CHAPTER 6

Uncertainty and policy preference

Better it is to die, better to starve,
Than crave the hire which first we do deserve.
In this wolvish toge should I stand here,
To beg of Hob and Dick, that does appear,
Their needless vouches? Custom calls me to't;
What custom wills, in all things should we do't,
The dust on antique time would lie unswept,
And mountainous error be too highly heapt
For truth to o'er peer. Rather than fool it so,
Let the high office and the honour go
To one that would do thus. I am half through;
The one part suffer'd, the other will I do.
(William Shakespeare, *Coriolanus*,
1608, Act II, sc. III)

Downs (1957) created the foundations of the classical model. But Downs clearly saw the need for a more comprehensive model. He tried hard to build better assumptions into his discussion of politics. As John Ferejohn points out:

> The spatial metaphor has by now become such a common and powerful way of portraying electoral competition that students and journalists unselfconsciously depict electoral phenomena in its terms, without recognizing either its limitations or its foundational assumptions. But in his original introduction of the spatial model Downs is actually quite cautious with regard to the applicability of the spatial theory to actual elections. He spends a good deal of effort and space in his book examining the conditions under which electoral competition could be understood in terms of the spatial model. Specifically, he tries to develop a theory in which parties compete for office by making promises and voters base their votes on a comparison of these promises. (1993, p. 107)

The classical spatial model simplifies candidates' "promises" and their reasons for making those promises. First, all participants know the distribution of voter ideal points. Second, platforms and candidates are indistinguishable. In the classical model, platforms and candidates are both nothing more than vectors of policy positions. These simplifications are crucial to the exposition of the model, but now that the reader has mastered the basics, it is time to incorporate some of Downs's own caution about applying the spatial theory to actual elections. What actually happens when a candidate must don his or her "wolvish toge" and seek out Hob and Dick in pursuit of those "needless vouches"?

In this chapter, we allow uncertainty about voter positions, as well as a distinction between platforms and candidates, by introducing three extensions of the classical model. As we explained in Chapter 1, a key advantage to abstract analytical theorizing is the ability to ask "what if?" questions. In this chapter we will look at three "what if?" questions, comparing the answers to the answers implied by the classical model:

- *What if* candidates are not sure how voter ideal points are distributed?
- *What if* voters are not sure what candidates will do once in office?
- *What if* candidates have some preferences of their own about outcomes?

The classical model requires that (1) the distribution of voters is known, (2) any participant can propose any platform, and (3) participants care only about winning and have no policy preferences. We have shown that the proposal power assumption is not crucial: Even if proposals can only be made by two parties, the outcome will be the same as with free proposal power, provided the parties care only about winning.

Further, the candidates take identical positions, because *equilibrium requires convergence to the median position.* Because the model advanced so far allows no place for comparisons of uncertainty about what the candidates will do, they might as well be clones. This Tweedledum and Tweedledee quality of the classical model has been criticized from several quarters, both for the lack of realism of its assumptions and for the (arguable) inaccuracy of the basic prediction of convergence. By considering *candidate uncertainty, voter uncertainty,* and *candidate policy preferences,* we can investigate the robustness of the predictions of the classical model under more plausible assumptions about political competition.

Where the voters are

In political campaigns, lots of time and money are spent asking voters questions, conducting focus groups, or looking at demographic characteristics of different parts of the electorate. Why would politicians and their staffs do this? Candidates need to know what voters want, what their preferences are. In the parlance of spatial theory, campaigns try to learn the distribution of voter preferences so candidates can locate at the middle of that distribution.

Suppose we don't know what voters want. How can we predict what politicians will *do*? The outcome might be random: If voter preferences cannot be directly observed, then politicians just pick a platform based on a guess about the distribution of voter preferences. The candidate closer to the center of the (unobservable) distribution of voter ideal points will win the election. But then, what of the prediction of convergence to the center?

Suppose candidates pick the platform representing their best guess at the ideal point of the median voter (or the interval of median positions). If the two candidates have access to the same information (polling data, consultants, etc.), then their "best guesses" about the location of the median voter will also be the same. If the (expected) position of the median voter is the same for both candidates, the prediction of convergence will be preserved. Further, if pollsters' estimates are (on average) correct, the point of convergence will center on the *actual* location of the median voter.

To see how this works, consider the distributions of expected median positions in Figure 6.1. The middle distribution (solid line) represents one distribution of the probabilities candidates attach to the event that these are the actual median positions for voters in the upcoming election. Most positions have no probability of being a median position, of course. Positions near the center of the distribution are fairly likely, however, because there is a good chance that the median voter will have one of those ideal points. The solid curve is labeled "convergent expectations," meaning that the two candidates (Y and Z) have similar data about the voter preference distribution.

Clearly, if candidates care only about winning and have the same information about the location of the median voter, they will choose

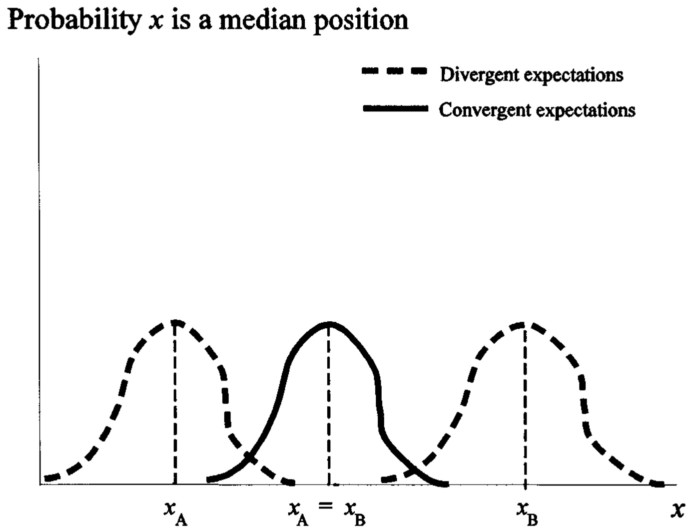


Figure 6.1. If expectations converge, candidate platforms converge; if expectations diverge, platforms diverge.

the same platform x. The optimal platform (assuming the distribution of expected median positions is single-peaked and continuous) is the "mean median," or center of the distribution of medians.[1] Thus, in Figure 6.1, $x_Z = x_Y$ if expectations are convergent.

On the other hand, if expectations about the location of the median voter's ideal point are not identical, neither are candidate locations. If candidate Z chooses a platform based on one set of interviews or advice, and candidate Y uses different information, the two candidates may have different expectations about the location of the median. Consequently, as in Figure 6.1 (dotted curves depicting distributions), the candidates may *initially* choose different platforms ($x_Z \neq x_Y$).

This "result" means little, for two reasons. First, broadly divergent expectations don't occur in large electorates, unless one of the polling firms is incompetent.[2] Political professionals, faced with similar information, draw similar conclusions. Second, and more important, *whatever the initial positions of the candidates,* divergence is not an equilibrium, given the logic of political competition. If one candidate takes a position different from the opponent's position, each would immediately notice he could increase his vote share by moving toward the opponent.

It is useful to summarize the discussion above in three theorems, which will be stated without proofs (for early work on the importance of the mean preference under uncertainty, see Davis and Hinich, 1968; for a more detailed discussion and proofs of these results, see Calvert, 1985, Theorems 3–7; and Wittman, 1990). The assumptions of the theorems are more restrictive than required, to simplify the intuition.

Theorem 6.1. *Suppose exactly one median position is known to exist, but that its location is unknown. If the distribution of possible median positions is unimodal, symmetric, and shared, then candidates will adopt identical positions at the location of the mean of the distribution of medians.*

Theorem 6.2. *If the distribution of possible median positions is unimodal and symmetric but candidates have different perceptions of this distribution, then candidates will initially adopt divergent positions at the location of the means of the perceived distributions of medians. These divergent positions are not an equilibrium, however. If candidates can move they will adopt identical positions somewhere between the two divergent perceived means of the distributions of medians.*

Theorem 6.3. *If candidates are uncertain about the location of voters and candidates seek some mix of policy and reelection, then candidate positions will diverge in equilibrium. In fact, no convergent equilibrium exists under these circumstances. However, the extent of the divergence depends on the extent of uncertainty and the mix of policy–reelection motivations by the candidates. Only if uncertainty is extreme and reelection motivations are trivial will the degree of divergence be substantively significant.*

Uncertainty about the location of the median is not, by itself, sufficient to reject the convergence prediction. The center still rules, even if the location of the center is now hard to identify before an election, as long as perceptions of the distribution of voters is shared. If perceptions differ, positions may diverge, but as a product of difference in expectations, not uncertainty per se. Further, even if expectations diverge, candidates will adjust to a convergent equilibrium if they can.[3]

Voter uncertainty about what candidates will do

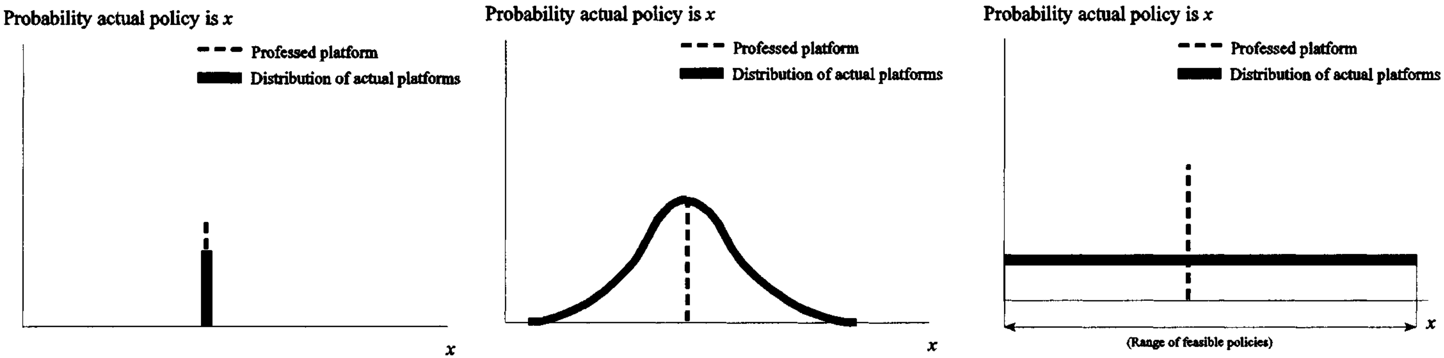
The classical model has voters choose based on what candidates say. Real voters may care about what a candidate says, because that may be the only way to tell what the candidate will do. However, as Jeffrey Banks points out:

> [The] strong assumption implicit in the [classical] model is that the positions the candidates announce prior to an election will be the positions they subsequently enact once in office. Since voters typically have preferences defined over policy outcomes and not over electoral announcement per se, but their only information at the time of voting consists of these announcements, the equivalence of announced position and policy outcome appears to be one of analytical tractability at the expense of realism. (1990, p. 311)

In this section we are concerned about the distribution of voter expectations about what candidates will do once in office, *given what the candidates claim they will do.* The classical model depicts candidates as *points* in policy space. Allowing voter uncertainty over candidate positions implies a *distribution* defined over an *interval.* Within this interval (assuming the set of possible policies is continuous), many different policies have some chance of being implemented after the election. Consequently, we are allowing that there may be some difference in voters' minds between what politicians say they will do and what actually will happen.[4]

Figure 6.2 depicts three very different levels of voter uncertainty about the policy consequences of a candidate's election. Panel (a) depicts a candidate about whom there is no uncertainty: The distribution of expected policy consequences is a point. Panel (b) depicts a candidate whom voters perceive as moderately committed to a particular policy. Voters recognize that this candidate may choose some other policy or for some other reason fail to do as promised. Panel (c) shows a candidate with no credibility at all. As in the first two panels, this candidate's "expected" (i.e., mean) policy action is the same as his or her professed platform; but the distribution of actual policies is uniformly distributed over all feasible policies.[5]

The question of how these distributions might be induced in voters' minds is very complex, and is outside the scope of the present book (see Bernhardt and Ingberman, 1985; Ferejohn, 1986; Banks, 1990; Austen-Smith, 1990; Enelow and Munger, 1993; or Hinich and



Panel (a): Candidate is a point
(perfect commitment/competence)

Panel (b): Bell-shaped distribution
(moderate commitment/competence)

Panel (c): Uniform distribution
(no commitment/competence)

Munger, 1994; for possible origins of voter expectations, given a candidate's espoused platform).[6] If voters have such expectations, we can incorporate the difference between panel (a) in Figure 6.2 (certainty) and the other panels (moderate or complete uncertainty) into our model of voter choice.

Suppose candidate Nagaer is a committed conservative and has taken consistent positions for the past twenty years in many different political environments. Imagine Nagaer's opponent, Sikakud, has taken a variety of positions on issues, but has been a liberal. In the campaign, suppose Nagaer continues to argue for rightist positions, though his expected policy is clearly to the right of the most preferred policies of the median voter. Sikakud, seeing this, gleefully proclaims himself to be the candidate of the center and awaits the landslide victory that must be his. (Sikakud read as far as Chapter 2 of this book and knows that the MVT is on his side!)

Of course, the voters (A, B, and C) have read the whole book or act as if they had. Such voters' choices are more complex and sophisticated than Sikakud realizes. Consider Figure 6.3, which depicts the comparison of voters' perceptions of the distribution of expected policies from the two candidates. Sikakud's distribution (solid line) is *centered* at the median position (x_B), just as he had hoped. Because he has taken a variety of positions in the past, however, the *dispersion* of his expected actions once in office is high. By contrast, Nagaer's distribution (dotted line) is centered some distance away from the median. But because of Nagaer's consistent conservatism, there is very little perceived variance around this central tendency.

The intuitive keys to the choice of the median voter, B, are the cross-hatched areas in the left and right tails of the Sikakud distribution. These areas represent the probability that the *actual* policy carried out by Sikakud, if he is elected, is worse (further from B's ideal point) than the *mean* value of Nagaer's expected policy distribution. Suppose voter utility functions are quadratic, meaning that the utility from candidate Y being elected is $-(x_Y - x_i)^2$. Such voters may accept an expected policy *slightly* away from their ideal point if the risk of being *very* far off is reduced. In that case, the probability that policies far from x_B may be implemented hurts Sikakud's chances.

The following section gives an overview of the more fully fleshed-out model for the reader familiar with basic statistics. Before continuing

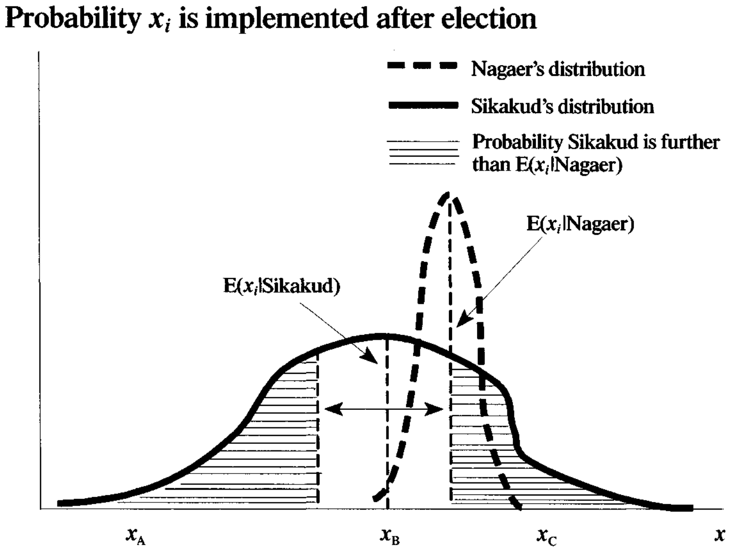


Figure 6.3. Voters trade off expected policy against uncertainty: Median voter prefers Nagaer, because of high probability Sikakud will be even worse.

to the next section, however, a disclaimer: The candidates in the above example are fictional characters. The fact that Nagaer spelled backwards is "Reagan" and Sikakud is "Dukakis" is just coincidence.

Details for the statistically minded

Suppose there is a single policy dimension x, preferences are quadratic, and that the voter's ideal point is x_i. Suppose there are two candidates, R and D, with policy positions x_R and x_D. These random variables are distributed with means $\bar{x}_R$ and $\bar{x}_D$, and are assumed to have known variances. If i chooses the candidate who provides him the highest expected utility, this implies the following decision rule (note: E[·] is the expectations operator):

$$E[(x_i - x_R)^2] < E[(x_i - x_D)^2] \qquad \text{Vote for R} \qquad (6.1)$$

$$E[(x_i - x_R)^2] > E[(x_i - x_D)^2] \qquad \text{Vote for D} \qquad (6.2)$$

$$E[(x_i - x_R)^2] = E[(x_i - x_D)^2] \qquad \text{Choose randomly} \qquad (6.3)$$

We can represent the random variables as (symmetrically) distributed about their means:

$$x_R = \bar{x}_R + \epsilon_R \tag{6.4}$$

$$x_D = \bar{x}_D + \epsilon_D \tag{6.5}$$

where ϵ_R and ϵ_D are zero-mean random error terms. But this means we can rewrite the decision rule by substituting in the definitions of the random variables. For example, i will vote for R if:

$$E[(x_i - (\bar{x}_R + \epsilon_R))^2] < E[(x_i - (\bar{x}_D + \epsilon_D))^2] \tag{6.6}$$

and so on. If we actually complete the square on both sides, take expectations, and gather terms, we find i will vote for R if

$$(x_i - \bar{x}_R)^2 + E(\epsilon_R^2) < (x_i - \bar{x}_D)^2 + E(\epsilon_D^2) \tag{6.7}$$

Since $E(\epsilon_R) = E(\epsilon_D) = 0$, the expected value terms on both sides of (6.7) are simply the variances of the expected positions of R and D, respectively. The following results are then obvious:

- If $\bar{x}_R = \bar{x}_D$, the candidate with the lower variance will always win.
- If $\bar{x}_R \neq \bar{x}_D$, it is possible for the candidate located at x_i (in expected value) to lose if that candidate has a large variance of expected policy. (See Exercise 6.3.)

Convergence or divergence if voters are uncertain

We began this section by asking if voter uncertainty about candidates causes divergence in equilibrium in the spatial model. A quick reading of this section might lead one to believe the answer is yes. Well, no. We have shown that, if positions diverge, the candidate further from the median *may* win, provided her variance is less than that of the centrist candidate. But this is true only if the candidates are for some reason fixed in position: Divergence is not, in a technical sense, an equilibrium result. A low-variance candidate is better off at the center than anywhere else, just as before.

There is one possibility for generating divergence in equilibrium, however, which is just beginning to be understood by social scientists. This possibility is that the "technology of commitment," by which we mean the cognitive process by which voters form expectations about what candidates will likely do in office, advantages extremists.[7] To put it another way, it is possible that one cannot commit to being a centrist with the same low variance as it is possible to commit to more extreme positions on either the right or the left. The center, after all, is the region of compromise and protection for the status quo.

Political extremists may be more doctrinally pure and consistent, and therefore have lower perceived variance, than candidates in the middle. If this is so (as we shall discuss further in Chapter 9), then the technology of commitment itself may imply divergence in equilibrium. Without this assumption, however, there is nothing about voter uncertainty that *necessarily* upsets the prediction of convergence to the center by both candidates.

Candidates with their own policy preferences

Candidates (or the parties that nominated them) may have specific policy goals. Politicians might plausibly be motivated, in other words, not just to work in government, but to change government. Such candidates would care *both* about winning and about what policies are actually enacted.

There are several reasons candidates might have policy preferences. One is the need to satisfy partisans who have policy preferences. People who volunteer labor or contribute money are necessary to make campaigns work. If supporters and contributors have policy preferences, then candidates may have to act as if they do, too. Further, doesn't it make sense to expect that politicians genuinely care about what policies are enacted? Having and arguing for a specific set of policy goals may be the reason that the member was selected as a candidate in the first place.[8]

The extension of the spatial model to allow candidates to have policy motivations has been suggested by several authors, including Bental and Ben-Zion (1975), Wittman (1977, 1983, 1990), Cox (1984a), Calvert (1985), and Enelow (1992). Rather than reproduce their analysis, we can simply give a flavor of the logic of candidate location when candidates care about policy. Consider Calvert's apt summary:

> It does not matter, in the electoral model, whether we treat the candidates themselves as having a vote or not, since we could think of the voting candidate as two separate people for the purposes of the model: one just a voter, the other a candidate whose ideal point happens to be identical with that voter's. *The voting, policy-oriented candidate for election faces exactly the same problem as a*

> *committee member with that power.* His task is to choose a proposal which, when matched against an opposing one, will give an outcome closer to his ideal. . . . It is plausible, of course, to expect that candidates have preferences about policy and prefer to win elections. Indeed, *the payoff to winning, itself, is really the only feature that might formally distinguish between the usual models of committee decision making and electoral competition with policy oriented candidates.* . . . The outcome of a two-party committee is exactly the same as the outcome when every member has proposal power, because the parties are forced to compete away their advantages in order to win. (1985, p. 79, emphasis added)

In these passages, Calvert captures the key difference between committee decisions and elections from the point of view of those making proposals. In the classical committee decision, people care *only* about policy and have free proposal power. The model predicts that the ideal point of the median voter will be the outcome. In an election between two candidates, if candidates care only about winning, the ideal point of the median voter will again be the outcome, though for different reasons: Since other positions lose, candidates go to the median to win.

To make this point clear, it is necessary to introduce a technique social scientists call "game theory." The following brief section introduces some elementary concepts of noncooperative game theory. Though the results generated from this approach are very similar to those of the classical model, the differences in how the idea of equilibrium is defined are important enough to merit their own section.

Game theory and political competition

The classical spatial model uses "decision-theoretic" reasoning. This means that the researcher assumes "rational" (informed and optimizing) behavior by each participant, but treats each participant as if his or her actions do not affect the expected payoffs of other participants. Thus, it is possible to evaluate the actions of each participant in isolation.

Game theory provides a way of incorporating the actions of others by accounting for strategic context. This may be important: What is best for A to do may depend on what A expects B to do. The trick is that B is also thinking about what A might do before choosing. The existence of a "best" choice is no longer obvious, because the best choice for each player may depend on what other people are expected to do.

This appears to lead to an infinite regress: "A thinks that B thinks that A thinks. . . ." But that is not necessarily true. In fact, there are some elegant solutions to the problem, though most are beyond the scope of this book. We will consider only the most elementary solution concept in game theory, "Nash equilibrium."[9]

The behavioral assumptions underpinning Nash games are these:

- Players move simultaneously, but blindly, or take turns moving.
- All players know (and know they all know) the context – the rules of the game, the set of feasible strategies, and associated payoffs and utility functions for all players.[10]
- In each turn, each player assumes that *the most recent play of the other players is fixed* and chooses the best response to this vector of positions.

The myopic behavioral assumption in Nash games seems silly. In fact, the presumption that actions are fixed is often dismissed as absurd by people who encounter it for the first time. In fact, the approach is both theoretically powerful and practically useful. The reason is that *in equilibrium* it must be true that nothing changes. This set of mutually consistent actions ("my play is the best response to your play, which is the best response to my play") provides the very definition of Nash equilibrium.

Nash equilibrium. For two players, let (for example) $U_1(S_1, S_2)$ be the utility of player 1, given his own strategy choice S_1 and the strategy of his opponent, S_2. For n players, let $U_1(S_1, S_{-1})$ be the utility of player 1 given his own strategy choice and the vector of all other players' strategies ("~1" means "all players other than 1"). Then for two players a strategy pair (S_1^*, S_2^*) is a Nash equilibrium if and only if the following two expressions are both true:

$$U_1(S_1^*, S_2^*) \geq U_1(S_1, S_2^*) \tag{6.8}$$

$$U_2(S_2^*, S_1^*) \geq U_2(S_2, S_1^*) \tag{6.9}$$

where S_1 and S_2 are any strategies different from S_1^* and S_2^*, respectively. The general, or n-player, Nash equilibrium is a strategy vector $\mathbf{S}^*$ such that for each player i's strategy, given all the other players' strategies,

$$U_i(S_i^*, \mathbf{S}_{-i}^*) \geq U_1(S_i, \mathbf{S}_{-i}^*) \tag{6.10}$$

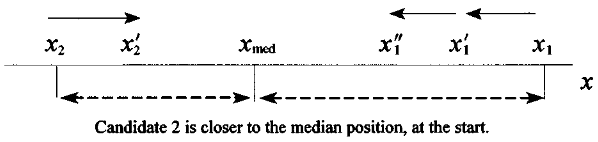


Figure 6.4. If candidates care about winning at all, platforms converge to the median position.

To put it another way, the only time the Nash behavioral assumptions make sense is in equilibrium. But then, that is the only time the assumptions need to make sense!

Nash behavior gives a way out of the infinite regress. Players' expectations are fulfilled in equilibrium, and there is no regret or possibility of having done better, taking the other players' positions as given. In the specific context of the two-player electoral game between candidates Y and Z, we can see that no position but the median is an equilibrium, as long as both candidate-players care about winning and policy.

There is no hint of the dynamic process by which equilibria are achieved in the Nash equilibrium concept. The point is that once an equilibrium is reached, it is sustained by the fact that none of the candidates has any incentive to move. One way that the candidates *might* reach equilibrium, a point where no one has any incentive to change position, is reminiscent of a description used by Cournot (1897) to describe duopoly competition.[11]

Suppose that there are many voters (with symmetric preferences), but that there is a unique median x_{med} at the ideal point of the median voter. Suppose that candidates Y and Z have taken divergent positions at the location of *their* respective policy ideal points, x_Y and x_Z. For the sake of example, suppose that x_Z is closer to x_{med} than x_Y is. This situation is depicted in Figure 6.4.

What will happen if the election were held today? Candidate Z would win (remember, preferences are symmetric!), so Y gets neither office nor his desired policy. Clearly, Y should move. His new platform, x'_Y, is closer to x_{med}, maybe just close enough to win by a whisker: $x'_Y = x_{med} + (|x_{med} - x_Z| - \epsilon)$, where ϵ denotes an arbitrarily small number. In words, Y's platform is just barely closer to the median, but now Y wins the election and, as a bonus, gets a policy much closer to his ideal (though it is less than his ideal). What is Z's best response to the new position by Y? To move even closer to the center, of course: $x'_Z = x_{med} - (|x_{med} - x'_Y| - \epsilon)$. But then, Y would respond, taking x'_Z as fixed: $x''_Y = x_{med} + (|x_{med} - x'_Z| - \epsilon)$.

This process of moving to the center will continue until both candidates converge to x_{med}. Surprisingly, this is true *even if the candidates care mostly about policy.* At the median point, the best response of Y to Z's position at the median is to remain at the median. Similarly, Z's best response is to stay at the median. There is no way to improve either candidate's level of satisfaction by moving to any other position. Any movement loses the election (whoever stays at the median wins), and *there is no change in policy anyway,* because the mover lost.

The strategy pair $[x_Y = x_{med}, x_Z = x_{med}]$ is the only equilibrium of the two-player Nash game. The important thing to remember is that both candidates care about policy and about winning. The fact that they care about winning *at all* is enough to guarantee convergence to the median. This is the result from Calvert (1985), though he used a more sophisticated game and a more general set of assumptions.

To summarize, the fact that winning and policy are both valued doesn't change the prediction of convergence. If the candidate cares about winning at all, then the fact that the median will be the winning policy proves irresistible. "It might as well be me up there signing those bills and getting my name in the paper," rationalizes the aspiring Solon. "The outcome will be the same no matter what; it might as well be me." If just one candidate chooses the median, the other must also. If one candidate moves closer to the median, the opponent will respond by edging inward. This is the logic of the classical spatial model, and that logic is confirmed by equilibrium models relying on game theory.

What if candidates are policy motivated ***and*** *uncertain about voters?*

The tenacious reader will recall a loose end in the discussion. In Theorem 6.3 in the section on voter uncertainty, we noted that equilibria are divergent if (a) candidates are uncertain about what voters want and (b) candidates have at least some policy motivation.

The particulars of this argument are beyond the scope of this book, partly because the relevant theorem requires a thorough knowledge of "probabilistic voting" (see Hinich, Ledyard, and Ordeshook, 1972;

Hinich, 1977; and Coughlin, 1992), which we will touch on in Chapter 8. More important, the question of the practical extent of divergence predicted by the model is still being decided (Green and Shapiro, 1994). We will simply point out the possibility that a relatively simple variant of the standard spatial model is capable of generating predictions of nonconvergent equilibrium.

Several interesting conjectures are suggested by the nonconvergence result:

- Policy-motivated candidates will lose more often because they will choose positions further from the median. But policy motivations, or noncentrist positions, may be an advantage in primaries. Which "type" is really more prevalent, policy seekers or pure office seekers? Why? For what offices?
- If the emoluments of office (salary, benefits, prestige, etc.) are increased, then at the margin holding office becomes relatively more attractive for its own sake. There is some evidence that careerism and platforms may be correlated (Parker, 1992; Fiorina, 1994), but many questions remain unanswered: Do existing politicians change their positions, giving up policy satisfaction to protect office satisfaction if salaries or benefits increase? Or do changes in salary induce a new wave of politicians whose main goal is a political career for its own sake? Finally, is paying high salaries and benefits "good" for society, in the sense of ensuring both accountability and leadership in government?
- Does the institution of recurrent elections select candidates whose policy preferences match the middle of the distribution of voter preferences, as Ferejohn (1986), Lott (1987), Lott and Reed (1989), and Dougan and Munger (1989) argue? If it does, the fact that politicians take central positions may reflect not convergence, but selection.[12]
- Do politicians trade off electoral "slack" and policy? That is, if a politician wins by wide margins, does he drift over time toward his ideal point? Conversely, if electoral pressures grow more binding, do politicians try to "vote their constituencies" more closely? Again, there is some evidence this is true (Kau and Rubin, 1981; Kalt and Zupan, 1984, 1990; Nelson and Silberberg, 1987; Bianco, 1994;

Coates and Munger, 1995), but no systematic investigations have been conducted on these questions.[13]

Though these questions have not yet been answered, it is clear that the various extensions to the classical model we have considered in this chapter represent exciting areas for future research.

Conclusions

In this chapter, we have presented an overview of the logic of spatial competition when the model is extended to account for uncertainty and policy preferences. The main prediction of the classical model outlined in earlier chapters is that the center rules, if it exists. The theme of the extensions we have considered is largely the same: Even if candidates are uncertain about where voters are, voters are uncertain about where candidates are, or if candidates have independent personal policy preferences, the center is the focus of political power.

There are four important qualifications for this claim:

- If two candidates are uncertain about the distribution of voters, have different perceptions of the location of the median, and *cannot move* after taking initial positions, they will take divergent positions corresponding to the mean of the respective distributions of median positions. But this result derives from the *divergence of expectations,* not from uncertainty itself. Nonetheless, different information or beliefs is a source of potential divergence.
- If voters are uncertain about the true position of candidates, then they will evaluate candidates both on what they expect the candidate will do and on the confidence they have in this prediction. Under these circumstances, it is possible for a candidate with a mean different from the median, with consistent commitment, to beat an unpredictable centrist candidate. If the technology of commitment is uniform across the spectrum of positions, however, the *equilibrium* is still at the center. The only difference is that now, instead of flipping a coin, the median voter chooses the centrist candidate who is more reliably centrist.
- If it is possible to commit credibly only to the extremes of the policy dimension (i.e., centrists have more variance), then divergence may

be observed in equilibrium. But this result derives from an *additional assumption* (the technology of commitment hurts centrists), not from the logic of spatial competition with uncertainty alone.

- The most important qualifications to the convergence result, arising when both candidates are policy motivated and uncertain about what voters will do, is still being worked out theoretically, and tested empirically. The practical extent of the implied divergence is still unknown.

Finally, it is important to note that the debate over convergence versus divergence has evolved far from our original motives for considering the middle. The basis of the claims for the value of the center in political theory is exclusively *normative:* The center is the best policy, and institutions that lead to the center create the good society. The attractions of the center we have discovered in the spatial model are all *strategic:* If candidates want to avoid losing, they move to the center.

If the institutions of society create the means for democratic processes to attract politicians to the center, it is *possible* that the result is normatively good. But it is not necessary to assume that politicians are altruistic, or that any moral force inheres in the will of the majority, to appreciate the positive results of the classical model. The center, if it exists, is where political power resides. We get the government we think we want. Whether it turns out that we want the government we get is another question entirely.

EXERCISES

6.1 Suppose that voter i must choose between candidate R, with mean expected policy position $\bar{x}_R$, and D, with mean expected policy position $\bar{x}_D$, using the following information:

$$x_i = \bar{x}_D = 12$$
$$\bar{x}_R = 14$$
$$E(\epsilon_D) = E(\epsilon_R) = 0$$
$$E(\epsilon_D^2) = 16$$

a. Suppose i's choice is described by the utility function in Equation 6.6 and that $E(\epsilon_R^2) = 2$. Who will i vote for?

b. What is the largest variance candidate R can have and still win the election?

6.2 Suppose two candidates, Y and Z, care *equally* about policy and winning. Let the unidimensional policy space be the unit interval [0,1], and let $x_Y = 0$ and $x_Z = 1$. (Note: These are *candidate* ideal points!) Assume the candidates have the following utility functions:

$$U_Y = -.5[(x - x_Y)^2] + .5[W_Y]$$
$$U_Z = -.5[(x - x_Z)^2] + .5[W_Z]$$

where x is the winning platform (assume platform and actual policy implemented are the same), and W_Y and W_Z each take one of three discrete values: 1 if the candidate wins, 0 if the candidate loses, and .5 if there is a tie.

Finally, assume voter preferences are symmetric, so proximity to x_{med} determines the winner. What platforms maximize each candidate's utility if x_{med} takes the following values?

a. $x_{med} = .95$
b. $x_{med} = .10$
c. $x_{med} = .50$

6.3 Consider a two-dimensional policy space, where voters have preferences over both policies. Suppose there are three voters, 1, 2, and 3, with preferences described by the ideal points $\mathbf{x}_1 = [6\ 0]^T$, $\mathbf{x}_2 = [0\ 6]^T$, and $\mathbf{x}_3 = [2\ 4]^T$, and matrices of salience/interaction terms:

$$\mathbf{A}_1 = \begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix} \quad \mathbf{A}_2 = \begin{bmatrix} 2 & -1 \\ -1 & 1 \end{bmatrix} \quad \mathbf{A}_3 = \begin{bmatrix} 5 & 0 \\ 0 & 2 \end{bmatrix}$$

The two candidates, Y and Z, care only about winning. But they don't know voter preferences, so they aren't sure where to locate. Each candidate hires his own polling firm. Each of the two firms takes a poll, from a slightly different sample and using slightly different survey questions. The candidates are told to take the following positions:

$$\mathbf{x}_Y = \begin{bmatrix} 3 \\ 4 \end{bmatrix} \quad \mathbf{x}_Z = \begin{bmatrix} 2 \\ 3 \end{bmatrix}$$

Which candidate wins the election, and which should hire a better polling firm next time he runs for office?