlezien, 2005](#); [Bartle and Laycock, 2012](#); [Johns, 2010](#)). It relates to the broader notion of "attitude strength", or the extent to which an attitude held by an individual "manifest[s] the qualities of durability and impactfulness" ([Krosnick and Petty, 1995, 3](#)). Issue importance as we consider it pertains to the latter quality of "impactfulness" as manifest in the political domain, since it concerns the extent to which attitudes held toward an issue causally "impact" an individuals' judgements and behavior ([Krosnick and Petty, 1995, 3](#)).

Our discussion is also premised on a conceptual distinction between an issue's *importance* to voters decisions and an issue's *salience* to current elite political conflict. The term salience is "vague" ([Miller, Krosnick and Fabrigar, 2016, 125](#)). It is sometimes used to refer to the prominence of an issue in voters' thoughts ([Butler and Stokes, 1974](#)), at other times as an alternative label

for the causal conception of issue importance to citizens that we define above (e.g., [Niemi and Bartels, 1985](#); [Hellwig, 2014](#)). We follow [Bartle and Laycock \(2012, p. 681\)](#) in defining an issue to be salient to the extent that there are perceptible differences between the positions of competing parties (or candidates) on that issue. Salience is thus used here to refer to the extent of *elite* political contestation on an issue.

Given these definitions, an issue can be important without being salient: this can happen where there is elite consensus on an issue, but where voters' choices between elites would be affected were perceptible differences between elites to emerge on that issue. We argue that empirically distinguishing importance from salience is vital not just for reasons of good conceptual hygiene, but because it is otherwise impossible to investigate important substantive questions. For example, if measurements of issue importance are only available for salient issues, we cannot evaluate whether parties present voters with meaningful choices on all the issues that voters care about and disagree about. To conduct that evaluation, we need to be able to measure the importance voters attach to issues whether or not those issues are salient at the elite-level.

Problems with self-reported measures

Most of the measures of issue importance in the existing literature treat importance as something that is *self-reported*. They record an issue as important for some voter to the extent that the voter themselves *judges* it to be so. One such measure is based on “direct” survey questions which ask respondents to assign subjective importance scores to a set of specific issues chosen by the researcher (e.g., [Converse and Pierce, 1986](#); [Krosnick, 1988](#); [Boninger et al., 1995](#)). Another common measure is based on survey respondents answers to open-ended questions about what they consider to be the “most important issue” (MII) facing the country (e.g., [Clarke et al., 2004](#)).

These self-reported importance measures share two undeniable virtues: they are individual-level measures and they are straightforward to implement in surveys. However, they also suffer from significant shortcomings. Direct measures of importance often lack discrimination due to respondents' reluctance to explicitly label issues (which are often in the survey because they have received national media or political attention) as “unimportant” even if they care little about them personally ([Converse and Pierce, 1986](#); [Johns, 2010](#)). A limitation of MII measures is

that the proportion of respondents for whom a given issue was most important is not a reliable indicator of the average importance of an issue.

A more fundamental concern with self-reported measures of importance is that asking respondents to introspectively consider the relative importance of different issues is asking them to report “more than they can know” (Bartle and Laycock, 2012). Because the cognitive processes that lead to evaluations and choices are often unconscious processes, individuals are often poor guides as to these processes (Wilson, 2002; Nisbett and Wilson, 1977.). When it comes to issue importance then, voters may simply “not [be] very good at judging the relative weight they attach to criteria in making decisions” (Niemi and Bartels, 1985, 1219).

The difficulty respondents have when making such introspective judgements may explain why issue importance measures generated from both direct and MII questions have proved to be of limited value in predicting voting behaviour (e.g., Niemi and Bartels, 1985, 1219; Bartle and Laycock, 2012; Leeper and Robison, 2018). It may also explain why respondents, when answering direct or MII questions, tend to rely upon, or use as a heuristic, “how much attention a particular issue attracted during the campaign, or how heated the debate... has been” (Sarlvik and Crewe, 1983, 224; see also Johns, 2010; Bartle and Laycock, 2012). If respondents do approach MII or direct questions in this way, the resulting measures would conflate an issue’s importance to citizens and its salience in elite political contestation.

Choice-based measures of issue importance

Instead of relying on respondent introspection, others have taken a *choice-based* approach to measuring issue importance. According to this approach, the importance of an issue to a voter will influence the decisions she makes when faced with objects of choice (candidates, parties, policy packages) with differing issue positions or competencies. If many voters choices are particularly sensitive to candidates’ positions or competency on one issue, then the issue is revealed to be important (at the population-level), regardless of whether the voters are aware of or could report this fact. The case for a choice-based approach for measuring issue importance is supported by marketing studies which show that measures of attribute importance inferred from choice-based conjoint experiments are better predictors of real product/candidate choice than

the direct importance scores that respondents self-report (Neslin, 1981; Harte and Koele, 1995).

Existing choice-based measures of issue importance have been generated by modelling the vote choices respondents make between parties in real elections (e.g., Alvarez, Nagler and Bowler, 2000; Hellwig, 2014). For example, Alvarez, Nagler and Bowler (2000) model voters' party choice in the 1987 UK general election as a function of voters' policy distance to each of the three main parties on seven different issues. The coefficients on these issues can be interpreted as relative measures of importance.

Unfortunately, measures of issue importance based on models of electoral choice are limited by their reliance on variation in the actual policy platforms adopted by parties. Even in multi-party systems the absolute number of observed party platforms that voters choose between in any given election are quite small, and parties' positions are likely to be correlated across issues. This approach also relies on respondents' perceptions of the issue positions parties being accurate, which they may not be due to strategic ambiguity on certain issues on the part of parties (Bräuninger and Giger, 2016) or projection effects (Ansolabehere and Jones, 2010). Third, respondents' vote choice in elections will be influenced by other considerations such as party attachment and competence judgements that are distinct from the policy issues we aim to study here. Fourth, and perhaps most crucially, if we infer issue importance based solely on voters' choices between observed party platforms it is not possible to estimate the importance voters attach to those issues which parties either don't talk about, or on which major parties adopt the same position. Thus, researchers measuring issue importance based on models of electoral choice are confined to studying *only those issues that are salient in elite political competition*.

An experimental approach

In an experimental setting we can measure choice-based issue importance for issues that are not salient for elite political competition. This is because an experimental setting permits researchers to construct hypothetical policy platforms composed of positions on both salient and non-salient issues and to ask respondents to choose between these platforms. One survey experimental method which lends itself well to this kind of task, and which has become increasingly popular in political science, is conjoint analysis (Hainmueller, Hopkins and Yamamoto, 2014).

Conjoint analysis has not been used to explicitly measure issue importance, although some recent studies have come close. [Horiuchi, Smith and Yamamoto \(2018\)](#) asks Japanese respondents to make choices between hypothetical policy bundles comprised of (random) positions on nine issues. Compared to modeling respondents' choices between observed party platforms in an election, this conjoint approach allows the researcher to observe respondent choices across a much more varied set of policy bundles and to control the information respondents receive about these bundles. The authors are thus able to more precisely and accurately identify the average effects – specifically, average marginal component effects (AMCEs) – of different issue positions.

However, the AMCEs estimated in that paper do not measure the *importance* of issues, but rather the net effect of alternative issue positions on support for a candidate/party. This becomes clear if we imagine a dichotomous issue where 50% of respondents take position A and 50% take position B. If respondents' choices between policy bundles in the experiment were exclusively affected by the position offered on this issue, making it not just the most important issue but the only important issue, the estimated AMCE would still be zero, because the reactions of the two groups of respondents cancel out. Low AMCEs do not imply a lack of issue importance. More generally, the AMCEs of a particular issue will be a function of both the importance individual respondents attach to the issue (in the sense defined above) *and* the distribution of respondent preferences on that issue.

This example makes clear that we can only recover the average importance respondents attach to an issue from a conjoint experiment if we condition statistical analysis on a measure of respondents' own positions on each issue. For measuring issue importance, what matters is the sensitivity of respondents' choices to divergences between their own views and candidate positions, and to measure these divergences one needs to know respondents' own views on that issue. [Leeper and Robison \(2018\)](#) take the next step of conditioning analysis of a conjoint candidate experiment on respondents' own issue positions. They estimate the average marginal effect of respondent-candidate issue distance for several issues to show that self-reported issue importance does not predict choices in a conjoint experiment, but do not generate a measure of issue importance.

Here, we develop a choice-based approach for measuring issue importance that combines questions about respondent issue positions with conjoint analysis. Unlike existing self-reported issue importance measures, our approach avoids excessive reliance on respondent introspection. Unlike existing self-reported and choice-based measures of issue importance, our approach can measure the importance of issues that are not salient in elite political contestation.

Our proposed approach is not without limitations. First, while the use of an experimental design tightly links the measurement strategy to the causal conception of issue importance, the usual external validity tradeoffs regarding potential artificiality of the experimental environment apply. In particular, our approach measures issue importance based on hypothetical choices in a survey experiment rather than observed behavioral choices between real candidates in elections. Second, it places extra burdens on researchers, who must select a set of issues and specify plausible alternatives on those issues. Third, although it requires only a moderate number of survey items, it does require a reasonably large sample size. We address these issues further in describing our survey instrument and data analysis strategy.

Survey instrument

Issue questions

The first component of our instrument consisted of seven issue questions, which asked respondents to give their position on seven issues (one issue per screen). The seven issues about which each respondent was asked were drawn randomly without replacement from a bank of 34 issue questions (described in more detail below).

Each issue question began with a short prompt introducing the issue, and was followed by list of five different policy options with a logical ordering (e.g., varying from less to more state intervention).² Respondents were asked to choose the option that came closest to their own view on the issue.³

Figure 1 gives an example issue question concerning the UK's relationship with the European

²The polarity of the order (from 1-5 or 5-1) was randomized with probability 0.5.

³Respondents had to select an option, and were not permitted to give a "don't know" response. Given our modelling strategy, random responses will correctly lead us to conclude that the respondent puts no weight on their position on that issue.

Which of the following is closest to your view on the relationship between the UK and the European Union?

- The UK **should remain a member of the EU, and sign up to EU agreements we had previously opted out of**, like the single currency and the Schengen border-free area.
- The UK **should remain a member of the EU**.
- The UK **should be out of the EU, but stay part of the single market**, which includes rules allowing "freedom of movement".
- The UK should **be out of the EU and out of the single market, but should participate in some EU programmes** (e.g., in research, education, and nuclear energy)
- The UK should **be out of the EU and out of the single market**, and should not participate in any EU programmes.



Figure 1: Example issue question on UK relationship with the European Union.

Union. The ordered options in this example run from a closer relationship than the current status quo through to withdrawal from the single market and all EU programmes.

Whereas many researchers have measured voters positions on issues using dichotomous response scales (whether they “favour” or “oppose” a certain policy) (e.g., [Jessee, 2012](#)) or ordered sentiment scales (e.g., “strongly oppose” to “strongly support”) (e.g., [Heath, Jowell and Curtice, 1985](#)), we follow [Broockman \(2016\)](#) by using an ordered polytomous response scale defined in terms of concrete policy alternatives. These response options require more cognitive effort from respondents and more preparation from researchers, but reduce the risk that variation in observed survey responses results from differences in the way respondents use response scales rather than differences in respondents’ positions ([Jessee, 2012](#); [Broockman, 2016](#)).

Why do we measure respondents’ issue *positions* using direct self-reports given the problems with direct self-reports of issue *importance* highlighted in the previous section? From the standpoint of psychological research, self-reported importance ratings are problematic because individuals are poor at explaining the unconscious processes that determine their judgements or attitudes ([Wilson, 2002](#), 62-63; [Nisbett and Wilson, 1977](#)). In contrast, with direct questions about issue positions, we are asking respondents to report not on processes but on attitudes, which tend to be consciously accessible ([Wilson, 2002](#), p. 79). Consistent with this, when [Converse and Pierce \(1986\)](#) asked both position questions and direct issue importance questions

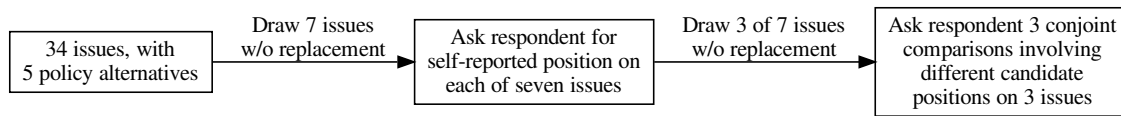


Figure 2: Relationship between question bank, issue questions, and conjoint comparisons

in their study of French voters, they find that the latter “clearly suffer[ed] more measurement ‘noise’, and [were] generally less effective measures” (p. 222-3).

There is an important debate among political scientists concerning the extent to which respondents’ answers to issue position questions reflect meaningful attitudes versus fleeting context-specific considerations (e.g., [Converse, 1964](#); [Zaller and Feldman, 1992](#)). However, recent studies confirm that a substantial portion of variation in reported issue positions is attributable to “real” – i.e., temporally stable – attitudes, even though these attitudes are often “idiosyncratic” rather than structured by a common low-dimensional ideological structure ([Broockman, 2016](#); [Lauderdale, Hanretty and Vivyan, 2018](#)).

Conjoint questions

The second component of our survey instrument involved respondents answering three conjoint questions (one per screen). Each conjoint question gave respondents a choice between two hypothetical political candidates (labeled “A” and “B”) characterised entirely in terms of their positions on three issues. These three issues were drawn randomly without replacement from the seven issues on which a respondent had already given their own position in the first part of the survey (see Figure 2). These were randomized once for each respondent, so that each respondent saw three conjoint questions with the same three issues in the same order.

For each conjoint question, the positions of each candidate on each issue were drawn randomly (with equal probability) from the five response options offered for that issue in the issue questions. Candidate positions were also drawn independently, so that occasionally a respondent could be faced with candidates advocating the same policy position on one or more issues. Respondents were asked to review the candidates’ positions and then to say whether they would

Now imagine that two candidates for Parliament, A and B, were asked about some of the same public policies that we just asked you about. Please look at their answers below and tell us who you would vote if this was all the information you had to go on.

Issue	Candidate A	Candidate B
How should the government be involved in subsidising (financially supporting) UK food production?	The UK should rely more on food from other countries and government should support current farmers switching into other work.	The UK should rely more on food from other countries and government should support current farmers switching into other work.
Which of the following is closest to your view on the relationship between the UK and the European Union?	The UK should remain a member of the EU.	The UK should be out of the EU and out of the single market, but should participate in some EU programmes (e.g., in research, education, and nuclear energy)
The UK currently gives around 0.7% of its national income to other countries in the form of aid. Many countries regard this figure as a target. Which of the following is closest to your view on foreign aid?	The UK should give the current amount of foreign aid (0.7% of national income).	The UK should give a substantial amount of foreign aid (around 14% of national income).

Given only the information shown above, who would you vote for?

- I would vote for A
- I am not sure
- I would vote for B



Figure 3: Example of a conjoint question.

vote for A, B, or whether they were “not sure”.

Figure 3 gives a screenshot of an example conjoint question. Here, the hypothetical candidates are characterised in terms of their positions on three issues: the degree of state intervention in food production; the future of the UK-EU relationship, and the magnitude of UK foreign aid provision. The example respondent would have already been asked for their own position on all three of these issues (plus four others) in the first part of the survey. In this example, the hypothetical candidates happen to adopt identical positions on the first issue but candidate B wants a closer relationship with the EU and more foreign aid provision than candidate A. In addition to this question, our example respondent would have been presented with two further candidate comparisons, each covering the same three issues presented in the same order but

with candidates' positions on those issues varying randomly.

We limited the number of issues shown in the conjoints to three so that the conjoints were not so difficult as to create significant survey nonresponse. However, because they ask respondents to consider a number of pieces of information about hypothetical candidates and then choose between them, our conjoint questions are clearly not easy for respondents to answer. Why then, do we argue for their use over questions which ask respondents to self-report issue importance, given that a key problem identified with the latter type of questions was the difficulty people have answering them? Crucially, the two types of question are difficult in different ways. The difficulty presented by the conjoint questions is fundamental to our measurement objective: it is the multidimensional nature of considering tradeoffs between preferences on different issues that makes conjoint experiments difficult for respondents. But the same difficulty arises when voters make choices between candidates in the real world. The implicit weights that they attach to different factors when making such choices are we are interested in measuring, whether respondents are aware of those weights or not. In contrast, the difficulty involved in self-reported issue importance is not a common part of political life: citizens are not typically required to engage in introspection about how they came to those choices. Citizens choose between candidates with a variety of potentially relevant differences whenever they vote, but there is no "why did you vote for that candidate?" question below those choices on the ballot paper.⁴

Selecting issues and positions

The bank of 34 issues from which we sampled for the issue and conjoint questions was developed to be wide-ranging, including issues that are salient in elite political contestation in the UK and issues that UK elites generally ignore. Researchers who are only interested in issues salient in elite political contestation can identify such issues by examining party manifestos and other forms of communication. It is harder to identify issues which are not salient but have

⁴One way to assess the difficulty of the conjoint questions is to examine whether less educated respondents' are less able to answer these questions. This is indeed the case: the rate at which respondents with no educational qualifications answer "not sure" to the conjoint questions is 13 points higher than for respondents with at least a university degree-level qualification. However, this "education gap" in responses is almost exactly the same to that found when we examine the rate at which the same groups of respondents either answer "don't know" or leave blank a question asking them for their "most important issue". Thus, by this metric, the difficulty of the conjoints is similar to that of a most important issue question.

the potential to be important to voters. To ensure breadth of issue coverage, we based our initial list of issues on the twenty top-level headings used by the Comparative Agendas Project (www.comparativeagendas.net). For each heading, we identified between one and three issue areas for which we could provide ordered policy positions. We drafted 42 issues and associated policy positions, before reducing the set to 34 issues which could be presented most clearly to survey respondents.

For each issue we wrote five ordered policy positions. Fewer policy alternatives per issue are easier to specify for the researcher and to answer for the respondent, but could potentially mask meaningful disagreements that would become apparent with greater numbers of alternatives. In writing these policy positions we tried to make sure that the policy status quo, any positions of the main parties, and any logical end-points, were all represented as options.⁵ The full wording of each issue question is reported in the supplemental information (p. 1).

Cost considerations and fieldwork

The overall design of the survey instrument was chosen to balance survey cost, sample size, and breadth of issue coverage. The cost of the survey was primarily dictated by the product of the number of items per respondent (7 issue questions + 3 conjoint questions = 10) and number of respondents. Given that each respondent only saw three issues in their conjoint questions, a cost-minimising module would have only asked issue questions about those three issues; however this survey experiment was designed to also facilitate other studies not reported in this paper, for which a greater number of ordinal items was advantageous. There is a further discussion of sample size and data sparsity in the supplemental information (p. 8).

The survey was fielded by YouGov UK from 22-31 January 2018. The 6070 respondents to our survey were selected via YouGov's sample matching algorithm from the set of 31196 respondents who took part in the 13th wave of the British Election Study, conducted online after the June 2017 election. We are therefore able to link our respondents to all variables present in the BES survey. YouGov provided UK population weights for the survey sample. Our analysis in the main text is based on a quasi-likelihood approach using these weights, however an unweighted analysis

⁵Positions of particular parties are not consistently anchored to particular alternatives because we include issues where parties have no or identical positions.

yields results that differ negligibly from what we present (Miratrix et al., 2018).

Model

Our survey instrument records the choices respondents make between hypothetical candidates who vary in terms of how much they disagree with the respondents' own preferred positions on several issues. We now introduce a model for this data which assumes that a respondent chooses between candidates based on the latent utility they derive from each candidate, and that the utility derived from a candidate depends on the proximity of that candidate to the respondent's own preferred position across issues.

For the choice component of the model, we define an ordered logistic response model for the probabilities of "I would vote for A" (A), "I am not sure" (NS), and "I would vote for B" (B). Given utilities for each respondent i for Candidate A and B of u_{iA} and u_{iB} respectively, and threshold parameters γ_1, γ_2 :

$$\log\left(\frac{p(NS) + p(B)}{p(A)}\right) = u_{iB} - u_{iA} - \gamma_1$$

$$\log\left(\frac{p(B)}{p(A) + p(NS)}\right) = u_{iB} - u_{iA} - \gamma_2$$

The larger the absolute values of γ_1, γ_2 , the more likely the respondent is to be indifferent between the two platforms. If $|\gamma_1| = |\gamma_2|$, voters treat A and B symmetrically. If $\gamma_1 \neq -\gamma_2$, respondents systematically prefer either A or B due to order effects.

We could estimate a single pair of parameters γ_1 and γ_2 for all comparisons, but for diagnostic purposes we estimate separate parameters according to the number of disagreements between A and B. In our data, we have 130, 1811, 7055 and 9214 conjoint responses involving comparisons where 0, 1, 2 and 3 issue positions differ between the two candidates, respectively. We thus allow for respondents to apply different thresholds depending on the complexity of the comparison.⁶

For the utility component we adopt a linear-loss "spatial" model of preferences, where ψ_{jk}

⁶In particular, in cases where all three issue positions are identical, we would expect larger differences between γ_1 and γ_2 as the intermediate response is most sensible when faced with two identical candidates. Indeed, when respondents were faced with identical candidates in the experiment 75% of raw responses were for the intermediate "not sure" option. The remaining 25% are presumably either not paying attention, or are giving a silly answer to what appears to be a silly question. Because we model separate thresholds by difference count, these responses have no consequence for any substantive parameter estimates.

are the locations of the five policy positions k for issue j on an issue-specific policy dimension. We assume that the utility of each platform for a respondent is equal to the sum of the absolute differences between the locations of their preferred position (ψ_{ji}) and the candidate platform positions (ψ_{jA}, ψ_{jB}) on the three presented issues ($j = 1, 2, 3$):

$$u_{iA} = - \sum_{j \in \{1,2,3\}} |\psi_{jA} - \psi_{ji}| \quad u_{iB} = - \sum_{j \in \{1,2,3\}} |\psi_{jB} - \psi_{ji}|$$

The location of the first position (ψ_{j1}) is fixed to zero. The locations of the remaining positions are *not* subject to an ordering constraint: the recovered locations are those that best fit the observed conjoint choices. Because the utility scale is common across issues, an issue where individuals put a lot of weight on differences between the positions will be one where the locations are widely spaced. An inconsequential issue would have $\psi_{j1} \approx \psi_{j2} \approx \dots \approx \psi_{j5}$.

The parameters from the model are thus the locations of the policy positions ψ_{jk} and the thresholds γ . Because the former are all on the same utility scale, the spacing of the policy alternatives ψ_{jk} on different issues indicates how much respondents penalize disagreement with their own position on that issue. However, the spacing between the alternatives is directly shaped by our choices of which alternatives to provide. Simply comparing the range of the alternatives is not a good measure of the degree to which disagreement on that issue carries significant weight with the public. A large range might just indicate that we offered more extreme alternatives on one issue than another. We want a measure of importance that reflects the relative importance of policy disagreements that actually exist in the electorate, not the extremity of the alternatives we provided.

To give a simple statistic that measures the importance of each issue among the public, we take into account the distribution of opinion on each issue (supplemental information, p. 9). If few respondents adopt the most extreme positions on offer, the fact that respondents would punish candidates who adopt those positions does not indicate that an issue is important in anything more than a trivial sense. If, however, we see respondents heavily punishing hypothetical candidates who take positions that are popular with many other members of the public, that indicates that the issue is important. The importance statistic we use is therefore the following

function of the estimated locations of each position ψ_{jk} on the common utility scale and the proportion of respondents who report preferring that position π_{jk} :

$$\chi_j = \sum_{k=1}^5 \sum_{k'=1}^5 \pi_{jk} \pi_{jk'} |\psi_{jk} - \psi_{jk'}|$$

This importance statistic is the population average disutility citizens feel towards the opinions held by their fellow citizens. Issue importance will be large when citizens hold widely varying positions on an issue and also place great weight on those disagreements in the candidate comparisons. Importance will be small either if there is little disagreement in the public on an issue or if citizens put little weight on the positions that the hypothetical candidates take on that issue (or both). We further discuss the implications of adopting this sort of measure below once we have examples to consider.

We estimate the conjoint response model by Bayesian posterior simulation, implemented in Stan ([Carpenter et al., 2016](#)), using uniform priors on all parameters and reporting posterior means and 95% central intervals. The likelihood of the model is well-identified by the data, and similar estimates could be obtained by maximum likelihood estimation.

Results

We begin by performing checks on the reasonableness of our modeling approach, before focusing more directly on our estimates of issue importance. First, we examine the parameters specifically related to the response model, which are primarily diagnostic. The parameters γ indicate the baseline propensity of respondents to give each of the three possible responses to the conjoint experiment. Recall that we estimate different values of γ for comparisons involving 0, 1, 2 and 3 policy disagreements. Our γ_1 estimates are -1.64, -0.86, -0.93, and -0.92 for each of these, respectively. Our γ_2 estimates are 2.50, 0.95, 0.97, and 0.97, respectively. As expected, the thresholds are very widely spread for comparisons involving no policy differences, because most respondents give the intermediate response when there is no way to distinguish between two identical candidates. Overall, the values of γ_1 are somewhat smaller in magnitude than the values of γ_2 , indicating a mild ballot/response order effect in favour of candidate A. However, there

is little difference in the parameters across comparisons involving 1, 2, and 3 policy disagreements. This is an indication that respondents are weighing up varying numbers of disagreements in a way that is consistent with our random utility model. If respondents became less responsive to candidate disagreements as the number of disagreements (and therefore complexity of the comparison) increased, we would see the threshold parameters become more extreme around zero.

Next we examine the estimated relative locations of the five policy positions on each issue (supplemental information, p. 10). In our model, we do not enforce the ordering that we intended when we designed each set of positions, so this provides an additional check on whether respondents perceive the alternatives as we expected. We estimate all five positions to be in the intended ordering for 30 of 34 issues. For the remaining 4 we find a single pair of adjacent alternatives where the point estimates are in the reverse order of what we expected (supplemental information, p. 11). None of these position reversals are substantively large, and none are statistically significant at conventional levels. This is not due to a lack of estimation precision: the posterior probability of being in the intended order is greater than 0.975 for 110 of the 136 total pairwise comparisons. In sum, respondents made choices in the conjoint as though they perceived the alternatives in the logical order we intended.

As a further check, we estimated an unrestricted preference model in which we do not assume a spatial structure to the utility function of respondents over alternative candidate positions (supplemental information, p. 13). The overwhelming tendency is for respondents to evaluate the hypothetical candidates in the conjoint in a way that is consistent with a spatial proximity-based utility function. Even without assuming spatial ordering, on average, and for most individual issues and positions on those issues, respondents are most inclined to choose candidates with the position that the respondent reported as their own, and penalise candidates deviating from that position more as the candidate moves to positions further from the respondent's own positions, in both directions. Not only is this evidence of the validity of the spatial model that we impose on the data to generate our main results, but it also speaks to the validity of respondent self-reported issue positions: by punishing candidates who take the more distant positions from their stated position, people are generally responding to the conjoint in

ways that reflect their stated issue preferences.

Estimated issue importance

Figure 4 shows our core results. It plots the estimated locations for the five positions for all 34 issues (i.e., the ψ_{jk} parameters). We label the five positions according to the designed ordering. The area of each point is proportional to the proportion of respondents choosing that alternative as their most preferred in the issue questions (supplemental information, p. 9). Issues are sorted from most to least important, with the estimated importance statistic and its 95% posterior interval reported on the right-hand side (see also supplemental information, p. 12).

Recall that the importance statistic for an issue represents the average utility weight that respondents attach in candidate choices to other respondents' deviations from their own preferred position on that issue. To illustrate the implications of this approach, consider the example of the NHS public/private issue. As Figure 4 shows, this issue is ranked only 23 of 34 in terms of importance ($\chi = 0.41$). The figure also shows that the estimated locations of the five positions for this issue are among the most widely spaced of all issues considered here: i.e., respondents very heavily penalised large deviations from their preferred positions on this issue when choosing between policy bundles in the conjoint task. The reason the NHS Public/Private issue scores only moderately on importance despite this spacing is that the distribution of voter positions on this issue is extremely lopsided. Almost 80% of respondents endorsed alternatives 1 or 2 (which favour no or very limited private involvement in the NHS), while less than 5% endorsed alternatives 4 or 5 (which favour partial or full privatization of the NHS). Thus although voters heavily penalised privatised NHS provision in the conjoint experiment, very few voters endorse private provision.

In contrast to the NHS issue, one of the two most important issues concerns Britain's relationship with the European Union ($\chi = 0.84$). This is a policy issue where voters heavily penalize disagreement with their preferred policy position (such that positions are estimated to be far apart on the issue scale) and where the distribution of voters' preferences on the issue is dispersed (such that positions far apart on the issue scale are preferred by substantial numbers of voters). It is unsurprising that Britain's relationship with the EU is currently one of the most



Figure 4: Left: estimated locations of policy positions for each issue, sorted from most to least importance. The number on each point is the designed ordering of the positions. Right: estimated importance score for each issue with 95% posterior intervals shown below the numerical value.

important issues to British voters. The negotiations following the UK's decision to leave the EU were at the forefront of national political debates – both in the media and among political elites – at the time our survey was fielded. The same is true for the closely related issue of net migration, which is the fourth-most important issue according to our estimates ($\chi = 0.71$).

However, Figure 4 also shows that issues can be important to the public without being the subject of prominent political debate. The death penalty question has an estimated importance score ($\chi = 0.85$) that is indistinguishable from that estimated for the EU issue. The finding that British voters vary in their opinions on the death penalty is not a new one (e.g., [Heath, Jowell and Curtice, 1985](#); [Heath et al., 1991](#)). What is striking is the *importance* voters attach to deviations from their preferred position on this issue, despite the fact that the death penalty (for murder) was abolished in the UK in 1969. Although the UKIP leader Paul Nuttall backed its partial reintroduction during the 2017 General Election campaign, no other significant British political party made mention of this issue in their campaigns. Our results suggest that, were parties to take up opposing positions on this issue, it would have a potential to move votes on a scale comparable to the EU issue.

Is it reasonable to have a measure of issue importance which says that the use of the death penalty is more important to the public than the public/private organisation of NHS? One might view this as evidence that our conception of importance is problematic, given that the death penalty is more or less ignored in contemporary British politics while the NHS holds an almost totemic place in British life. We have several responses to this line of criticism. First, because we are trying to measure importance as distinct from salience, we should not expect to see a perfect association between our importance measure and the issues currently being contested. Second, it is possible that a differently phrased NHS question, perhaps about funding levels rather than public/private organization, would have ranked higher because it would have induced more varied positions among respondents. We may simply have asked about a less contentious aspect of the NHS: its primarily public organisation. Third, we have defined a measure that focuses our attention on issues that are politically important to voters in the sense that there are disagreements among citizens on which basis citizens would be willing to change their vote choices. These are issues that *could* become major issues of political contestation, but they will not do

so unless parties and candidates choose to adopt varying positions and to emphasize those positions (perhaps because they are losers on the primary issue dimension: [Hobolt and De Vries \(2015\)](#)). Indeed, one of the major lines of argument about Brexit is that it was the result of multiple decades of elites in the major UK political parties failing to take up varying positions along an increasingly severe fault line in British public opinion, leading to a political earthquake when that fault line found an outlet through UKIP and then the referendum on EU membership ([Evans and Menon, 2017](#)). Our conception of issue importance and the resulting measurement strategy is one that can identify such fault lines before the earthquake strikes, rather than only after – a roadmap for both issue entrepreneurs and those who study them.

In contrast, if we look at the open-ended most-important issue measures from the same respondents, measured six months earlier, we only see the issues on the most immediate political agenda. The distribution of responses is, by the nature of a “most important” prompt, very lopsided and covers few issues. Fully 31% of (population weighted) respondents name “Europe” as the most important issue. Smaller groups give responses related to terrorism (13%), immigration (7%), health (6%), or the economy in general (4%). There is clear indication of sensitivity to recent events: it is unlikely that terrorism would have been the second largest share had there not been three terror attacks on the UK in the four months before the survey. 13% of respondents leave the item blank. Maybe these respondents do not care about any issues, but more likely they just have difficulty answering an open-ended question. While the responses to this question clearly tell us something about which issues people think are most important, they give a relatively superficial picture that is limited to a few of the highest profile issues.

Issue importance and ideological structure

To relate our importance scores to the major dimensions of conflict in UK politics we conduct a separate two-dimensional scaling of respondents’ answers to the self-reported issue position questions. This uses a standard item response theory scaling model for ordered responses to measure how issue positions tend to go together. The details of the model specification and identification restrictions are in the supplemental information (p. 16).

The top two panels of Figure 5 summarise the results of the 2D ideological scaling model. The

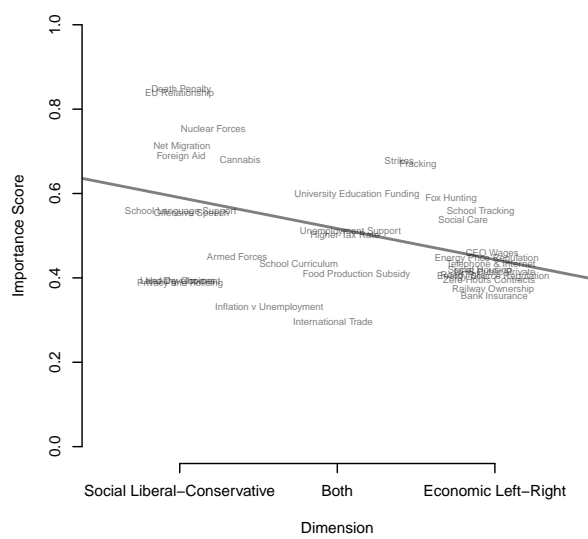
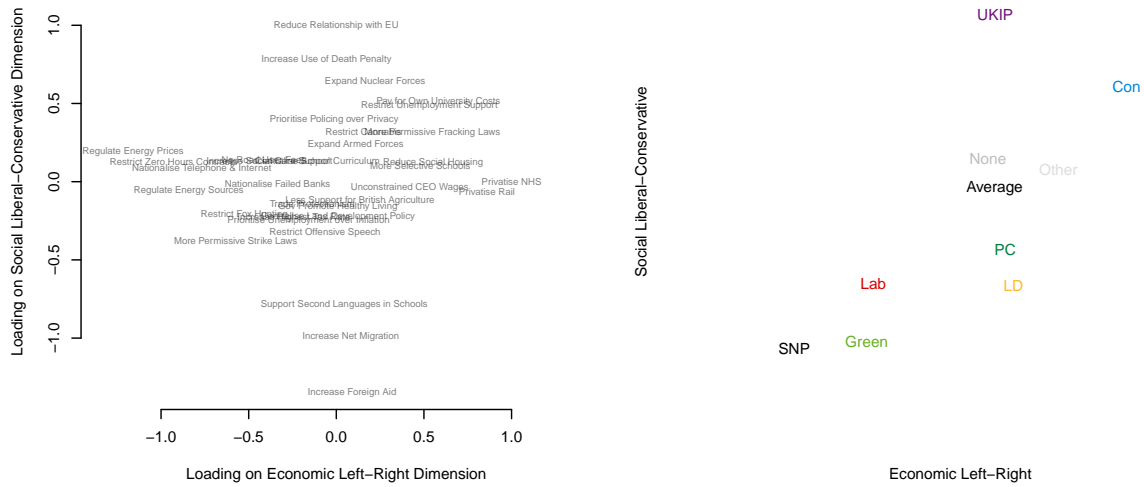


Figure 5: Top left: loadings of issues on economic left-right and social liberal-conservative dimensions. Top right: average 2D position of respondents by 2017 UK general election vote. Bottom: importance of each issue as a function of the extent to which it divides the public along the economic left-right versus the social liberal-conservative dimension.

top-left panel shows the loading of each of our 34 issue positions on the economic left-right (x-axis) and social liberal-conservative (y-axis) dimensions, respectively. Along with the EU, issues such as the death penalty, foreign aid, net migration and support for school pupils whose first language is not English are strongly associated with an underlying social liberal-conservative dimension. Issues which load strongly on the economic left-right dimension principally concern the extent to which government should intervene in the provision of goods and services (e.g., rail privatisation, regulation of energy prices, nationalisation of telephone and internet services). Issues relating to tax and social support load less heavily on this dimension. The top-right panel shows the average estimated position of respondents by reported 2017 UK general election vote. Conservative voters are on average more economically right-wing and more socially conservative than Labour voters. Liberal Democrat and UKIP voters are on average moderate on economic left-right issues, but differ strongly on the social liberal-conservative dimension, with UKIP supporters highly conservative.

The bottom panel of Figure 5 is our focus here. It shows a clear negative association between how important each issue is and the relative degree to which each issue loads on the economic left-right ideological dimension rather than the social liberal-conservative dimension.⁷ Issues in our survey that related more to economic left-right considerations were generally *less* important to voters; those issues which related more to social liberal-conservative considerations were conversely more important.

While this association is statistically significant in a simple regression analysis (the p-value on the slope of the regression line in Figure 5 is 0.02), the issues we included in our survey are not an independent random sample from any meaningfully defined population of issues. This is therefore not conclusive evidence that the issues that divide social liberals and conservatives in the UK are more important than those that divide economic left and right. It is possible that the left-right issues we asked about were not sufficiently explicit regarding benefits and overall redistribution, tending instead to focus on public versus private ownership, tax and workers

⁷Formally: where β_j is the discrimination parameter for dimension i and issue j , we plot

$$\frac{\beta_{1j}^2}{\beta_{1j}^2 + \beta_{2j}^2}$$

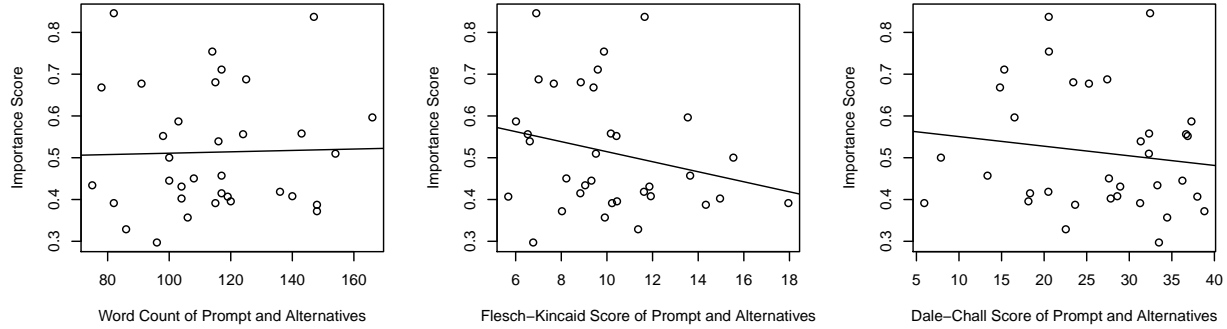


Figure 6: Estimated importance scores for each issue as a function of three measures of prompt and alternative complexity: word count, Flesch-Kincaid score and Dale-Chall score.

rights. Perhaps there are other left-right oriented policy questions that would have much more powerfully shaped respondents' choices, and we simply failed to ask about them. Nonetheless, of the issues that we asked about, we see a clear pattern which is consistent with arguments made by other scholars of recent UK voting behaviour (Mellon et al., 2017; Curtice, 2017).

Issue Importance and Complexity

One might worry that some of the issues we study may be measured as less important because the wording we use to operationalize those policy issues was more difficult for non-experts respondents to understand. In Figure 6 we plot our measure of issue importance against three possible measures of the linguistic complexity of the prompt and response alternatives that we provide for an issue: simple word count; Flesch-Kincaid score, which measures the readability in terms words per sentence and number of syllables per word; and Dale-Chall score, which is similar to Flesch-Kincaid but accounts for the proportion of difficult words instead of syllables per word. Figure 6 shows weak and non-significant associations between these measures of prompt/alternative complexity and our measure of issue importance. Linguistic complexity is unlikely to drive very much of the differences in issue importance we measure.

What is Important to Whom?

We can extend our model to allow issue importance to vary between population sub-groups. We do this by allowing the weight on the distance between the respondent's position and candidate positions to vary as a function of observed covariates X :

$$u_{iA} = - \sum_{j \in 1,2,3} \left| e^{\beta_j X_i} (\psi_{jA} - \psi_{ji}) \right| \quad u_{iB} = - \sum_{j \in 1,2,3} \left| e^{\beta_j X_i} (\psi_{jB} - \psi_{ji}) \right|$$

The overall weights are constrained to be positive by using an exponential function, $e^{\beta_j X_i}$. The coefficients β are estimated from the data under an improper uniform prior.

Table 1 shows the results of a simple application of this approach with four predictor variables: self-reported political attention (0-10 scale, mean 5.8), whether a respondent is female, age (five year increments) and whether a respondent holds a university degree (Level 4+ qualifications). All of these variables were measured for the BES at least seven months prior to our survey. In the table, we highlight issues which have significantly more positive or negative associations with each demographic variable, compared to the average issue. Comparison to the average issue is necessary because some variables are generally associated with higher or lower weight placed on the average issue. This is particularly true for attention, which is associated with higher weight put on all issues, which manifests in the data as lower probabilities of choosing the "I am not sure" option in the conjoint questions. It is likely that high attention respondents consider candidate profiles more carefully in relation to their own policy preferences and have firmer policy preferences ([Bartle, 2000](#); [Lauderdale, Hanretty and Vivyan, 2018](#)).

Holding the other variables constant, *older voters* care relatively more about nuclear forces, fracking, fox hunting, social care and food production subsidies. Social care directly affects older voters while fracking affects areas where older voters disproportionately live and own land. Fox hunting, UK nuclear forces, and the extent to which the UK is reliant on food imports are literally "old" issues in British politics in the sense that they were more prominently debated decades ago. Younger voters care relatively more about the future relationship with the EU, the extent of unemployment support, road tolls, government intervention to encourage healthy eating, and the terms of international trade. Several of these are issues that primarily affect people of work-

	Age	Attention	Degree	Female
Death Penalty	0.017 (+)	0.019 (-)	-0.026	-0.027
EU Relationship	-0.052 (-)	0.124 (+)	0.093	-0.381 (-)
Nuclear Forces	0.060 (+)	0.023 (-)	0.057	-0.091
Net Migration	-0.001	0.038	-0.078	-0.260
Foreign Aid	-0.006	0.086	0.200	-0.011
Cannabis	0.007	0.044	0.035	-0.096
Strikes	-0.032	0.091	0.141	0.066
Fracking	0.027 (+)	0.118	-0.107	0.034
University Education Funding	0.021	0.112	0.219	-0.221
Fox Hunting	0.035 (+)	0.048	-0.340 (-)	-0.211
School Tracking	-0.041	0.119	-0.089	-0.115
School Language Support	-0.016	0.027	-0.096	-0.120
Offensive Speech	-0.038	0.087	0.131	0.053
Social Care	0.039 (+)	0.004 (-)	0.214	-0.047
Unemployment Support	-0.054 (-)	0.055	-0.102	-0.103
Higher Tax Rate	-0.026	0.109	0.009	-0.406 (-)
CEO Wages	0.017	0.064	0.041	-0.359
Armed Forces	0.020	0.100	0.134	-0.039
Energy Price Regulation	0.023	0.120	-0.111	0.074
School Curriculum	-0.022	0.028	-0.116	0.056
Telephone & Internet	-0.006	0.024	0.161	-0.046
Social Housing	-0.006	0.109	0.097	-0.299
NHS Public/Private	-0.040	0.083	-0.012	-0.246
Food Production Subsidy	0.095 (+)	0.095	0.379 (+)	-0.174
Road Tolls	-0.116 (-)	0.031	0.217	-0.192
Energy Source Regulation	-0.035	0.178 (+)	0.152	0.020
Zero Hours Contracts	-0.036	0.079	-0.002	0.294 (+)
Land Development	-0.032	0.046	-0.382	0.217
Healthy Choices	-0.090 (-)	0.050	-0.582 (-)	-0.274
Privacy and Policing	-0.017	0.077	0.106	0.049
Railway Ownership	-0.031	0.118	0.124	-0.073
Bank Insurance	0.012	0.026	0.143	-0.098
Inflation v Unemployment	-0.010	0.026	-0.105	-0.493 (-)
International Trade	-0.114 (-)	0.123	0.419 (+)	-0.247
Average	-0.013	0.073	0.027	-0.111

Table 1: Coefficient estimates for variation in importance as a function of four demographic variables. Coefficients significantly higher than or lower than the average coefficient for that demographic variable across all issues are marked with (+) or (-), respectively.

ing age, and the EU relationship is explicitly about the future.

Holding other variables constant, voters who are *more attentive* to politics care relatively more about the future relationship with the EU and energy source regulation, two relatively complex issues. In contrast, voters who are less attentive to politics care more about the death

penalty, nuclear forces, school language support, and social care provision. With the possible exception of social care, these are relatively non-technical issues that connect more straightforwardly to political values.

The associations for the two remaining variables are weaker. Other things equal, university graduates care more about food production subsidies and international trade issues, and care less about fox hunting, land development and the government intervention to encourage healthy eating. Women put higher weight on zero hours contracts and less weight on the EU relationship, top tax rates, and the inflation/unemployment tradeoff.

In the supplemental information (p. 19) we provide plots showing the predicted levels of importance of different issues as a function of each variable considered singly. These figures sometimes show clearer relationships than the multivariate analysis here because variables like political attention and holding a university degree are correlated, making it difficult to distinguish their associations with importance.

Discussion

In this paper, we have offered a new choice-based approach for measuring issue importance in the public. Our approach combines standard survey questions asking respondents to choose concrete policy positions on a number of issues with a conjoint analysis presenting respondents with hypothetical candidates who take positions on a subset of those same issues.

There are limitations to our approach in general and in the specific implementation presented here. Concerning our specific implementation, although we chose a set of issues that was representative of the policy areas defined by the Comparative Agendas Project, we have still only studied one particular set of policy issues using a particular wording for each issue. Future work might explore additional policy issues and sensitivity to the set of and wording of alternatives. Future work could also use our measurement approach to further investigate the factors that determine issue importance. Although our results suggest that measured importance is not driven by linguistic complexity of issue wording and that issues can be important to voters even when they are not salient in elite political contestation, there is much work to be done to understand the antecedents of issue importance. For example, past research finds that

the temporal stability of issue positions is higher when those positions have clear implications for well-defined societal groups or for objects that are concrete and significant for respondents themselves (Converse, 1964). This might suggest that issues are more likely to be important for citizens' political decision-making to the extent that they clearly have such implications. Furthermore, since issues can be framed in different ways, scholars could examine whether our measure of issue importance increases when the same issue is presented in terms of clear societal groups or in more abstract terms.

The limitations to our general measurement approach are mostly variants of the typical external validity concerns that come with any survey experiment. We infer importance based on respondents' choices between hypothetical candidates rather than based on voters' behavioral choices between real candidates in real elections. Because respondents know nothing else about the candidates, know they are not real, and have information about only three issues, they may put some weight on issues that they would not care about at all when making real political decisions. Future research could address some of these points by, for example, embedding the candidate policy positions in a richer conjoint design where respondents also receive information about candidates' background attributes or valence characteristics. This would allow researchers to gauge the importance that voters attach to policy issues when weighing these up against other potentially relevant attributes of candidates. Even then, there is still a risk that voters choose differently when considering the hypothetical issue stances of hypothetical candidates compared to when considering real issue positions of real politicians.

However, just as external validity concerns are not a good general argument against doing survey experiments, none of these limitations are good arguments for rejecting our approach to measuring issue importance, especially given the severe limitations of the alternatives. When we say an issue is important in politics, we should mean that changing something related to that issue is capable of causing people to act differently. Once we recognise that importance can be considered a causal attribute, all the arguments for using experiments to study it have their usual force. A further advantage of the experimental approach is that it allows us to identify those issues which, despite being important to the public, are not the subject of current political debate. We care about variation in issue positions that are not currently being presented to

the public by political parties and candidates, but may be in the future. Armed with a method which identifies such issues in a systematic fashion, we can better understand current electoral competition and its likely future trajectory, and can better judge whether citizens are getting the policies that they say that they want on the issues that they care most about.

References

- Alvarez, R. Michael, Jonathan Nagler and Shaun Bowler. 2000. "Issues, Economics, and the Dynamics of Multiparty Elections: The British 1987 General Election." *American Political Science Review* 94(1):131–149.
- Ansolabehere, Stephen and Philip Edward Jones. 2010. "Constituents' Responses to Congressional Roll Call Voting." *American Journal of Political Science* 54(3):583–597.
- Bartle, John. 2000. "Political awareness, opinion constraint and the stability of ideological positions." *Political Studies* 48:467–484.
- Bartle, John and Samantha Laycock. 2012. "Telling more than they can know? Does the most important issue really reveal what is most important to voters?" *Electoral Studies* 31:679–688.
- Boninger, David, Jon Krosnick, Matthew Berent and Leandre Fabrigar. 1995. The Causes and Consequences of Attitude Importance. In *Attitude Strength: Antecedents and Consequences*, ed. Richard E. Petty and Jon A. Krosnick. Lawrence Erlbaum Associates.
- Bräuninger, Thomas and Nathalie Giger. 2016. "Strategic Ambiguity of Party Positions in Multi-Party Competition." *Political Science Research and Methods* .
- Broockman, David. 2016. "Approaches to Studying Policy Representation." *Legislative Studies Quarterly* 41(1):181–215.
- Butler, David and Donald Stokes. 1974. *Political change in Britain: Basis of electoral choice*. Springer.
- Carpenter, Bob, Andrew Gelman, Matt Hoffman, Daniel Lee, Ben Goodrich, Michael Betancourt, Michael A. Brubaker, Jiqiang Guo, Peter Li and Allen Riddell. 2016. "Stan: A probabilistic programming language." *Journal of Statistical Software* .
- Clarke, Harold D, David Sanders, Marianne Stewart and Paul Whiteley. 2004. *Political choice in Britain*. Oxford University Press.
- Converse, Philip. 1964. The nature of belief systems in mass publics. In *Ideology and its discontents*, ed. David Apter. New York: Glencoe Free Press.
- Converse, Philip E. and Roy Pierce. 1986. *Political representation in France*. Harvard University Press.
- Curtice, John. 2017. "General Election 2017: A New Two-Party Politics?" *Political Insight* 8:4–8.
- Evans, Geoffrey and Anand Menon. 2017. *Brexit and British politics*. Polity.
- Grimmer, Justin. 2013. "Appropriators not Position Takers: The Distorting Effects of Electoral Incentives on Congressional Representation." *American Journal of Political Science* 57:627–642.
- Hainmueller, J., D. J. Hopkins and T. Yamamoto. 2014. "Causal inference in conjoint analysis: Understanding multi-dimensional choices via stated preferences experiments." *Political Analysis* 22(1):1–30.
- Hanretty, Chris, Benjamin E. Lauderdale and Nick Vivyan. 2017. "Dyadic Representation in a Westminster System." *Legislative Studies Quarterly* 42:235–267.

- Harte, Johanna and Pieter Koele. 1995. "A comparison of different methods for the elicitation of attribute weights: structural modeling, process tracing, and self-reports." *Organizational Behavior and Human Decision Processes* 64(1):49–64.
- Heath, Anthony, Roger Jowell and John Curtice. 1985. *How Britain votes*. Pergamon Press.
- Heath, Anthony, Roger Jowell, John Curtice, Geoff Evans, Julia Field and Sharon Witherspoon. 1991. *Understanding political change: The British voter 1964-1987*. Pergamon Press.
- Hellwig, Timothy. 2014. "The structure of issue voting in postindustrial democracies." *The Sociological Quarterly* 55:596–624.
- Hobolt, Sara and Catherine De Vries. 2015. "Issue entrepreneurship and multiparty competition." *Comparative Political Studies* 48(9):1159–1185.
- Horiuchi, Yusaku, Daniel Smith and Teppei Yamamoto. 2018. "Measuring voters' multidimensional policy preferences with conjoint analysis: application to Japan's 2014 election." *Political Analysis* .
- Jessee, Stephen. 2012. *Ideology and spatial voting in American elections*. Cambridge University Press.
- John, Peter, Anthony Betrelli, Will Jennings and Shaun Bevan. 2013. *Policy Agendas in British Politics*. Basingstoke: Palgrave Macmillian.
- Johns, Robert. 2010. "Measuring Issue Salience in British Elections: Competing Interpretations of "Most Important Issue"." *Political Research Quarterly* 63:143–158.
- Jones, Bryan and Frank Baumgartner. 2004. "Representation and Agenda Setting." *The Policy Studies Journal* 32:1–24.
- Kastellec, Jonathan, Jeffrey Lax and Justin Phillips. 2010. "Public opinion and Senate confirmation of Supreme Court nominees." *Journal of Politics* 72:767–784.
- Krimmel, Katherine, Jeffrey Lax and Justin Phillips. 2016. "Gay Rights in Congress: Public Opinion and (Mis)Representation." *Public Opinion Quarterly* 80:888–913.
- Krosnick, Jon. 1988. "The role of attitude importance in social evaluation: A study of policy preferences, presidential candidate evaluations, and voting behavior." *Journal of personality and social psychology* 55(2):196.
- Krosnick, Jon and Richard Petty. 1995. Attitude Strength: An Overview. In *Attitude Strength: Antecedents and Consequences*, ed. Richard Petty and Jon Krosnick. Lawrence Erlbaum Associates.
- Lauderdale, Benjamin, Chris Hanretty and Nick Vivyan. 2018. "Decomposing Public Opinion Variation into Ideology, Idiosyncrasy, and Instability." *Journal of Politics* 80(2):707–712.
- Lax, Jeffrey and Justin Philips. 2012. "The democratic deficit in the states." *American Journal of Political Science* 56:148–166.
- Leeper, Thomas and Joshua Robison. 2018. "More Important, but for What Exactly? The Insignificant Role of Subjective Issue Importance in Vote Decisions." *Political Behavior* .
URL: <https://doi.org/10.1007/s11109-018-9494-0>

- Mellon, Jonathan, Geoffrey Evans, Edward Fieldhouse, Jane Green and Christopher Prosser. 2017. "Brexit or Corbyn? Campaign and Inter-Election Vote Switching in the 2017 UK General Election." Available at SSRN.
URL: <http://dx.doi.org/10.2139/ssrn.3073203>
- Miller, Joanne, Jon Krosnick and Leandre Fabrigar. 2016. *The origins of policy issue salience: Personal and national importance impact on behavioral, cognitive, and emotional issue engagement*. Taylor and Francis Inc. pp. 125–171.
- Miller, W.E. and D.E. Stokes. 1963. "Constituency influence in Congress." *The American Political Science Review* 57(1):45–56.
- Miratrix, Luke, Jasjeet Sekhon, Alexander Theodoridis and Luis Campos. 2018. "Worth Weighting? How to Think About and Use Weights in Survey Experiments." *Political Analysis* pp. 1–17.
- Neslin, Scott. 1981. "Linking product features to perceptions: Self-stated versus statistically revealed importance weights." *Journal of Marketing Research* pp. 80–86.
- Niemi, Richard and Larry Bartels. 1985. "New measures of issue salience: An evaluation." *The Journal of Politics* 47(4):1212–1220.
- Nisbett, Richard and Timothy Wilson. 1977. "Telling more than we can know? Verbal reports on mental processes." *Psychological Review* 84:231–259.
- Sarlvik, Bo and Ivor Crewe. 1983. *Decade of Dealignment*. Cambridge University Press.
- Wilson, Timothy. 2002. *Strangers to Ourselves: Discovering the Adaptive Unconscious*. Belknap Press.
- Wlezien, Christopher. 2005. "On the salience of political issues: The problem with "most important problem"." *Electoral Studies* 24:555–579.
- Zaller, John and Stanley Feldman. 1992. "A simple theory of the survey response: Answering questions versus revealing preferences." *American Journal of Political Science* 36(3):579–616.