

The Coalition-directed Vote in the 2009 German and the 2010 British Elections

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1 Introduction

We typically think of voters as making relatively simple calculations when they decide how to vote in a national election. The simplest characterization is one in which voters support or oppose a party based on performance or policy position. The 2009 German legislative election posed an interesting dilemma for voters employing this simple calculus because the incumbent consisted of a Grand Coalition of the country's two largest political forces. This simple calculus was problematic even in the case of the 2010 British Parliamentary election in which, as the election approached, it became highly likely that no party would command a majority of seats in the House of Commons. This was a relatively unprecedented event and one that made it difficult for voters, accustomed to a two-party majoritarian system, who wanted to simply reward, or punish, an incumbent or opposition. Most voters in democratic contexts make vote choices for parties that were, or may be, in a governing coalition. And to the extent that we think these vote choices are motivated by concerns for policy or performance then we need to understand how voters take into consideration shared administrative responsibility when they vote.

In two recent projects I attempt to grapple with this challenge by considering how economic perceptions (performance) and left-right self-placement (policy), enter the vote utility function and hence shape vote choice. Both projects develop a theory of vote choice that incorporates these two variables – a contextual theory of the economic vote (Duch and Stevenson 2008) and a theory of the coalition-directed ideological vote (Duch, May and Armstrong 2010). Common to both models is the notion that voters exercise a coalition-directed vote. Voters are not simply assessing the party in isolation but rather thinking about the party's contribution to an outcome that is taken by a governing coalition, formed after the election and, obviously, made up of multiple parties. Our evidence based on the analysis of large numbers of public opinion surveys over extensive time periods suggest that vote choice is very much affected by the nature of shared administrative responsibility within the coalition.

These large N studies do not explore in any detailed fashion the micro-level assumptions underpinning the notion of a coalition-directed vote choice. Do voters in fact exhibit reasonably sophisticated levels of coalition reasoning? Are they knowledgeable about the composition of

governing coalitions and prospective governing coalitions? And do coalition-savvy voters conform better than the less-savvy voters to coalition-directed models of vote choice? In this paper provide some micro-foundation to this coalition-directed argument. The evidence is based on two recent elections that provide interesting comparative contexts in which to study the coalition-directed vote: The 2009 German Federal Election and the 2010 British General Election. In conjunction with these two elections the Centre for Experimental Social Sciences (CESS) at Nuffield College organized a German and British Comparative Cooperative Campaign Project that fielded internet panel surveys that spanned the election campaign for these two elections. Data from these campaign internet studies are the basis for the analyses presented in this paper.

The essay is organized as follows: First I briefly review the two theories of coalition-directed voting, highlighting the common micro assumptions of these theories that will be empirically tested using these two elections studies. I then propose a strategy for measuring coalition reasoning and information about governing (or potentially-governing) coalition. A subsequent section describes these measures and provides some validity tests. A final empirical section of the essay tests whether these variables can distinguish individual voters who are more or less likely to exercise a coalition-direct vote.

2 Theory of Coalition-directed voting

This essay builds on a theoretical and empirical work suggesting that voters exercise a coalition-directed vote. My goal is to provide empirical evidence of the micro-foundations of these coalition-directed theories. I'll focus on two theories of coalition-directed voting – the coalition-directed economic vote and ideological vote. I briefly review the basic mechanics of these models in order to highlight the underlying assumptions about voter knowledge and voter reasoning which will be the subject of the empirical tests in the subsequent section.

2.1 The coalition-directed economic vote

Duch and Stevenson (2008) propose one model of the coalition-directed economic vote that assumes 1) multiple parties; 2) a coalitional executive; 3) opposition policy-making responsibil-

ity; and 4) rational beliefs about the competence of alternative governments. Two components of their theory are of particular interest in this essay because they define the coalition-directed aspect of the economic vote: contention and administrative responsibility. My interest in this essay is understanding what these two features of the theory imply about how voters are informed about coalition governments. The following equation captures the essence of their argument (details of this result are developed in Duch and Stevenson (2008) – here I will focus on the components of the model that relate to contention and administrative responsibility). It characterizes the voter’s utility of voting for party j as opposed to abstaining. And this particular representation assumes that the status quo distribution of responsibility (which could be thought of as the incumbent coalition) is not in contention, i.e., will not be re-elected.

$$E[u|v_j] - E[u|v_0] = Z \sum_{\lambda' \in \Lambda'} \sum_{\lambda'' \in \Lambda'} (P_{j,\lambda'\lambda''} - P_{j,\lambda''\lambda'}) \left(\sum_{i \in J} \lambda_{i,t} (\lambda'_{i,t} - \lambda''_{i,t}) \right) \quad (1)$$

$$= Z \sum_{\lambda' \in \Lambda'} \sum_{\lambda'' \in \Lambda'} P_{\lambda'\lambda''} (2P(w_{\lambda'} \lambda_j - w_{\lambda''} \lambda'_j > 0) - 1) \left(\sum_{i \in J} (\lambda_i \lambda'_i - \lambda_i \lambda''_i) \right) \quad (2)$$

Z is just the part of the utility difference that does not change across parties e.g. such as perception of retrospective economic performance.

Administrative Responsibility The amount of administrative responsibility that each party i holds is captured by λ_i . And the impact of relative levels of administrative responsibility associated with party on the vote utility is captured by the last part of Equation 2.1. A key assumption here is that voters know the distribution of responsibility across incumbents. Notice that it still contains the elements of the status quo distribution of authority since it is only through their responsibility for current economic outcomes that voters have any information at all about the competence of the parties in these contending alternatives. Clearly, if no party in either alternative held responsibility in the status quo distribution, these terms will be zero and there will be no economic voting. Further, if λ_i and λ''_i are very similar to one another for most parties this term will be small and economic voting will be muted. So again, we find that

distinct alternatives enhance economic voting.

Also, notice that if those parties in the two alternatives that had some experience in the previous distribution of authority, have equal shares of power in the new distribution, this sum will be zero. For example, suppose that the incumbent distribution of responsibility was a “Grand Coalition” in which two large parties shared power equally and all other parties had no responsibility at all. Further, suppose that this coalition breaks up and cannot reform, and that the only contending alternatives are two one-party governments in which one or the other former partners rules alone. Under these circumstances, the sum in the Equation 2.1 is $(.5*1-.5*0)+ (.5*0-.5*1) = 0$. The intuition of this result is clear: because the only information the voter has about the competence of the parties comes from economic outcomes under the status quo distribution of responsibility and voters apportion responsibility for those outcomes to the two large parties equally, they must conclude that the two alternatives they must decide between have the same level of competence. Because of this, they cannot distinguish between them and so there will be no economic voting in this case (since in our example these are the only contending distributions).

This component of the Duch and Stevenson theory assumes that voters are informed about the distribution of administrative responsibility which could be narrowly defined as the relative number of portfolios allocated to the parties within the coalition; the particular portfolios held by particular parties; or even administrative responsibility that is exercised by parties not formally in the governing coalition.

Contention. Equation 2.1 includes generalized pivot probabilities for the pairs of potential cabinets that include the incumbent cabinet. Note that in the Duch and Stevenson theory, $P_{\lambda'\lambda''}$ is the probability that cabinets λ' and λ'' are tied for selection. $w_{\lambda'}$ is the derivative of selection function for the cabinet λ' with respect to electoral support for λ . Voters do not know w for certain i.e. they are uncertain how changes in electoral support for a given potential cabinet impact its selection. Their belief about these quantities are governed by the probability distributions $f(w_{\lambda})$ and $f(w_{\lambda'})$, respectively.

The important contention intuition here is that the act of voting for a party can only change a

voters utility by changing the outcome of the election. The likelihood that a voter's vote changes the outcome is captured by the probability that this vote is decisive. Consequently, the voter's expected utility for voting for a particular party is simply the sum of the ways in which her vote can be decisive multiplied by the utility of the outcome associated with each kind of decisive vote.

This contention component of the Duch and Stevenson model presumes that coalition-directed voters know which distributions of administrative responsibility are most likely to be in contention. In other words, voters know which governing coalitions are most likely to form after an election and which of these are competitive electorally.

2.2 The coalition-directed ideological vote

A similar challenge faces voters who incorporate party policy positions into their vote calculus: administrative responsibility is shared in coalition governments which implies, again, a more complex relationship between party vote choice and expected policy outcomes adopted by coalition governments. For example, a centrist voter, concerned about policy outcomes and anticipating a likely Tory-Liberal coalition outcome in the recent 2010 British election, might have been more favourable to the Liberal party than would have been the case if the likely outcomes were either a Labour or Conservative majority government. This suggests that the vote calculus, in context with multi-party governing coalitions, is not simply focused on parties and their ideological proximity to the voter but rather about policy outcomes that result from bargaining amongst party elites after the election takes place (Kedar 2009).

In coalition contexts, coalitions form after elections as a result of bargaining amongst parties over the policies to be enacted by the government (Austen-Smith and Banks 1988, Persson and Tabellini 2000). Policy outcomes in coalition government reflect the policy preferences of the parties forming the governing coalition weighted by their legislative seats (Indridason 2007, Duch and Stevenson 2008, Schofield and Laver 1985).¹ I believe that in coalition contexts voters

¹An alternative, and in our view less plausible, perspective is that the policy outcomes adopted in multiparty contexts reflect the weighted preferences of all parties elected to the legislature (Ortuno-Ortin 1997, De Sinopoli and Iannantuoni 2007). This of course significantly reduces the second-order strategic incentives for voters.

anticipate these policy outcomes and they use these to condition their ideological vote calculus.² Rational voters, concerned with final policy outcomes (as opposed to party platforms), condition their vote choices on coalition bargaining outcomes that occur after the election (Austen-Smith and Banks 1988). In multiparty contexts with coalition governments, Austen-Smith and Banks (1988) argue, sincere ideological voting is not rational. The implication of the Austen-Smith and Banks (1988) insight here is that the link between ideology and vote choice is conditioned by rational voters engaging in coalition-directed voting. Voters anticipate the likely coalition formation negotiations that occur after the election and they condition their vote choices accordingly in order to maximize the likelihood that a coalition government forms that best represents their policy preferences.³

Duch, May and Armstrong (2010) have formalized this argument by writing down precisely how this coalition-directed calculation enters the vote utility function:

$$u_i(j) = \lambda \left\{ \beta \left(U - \sum_{n=1}^{N_{c_j}} (x_i - Z_{c_{jn}})^2 \gamma_{c_{jn}} \right) + (1 - \beta) [U - (x_i - p_j)^2] \right\} + \phi \mathbf{W}_i \quad (3)$$

Equation 3 represents the utility that voter i derives from party j . The first right-hand term in large parentheses in Equation 3 incorporates these coalition-directed components, $\gamma_{c_{jn}}$ and $Z_{c_{jn}}$. It is important to emphasize that $\gamma_{c_{jn}}$ is a conditional probability: conditional on entering government its the probability of party j entering into a particular coalition. In our formulation of $\gamma_{c_{jn}}$ the voter asks herself the following question: “If Party j were to enter some government coalition, what is the likelihood that it would govern with a particular combination of partners (or on its own)?” This is a conditional probability such that the sum of these

²This anticipation of post-election policy compromises is not restricted to multiparty coalition contexts. Alesina and Rosenthal (1995), for example, suggest that voters in the U.S. context exercise a policy balancing vote, anticipating the policy differences between Congress and the President. Kedar (2006) makes a more general claim suggesting that this occurs in all Presidential regimes. Adams, Bishin and Dow (2004) analyze individual and aggregate-level data related to U.S. Senate elections and find support for the argument that voters anticipate the moderating effect of the legislative process and hence vote for candidates with more extreme positions. Although they are careful to point out that their data could not distinguish this discounting argument from a directional voting explanation.

³We should be very clear here that this behavior that we are characterizing as strategic only represents one of many dimensions of what is more broadly characterized as strategic voting. The term strategic ideological vote is simply referring to the conditioning of vote choice on the ideological composition of the likely coalition to form after the election.

probabilities across all possible coalitions (c_j), that include j , is one. As a result, each of Party j 's likely coalition partners will contribute (either more or less) to the voter's utility function, for party j . This is important because in our formulation of the $\gamma_{c_{j_n}}$ the voter is not making a strategic calculation regarding the likelihood of particular coalitions forming; rather she is simply assessing the likelihood of different coalition partners given that the party does govern in a coalition government (or governing alone). Note that in this representation of the voter utility calculation, the voter does not weight the particular coalition by its overall likelihood of forming (relative to all coalitions including those of which party j is not potentially a member).

The second important theoretical term in Equation 3 is $Z_{c_{j_n}}$ which is the sum of the seat-weighted ideological positions p_k of each party k in the coalition c_{j_n} . For any possible coalition that includes j (c_{j_n}), we define $Z_{c_{j_n}}$ as follows:

$$Z_{c_{j_n}} = \sum_{k \in c_{j_n}} p_k h_k \quad (4)$$

where h_k is the proportion of seats held by party k in coalition c_{j_n} . Hence voters are assumed to be knowledgeable about the electoral strength of parties and how this translates into their shares of portfolios in the cabinets they enter. Accordingly, the Euclidean distance is between the voter's left-right ideal point and that of the seat-weighted sum of the left-right locations of coalition parties. Note that this is a simplification of the vote calculus in that we do not incorporate into the model the coordination dilemma confronting voters; specifically, that voters should not simply anticipate what coalitions are likely to form but also anticipate how other voters will use this information about post-election coalition bargaining. Voters in these models anticipate how the coalition-directed ideological vote of other voters will affect post-election coalition outcomes and vote accordingly (McCuen and Morton (2010) is one of the few efforts to our knowledge that addresses the modeling challenges posed by such behavior).

Finally, note that the full coalition-directed component of the model that falls within the large parentheses is weighted by β which indicates the importance of coalition-directed considerations and is assumed to vary between 0 and 1. Equation 3 also includes the party-directed ideological expression that we typically see in the literature. Note that this party-directed Eu-

clidean distance term is weighted by $1 - \beta$. As β gets large, i.e., voters put more weight on coalition-directed ideological considerations, this party-directed component of the ideological vote gets smaller. Hence voters in this model can give varying weight to ideological considerations that are entirely party-directed which is captured by the standard Euclidean distance term weighted by $1 - \beta$.

An important part of this richer characterization of the vote calculus is an assumption that voters are reasonably well informed about the coalition formation process after elections; in particular, that voters are informed about $\gamma_{c_{jn}}$ and $Z_{c_{jn}}$.⁴

3 Do voters exercise an informed coalition-directed vote?

Both models of coalition-directed voting presume that voters are informed about the composition of governing coalitions, can anticipate coalition bargaining outcomes after an election, and are knowledgeable about the dynamics of coalition formation. And while this might seem like an exaggerated claim, there are a number of reasons why we might expect voters in fact to display such levels of skill and knowledge. Most importantly, in contexts in which coalition governments are the norm information about the coalition process is of value to the average voter – it helps them make informed decisions.

And a number of important factors facilitate voters gathering this information about coalition formation patterns. One is the relative stability of coalition configurations that typically form in any single country and the fact that these coalitions are not particularly complex in terms of numbers of parties. Most Dutch voters know which parties make up the “rainbow” coalition and are cognizant that this is the coalition that frequently forms after an election. Armstrong and Duch (2010) document this stability in their analysis of coalition formation pat-

⁴There is in fact a growing literature suggesting that voters, at least in some contexts, are quite knowledgeable about this coalition bargaining. Kedar (2005), in particular, finds that voters in contexts with coalition governments engage in compensational voting, i.e., certain voters will vote for more extreme parties with the goal of shifting the policy position of governing coalitions closer to their ideal points. Recent findings for individual countries suggest that voters do respond in an instrumentally rational fashion to the strategic incentives associated with post-election coalition formation possibilities – (Bargsted and Kedar 2009, Gschwend 2007, Bowler, Karp and Donovan 2010, Blais et al. 2006) or they engage in vote discounting whereby voters support more extreme candidates because they anticipate the moderating impact of the legislative process on policy outcomes (Tomz and Houweling 2007, Adams, Bishin and Dow 2004, Merrill and Groffman 1999, Alesina and Rosenthal 1995).

terns in 30 countries over the period 1960 to the present. They find that the effective number of parties in a typical coalition government is approximately 3.5 and that the exact same coalitions are returned to power with relatively high frequency. Hence, the history of coalition formation patterns can be very informative to voters' efforts to anticipate post-election coalition formation outcomes.

A second factor is publicly available polling results that inform voters about the relative electoral strength of competing parties. The assumption that public opinion polls are a coordinating device that informs voting behaviour has a rich theoretical foundation (Cox 1997, Fey 1997). It also has received convincing support from experimental evidence (Forsythe et al. 1993, Forsythe and Weber 1996) and from observational data (Cox 1997). In contexts with multi-party governing coalitions, opinion polls also signal the likelihood of different coalitions forming and hence shape the nature of the coalition-directed vote. Bowler, Karp and Donovan (2010) present evidence that New Zealand voters condition their vote on the electoral prospects, as reflected in public opinion polls, of different coalition formations.⁵

Election campaigns, and in particular the explicit communication efforts by the competing parties, provide voters with information about coalition formation likelihoods (γ_{c_j}). In some cases the signals are very explicit – this is the case with pre-electoral coalitions by which parties make explicit commitments, prior to the election, to form a governing coalition (Golder 2006). And parties can also signal to voters that they will not enter into coalitions with particular parties (an “anti-pact”). For example, in the recent German Federal elections, the FDP specifically ruled out a “traffic light” coalition consisting of the SPD, FDP and Greens. And there is evidence that these “coalition” cues inform vote choice. An example is the Meffert and Gschwend (2007) experiment that documents the strong impact that party cues can have on coalition-directed voting.

In this section I will empirically assess the claim that voters are in fact informed about the features of coalition politics by measuring their coalition reasoning skills and knowledge levels using data from the two German and British panel studies. Second, I will assess the validity of

⁵Although in their experimental results Meffert and Gschwend (2007) find that polling information had a weak impact on coalition-directed voting.

these measures. Thirdly, I explore heterogeneity in these measures. I am going to categorize the micro-assumptions regarding individual level voters into three categories: 1) coalition reasoning; 2) knowledge of coalition composition; 3) administrative responsibility reasoning.

3.1 Measuring coalition reasoning

Note that a key feature of the two coalition-directed utility functions described earlier is that voters are assumed to understand the general dynamics of the coalition formation process. What precisely does this mean? Here I am not referring to factual information, such as which parties made up the incumbent coalition. Understanding the general dynamics of coalition formation suggests the ability to reason about how coalition governments get formed. I have broken this general reasoning ability into three basic components. First, at the very minimum level, it suggests that voters understand what constitutes a majority government. Voters should understand what constitutes a majority governing coalition – either in terms of a single- or multi-party coalition. If voters have a difficult time grasping this basic concept then the other components of the voter utility function described in Equation 3 and 2.1 will pose a significant challenge.

A second dimension of coalition reasoning is the ability to assess features of the coalition such as whether they are over-sized, connected or minimum winning. Considerable scholarship has focused on how these factors shape the negotiating behaviour of potential coalition members (Martin and Stevenson 2001, Riker 1962). But with respect to the general voting population we have little information on their ability to reason about these features of the coalition formation process. Here I will, at least initially, argue that voters typically anticipate the formation of minimum winning coalitions and that the ability to recognize the bias in favour of minimum winning coalitions distinguishes those with more developed coalition reason capabilities from those without.

Finally, a third dimension of ideological reasoning concerns how voters relate to left-right ideological spatial representations of electoral competition. Here I am particularly interested in spatial reasoning as it relates to coalition formation. There has of course been considerable work examining how voters reason ideologically about particular parties in the electoral/issue space.

But there has been relatively little work, that I am aware of, devoted explicitly to studying how voters reason about party ideological proximity and coalition formation likelihoods, for example. Ideological proximity is typically assumed to condition the likelihood of parties agreeing to form a coalition. Accordingly I characterize voters as having more developed coalition reasoning skills if they recognize ideological proximity as increasing the likelihood of coalition agreement amongst parties.

3.2 Description of the Experiment

There are three dimensions of coalition reasoning that I attempt to recover with experimental vignettes embedded in the CCAP internet surveys: 1) voters understand the basic arithmetic of coalition formation – for example, they understand that two parties each with 30 percent of the legislative seats have sufficient voting strength in the legislature to form a viable coalition government; 2) voters anticipate the formation of minimum winning coalitions – they think parties prefer coalitions that minimize the number of parties necessary to command a majority in the legislature; 3) voters reason in terms of the left-right ideological continuum so they anticipate parties that are proximate on the ideological scale will enter a coalition. The treatments described below are designed to determine the extent to which these intuitions are correct.

I expect the political context to play an important role here and hence conduct coalition reasoning experiments in two different political contexts: Germany and Britain. In Germany where there is a history of coalition government, voters are likely to be relatively informed about coalition formation patterns and hence should conform to my expectations. In the UK where there is no history of coalition government I would not expect the average British voter to be informed about coalition government patterns and hence I would expect them to perform very poorly in terms of coalition reasoning.

The 2008-2010 British and 2009 German Cooperative Campaign Projects provide the data for addressing the questions raised in the previous sections. This project is a cooperative undertaking of 10 university teams (25 political scientists). The BCCAP is a six-wave panel internet study of 10,000 respondents. The waves are being conducted by Polimetrix YouGov in December, 2008; May and October 2009; and January, May and June of 2010. The DECAPP

is a four-wave panel that was conducted by Psychnomics/YouGov over the course of the 2009 German election campaign.

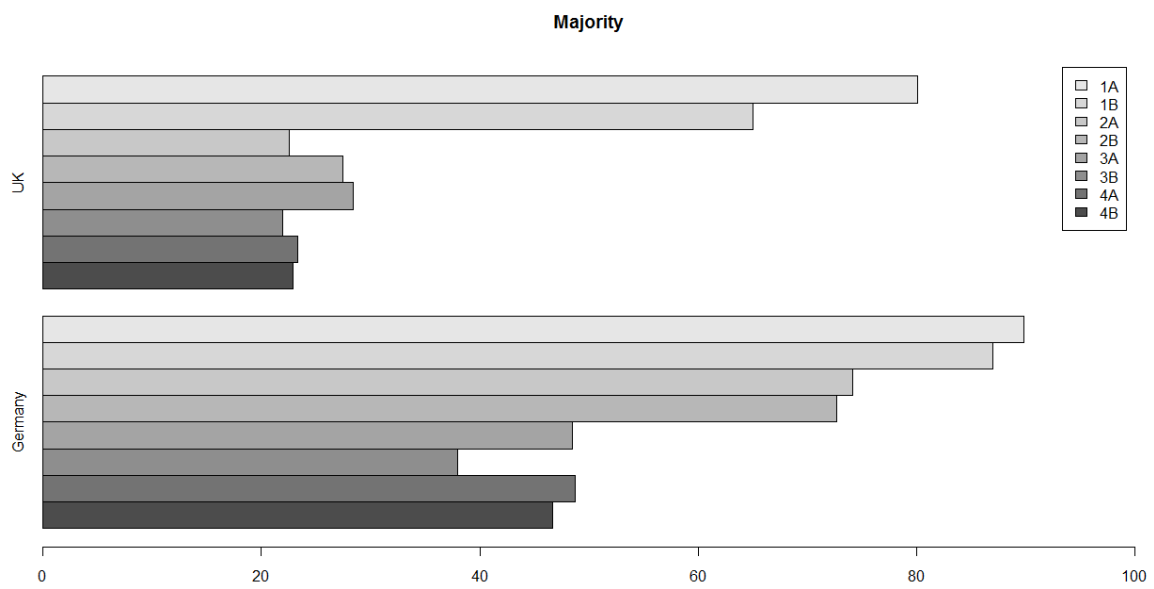
Included in Wave 4 of the BCCAP internet panel survey (Fall 2009) and Wave 2 of the DEC-CAP survey is an experiment to recover measures of coalition reasoning. The experiments were very similar. The British experiments are incentive compatible – respondents were rewarded if they did well in each of the treatments. Accordingly, I rewarded respondents who make choices that are consistent with the majority of respondents with bonus YouGov points. This was not feasible in the German experiments.

3.3 Majority Government Reasoning

In both the German and the UK context, minority governments are extremely rare. Hence I would expect large majorities of respondents in both contexts to select a party with a majority of seats in the legislature. The two contexts differ though in that the UK historically has virtually no history of coalition governments. Hence faced with the task of identifying a majority government in situations in which this requires assembling parties that constitute a majority coalition, my expectations are that British respondents would fare quite poorly compared to the Germans.

As Figure 1 indicates this is in fact the case. In Treatment 1a and 1b where there are only two parties, large majorities in both countries select the party with a majority of seats as being most likely to form a government. Nevertheless even here the Germans exhibit a greater likelihood of making the correct choice. This may simply indicate that in the German context there is a discourse associated with government formation – something that really has not been the case in the UK (although it has been the case with the Scottish and Welsh regional parliaments). Government formation in the UK typically simply follows automatically as a result of a party winning a majority of seats in an election.

Figure 1: Frequency with which Majority Governments Selected



By contrast, as respondents are confronted with choices that require a coalition of parties to form a majority coalition government, there is a pretty dramatic contrast between Germany and Britain. In treatments 2A and 2B, any combination of two or three parties will constitute a majority government. Nevertheless, only about 20 percent of the British are able to correctly perform this task while 80 percent of the Germans succeed. This gap narrows slightly in the case of treatment 2B but it remains over 3 to 1 in favor of the Germans.

Treatment 3A and 3B add somewhat more complexity to the choice. Again, no single party can form a majority government but now there are combinations of parties that would not have sufficient numbers of seats to form a majority governing coalition. Now here we see an interesting pattern. The percentage of British respondents giving a correct answer remains pretty similar to the percentage in the case of Treatment 2A and 2B – around 20 percent. But the correct percentage for the German respondents drops from around 80 to about 50 percent.

The final Treatment 4A and 4B increments the complexity of the choice by reducing the combination of parties that could form a majority governing coalition. This incremental level of complexity does not seem to affect the levels of correct responses – the British remain at around 20 percent and the Germans remain at around 50 percent. This suggests the equilibrium level of sophisticated coalition government reasoning in the two countries – it constitutes about 20 percent of the British electorate and 50 percent of German voters.

Most rational choice theories of vote choice in coalition government contexts assume that voters are knowledgeable about the types of coalitions that are likely to form after an election. At a very minimum this presumes that voters understand what constitutes a majority governing coalition. The coalition reasoning experiments were designed to recover this basic level of comprehension in the British and German voting populations. I expected considerable contextual variation in this reasoning ability: For German voters this is a reasoning capability that is extremely useful for making vote decisions in the German context and its one that receives considerable attention in the German media. And in the British context, this feature of coalition reasoning has been of little utility for exercising a vote in British Parliamentary elections.

Encouragingly, with respect to the very basic reasoning ability – recognizing which of two

competing parties would form a majority government – voters in both Germany and the UK exhibit very high levels of knowledge (exceeding 80 percent in both countries). By varying the difficulty of identifying majority governing coalitions the experimental treatments allow us to identify what I characterize as coalition sophisticates. Here I would expect, and find, significant contextual variation. In the UK only about 20 percent of the voting population falls in this category while in Germany approximately half the population can be considered a coalition sophisticate. For the multi-variate analyses that I conduct later in this essay, I will use this ability to identify majority coalitions as my measure of coalition reasoning abilities.

3.4 Minimal winning coalitions and ideological spatial reasoning

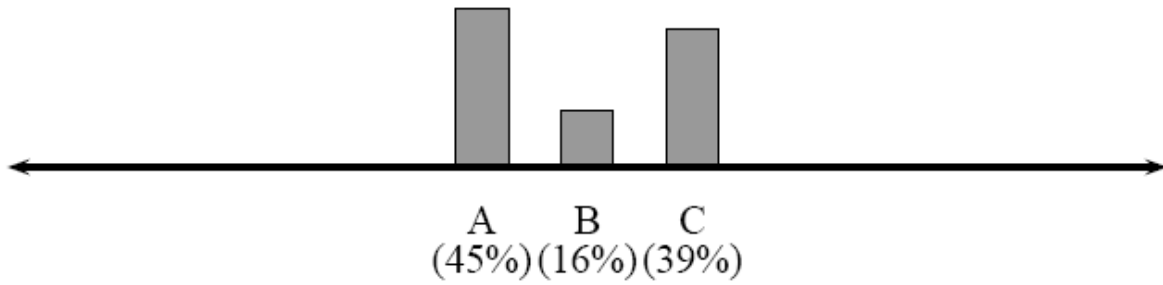
The experimental vignettes were designed to recover two other dimensions of coalition reasoning: the extent to which respondents favoured minimum winning coalitions and ideological proximate parties in predicting the likely coalitions that would form. These two dimensions are not currently incorporated in the measure of coalition reasoning that will be employed in the subsequent multi-variate analyses. Nevertheless, the raw results provide interesting insights into the coalition reasoning of the two electorates and ultimately these dimensions will be added to the measure.

The treatments are designed to calibrate whether respondents favour minimal winning coalitions and whether they anticipate that ideological proximity affects the composition of coalitions.

Figure 13-Figure 14 present the first treatments. In Treatment 2A and 2B the parties have the same seat allocations – A has 45 seats; B has 16 seats; and C has 39 seats. In Treatment 2A the parties are equidistant and straddle the ideological centre. The respondents' choices are recorded below the figures. While relatively few British respondents understand that A is not a winning coalition, the small number of coalition savvy respondents are approximately indifferent between coalition AB and BC. Interestingly, not only do the Germans recognize that a coalition is necessary to form a majority government, but they favor AB over BC. Large numbers of Germans would appear to understand that the party with the largest numbers of seats in the legislature would be called upon to form a government (i.e., party A) and of course would enter into coalition with B.

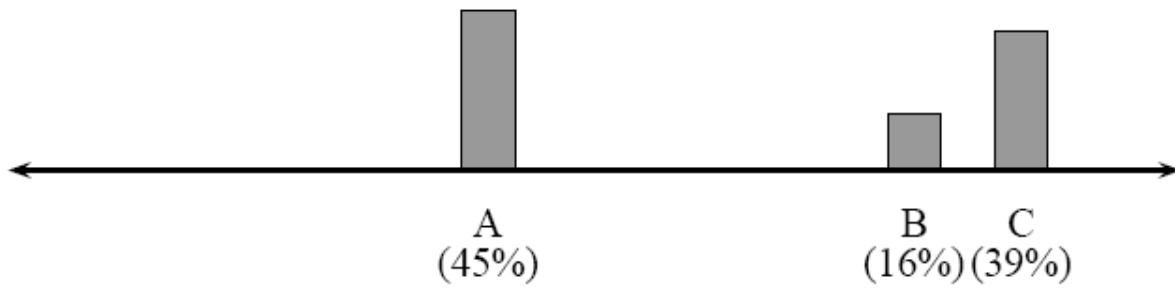
Treatment 2B shifts the parties B and C significantly to the Right extreme of the ideological continuum leaving Party A significantly to the Left of these parties. Respondents respond to the increase in ideological distance between A and B in the manner that we would expect. In the case of Germany, respondents are now significantly more likely to choose BC than AB. Hence, they effectively recognize that the formateur advantage would be out-weighted by ideological proximity in this particular extreme case. And even the British respondents demonstrate some sensitivity to this ideological proximity treatment although for the most part they remain rather confused.

Figure 2: Treatment 2A



	A	AB	ABC	AC	B	BC	C	N
Germany	17.61	37.4	1.79	11.39	4.35	23.6	3.85	4021
UK	54.42	10.32	0.38	3.03	6.77	8.85	16.23	2113

Figure 3: Treatment 2B

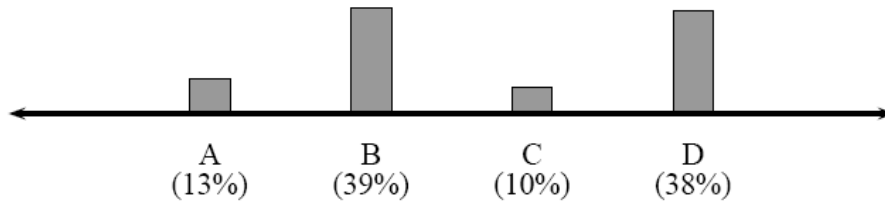


	A	AB	ABC	AC	B	BC	C	N
Germany	19.12	20.34	1.37	9.05	3.93	41.9	4.28	4021
UK	41.4	2.7	0.24	1.94	7.06	22.6	24.06	2111

In treatment 3A and 3B parties A and B are the only two parties that can form a minimum winning connected coalition. The results are reported in Figure 15 and Figure 16. In treatment 3A the two parties are ideologically equidistant and straddle the ideological centre. About a quarter of the German respondents select this coalition, along with 20 percent of the British respondents. Interestingly, a slightly greater percentage of the Germans choose BC which is just shy of enough seats to form a majority governing coalition. And once again almost one-half of the British respondents select a party that will not be able to constitute a majority governing coalition.

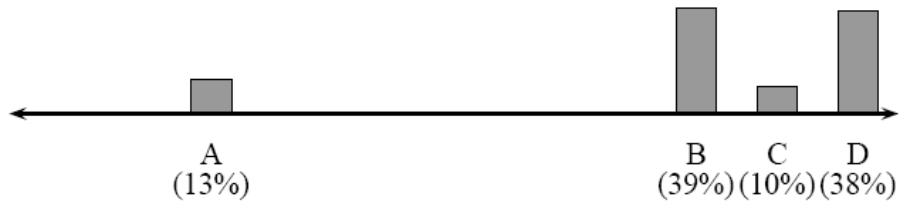
In treatment 3B, Party A is ideologically isolated on the extreme Left of the continuum while Parties B,C, and D are ideologically cluster on the extreme Right. My expectation was that most respondents would anticipate the minimum winning connected coalition, AB, in Treatment 3A. But assuming respondents recognize that ideologically distant parties are unlikely to enter a coalition, the percent selecting AB in Treatment 3B should fall dramatically. This happens to a considerable extent in the German case – the numbers selecting AB are halved although to the advantage primarily of BC which is just shy of constituting a majority governing coalition.

Figure 4: Treatment 3A



	AB	B	BC	BD	C	CD	D	<i>N</i>
Germany	24.27	13.93	26.59	18.9	1.64	4.4	2.64	4021
UK	20.1	46.04	4.79	5.07	3.22	2.04	9.53	2109

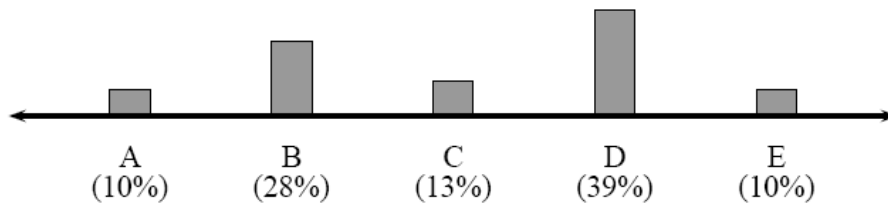
Figure 5: Treatment 3B



	AB	B	BC	BCD	BD	CD	D	<i>N</i>
Germany	10.07	14.52	36.98	4.53	20.49	3.76	2.59	4021
UK	2.89	44.76	11.57	6.26	11.38	3.89	10.05	2109

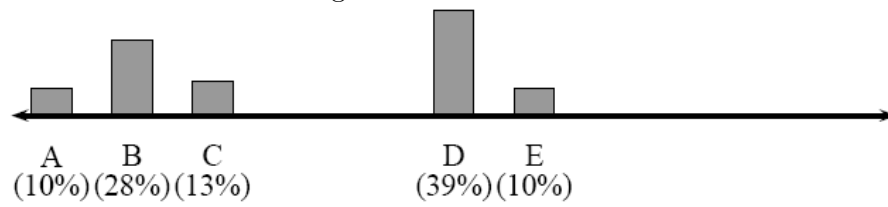
Treatments 4A and 4B are summarized in Figure 17 and Figure 18. In Treatment 4A voters who anticipate minimal (in terms of parties) winning connected coalitions, who recognize the formateur advantage of being the largest party in the legislature, and are sensitive to ideological proximity should anticipate that CD will likely form a governing coalition. In the German case 30 percent of the respondents select this as the most likely outcome. Again, the British are pretty hopeless in making these types of calculations. Note that in Treatment 4A the parties are ideological equidistance from each other and straddling the ideological centre. In Treatment 4B, Parties C and D significantly diverge in terms of their location on the ideological spectrum. And as expected, the percentage of German respondents selecting these two parties as likely forming a coalition drops dramatically. In this treatment only 14 percent of the German respondents now anticipate this coalition forming. The modal response is now ABC.

Figure 6: Treatment 4A



	ABC	B	BCD	BD	CD	CDE	D	<i>N</i>
Germany	6.09	2.64	3.93	24.42	30.02	7.31	12.78	4021
UK	3.13	5.93	1.47	5.31	13.47	4.55	49.29	2108

Figure 7: Treatment 4B



	ABC	B	BD	CD	CDE	D	DE	<i>N</i>
Germany	24.57	3.01	18.85	13.95	5.07	11.32	10.1	4021
UK	17.84	12.48	4.41	2.42	1.52	40.32	9.77	2108

These preliminary analyses of the coalition formation experimental vignettes suggest, at least to me, that they are very useful for a very basic distinction between those respondents who understand the notion of a majority governing coalition and those who have difficulty with this basic coalition arithmetic. And this is the basic measure I propose using for calibrating the skill level of respondents' coalition reasoning. The other dimensions of coalition reasoning – ideological proximity and minimal winning coalition status – I think offer some promise in terms of measuring skill levels although these are the subject of future analysis of these data.

3.5 Coalition Reasoning Types

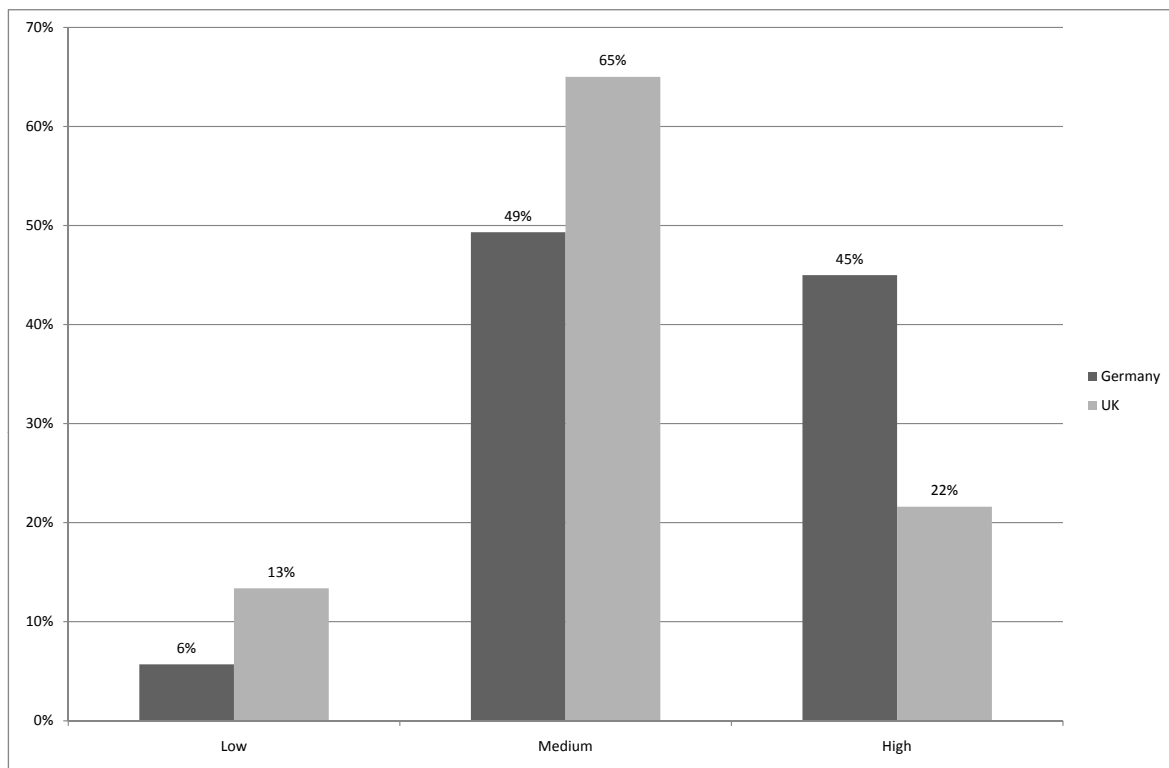
The results of the reasoning experiments suggests that a large proportion of the German electorate, and a quite small one in the UK, are comfortable engaging in this coalition reasoning. This suggests first that we ought to be able to recover a coalition reasoning measure using this, or similar, embedded survey experiment. Secondly, we should expect considerable variation within the electorate.

The embedded experiments allow us to recover a measure of the individual's level of sophistication employed in reasoning about governing coalitions. Table 1 summarizes how I defined the three levels of sophistication based on the responses to the experimental scenarios. Low sophisticates couldn't identify a majority coalition in any of the simple treatments (1A or 1B). If they identified any one of these simple majority coalitions, but did not meet the criteria for a High sophisticate, then they were assigned to the Medium sophisticate category. High sophistication identified at least 2 out of the 6 minimum winning majority coalitions (2A, 2B, 3A, 3B, 4A, 4B). And Figure 8 summarizes the distribution of coalition reasoning types in Germany and the UK. Not surprisingly, given the previous discussion, about 45 percent of the German respondents are coalition reasoning sophisticates while only 22 percent fall in this category in the UK. The UK has a higher percent falling in the low and medium reasoning categories.

Table 1: Levels of Coalition Reasoning Defined

	Low	Medium	High
Identify majority coalition – two parties	<i>no</i>	<i>yes</i>	<i>yes</i>
Identify < 3 majority coalitions – multiple parties	<i>no</i>	<i>yes</i>	<i>yes</i>
Identify > 2 majority coalition – multiple parties	<i>no</i>	<i>no</i>	<i>yes</i>

Figure 8: Coalition Reasoning Types: Germany (2009) and UK (2010)



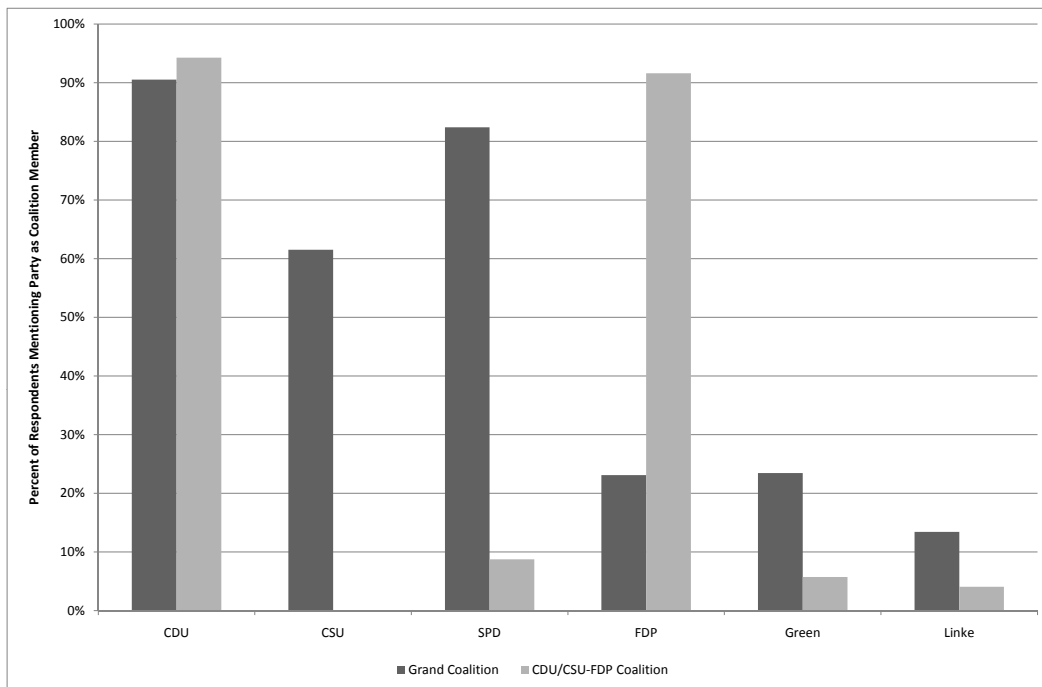
3.6 Measuring knowledge of coalition composition

Again in either of these coalition-directed vote utility functions voters need to know which parties constitute the governing coalition and to anticipate the different types of coalitions that

could form after an election in addition to having a sense of the likelihood of different coalitions forming. This is the notion from Duch and Stevenson (2008) that voters have preferences over distributions of administrative responsibility – and the notion that their vote would be pivotal in electing (or defeating) a particular distribution of administrative responsibility. In Duch, May and Armstrong (2010) its the γ term in Equation 3 that assumes voters know what parties make up the incumbent governing coalition and which are likely to enter a post-election governing coalition.

The German DCCAP survey included two sets of knowledge questions regarding the composition of both the out-going and, in the post-election study, the in-coming coalition. Figure 9 summarizes the responses. Most respondents named the CDU (90 percent) and the SPD (80 percent) as members of the out-going Grand Coalition, although a surprisingly small, 60 percent, named the CSU. And 90 percent of respondents named the FDP and the CDU as members of the new post-election governing coalition. Responses to this coalition knowledge question will be used in constructing the final measure of coalition sophistication.

Figure 9: Knowledge of out-going and in-coming German Coalitions



3.7 Measuring administrative responsibility reasoning

The final and probably most difficult to measure assumption regarding the coalition-direct vote is this notion that voters have preferences over distributions of administrative responsibility (which is what determines policy outcomes) rather than over parties. This is the λ term in Duch and Stevenson (2008) and the Z term in Duch, May and Armstrong (2010). For this particular analysis we will not be incorporating this measure in the analysis.

4 Micro-foundations of the coalition-directed vote

At the outset of this essay I laid out the theoretical foundations for a coalition-directed vote. I provided a description of the micro-foundations of the coalition-directed economic and ideological vote and pointed out that both models assume voters engage in reasonably sophisticated coalition reasoning. The previous sections suggests that, yes, there are voters that have this profile although there clearly are many who do not. To the extent that voters vary significantly in terms of the sophistication of their coalition knowledge and reasoning, I would expect these sophistication measures to distinguish those who in fact are exercising a coalition-directed vote from those who are not. This section will test this argument. The coalition-savy measure is simply the sum of the respondent scores on the coalition knowledge measure (which ranges in values from 0 to 3) and the coalition reasoning measure (which ranges from 1 to 3).

4.1 The Coalition-directed Economic Vote in Germany and the UK

I begin with a comparison of the coalition-directed economic vote of those who score high versus those who score low on this measure of savy coalition reasoning. The 2009 German Federal election provides a particularly interesting context in which to explore whether my measure of coalition reasoning has any empirical foundation. Because of the unique outcome of the 2010 British election, it also provides some insight into coalition reasoning and the economic vote.

The 2009 German election represents a theoretical anomaly for students of the economic vote because the incumbent government in that election consisted of the two parties making up

the Grand Coalition, the CDU/CSU and the SPD. Classic moral hazard models of the economic vote presume, at a minimum, well-defined incumbent parties that will either be rewarded or punished as a function of perceived economic performance. A Grand Coalition does not provide such a clear dichotomy and hence at best these models simply predict a muted economic vote in such contexts (Anderson 1995, Powell and Whitten 1993).

One feature of the Duch and Stevenson (2008) model is particularly appropriate for modeling a “Grand Coalition” economic vote because it assumes that voters have preferences over distributions of responsibilities rather than parties per se (which is the weakness of the typical moral hazard model). The theory assumes that voters know which parties are in the incumbent cabinet and which parties are in any alternative cabinet they are considering. Voters are assumed to believe each party’s contribution to economic outcomes is proportional to the parties’ shares of responsibility. Hence increased cabinet responsibility should enhance a party’s economic vote. This implication stems directly from the Duch and Stevenson (2008) assumption that voters believe the impact of a vote for party j on the selection of a distribution of responsibility λ is proportional to party j ’s share of responsibility in λ and that they want to vote rationally to maximize their impact.”

The analysis of the economic vote in the 2009 German election, that occurred after four years of a Grand Coalition consisting of the CDU/CSU and SPD, allows a direct test of the Duch and Stevenson (2008) hypothesis regarding this “distribution of responsibility” reasoning. First, the incumbent coalition consisted of the the two major parties in which cabinet portfolios were divided equally amongst the two parties (roughly eight ministries for each party). Second, Duch and Stevenson predicted economic vote would be contingent on voter expectations regarding the coalitions that would form after the election:

- *Naive*: A naive expectation would be that one of the two parties would govern on its own (or effectively on its own) – in this case, given the equal distribution of responsibility in the incumbent cabinet, neither party should receive an economic vote.
- *Sophisticated*: A plausible coalition outcome would have been either 1) the CDU/CSU and FDP in coalition (which is the actual coalition that formed); or 2) the SPD in coalition

with the Greens and the Linke parties. The Duch and Stevenson model would predict the following: 1) coalition directed voters who were happy with the economy should vote for the CDU/CSU or FDP parties – the likely resulting coalition would result in the “incumbent” CDU/CSU having about 85 percent of the distribution of responsibility; 2) coalition directed voters who were unhappy with the economy should vote for the SPD, Greens or Linke parties (in effect, whichever party vote they thought would maximize the likelihood of this coalition forming) – this coalition would have about half of the responsibility accounted for by “opposition” parties that were not in the Grand Coalition (the Greens obtained about 10 percent of the vote; the Linke 12 percent; and the SPD about 23 percent).⁶

Hence the theoretical expectation here is that coalition-oriented voters should reward the CDU/CSU and FDP parties for good perceived economic outcomes but should prefer the SPD, Green, and Linke parties if they perceive the economy as doing poorly. This is precisely what happens in the 2009 German election.

Table 2 summarizes the estimation of a simple multi-nomial logit economic voting model. In Model 1, the dependent variable is the vote choice of German CCAP respondents in the second wave of the panel (July, 2009) with national retrospective evaluations as the independent variable and controlling simply for left-right self identification. The economic evaluation variable (which is coded in such a fashion that high values indicate dissatisfaction with the retrospective economy) has a positive and significant coefficient for all of the party choices, including the SPD. Note that the CDU/CSU vote option is the referent category in the estimation. The results are consistent with the Duch and Stevenson model which predicts that voters unhappy with the economy would cast a vote that would maximize the chances of the election of a coalition – or a distribution of responsibility – that had an “opposition” distribution of responsibility (i.e., parties that were not in the incumbent governing coalition). As was pointed out above, the most plausible “opposition” distribution of responsibility was the SPD, Green and Linke – hence we would expect a positive coefficient on the economic evaluations for these parties.

⁶Another other plausible coalition outcome was another Grand Coalition but this was one that was heavily discounted by most observers and by the voters. In this case the economic vote for both the CDU/CSU and SPD would be large, similarly signed and indistinguishable in magnitude.

A stronger test of the argument would be to explore the nature of the economic vote for those I characterized earlier as having relatively savvy coalition reasoning skills versus those who did not. Savvy coalition reasoning skills here is defined as the sum of the coalition knowledge variable and the coalition reasoning variable. This variable is interacted with the economic evaluation variable. Model 2 reports the estimates of a model that includes the coalition variable and its interaction with economic evaluations. The results are reported in Table 2. Again, these results are precisely what the Duch and Stevenson model predicts. Note that for the SPD choice, the coefficient on economic evaluations is statistically insignificant while the coalition-savvy interaction term has a statistically significant coefficient. This suggests that the coalition-savvy respondents are behaving according to the Duch and Stevenson model by favouring parties that will likely help form an “opposition” distribution of responsibility. But of course the Duch and Stevenson model assumes coalition reasoning skills and knowledge about the likely coalition compositions after the election. For those without those skills, one expectation might be the naive one described above and treat each party as likely to form a separate government on its own – in which case the expectation is that there would be no economic vote for either party which is precisely what we see in Model 2 – for the non-sophisticates the coefficient on economic evaluations is effectively zero.

Table 2: Coalition-directed economic vote: German CCAP Study 2009

Variable	Model 1	Model 2
SPD		
Prosp. Nat'l	0.323 (0.092)	-0.031 (0.179)
LR place	-0.682 (0.05)	-0.669 (0.08)
ev savy	-	0.115 (0.037)
savy	-	-0.149 (0.171)
Constant	3.001 (0.406)	2.993 (0.961)
FDP		
Prosp. Nat'l	0.3 (0.085)	0.154 (0.169)
LR place	-0.075 (0.041)	-0.095 (0.069)
ev savy	-	0.012 (0.034)
savy	-	0.165 (0.152)
Constant	-0.498 (0.386)	-0.967 (0.905)
Green		
Prosp. Nat'l	0.427 (0.103)	-0.061 (0.2)
LR place	-0.742 (0.056)	-0.787 (0.09)
ev savy	-	0.092 (0.041)
savy	-	-0.038 (0.195)
Constant	2.543 (0.447)	3.059 (1.083)
Linke		
Prosp. Nat'l	1.012 (0.102)	0.448 (0.198)
LR place	-1.048 (0.057)	-1.099 (0.094)
ev savy	-	0.13 (0.041)
savy	-	-0.203 (0.204)
Constant	2.293 (0.441)	3.161 (1.094)
Obs	1727	699
ll(model)	-3013.304	-1217.038
	15	25
AIC	5163.903	2097.101
	5245.715	2210.843

4.2 The Coalition-directed ideological vote in Germany and the UK

Empirical tests of the Duch, May and Armstrong (2010) theoretical claims about how ideology shapes vote choice require observations that vary over x_i , p_k , $\gamma_{c_{jn}}$, and h_k . The first two requirements are quite standard: there needs to be variation in the self-placement of voters on the ideological continuum and parties need to vary along this same continuum. The other requirements are somewhat more demanding: parties need to vary considerably in terms of their probability of participating in a governing coalition; and there needs to be variation across parties and over time in the allocation of cabinet portfolios to different parties in the governing coalition. Germany certainly meets these criteria. Further, the functional form of the empirical model has to be specified such that it generates estimates for the parameter β .⁷

The challenge here is to leverage the individual-level vote choice data in the panel surveys so that we can calibrate the magnitude of β . Note that even for those cases in which there are opportunities to exercise a coalition-directed ideological vote, the predictions from a model in which $\beta = 1$ versus a model in which $\beta = 0$ will be identical for a large number of voters. This frequently happens because, given the ideological self-placement of voters, the optimal coalition-directed vote choice, taking into consideration post-election coalition compromises, is the same as one that simply considered the ideological proximity of parties. This makes it difficult to assess the independent contribution of the coalition- and party-directed components of Equation 3 with an empirical model that includes both terms.

Conventional multi-nomial logit estimation. Here I estimate a set of preliminary vote choice models that provide insight into the relatively magnitude of β . The multi-nomial logit models include two different sets of left-right distant variables. One set consists of what I have referred to as the sincere ideological distance variables ($[U - (x_i - p_j)]^2$ from Equation 3). Euclidean distance values are calculated for each of the major parties: CDU, CSU, SPD, FDP, Greens, Linke – these are based on individual left-right self placements (x_i) and the respondent’s placement of each j party on the left-right continuum (p_j). A second set of left-right distance variables constitute coalition-directed ideological distance calculations that are attributed to the

⁷This initial analysis does not estimate the λ coefficient.

voters $\left(U - \sum_{n=1}^{N_{c_j}} (x_i - Z_{c_{j_n}})^2 \gamma_{c_{j_n}} \right)$ from Equation 3). In this initial analysis, which is a much simplified version of Duch, May and Armstrong (2010), I include two coalition distance terms: a Right coalition distance term: in this case $Z_{c_{j_n}}$ is based on the respondent's left-right placement of the CDU/CSU and the FDP weighted by the party's share of the seats in the legislature won by the parties in the Right coalition. A similar calculation is made for the Left coalition which I defined as the SPD, Greens and the Linke parties.

In this preliminary analysis my primary interest is to 1) determine whether the coalition-directed calculations, theoretically captured by the β term, are guiding the vote choice of some of the German voters; and 2) test the hypothesis that this incidence of coalition-directed voting is exaggerated amongst those who score high on coalition reasoning and coalition knowledge. Accordingly, I estimate conventional multi-nomial vote choice models with a standard set of controls in addition to the sincere and coalition-direct ideological distance terms.

The estimates of these models are presented in Table 3 and Table 4. Again, these are preliminary but they provide initial support for the argument that voters engage in coalition-directed ideological voting. Model 1 is a standard vote choice model with Euclidean left-right distance terms for each of the major political parties (I do not report the results for the controls). Note that the distance terms for the smaller parties, FDP, Green and Linke, are significant in the model while those for the two Grand Coalition partners, the CDU/CSU and SPD typically are not statistically significant. Model 2 includes only the two coalition-directed distance terms. In this case, both the Left and Right coalition-directed distance terms are statistically significant, and in the expected direction, for the SPD, Green Party and Linke. Including both the coalition-directed and party-directed distance terms – Model 3 – suggests that coalition-directed distance terms continue to perform well. But given that for many voters the two distance terms should be associated with the same vote choice the results in Model 3 are probably not that informative. And in fact we see a number of curious anomalies, such as the negative coefficient on the Right distance terms for the SPD and Linke vote. My major point here though is that preliminary evidence suggests that modeling vote choice with a coalition-directed measure of ideological distance provides added value above and beyond models that exclusively incorporate sincere party ideological distance.

Table 3: Coalition-directed ideological vote: Germany

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
SPD					
sqr dist to Left Coal	—	−0.078	−0.046	−0.398	−0.03
	—	(0.014)	(0.071)	(0.321)	(0.074)
sqr dist to Right Coal	—	0.136	−0.434	−0.915	−0.405
	—	(0.02)	(0.171)	(0.649)	(0.204)
sqr dist to CDU	0.035	—	0.198	0.36	0.2
	(0.036)	—	(0.079)	(0.289)	(0.098)
sqr dist to CSU	0.044	—	0.174	0.312	0.167
	(0.029)	—	(0.057)	(0.19)	(0.07)
sqr dist to SPD	−0.01	—	0.018	0.165	0.024
	(0.021)	—	(0.047)	(0.232)	(0.047)
sqr dist to Green Party	−0.058	—	−0.048	0.11	−0.066
	(0.021)	—	(0.03)	(0.09)	(0.036)
sqr dist to Linke	−0.015	—	−0.01	0.025	−0.014
	(0.01)	—	(0.016)	(0.064)	(0.019)
sqr dist to FDP	0.064	—	0.191	0.489	0.129
	(0.02)	—	(0.056)	(0.235)	(0.063)
constant	−1.139	−1.148	−1.022	−1.07	−1.68
	(0.922)	(0.906)	(0.926)	(2.732)	(1.164)
FDP					
sqr dist to Left Coal	—	0.002	−0.013	0.24	0.055
	—	(0.007)	(0.07)	(0.274)	(0.082)
sqr dist to Right Coal	—	−0.025	0.068	0.256	0.162
	—	(0.025)	(0.176)	(0.583)	(0.227)
sqr dist to CDU	0.04	—	0.021	−0.085	0.011
	(0.041)	—	(0.084)	(0.255)	(0.112)
sqr dist to CSU	−0.021	—	−0.037	−0.056	−0.082
	(0.033)	—	(0.059)	(0.166)	(0.08)
sqr dist to SPD	0.021	—	0.032	−0.187	−0.002
	(0.014)	—	(0.044)	(0.175)	(0.05)
sqr dist to Green Party	−0.005	—	−0.002	0.025	−0.04
	(0.013)	—	(0.023)	(0.069)	(0.029)
sqr dist to Linke	−0.008	—	−0.006	−0.057	−0.015
	(0.009)	—	(0.016)	(0.058)	(0.019)
sqr dist to FDP	−0.071	—	−0.1	−0.117	−0.145
	(0.027)	—	(0.061)	(0.208)	(0.077)
constant	0.038	−0.089	0.053	−2.348	−0.783
	(0.826)	(0.819)	(0.831)	(2.312)	(1.082)

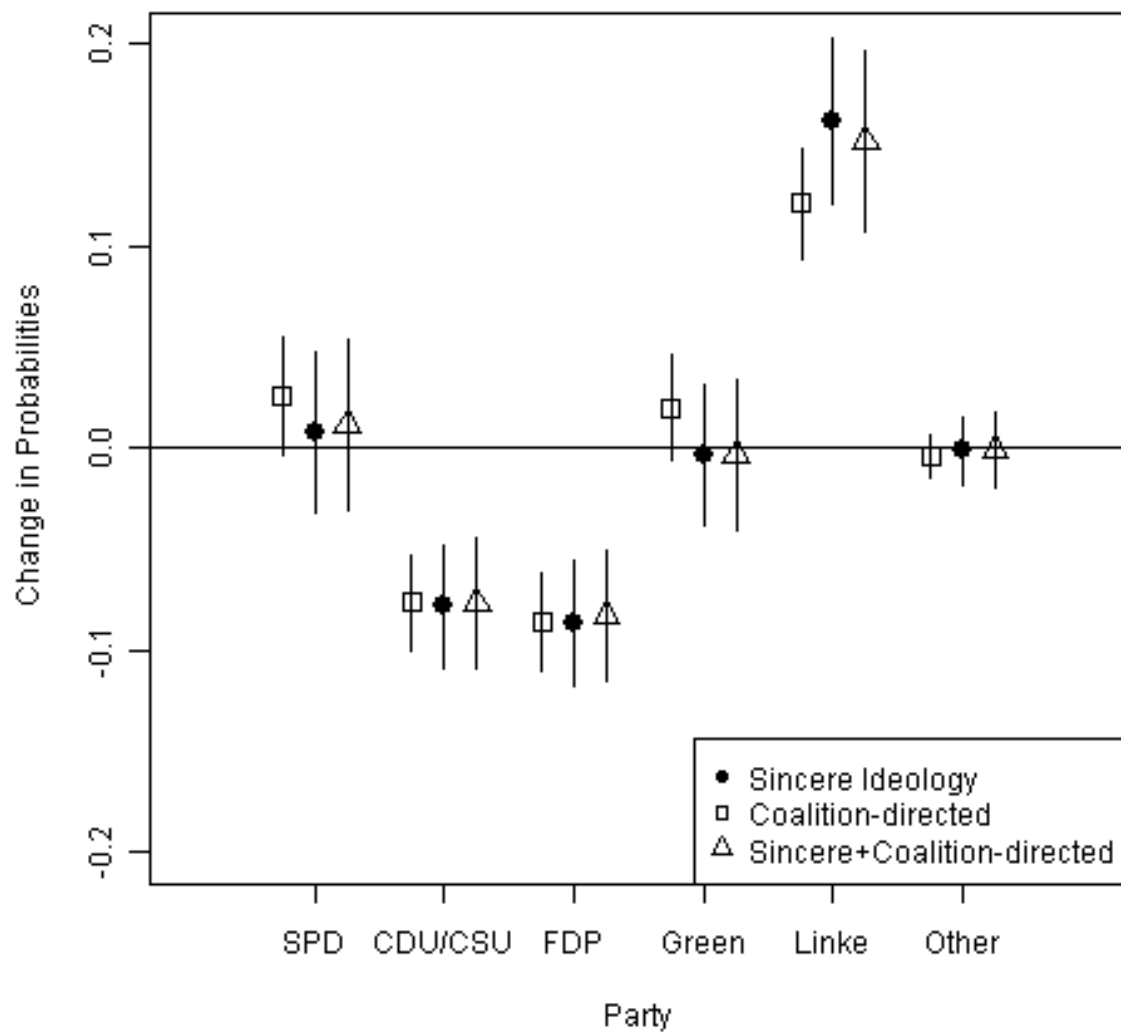
Table 4: Coalition-directed ideological vote: Germany

Green					
sqrd dist to Left Coal	–	–0.111	–0.116	–0.571	–0.017
	–	(0.022)	(0.078)	(0.332)	(0.092)
sqrd dist to Right Coal	–	0.14	–0.69	–0.816	–0.703
	–	(0.02)	(0.177)	(0.666)	(0.211)
sqrd dist to CDU	0.023	–	0.275	0.367	0.262
	(0.038)	–	(0.081)	(0.294)	(0.1)
sqrd dist to CSU	0.058	–	0.273	0.257	0.301
	(0.03)	–	(0.06)	(0.197)	(0.074)
sqrd dist to SPD	0.027	–	0.09	0.318	0.042
	(0.023)	–	(0.048)	(0.233)	(0.057)
sqrd dist to Green Party	–0.153	–	–0.131	0.08	–0.199
	(0.034)	–	(0.042)	(0.11)	(0.058)
sqrd dist to Linke	–0.02	–	–0.007	0.006	–0.01
	(0.012)	–	(0.018)	(0.066)	(0.021)
sqrd dist to FDP	0.063	–	0.267	0.431	0.228
	(0.021)	–	(0.058)	(0.24)	(0.066)
constant	–1.457	–1.345	–1.322	–0.181	–2.247
	(1.017)	(0.991)	(1.038)	(2.94)	(1.335)
Linke					
sqrd dist to Left Coal	–	–0.074	–0.204	–0.662	–0.174
	–	(0.015)	(0.07)	(0.327)	(0.074)
sqrd dist to Right Coal	–	0.164	–0.259	–0.337	–0.367
	–	(0.02)	(0.187)	(0.685)	(0.22)
sqrd dist to CDU	0.081	–	0.182	0.253	0.214
	(0.037)	–	(0.083)	(0.299)	(0.102)
sqrd dist to CSU	0.026	–	0.1	0.075	0.152
	(0.029)	–	(0.063)	(0.204)	(0.077)
sqrd dist to SPD	0.037	–	0.127	0.345	0.108
	(0.02)	–	(0.044)	(0.231)	(0.044)
sqrd dist to Green Party	–0.015	–	0.034	0.268	0.014
	(0.023)	–	(0.032)	(0.096)	(0.036)
sqrd dist to Linke	–0.085	–	–0.041	–0.045	–0.017
	(0.014)	–	(0.019)	(0.065)	(0.022)
sqrd dist to FDP	0.041	–	0.11	0.246	0.109
	(0.021)	–	(0.062)	(0.245)	(0.069)
constant	–2.449	–2.836	–2.509	–3.953	–2.67
	(1.057)	(1.024)	(1.076)	(3.079)	(1.367)
Obs	877	877	877	226	535
ll(null)	–1476.005	–1476.005	–1476.005	–375.096	–904.022
ll(model)	–1141.792	–1086.076	–1064.463	–208.895	–666.614
df	50	70	80	80	80
AIC	2383.585	2312.152	2288.926	577.791	1493.227
BIC	2622.41	2646.507	2671.046	851.434	1835.808

The results for Model 1 and Model 2 suggests that simply modeling vote choice as a function of spatial distance from likely coalition outcomes may not perform appreciably worse (or better mind you) than a model with spatial distance from parties. This is confirmed when we compare predicted vote choices with actual vote choices. The model with party-directed ideological measures correctly predicts vote choice in 23 percent of the cases while the model with coalition-directed ideological measures generates correct predictions in 19 percent of the cases. My suspicion, implied by Equation 3, is that there are groups of voters for whom the coalition-directed elements in this model better describes vote choice while for others the party-directed consideration is more important.

The magnitude of the estimated ideology distance effect is another metric for simply assessing whether the coalition-directed term adds value in modeling the vote utility function. Figure 10 presents the simulated effects – averaged overall all respondents in the sample – associated with a two-unit negative shift (i.e., more Left-wing) on the left-right self placement measure. In the case of the CDU and FDP the probabilities decline by about .1 which is an effect that is consistent with my expectations (Duch and Stevenson 2008). The results for the SPD and the Greens are particularly interesting. Clearly, in the models that include the sincere distance terms, the simulated affect of ideology is effectively zero. In the models that include the coalition-directed distance terms the simulated effects are in the expected direction and appear to be higher although even here their confidence intervals just barely include zero. Finally, the simulated effects of ideology are quite high in magnitude for Linke, although here the effect for the coalition-directed model is lower. Its certainly plausible that many voters discounted the likelihood that Linke would enter a governing coalition in which case the predominant ideology effect may have been a sincere one. On balance these results suggest that many voters are exercising a coalition-directed ideological vote. But this estimation strategy does not effectively tease out the relative importance of a coalition-directed as opposed to strategic ideological vote.

Figure 10: Simulated change in vote probabilities associated with ideology



It stands to reason, as I just pointed out, that this coalition-directed voting should be more prominent amongst voters with higher levels of coalition reasoning and knowledge. Model 4 estimates Model 3 for those who score low on the coalition savvy metric and Model 5 presents the results for the high sophisticates. Model 5 results are more consistent with a coalition-direct ideological vote. Note in particular that in this model the Left coalition distance terms for the Green and Linke vote choices are negative and statistically significant and their magnitudes in this model a significantly larger than those for the non-savvy types – also, there is no longer an anomalous coefficient on the Right coalition for the SPD. On balance the sophisticates give more evidence of engaging in coalition-directed voting than is the case for the non-sophisticates.

5 Conclusion

When the election results were announced after both the 2009 German and 2010 British elections, the voters did not know what government was elected - in both cases they had to wait weeks before a governing coalition was agreed upon. These immediate vote tallies of course are important but rational choice theories suggest that voters are more concerned with the actual governing coalition that forms after the election results are announced. I believe this is in fact the case for many voters in contexts that have a history of coalition government. This implies that large numbers of voters exercise a coalition-directed vote rather than a sincere party-directed vote. And to the extent that this is the case our current theoretical and empirical approaches to explaining vote choice need re-thinking.

Most importantly, if voters are actually conditioning their vote choice on their expectations of what happens in post-election coalition bargaining then most of the vote choice models in the literature are misspecified. In this essay I briefly review recent attempts to specify a coalition-directed economic vote model (Duch and Stevenson 2008) and a coalition-directed ideology vote model (Duch, May and Armstrong 2010). And there are others; most notably (Kedar 2009).

A second important challenge here is developing estimation strategies that distinguish sincere from coalition-directed voting. As Duch, May and Armstrong (2010) point out, both considerations are likely to shape vote choice simultaneously – the challenge is to identify, for

any individual or population, the independent contribution, and hence the relative importance, of one versus the other. In this essay I briefly describe our efforts in this regard using large-N observational studies (Duch, May and Armstrong 2010).

The focus of this essay has been on a third challenge associated with the coalition-directed vote: Theories of coalition-directed voting suggest that voters have reasonably well developed levels of reasoning and knowledge about coalitions and the coalition formation process. But do they? This essay has proposed a strategy for recovering, using incentive-compatible experimental vignettes, coalition reasoning skills. Additionally, it proposes fairly standard measures of knowledge of coalition composition and secondly of administrative responsibility. All three of these dimensions define savy versus non-savy coalition reasoning. As we might expect, given their histories of coalition government, the Germans score significantly higher on these measures than the British. Of particular theoretical concern here is whether, as the coalition-directed voting theories would predict, voters who exercise a coalition-directed vote display more well-developed coalition reasoning skills. The preliminary evidence presented here suggests in fact that this is the case, providing further micro-evidence for the notion that there is in fact a coalition-directed vote.

6 Appendix

6.1 Random Ordering of Treatments

In the two surveys respondents were administered each of eight treatments (Treatments 1A through 4B) – the treatments were randomly ordered for each respondent.

6.2 Description to Participants

(UK) Participants were given the following set of instructions (the German instructions were similar with one important caveat – there Germans were not rewarded for "correct" answers):

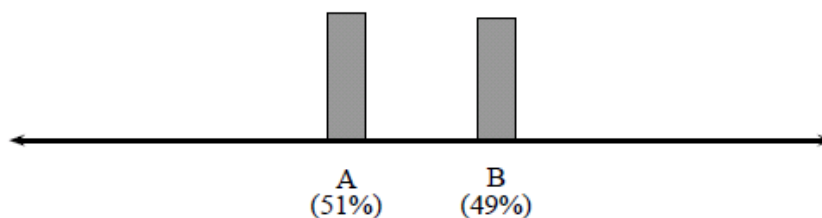
We will now like you to play a game. You will be asked to make some choices. Other participants in this survey will be asked to make the same choices. Each time you make a choice that is the same as the choice made by the majority of respondents in this survey you will be awarded bonus YouGov points.

We are going to describe a number of hypothetical political situations to you and for each different situation you will need to make a choice that you think most other participants in this survey will agree on. First, all of the questions are going to use a Left versus Right political scale like the one below. At one end of the scale you find the most Left-wing position (Position 0). At the other end of the scale you find the most Right-wing position (Position 10). And right in the middle you find those with Centrist positions (Position 5).

We are going to add two pieces of information to this scale. First we are going to locate political parties on this scale – Party A, Party B, etc. Secondly, we are going to report the results of an election – so we will tell you how many seats in the Parliament each party won as a result of the election. Based on this information you will need to answer some questions. Remember, if your answers are the same as the majority of respondents in this sample you earn additional YouGov points.

6.3 Treatment 1A

Figure 11: Frequency with which Majority Governments Selected

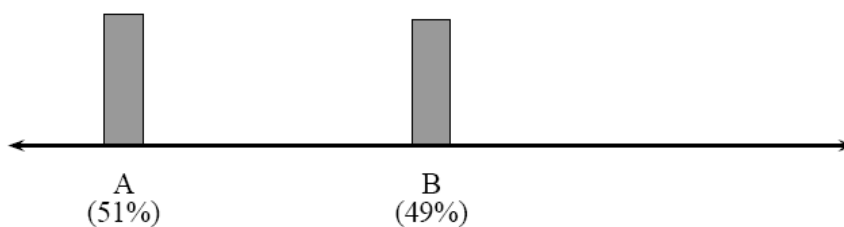


Two parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .40 and Party B is at .60
2. Party A: 51 percent and Party B: 49 percent

6.4 Treatment 1B

Figure 12: Frequency with which Majority Governments Selected

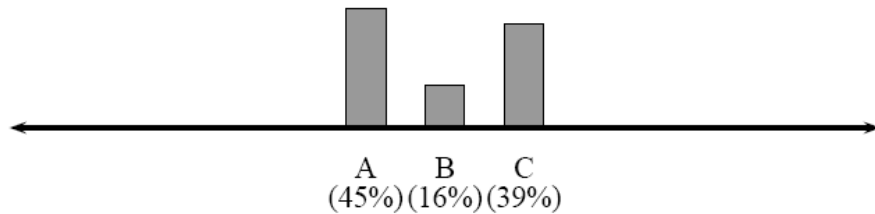


Two parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .10 and Party B is at .50
2. Party A: 51 percent and Party B: 49 percent

6.5 Treatment 2A

Figure 13: Frequency with which Majority Governments Selected

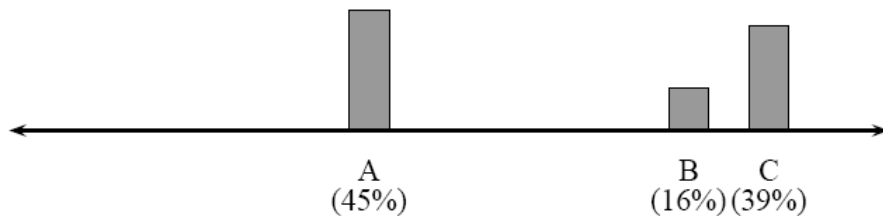


Three parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .40; Party B is at .50; and Party C is at .60
2. Party A: 45 percent; Party B: 16 percent; and Party C: 39 percent

6.6 Treatment 2B

Figure 14: Frequency with which Majority Governments Selected

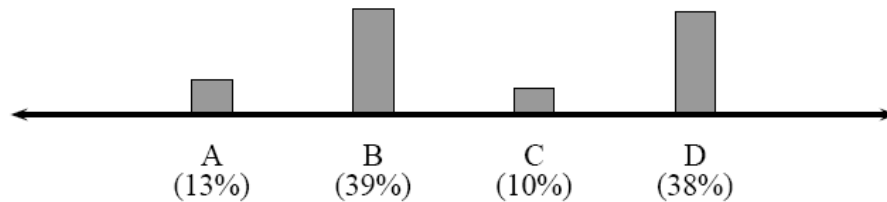


Three parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .40; Party B is at .80; and Party C is at .90
2. Party A: 45 percent; Party B: 16 percent; and Party C: 39 percent

6.7 Treatment 3A

Figure 15: Frequency with which Majority Governments Selected

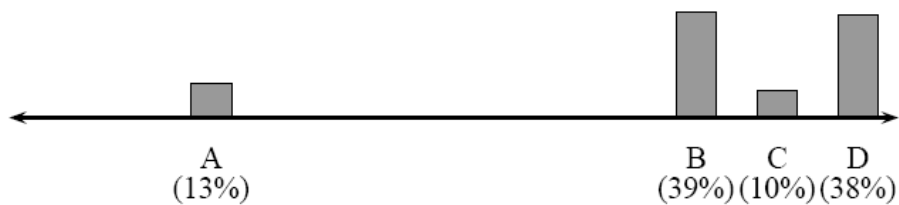


Four parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .20; Party B is at .40; Party C is at .60; Party D is at .80
2. Party A: 13 percent; Party B: 39 percent; Party C: 10 percent; and Party D: 38 percent

6.8 Treatment 3B

Figure 16: Frequency with which Majority Governments Selected

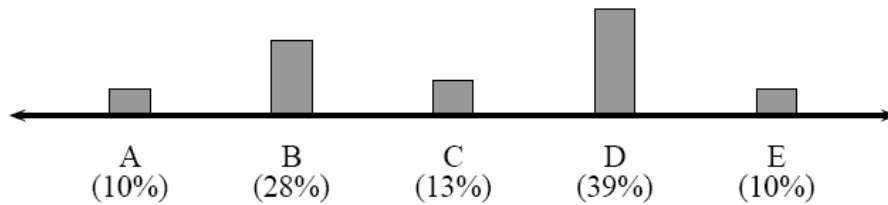


Four parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .20; Party B is at .80; Party C is at .90; Party D is at 1.0
2. Party A: 13 percent; Party B: 39 percent; Party C: 10 percent; and Party D: 38 percent

6.9 Treatment 4A

Figure 17: Frequency with which Majority Governments Selected

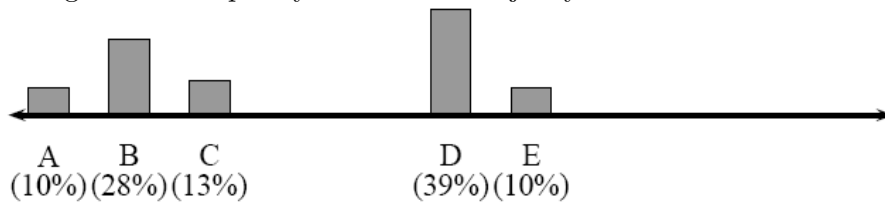


Five parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at .10; Party B is at .30; Party C is at .50; Party D is at .70; Party E is at .90
2. Party A: 10 percent; Party B: 28 percent; Party C: 13 percent; Party D: 39 percent; and Party E: 10 percent

6.10 Treatment 4B

Figure 18: Frequency with which Majority Governments Selected



Five parties win Parliamentary seats in this election. Which party or parties most likely will form a majority government in Parliament?

1. Party A is at 0; Party B is at .10; Party C is at .20; Party D is at .50; Party E is at .60
2. Party A: 10 percent; Party B: 28 percent; Party C: 13 percent; Party D: 39 percent; and Party E: 10 percent

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