

Chapter 2

A Model of Menu Dependence in Voter Behavior

Let me summarize my argument so far. In spite of evidence of menu dependence in voter choice (Alvarez and Nagler, 1995, 1998, 1999, Lacy and Burden, 1999, 2001), assumptions embedded in most formal models of voter behavior and empirical analyses that incorporate these models assume no such dependence. Most studies of electoral choice assume that voter assessment of any single party is independent of other parties in the race. The most commonly used model of issue voting – the proximity model – assumes that voter utility for a party depends only on the distance between the voter and that party. Figure 1 illustrates the implications of this assumption. The first panel of the figure presents an effectively uni-dimensional policy space with one voter and two parties equally distant from the voter. The proximity model predicts that the voter will randomize her vote choice between the two parties. In fact, any randomization rule the voter might employ is consistent with the proximity model. The second and third panels add a third party. Both dimensions are relevant now. In both panels of the figure the voter is equally distant from the three parties. The proximity model, then, is still consistent with any randomization rule the voter employs among the three. It does not distinguish between panels (b) and (c) – as long as the parties are equally distant from the voter, it treats the two maps of party dispersion the same. As I show below, incorporating outcome-oriented voting helps account for the differences between the two situations.

Studies mentioned above address the violation of IIA via sophisticated statistical models and fit the data better than studies ignoring choice-set effects. Yet, even these analyses address the effect of menu dependence on aggregate outcomes only (such as vote share), or do not provide an explanation of what it is about voter behavior that violates IIA, except for, possibly, an omitted variable bias (Alvarez and Nagler, 1995). The literature does not provide a micro-foundation theory of menu dependence in voter behavior that is consistent with empirical evidence. The model proposed takes up this task.

The chapter proceeds as follows. The next section introduces the logic of the model in a nutshell. The following section introduces the formal model itself, followed by comparative statics. The next section compares the model to the spatial and directional models, as well as to Iversen's leadership model that combines insights from the two. The next section brings institutions in and explores menu dependence under presidential systems compared to parliamentary systems. The last section concludes.

The Intuition of the Model

The following model provides a micro foundation rationale for menu dependence. It shows that when assessing each party alone, outcome-oriented voters take into consideration characteristics of other parties. In particular, I propose that voter choice is menu dependent because the effect of each party on policy outcomes depends on the configuration of parties in the race.

Consider a unidimensional ideology space where voter is located at 0 ($v_i = 0$). Imagine two scenarios. In the first a choice set $S = \{p_A, p_B, p_C\}$, where $p_A = -1$ and $p_B = 1$, and $p_C = 1.01$. In the second scenario, the choice set $S' = \{p_A, p_B, p_C\}$, where $p_A = -1$, $p_B = 1$ as before, and $p_C = -1.01$. The spatial model does not discriminate between the two scenarios. It produces a single prediction rule for both situations: since both p_A and p_B are equally distanced from the voter, the model is consistent with any randomization across the two the voter may employ. As a shorthand, we usually give each of the two parties equally distant from the voter a probability of 0.5. Either way, the spatially suboptimal alternative is not a part of the voter's calculation.

The prediction provided by the proximity model in this case is curious. Is the similarity between the suboptimal alternative and one of the other two really irrelevant? If not, what makes the two situations different? In the first case we had two parties (p_A and p_B) equally distant from the voter, and $p_C = 1.01$ right next to p_B . Reexamining the example under the framework of outcome-oriented voters, notice that p_C pulls policy outcome away from the voter (toward 1.01).

If we accept the notion of policy being a compromise between the governing forces, then it is easy to see that policy produced by a coalition of p_B and p_C is farther away from the voter than policy produced by a coalition of p_A and p_C . Thus, while spatial proximity of the voter to p_A and p_B is equal, policy benefit for the voter is greater if party A is in the governing coalition than if B is in power. Conversely, in the second case $p_C = -1.01$ (located right next to p_A) pulls the outcome toward -1.01 . The voter's instrumental utility for p_B is hence greater than her utility for p_A . In other words, if voters are concerned with policy outcomes (in addition to representation), they are likely to vote for party A in the first case and for B in the second.

This example illustrates how a seemingly sub-optimal party (C or C'), and in fact any other party, may be relevant for voter calculation while evaluating each party alone – a statement counterintuitive at first glance. The 'irrelevant' party is relevant to voters because it affects policy and consequently affects the marginal impact of other parties on policy. In both cases, the third party is located very closely to one of the two and reduces the marginal effect of the party close to it. Further, realizing that policy is a product of political bargaining, outcome-oriented voters are likely to prefer parties more extreme than their own positions. These parties will be able to pull strongly in the direction of the voter and so to compensate for pulls in the opposite direction.

The Model

Rewriting equation (1) and reducing it to one dimension, under the proximity model, utility of voter i ($i=1, \dots, n$) for party j ($j=1, \dots, k$) is inversely related to the ideological distance between i and j :

$$U_{ij} = -b_1 (v_i - p_j)^2 \tag{3}$$

Where

v_i is the ideal point of voter i

p_j is the location of party j , and

b_1 is an unknown constant.

Voter motivation under this framework can be interpreted as expressive: she prefers party A to party B because A better represents her views. By voting for A the voter declares ‘this is who I am’. Schuessler (2000) proposes that mass election is an instance individuals use to express and reaffirm who they are. According to Schuessler, voting for a candidate ‘close’ to one’s own positions entails expressive attachment; it allows individuals to express who they are and to attach themselves to a collective similar to them.

Expression of opinions or representation is not the only possible motivation for choosing one candidate over another. Voting, I propose, is also policy driven. Facing the status quo, voters are interested in shifting policy outcomes toward their own ideal point. They reward parties that pull outcomes in their direction and penalize parties that pull it away from them.

How do voters perceive political outcomes? I employ a naïve understanding of politics, by which voters take policy outcomes to be a weighted average of policy positions of the parties in the parliament, where the weights are the relative impacts of the different parties.¹ For J parties, policy outcome is calculated as:

$$P = \sum_j s_j p_j$$

where

p_1 through p_K are the locations of parties 1 through K , and

s_1 through s_K are the relative impacts of parties 1 through K , such that $\sum_j s_j = 1$ and

$$0 \leq s_j \leq 1 \quad \forall j.$$

Under my formalization, then, voter choice is a function of two considerations. First is *expressive*. As in the spatial framework, voters prefer candidates who represent their views.

Utility for party j is inversely related to the proximity between the voter and j ’s platform. Second

¹ I discuss measurement issues of party impact, probability of being a member of a winning coalition, and how impact relates to size in the empirical chapter.

motivation is *policy*. As put by Austen-Smith and Banks (1988): “inter alia, voters are interested in policy outcomes, not policy promises.” This motivation translates into instrumental voting; the voter is forward looking and considers proximity to policy outcomes, rather than proximity to preferred platforms. The voter, in turn, rewards parties that pull outcomes in her direction. (Note that when there is only one pivot player such as in a two-party parliament, policy voting and expressive voting collapse to one.)

Utility from policy-motivated voting can therefore be represented as:

$$U_{ij} = -\mathbf{b}_2 \left[(v_i - P)^2 - (v_i - P_{-p_j})^2 \right] \quad (4)$$

where P_{-p_j} is a counterfactual policy outcome – an outcome produced by all other parties but j :

$$P_{-p_j} = \frac{s_1}{s_1 + \dots + s_{j-1} + s_{j+1} + \dots + s_K} p_1 + \dots + \frac{s_{j-1}}{s_1 + \dots + s_{j-1} + s_{j+1} + \dots + s_K} p_{j-1} + \frac{s_{j+1}}{s_1 + \dots + s_{j-1} + s_{j+1} + \dots + s_K} p_{j+1} + \dots + \frac{s_K}{s_1 + \dots + s_{j-1} + s_{j+1} + \dots + s_K} p_K$$

The intuition behind the bracketed term in equation (4) is that the voter engages in a counterfactual analysis comparing policy produced by a coalition (or a parliament) in which j is a member to policy produced by a parliament from which j is absent. Imagine a German voter who is sympathetic to environmental policy. “How would the political discourse look like if it was just like in the old days when nobody cared about the environment? How would it have looked like without the Greens?” our voter may ask herself. If j pulls the outcome closer to the voter, this term is positive. If, on the other hand, j pulls it away from the voter, it is negative.

Incorporating the two motivations and normalizing $\mathbf{b}_1 + \mathbf{b}_2$ to 1, we get the following utility function:

$$U_{ij} = -\mathbf{b} (v_i - p_j)^2 - (1 - \mathbf{b}) \left[(v_i - P)^2 - (v_i - P_{-p_j})^2 \right] \quad (5)$$

where $\mathbf{b} \in [0, 1]$ is a weight on the two components of the utility such that the more spatial is

voting, the larger is \mathbf{b} .

In a three party parliament with parties A , B , and C ($s_A = 1 - s_B - s_C$),

$$P_{-p_A} = \frac{s_B}{s_B + s_C} p_B + \frac{s_C}{s_B + s_C} p_C$$

i 's utility for party A in the three party case becomes:

$$\begin{aligned} U_{iA} &= -\mathbf{b}(v_i - p_A)^2 - (1 - \mathbf{b}) \left[(v_i - P)^2 - (v_i - P_{-p_A})^2 \right] \\ &= -\mathbf{b}(v_i - p_A)^2 - (1 - \mathbf{b}) \left(v_i - s_A p_A - s_B p_B - s_C p_C \right)^2 + \\ &\quad (1 - \mathbf{b}) \left(v_i - \frac{s_B}{s_B + s_C} p_B - \frac{s_C}{s_B + s_C} p_C \right)^2 \end{aligned} \quad (6)$$

Calculating the utility of p_B as in equation (6) and taking the difference gives the net utility of voting for A versus B :

$$\begin{aligned} U_{i,A-B} &= U_{iA} - U_{iB} \\ &= \mathbf{b} \left[(v_i - p_B)^2 - (v_i - p_A)^2 \right] + (1 - \mathbf{b}) \left[(v_i - P_{-p_A})^2 - (v_i - P_{-p_B})^2 \right] \end{aligned} \quad (7)$$

This is the difference in the expressive value between the two parties, and the difference between the policy benefit of the two. When $U_{i,A-B} > 0$ the voter votes for A rather than B . This occurs when both A is closer to the voter than B (expressive value of A is greater than expressive value of B) and the impact of A on policy is more beneficial to the voter than the impact of B , or when only one of the two holds but the advantage of A over B is greater than the advantage of B over A .

Differentiating equation (6) with respect to p_A and setting the result to zero, we get the optimal location of p_A for voter i :

$$p_A^* = v_i \frac{\mathbf{b}(s_A - 1) - s_A}{\mathbf{b}(s_A^2 - 1) - s_A^2} + \frac{(1 - \mathbf{b})s_A(s_B p_B + s_C p_C)}{\mathbf{b}(s_A^2 - 1) - s_A^2} \quad (8)$$

When $\mathbf{b}=1$ (expressive voting), the prediction reduces to the spatial prediction:

$$p_A^* \Big|_{\mathbf{b}=1} = v_i \quad (8a)$$

When $\mathbf{b}=0$ (policy motivated voting) it reduces to:

$$p_A^*|_{b=0} = \frac{v_i - (s_B p_B + s_C p_C)}{s_A} \quad (8b)$$

That is, when vote is purely instrumental, the ideal location of p_A is the mirror image of policy outcome created by the combination of p_B and p_C alone (in a three party parliament) weighted by the impact of A. The less powerful is party A, the farther away does it have to locate in order to shift policy outcome in its direction. In addition, the more extreme parties B and C are, the more extreme the voter would like A to locate in order to balance the other two parties.

The last result implies an alternative interpretation of policy-motivated voting. Recall our German voter. Anticipating a coalition of the Social Democrats with the Christian Democrats and fearing an outcome on the contract curve between the two too close to the Christian Democrats' position, the voter may vote for the Greens even if her ideal policy is only a touch left of the Social Democrats. Other things equal, if a coalition between the two where the Christian Democrats are less powerful yields policy outcome 'close enough' to the voter, and a vote to the left (farther away from the voter) is unnecessary. In other words, the location and impact of the Christian Democrats affect the pull to the left that the voter hopes to achieve, and consequently affects her vote choice between the Social Democrats and the Greens. Similarly, the impact the voter ascribes to the Christian Democrats affects her likelihood of voting for the Greens versus the Social Democrats.

In general, for any $b \in [0, 1)$, p_A^* is more extreme than the voter herself. This result too is a deviation from the proximity model. On aggregate, it implies that rather than converging to the median voter's position, parties will locate away from the center. This prediction is consistent with the directional model, yet it relies on different reasoning (see a comparison of the two models below). As mentioned above, this result is supported by empirical evidence. Given that voters prefer outcomes that are spatially close to their own ideal point, it is not surprising that they vote for party more extreme than themselves. Given p_A^* (equation 8b), we can now calculate P :

$$P|_{b=0, p_A=p_A^*} = s_A \frac{v_i - (s_B p_B + s_C p_C)}{s_A} + s_B p_B + s_C p_C = v_i$$

This ideal location of p_A is more extreme than the voter herself. In fact, it is that point in policy space that yields a policy compromise identical to the voter's ideal position.

Policy-Motivated Voting: An Alternative Formalization

Policy voting in equation (4) presents an extreme counterfactual: the party's impact on policy. The two scenarios the voter compares are a case where the party participates in policy making and makes an impact, and a case where the party is absent from the decision making process. In this section I propose a more subtle counterfactual.

Under the alternative formalization, the voter compares her impact on the outcome when she votes for j to her impact on the outcome when she abstains.

For party A, policy component alone is then:

$$U_{iA} = -g_2 \left[\left(v_i - P|_{v=A} \right)^2 - \left(v_i - P|_{v=f} \right)^2 \right] \quad (9)$$

where

g_2 is the weight on the policy component,

policy outcome in the case of i voting for A is: $P|_{v=A} = s_A^{(1)} p_A + s_B^{(1)} p_B + s_C^{(1)} p_C$,

policy outcome in the case of abstention is: $P|_{v=f} = s_A^{(2)} \bar{p}_A + s_B^{(2)} p_B + s_C^{(2)} p_C$,

$s_j^{(1)}$ and $s_j^{(2)}$ are the respective impacts of party j when i votes for j and when she

abstains, such that $\sum_j s_j^{(1)} = \sum_j s_j^{(2)} = 1$.

This formalization relies on one additional assumption. Note the difference between the meaning of A's policy position in the first and second expressions (p_A and \bar{p}_A , respectively). While position of party A is fixed when the voter abstains, she perceives p_A as endogenous when she votes for A. This assumption implies that voters who participate have a sense of efficacy. They believe they make a difference not only by affecting vote shares of the different parties but also

by voicing their preferences (for empirical evidence, see, for example, Verba, Schlozman, and Brady, 1994, Rosenstone and Hansen (1993)). Granted, the effect of a single voter on p_A is miniscule. The crucial assumption, however, is that *it is perceived by the voter to be greater than zero*. Voters believe that parties pay some attention to their voice. Parties may do that, for example, via public opinion polls, constituency-targeted policy, or pork.

Combining this formalization of policy-oriented voting with expressive voting (where expressive voting is as in equation 3 above, only the weight \mathbf{b}_1 is now marked by \mathbf{g}_1) and setting $\mathbf{g}_1 + \mathbf{g}_2 = 1$, utility becomes:

$$\begin{aligned}
 U_{iA} &= -\mathbf{g}(v_i - p_A)^2 - (1-\mathbf{g})\left[(v_i - P|_{v=A})^2 - (v_i - P|_{v=f})^2\right] \\
 &= -\mathbf{g}(v_i - p_A)^2 - (1-\mathbf{g})\left[v_i - s_A^{(1)} p_A - s_B^{(1)} p_C - s_c^{(1)} p_c\right]^2 \\
 &\quad + (1-\mathbf{g})\left[v_i - s_A^{(2)} \bar{p}_A - s_B^{(2)} p_B - s_c^{(2)} p_c\right]^2
 \end{aligned} \tag{10}$$

Differentiating equation (10) with respect to p_A and setting the result to zero, we get the ideal location of party A for voter i :

$$p_A^* = v_i \frac{\mathbf{g}(s_A^{(1)} - 1) - s_A^{(1)}}{\mathbf{g}(s_A^{(1)2} - 1) - s_A^{(1)2}} + \frac{(1-\mathbf{g})s_A^{(1)}[s_B^{(1)} p_B + (1 - s_A^{(1)} - s_B^{(1)}) p_C]}{\mathbf{g}(s_A^{(1)2} - 1) - s_A^{(1)2}} \tag{11}$$

This is identical to the result of equation (5) in the original formalization. In fact, even though the modeling rationale behind the two specifications is different, mathematically, they are similar. The two formalizations can be seen as two poles of one continuum, where difference between the formalization in equation (4) and the specification in equation (9) is a matter of magnitude: in the former party A's impact share changes from s_A to zero, while in the latter, the change from $s_A^{(1)}$ to $s_A^{(2)}$ is infinitesimal. Since formalization of voter choice is different here, the weights \mathbf{b}_2 in equation (4) and \mathbf{g}_2 in equation (9) note different quantities, and need not be similar in magnitude. Since there are no theoretical constraints on the parameters (other than that $\mathbf{b}_1 + \mathbf{b}_2$ or $\mathbf{g}_1 + \mathbf{g}_2$ sum up to one), the two formalizations are empirically undistinguishable.

Comparative Statics

Having established the utility function and the political motivation for it, I turn now to examine model behavior and implications using comparative statics.² I simulate a unidimensional policy space, where two of the three parties are located at $p_B=6/9$ and $p_C=1$, and the voter's ideal point is at $v_i=-5/9$. I further assume that the voter places equal weight on the two motivations – expressive and instrumental (i.e. $\mathbf{b}_1=\mathbf{b}_2=0.5$). Finally, assume for simplicity that the three parties are of equal impact ($s_A=s_B=s_C=0.33$). According to equation (8), for voter i , party A 's optimal location is

$$P_A^* \Big|_{v_i=-5/9, c_B=6/9, c_C=1, \mathbf{b}_1=0.5, s_A=s_B=s_C=0.33} = -0.833 .$$

Now let party B move along the policy space past the voter and party A (and also up the axis past party C), while holding $p_A=p_A^*$. Figure 2 presents the effects of B 's location on utilities for the three parties. The utility for p_B is straight forward: it increases as p_B moves toward the voter, reaches a maximum at a value more extreme than the voter herself (-.683 in this example), and declines as p_B keeps moving away from the voter. The 'directional' effect – the peak at a more extreme point than the voter herself – depends on the locations and impacts of parties A and C , as well as the relative sizes of \mathbf{b}_1 and \mathbf{b}_2 , all constant on this curve.

Utilities for the other two candidates change in correspondence with B 's location, even though the distance between each of the two candidates and the voter does not change. The utility for p_A declines as p_B moves toward p_A . The explanation this model proposes is that the value added of A in achieving any policy outcome declines as p_A and p_B become more and more similar to each other. Utility for p_A , however, declines somewhat even as p_B moves past p_A , and then increases again (past -2.333) as p_B moves farther away. This is because the location of B in this range affects voter utility through two terms that pull in opposite directions: it shifts policy away from the voter ($(v_i-P)^2$ gets larger), but it also shifts the counterfactual policy away from the

² See Appendix for analytic results.

voter $(v_i - P_{-p_A})^2$ gets larger). At the beginning, the former is greater than the latter, but past a certain point (-2.333 here), A 's hypothetical correction of policy exceeds B 's pull away from the voter. Similarly, utility for p_C increases as p_B moves past p_C and away from the voter. As p_B moves away from p_C in the voter direction, it first declines, reaches a minimum (0.967), and then increases again as p_B moves afar from p_C .

In addition, the results obviously depend on the model parameters and party impacts. Repeating the same exercise for different \mathbf{b} 's (not shown) illustrates this. As \mathbf{b} declines (voting is more policy motivated), the choice-set effects (the change of utility for parties A and C as B 's location changes) are magnified, while the effect on p_B (which is mostly spatial) declines.

Party impacts on policy outcomes affect voter choice as well. Utility for party j as a function of party k 's location ($k \neq j$) depends on the respective impacts of the two parties. In the above example, as p_B moves left (toward the voter), p_A^* moves right. The smaller is A 's impact (relative to B 's impact), the greater is the movement of p_A^* required to balance the political outcome.

Choice-Set, Directional, Spatial, and Leadership Models: A Comparison

As discussed above, the model proposed here combines spatial with instrumental voting. The results of the instrumental component have a directional flavor, yet the reasoning is different from the logic of the directional model. The choice-set model draws on Iversen's (1994a) representational leadership model. Utilizing data from six Western European party systems, Iversen evaluates three theories of voting: spatial voting, directional voting, and representational policy leadership voting – a theory that combines insights of the previous two. He finds that the representational leadership model best accounts for observed voting behavior. Given the parallels between the leadership model and the choice-set model, it is useful to compare the predictions they provide.

The leadership model can be represented by the following equation:

$$U_{ij}^L = -\mathbf{b}^L (v_i - p_j)^2 + (1 - \mathbf{b}^L) v_i p_j \quad (12)$$

where the first component accounts for spatial voting, the second accounts for directional voting, and \mathbf{b}^L is a weight such that $0 < \mathbf{b}^L \leq 1$.³ These two components have parallels in the choice-set model proposed here. Rewriting equation 5, the choice-set model can be represented as:

$$U_{ij}^C = -\mathbf{b}^C (v_i - p_j)^2 + (1 - \mathbf{b}^C) [(v_i - P_{-p_j})^2 - (v_i - P)^2] \quad (13)$$

As mentioned above, the policy component of the choice-set model yields results similar to the directional model: the preferred location of the candidate is more extreme than the voter's ideal point. Still there are differences between the two. The first element in both equations is spatial voting; the squared distance between the voter's ideal point and the candidate's policy position. The two models vary on the second element. In the leadership model, the second element is the scalar product of directional voting. In the choice set model, on the other hand, the second element describes instrumental voting.

Similar to the previous section, I explore comparative statics of the two models. Figures 3a through 3d present voter utility as expressed in equations 12 and 13. The parameter and variable setup is similar to the above ($p_B=6/9$, $p_C=1$, $v_i=-5/9$, $s_A=s_B=s_C=0.33$). Each figure shows the change in utility for party A as p_A changes its location. Furthermore, I let \mathbf{b} – the weight on the two motivations of voting – vary across figures.

When voting is primarily spatial (\mathbf{b} is large) the two functions peak in similar points and behave generally similar (see figure 3a). This is not surprising as the spatial component is identical in both models (when $\mathbf{b}=1$ they both collapse to the spatial model). As \mathbf{b} gets smaller, the leadership function peaks farther from the voter compared to the choice-set model (see figure 3b). The more 'directional' (or policy driven) is voting (i.e. the smaller is \mathbf{b}), the more crucial is the region of acceptability assumption for getting sensible results under the leadership model. As figures 2c and 2d show, utility in the leadership model peaks farther and farther away, implying

that voters prefer extreme parties. Here the ‘region of acceptability’ assumption keeps the prediction of the model sensible, as it would be implausible that all voters prefer parties located at the very extremes of the policy space.

Finally, when $\mathbf{b}=0$ (not shown) the directional model does not have a well-defined maximum (indeed, the leadership model is defined for $\mathbf{b}^L > 0$), while utility of the choice-set model peaks at a point more extreme than the voter herself but then declines. The latter offers an explicit logic for the directional effect – policy-motivated voting.

As mentioned above with respect to the directional model alone, the two models also differ on the effects of availability and location of other parties. The leadership model, like the two models it draws upon, assumes IIA. Voter utility for each party is therefore insensitive to locations of other parties. The choice-set model is sensitive to these locations *depending on* \mathbf{b}^C . Again, when \mathbf{b}^C is large (spatial voting) the locations do not make much difference, and hence the two functions behave similarly even if locations of other parties change. As voting becomes more policy motivated (or more ‘directional’), \mathbf{b}^C gets smaller, and the peak of the choice-set function changes with these locations (it moves in a direction opposite to the locations of other parties, as discussed above).

What is the point where the policy/directional component is negative? The second expression in the choice set model is positive when the party pulls policy toward the voter. If policy outcome produced by a parliament that includes the party is closer to the voter than policy outcome produced by a parliament from which it is absent, utility from the policy component is positive. If, on the other hand, policy with the party is farther away from the voter’s ideal point compared to the counterfactual policy, the utility from the policy component is negative. This usually occurs when the voter and the party are in different directions with respect to the status quo (although it may also happen when they are located on the same side of it, but the party is too extreme and pulls the policy away from the voter). In the directional model, it occurs when the

³ To rewrite equation (12) in Iversen’s framework (Iversen, 1994, p. 51, equation 3), substitute s for $1-\mathbf{b}^L$.

voter and the party are on different directions with respect to the neutral point – the point that evokes no reaction one way or another on the voter’s end. The reference point for the voter, then, is different in both models.

Choice-Set Effects and Institutional Environment

So far, I presented voters motivation under a parliamentary system. Voters, it is argued, realize that policy is a function of more than one player; indeed it is a result of a compromise among multiple forces. As I show above, availability and dispersion of parties in policy space affect voter utility for each party alone. This, however, is not unique to parliamentary systems. In fact, it applies to any political system where no single player can implement her policy preference and policy is a consequence of political bargaining.

The bargaining agents in parliamentary systems are members of the governing coalition. In presidential systems these are the president and the legislature that bargain with each other. In federal systems, the official elected in local elections serves as a bargaining agent in the federal game. In their study of parliamentary government formation, Laver and Shepsle (1996) examine how cabinets are formed and jurisdictions are partitioned in legislatures. Even though the authors study parliamentary democracy in particular, the spirit of their work is compatible with decision-making process in presidential systems. In particular, based on Shepsle (1979), they propose that the structure that government departments provide in parliamentary democracy is analogous to the structure provided by committees in the U.S. Congress.

In this section I explore policy-motivated voting under a different institutional structure – a presidential system. Clearly, there is large variation across different presidential systems; each system has its own characterizing features. For the purpose of this project, however, I use the U.S. as a prototype of a presidential system.

Fiorina (1996) explains split-ticket voting in the general elections in the U.S. as an attempt of voters to moderate policy. Fiorina sets up a spatial model: voters favor policies less as

they depart from their ideal point in either direction. The author assumes that voters understand that the executive and the legislature together determine public policy, so that when control of the two institutions is divided, any adopted policy must be a product of bargaining between the two parties (p. 74). The author formulates the compromise as a weighted average between the executive and the legislative ideal policies (assuming a unicameral legislature for simplicity), where the weight (q) is the power of each branch. Since both weights are greater than zero, policy is in the interval between the ideal points of the two institutions (p. 74):

$$\text{Policy} = q(\text{executive policy}) + (1-q)(\text{legislative policy}) \quad (14)$$

where $0 < q < 1$ represents the power of the executive and $1 - q$ the power of the legislature.

Voters in Fiorina's model can "choose among four "platforms" rather than two" (p. 74):

Executive/legislature	D	R
D	DD	DR
R	RD	RR

The two diagonal combinations are unified government and are relatively more extreme, and the off-diagonal entries – RD and DR – are divided government and are thus more centric. The locations of the two divided platforms relative to each other depend on q . Voters to the right of the RR vote for R altogether, and conversely, voters to the left or DD vote for D altogether. Voters whose ideal point is in between the two may vote straight or split ticket, depending on where their ideal point is with respect to the four combinations. The four policy outcomes are given and perceived to be the same by all voters. All voters view parties' locations and weights on the institutions the same.

Mebane (2000) studies policy moderation by individual voters and adds to his model coordination across voters. He argues that in addition to intending to moderate policy, voters also engage in coordination. Policy moderation, he argues,

"...is the relationship between the policy outcome intended by the voter and the parties' policy positions. There is moderation if the intended policy outcome is an intermediate combination of the parties' positions. Coordination refers to a relationship among different voters' choices among candidates. There is coordination if each voter's choice is in a strategic sense in equilibrium with every other voter's choice.

(Mebane, 2000, p. 37)

Mebane finds evidence for both policy moderation by individual voters and coordination across voters in equilibrium. Drawing on Fiorina's theory, Burden and Kimball (1998) analyze 1988 Congressional election to examine ticket splitting. Unlike Fiorina, the authors find no evidence for intentional policy balancing.

While Fiorina discusses split-ticket voting in the general election, Alesina and Rosenthal (1995) employ similar motivation to explain the midterm cycle. It is generally observed that the party holding the White House loses plurality in Congress in the midterm election. In their model "the midterm cycle is *always expected* to occur, as long as the presidential elections are not completely certain..." (p. 84, emphasis in original). The size of the cycle depends on the degree of surprise in the general elections. Middle of the road voters will use the midterm to balance a partisan president. The authors explain:

American voters use the midterm election to signal that they do not want extreme policies. However, this signaling is costly to voters if they prefer to re-elect the incumbent for various reasons (...) and by voting against the president's party they do not reappoint incumbent legislators.

(Alesina and Rosenthal, 1995, p. 138)

Similar to Alesina and Rosenthal, Mebane and Sekhon (in progress) examine moderation and coordination in the midterm election and find empirical evidence for both.

As discussed above, the model proposed here can explain voter behavior generally where policy is a result of a compromise. In particular, I present here an adaptation of the model to the U.S. mid-term election.

The outcome function under presidential regime is a compromise between two institutions: presidency and Congress. Similar to equation (5) voter utility from voting for party j in Congressional election is:

$$U_{ij}^C = -\mathbf{b}(v_i - p_j^C)^2 - (1 - \mathbf{b})[(v_i - P)^2 - (v_i - P_{-p_j^C})^2] \quad (15)$$

where the policy outcome P is the weighted mean of the two institutions such that:

$$P = s^C p^C + \bar{s}^P \bar{p}^P$$

where \bar{p}^P , policy position of the president, and \bar{s}^P , relative power of the president (whether it is the institution of presidency or the president herself), are given at the time of the midterm election. Since it is a two-party system, the counterfactual policy outcome $P_{-p_j^C}$ reduces to an outcome where the other of the two parties controls Congress:⁴

$$P_{-p_j^C} = s_k^C p_k^C + \bar{s}^P \bar{p}^P, k \neq j$$

More concretely, the utility of voting D in the midterm election is:

$$\begin{aligned} U_{iD}^C &= -\mathbf{b}(v_i - p_D^C)^2 - (1 - \mathbf{b})\left[(v_i - P)^2 - (v_i - P_{-p_j^C})^2\right] \\ &= -\mathbf{b}(v_i - p_D^C)^2 - (1 - \mathbf{b})(v_i - s^C p^C - \bar{s}^P \bar{p}^P)^2 + \\ &\quad (1 - \mathbf{b})(v_i - s_R^C p_R^C - \bar{s}^P \bar{p}^P)^2 \end{aligned} \tag{16}$$

Under this regime, the outcome involves a compromise across institutions where presidency at the time of the midterm is exogenous. What was a choice-set effect in the parliamentary case is an exogenous effect here. The impact on voting, though, is similar in both cases. Differentiating equation (16) with respect to p_D^C and setting the result to zero, we get the optimal location of party D in Congress for voter i :

$$p_D^{C*} = v_i \frac{\mathbf{b}}{\mathbf{b} - (1 - \mathbf{b})s_D^{C2}} - \frac{(1 - \mathbf{b})s_D^C(v_i - \bar{s}^P \bar{p}^P)}{\mathbf{b} - (1 - \mathbf{b})s_D^{C2}} \tag{17}$$

when $\mathbf{b}=1$ (voting is purely expressive) it reduces to the voter's own position:

$$p_D^{C*} \Big|_{\mathbf{b}=1} = v_i \tag{17a}$$

When $\mathbf{b}=0$ (voting is entirely instrumental), it reduces to:

$$p_D^{C*} \Big|_{\mathbf{b}=0} = \frac{v_i - \bar{s}^P \bar{p}^P}{s^C} \tag{17b}$$

This is the mirror image of the presidency position with respect to the voter, weighted by the

president and Congress' relative impacts. The more extreme and/or more powerful is the president, the more extreme does the voter prefer Congress to be, to balance policy. Again, since policy formation involves more than one player, policy-motivated voting is affected by the various forces that pull policy in different directions; whether they are up for election as in the parliamentary case, or given as in the case discussed here.

Generally, how does institutional environment interact with choice-set effects? How does the effect of the Republican party in the U.S. presidential system differ from the effect of the Christian Democrats in the German parliamentary system? In the latter, I propose, one can expect the effect to be smoother than in the former. In terms of the model, I expect the impact of a party on policy (s in my model) – to be continuous in parliamentary systems but discrete in presidential systems. The effect of a given party on voter evaluation of another party is positively correlated with the impact of the party on outcomes. In a fragmented parliamentary system, almost always multiple parties have impact on outcome. True, parties in coalition have more impact than their counterparts in the opposition, but impact is still not dichotomously distributed; even if impact is not always monotonic in size (Austen Smith and Banks, 1988), there are no clear cut-off points as to when a party becomes influential or ceases to influence. In the U.S., a clear majority in Congress to the party holding the White House reduces the need of compromise (other than intra-party bargaining), while congressional majority of the opposite party makes a compromise essential. A compromise between the president and the legislature may or may not occur, depending on seat distribution in the legislature (assuming that a compromise across institutions that are ruled by the same party is not necessary). In majoritarian systems (such as the U.K.), the effect is yet different. The governing party has almost complete control over policy, such that little bargaining with the opposition takes place.

⁴ Following Fiorina, I assume a unicameral legislature.

Conclusion

This project incorporates menu dependence into our understanding of voter behavior. In spite of persistent evidence from political science, psychology, and economics showing that choice sets matter for individual behavior, current modes of voting behavior assume no such effects. The model proposes a simple mechanism by which choice sets affect voter calculation: since multiple players affect policy outcomes, multiple players are relevant for policy-motivated voters. Combining expressive voting from classic models with outcome-oriented voting, I show how party dispersion might make a difference for voter choice. Parties that cluster together affect policy in a similar manner. Generally speaking, the closer together are parties, the lower is the value added of each one in affecting policy outcomes. If voters are policy motivated, they evaluate parties according to their impact on policy, and so other things equal, they prefer isolated parties to parties that cluster together.

What level of sophistication does the model ascribe to voters? The model assumes that voters have some perception of parties' policy positions. Also, they understand that policy outcome is usually 'somewhere between' these policy positions. They need not understand the exact procedure of policy formation. Rather, they realize that different parties pull in different directions, and that the outcome is some average of these positions. The model does not assume, however, that voters are strategic actors (as in Austen-Smith and Banks, 1988), nor does coordination across voters take place (as in Mebane, 2000).

The notion of voters being outcome-oriented has broader implications than discussed above. The spatial proximity is consistent with voters thinking about the various candidates in parallel. It can be described as a decision tree with one node and J branches, each marking a party. The decision-making process of outcome oriented voters, on the other hand, can be described as a nested decision: the voter first decides whether she turns left or right, and then makes a choice among the competing candidates within each branch. This structure allows for

menu dependence: substitutability across parties is higher within each branch than across branches.

The difference between this formalization and the spatial formalization has to do with the transformation from the set of possible parties (platforms) – the space of alternatives on which voters vote – to the set of possible policy outcomes – the space on which voters base their preferences. While voters, of course, choose a party (a platform) from a set of competing parties, they are actually interested in a policy outcome from a set of policies. Because of the complexity of policy formation, the mapping from platforms to policies leads to this seemingly odd effect of menu dependence. The institutional environment that determines the conversion from party platforms to policy outcomes affects in turn the extent and nature of menu dependence in voter choice. Comparing a presidential system, a fragmented parliamentary system, and a majoritarian system, the next chapter investigates this implication further.

Appendix

Analytic Solution

Comment: the following solution assumes that $\mathbf{b} \in (1,0)$, and $s_j \in (0,1)$. For now, I ignore the knife-edge cases where $\mathbf{b}=0$ or 1, and $s_j=0$ or 1.

Second order condition on U_{iA} with respect to p_A :

$$\frac{\partial^2 U_{iA}}{\partial p_A^2} = -2\mathbf{b} - 2(1-\mathbf{b})s_A^2 \quad (\text{a1})$$

Rewriting equation (a1), it is easy to see that this is a maximum:

$$\frac{\partial^2 U_{iA}}{\partial p_A^2} = 2s_A^2(\mathbf{b}-1) - 2\mathbf{b}$$

Since $0 < \mathbf{b} < 1$ both expressions are negative, and therefore $\frac{\partial^2 U_{iA}}{\partial p_A^2} < 0$.

Differentiating U_{iA} with respect to p_B , we get:

$$\begin{aligned} \frac{\partial U_{iA}}{\partial p_B} &= 2(1-\mathbf{b})s_B(v_i - p_A s_A - p_B s_B - p_C s_C) \\ &\quad - \frac{2(1-\mathbf{b})s_B \left(v_i - \frac{p_B s_B}{s_B + s_C} - \frac{p_C s_C}{s_B + s_C} \right)}{s_B + s_C} \end{aligned} \quad (\text{a2})$$

Setting the result to 0 and solving for p_B :

$$p_B^* = - \frac{(1-\mathbf{b})s_B(v_i - s_A p_A - s_C p_C) - \frac{(1-\mathbf{b})s_B \left(v_i - \frac{s_C p_C}{s_B + s_C} \right)}{s_B + s_C}}{- (1-\mathbf{b})s_B^2 + \frac{(1-\mathbf{b})s_B^2}{(s_B + s_C)^2}} \quad (\text{a3})$$

Second order condition with respect to p_B :

$$\frac{\partial^2 U_{iA}}{\partial p_B^2} = -2(1-\mathbf{b})s_B^2 + \frac{2(1-\mathbf{b})s_B^2}{(s_B + s_C)^2} \quad (\text{a4})$$

Rewriting equation (a4), it is easy to see that this is a minimum:

$$\frac{\partial^2 U_{iA}}{\partial p_B^2} = 2(1 - \mathbf{b})s_B^2 \left(\frac{1}{(s_B + s_C)^2} - 1 \right) \quad (\text{a5})$$

Since all elements are positive and $0 < s_B + s_C < 1$, $\frac{\partial^2 U_{iA}}{\partial p_B^2} > 0$.

These results are symmetric with respect to p_C .

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