

do so. With factions, there is not a loyal opposition that will search for issues to bring up in an attempt to oust the governing party. Factions lack "collective spirit," a sense of duty and obligation, and any sense of "joint responsibility" between governor and legislature as well. In sum, factional politics undermines each part of Key's party triad (i.e., the party in the electorate, in government, and as an organization), both in the short term and, more worryingly, in the long term.

It might seem that the voter in a one-party (which was, to Key, a "no party") system could still be a "rational God of vengeance or reward," in the sense of retrospective voting that Key developed (1966). Not so, he argued. Retrospective voting needs a competitive alternative. At the same time, he extended his argument about how the lack of organized parties undermines the development of responsible leadership and affects the choices of those ambitiously seeking to enter politics.

The problem Key identified with factional politics was that it does not stand for any of three things that we might believe-partisan contests for control of electoral offices to be about. Factions do not stand for ideas or policies that would help the voter distinguish one from another in the voting booth. Neither do they stand unified with ambitious politicians in seeking joint control of a large swath of offices, who therefore could be seen as bound together across the legislature, the executive branch, and in other offices chosen directly by election, or chosen indirectly by political appointment by elected officials. Third, factions do not typically, in Key's account, stand for control of the same office over time, making the transition from one occupant of that office to the next unconnected with what had transpired in that office, and thus denying the voter the ability to hold the party and its ambitious politicians accountable for conduct while in office.

Griffin and I thus contended that a competitive party system is a necessary ingredient of democratic politics. Meaningful party labels allow voters to play a substantial role in selecting the direction of policy and holding politicians accountable. Ambitious politicians affiliate with parties that create those meaningful (and, if they are good enough, popular) labels. A party will be competitive when its label attracts a sufficient number of voters and ambitious candidates, and a pair of competitive parties consists of two such parties, each of which is in such an individual equilibrium. They form a two-party system when each party acts and reacts to the actions of the other, thus integrating their choices into a system of strategic interaction. And it is at that point, and only at that point, of existence of a party system that democracy can be effective, at least in an extended republic.

## 2 WHY PARTIES FORM

Ratification of the Constitution launched America's "great experiment," testing the viability of democracy. This experiment began before national political parties were invented. The founders held deep sentiments against parties, yet many of them were instrumental in creating parties, justifying them as temporary necessities to make the great experiment succeed, as we will see in chapter 3. In the 1820s what effectively had become a one-party system led to a revival of concerns that the viability of the republic was threatened (see chap. 4). Martin Van Buren and others sought to revive the old party principles of Jefferson and Madison through a new form that historians have come to call the "modern mass party," and with formation of the Whigs this led to the first full flowering of a two-party system. Even with collapse of the Whigs, incentives for political parties were sufficiently strong that politicians turned almost immediately to the formation of the Republican and American ("Know Nothing") Parties. With the ascendance of the Republicans over the Americans, a two-party system was maintained (see chap. 5).

In these crucial moments, ambitious politicians sought durable solutions to what they perceived as critical problems. New partisan institutions were their chosen means. In each case not only were these problems seen as threatening the Union, but it was the politicians' seeking to achieve their goals—seeking to win—that led them to create parties.

In this chapter I will develop a theoretical account of the origins of political parties by demonstrating that there exists a set of incentives for ambitious politicians to "turn to parties." In particular, a series of problems that necessarily arise in elections and in governance make

it possible for politicians to win more of what they seek to win, more often, and over a longer period by creating political parties. The historical context determines when, and in what form, these theoretical possibilities actually arise. This theoretical inquiry produces "possibility" results that imply political parties may be a solution. It is not necessary or inevitable that politicians will turn to parties. These theoretical circumstances are, however, regular and recurring rather than rare and occasional, so the possibility that politicians will seek to achieve their goals through political parties will also recur.

The situations that give rise to incentives for turning to parties are problems endemic to republican government.<sup>1</sup> That is, each of the three problems is deeply interwoven into the choices a society might make and thus into our theoretical understanding of social decision-making. All are so significant that there are theories about each: the theory of public goods and collective action, the theory of social choice and voting, and the theory of political ambition. A second purpose of this chapter is to develop the technical tools, language, and logics that their theoretical study has produced. These tools and logics need to be understood on their own terms if we are to comprehend the role of each in the theory of political parties. I have simplified presentation as much as possible, and I hope to provide readers unfamiliar with the technical literature enough of the insights and results already achieved to make them useful for understanding.<sup>2</sup>

I also hope to show that each is indeed relevant to the question of why ambitious politicians might choose to create and use political parties. Of course politicians confront such circumstances not as theoretical insights, but as practical, substantive problems affecting their ability to achieve their goals. The task therefore is to demonstrate that they perceive political parties as a possible institutional means to solve the particular (theoretical) problem that has arisen.

## COLLECTIVE ACTION PROBLEMS WITHIN THE GOVERNMENT

### The Problem of Collective Policymaking

Parties-in-government consist of officeholders who have preferences. It could be that parties are no more than a convenient coalition of those who share preferences most closely: shared preferences are important bases of political parties. Parties-in-government are also institutions with rules and procedures for selecting leaders, providing them with powers and resources, and structuring Congress and government more

Table 2.1 A Collective Action Problem and Incentives for Party Formation

Legislator	Bill		
	X	Y	Z
A	4 <sup>a</sup>	3	-9
B	3	-9	4
C	-9	4	3

*Independent voting* Outcome: All bills pass. Payoff (-2, -2, -2)<sup>b</sup>  
*Pareto optimal result* Defeat all bills. Payoff (0, 0, 0)  
*Party of A and B* Outcome: Pass only X. Payoff (4, 3, -9)

<sup>a</sup>Denotes payoff to legislator if bill is passed.

<sup>b</sup>Denotes typical payoffs to legislators A, B, and C, respectively.

generally. The goal here is to see what the incentives are for creating or affiliating with institutional parties in addition to any sharing of preferences. Let us begin with a simple "government," in which whatever a unicameral legislature passes becomes law, but let us also assume as great a divergence in preferences as we can. That is, are there incentives for partisan activity even when preferences are not closely shared?

Consider distributive or "pork barre!" legislation—legislation that concentrates benefits in one or only a few districts but distributes costs broadly, perhaps equally, across all districts. One such example is shown in table 2.1, adapted from Schwartz (1989), whose account this section relies on.

In table 2.1 there are three legislators, A, B, and C, and three bills, X, Y, and Z. The entry is the value to the legislator (or the district represented) if the bill passes. Thus the 4 in row A, column X indicates that A receives a payoff of 4 if X passes. The three bills are symmetric, each legislator (or district) winning 4 with one bill, 3 with another, and -9 with the third. Any bill that fails gives each a payoff of 0.

Suppose these legislators act independently and arrive at their choices by looking only at the value to them of the bill currently under consideration. If so, all three bills pass by a 2-1 vote, and all three legislators receive a total payoff of -2. This is worse for all three of them than defeating all bills, yielding each 0. Defeating all bills is said to be "Pareto superior" to passing all three.

Even knowing this result, legislators cannot ensure the Pareto superior outcome when acting independently. Suppose the bills are taken up in alphabetical order. No matter what happens with bills X and Y, by the time Z is taken up B and C have a clear incentive to vote for passage, as they gain 4 and 3, respectively, no matter whether X and Y have won

or lost. So too A and C would rationally choose to vote for Y, whenever it would come up for a vote. In similar fashion, A and B independently conclude that they should vote for X. The equilibrium in behavior for independent legislators, therefore, is to pass each bill, even though all three might know full well that doing so makes them worse off.

This is the problem of collective action, and it arises when rational behavior, in equilibrium, leads to results that are Pareto inferior to at least one other possible outcome. A, B, and C are led by their individual, rational decisions to a behavioral equilibrium that passes all three bills. They unanimously prefer defeat of all bills to their adoption, however, and yet that Pareto superior outcome cannot be attained by rational, independent action.

#### The Nature of the Collective Action Problem

Collective action arises in a large variety of political contexts, owing to the nature of the goods governments deal with. These are "public goods" rather than the "private goods" of economic theory. Pure public goods exhibit "jointness of supply," meaning that one person's use or consumption of the good does not reduce the amount available for others, and "nonexcludability," meaning that it is very difficult to keep those many from consuming the good (see, for example, Barry and Hardin 1982). Indeed it is often impossible to avoid consuming a public good provided by the government even for those who do not want it. A lighthouse illustrates jointness of supply, since one ship's use of the light does not affect others' ability to see and use that light. National defense is nonexcludable, since if it protects one family, it is effectively impossible to keep from protecting their neighbors as well. And the president is everyone's president, so citizens cannot avoid "consuming" this public good whether they like it or not.

Collective action is needed to secure nearly all public goods, and this is especially true in democracies, where governments all but invariably act collectively, such as in voting to select representatives or to pass legislation. Political parties, moreover, are collections of individuals, so that virtually everything they do involves collective action, and they provide public goods for their members, since much of what they do affects many, if not all, partisans. To be sure real, rather than theoretically pure, public goods typically have private goods dimensions—some firm receives the contract to build a bridge or jet fighter—and this private dimension is often critical in producing public goods. Additionally, the "public" that benefits from the public good may not include all citizens: for example, agricultural subsidies are a public good available primarily to farmers. Nonetheless, effectively everything governments and thus

political parties produce constitutes goods that are primarily public, and collective action is required to secure them.

The problem of collective action—the potential that individually rational decisions lead to Pareto inferior outcomes—is ever present in the provision of public goods. This problem can be studied in two forms. One is game theoretic, typified by the "prisoners' dilemma game" (see Luce and Raiffa 1957). The other is based on the theory of individual decision making, typified by the expected utility model of turnout called the "calculus of voting." The expected utility form will be taken up later in this chapter. The game theoretic form is examined here.

Table 2.2 provides a standard illustration of a two-player prisoners' dilemma, similar to but simpler than that in table 2.1. Here player 1 chooses the upper or lower row while player 2 chooses the left or right column. The entry lists the payoffs to the two players for the particular combination of choices, with player 1's payoff first and player 2's second. Note that no matter what player 2 chooses, player 1 is always better off by picking the bottom row. Similarly, player 2 always receives a better payoff for choosing the right over the left column, no matter what player 1 chooses. The result therefore is a behavioral equilibrium of choosing bottom and right, respectively. The bottom right outcome, however, yields both players less than in the upper left cell, and thus the dilemma is that the equilibrium in behavior is Pareto inferior. The choices in table 2.2 are labeled to reflect the usual interpretation of choosing to "cooperate" with the other player or choosing to "defect" from cooperation. If both cooperate, they receive the Pareto superior outcome. Acting independently, they are rationally led to defect and, in equilibrium, fail to realize their potential joint gains.

There are two ways to achieve cooperation. One way is to agree to cooperate during play. For example, legislators interact repeatedly over a relatively long period. Axelrod (1984), Hardin (1982), and Taylor (1976) studied repeated play, and they show roughly that as long as interaction is ongoing and as long as the players place enough value on payoffs in the future, it can be individually rational to cooperate. A very closely related idea is that politicians might find it valuable to develop a reputation for being cooperative; if they do, they can achieve

Table 2.2 The Two-Person Prisoners' Dilemma Game

		Player 2's choice	
		Cooperation	Defection
Player 1's choice	Cooperation	(3, 3)	(1, 4)
	Defection	(4, 1)	(2, 2)

more by obtaining cooperative outcomes in the face of incentives to defect. This is one interpretation of Sam Rayburn's famous dictum that representatives can "get along by going along."

The problem with these ideas is a result known as the "folk theorem" (so called because the originator is unknown; see Bianco and Bates 1990; Fudenberg and Maskin 1986). The folk theorem says, in effect, that though the cooperative outcome is a behavioral equilibrium to the repeated prisoners' dilemma game, so too is every set of outcomes that yields the players at least what they get from defecting. Instead of the defection outcome being the single behavioral equilibrium, as in the single play game, the folk theorem concludes that essentially everything is a possible equilibrium in the repeated version of this game. The Axelrod-Hardin-Taylor results are thus only one set out of the many possible equilibria, just as always defecting is also an equilibrium outcome, and many others are in equilibrium as well. In this case, actors may choose to create institutions, because institutional arrangements can help specify which of the equilibrium outcomes is actually chosen.

The second way to achieve the cooperative outcome is to agree in advance to do so. Saying so is insufficient, however, for both players have every reason to defect from that agreement, and even if they intend to honor it, they would recognize that the other player might take advantage of the situation and defect, making them the "sucker."<sup>3</sup> To be effective any a priori agreement requires a binding commitment. One possibility is some form of institutional arrangement that provides a basis for commitment.<sup>4</sup> In either single or repeated play, then, institutions can be important in resolving collective action problems.

#### Incentives for Party Formation

With legislators acting independently, each bill in table 2.1 passed with a minimal winning coalition. One alternative to acting independently is to form what Schwartz calls a "broad" coalition, one larger than required for minimal winning. To do so the legislators would have to have some means of binding each other ex ante, but suppose they can solve this problem. One agreement they could reach would be to agree to vote for a bill only if it made each one of them better off (or no one worse off). In the example in table 2.1, "broad" means "unanimous," and this rule would lead to them defeating each bill. This would solve the collective action problem, for only Pareto superior bills could pass under unanimity. Of course, as the filibuster politics in the Senate reminds us, supermajority rules can easily lead to no bill being passed at all.

Another alternative is to form what Schwartz calls a "long" but narrow coalition. Two legislators could agree to form an enduring coalition to pass any bill that made both of them better off and to defeat all others. Schwartz, indeed, defines a political party as a long coalition. As in the first case, there would have to be some means of ensuring commitment, one primary purpose of institutionalizing the party. Suppose A and B enter into a long coalition. They would agree to pass bill X and defeat bills Y and Z. Each would get positive payoffs, 4 and 3 respectively (and C would lose -9). Society would not be better off, but both members of the majority coalition are better off than by acting independently or in a unanimous coalition.<sup>5</sup> To be sure, A prefers the A-B coalition, B prefers the B-C coalition, and C prefers A-C. The central point, however, is that members win more in this "party" than in the unanimous coalition or by acting independently. It is not necessarily the case that a party will form, but it is possible, and it is possible because partisans win more in a party than by other arrangements.

Table 2.3 provides a second example. Here, with independent voting, all bills fail, and each legislator nets 0. It is Pareto superior for each bill to pass, yielding each legislator 1. Thus a broad coalition will pass all three. A two-person party will yield each of its members 2 and the excluded member -2. This particular case illustrates the conditions of Weingast's universalism theorem (1979); "universalism" means passing substantive legislation unanimously, or nearly so, within this pork barrel setting. The basic idea is that in a universal coalition, each legislator gets a "pet project" to take back to the district.

Central to his theorem is his assumption that, a priori, each member expects a minimal winning coalition to form but no member has any idea which one, so that (Weingast assumes) every minimal winning

Table 2.3 A Second Collective Action Problem with Incentives for Party Formation and for a Norm of Universalism via Weingast's Theorem

Legislator	Bill		
	X	Y	Z
A	3	-1	-1
B	-1	3	-1
C	-1	-1	3

*Independent voting* Outcome: All bills fail. Payoff (0, 0, 0)  
*Pareto optimal result* Pass all bills. Payoff (1, 1, 1)  
*Universalism norm* Outcome: Pass all bills. Payoff (1, 1, 1)  
*Party of A and B* Outcome: Pass bills X and Y. Payoff (2, 2, -2)  
*Universalism theorem* (Weingast, 1979)  
 Outcome: Pass all bills. Ex ante payoff (2/3, 2/3, 2/3)

coalition is equally likely. In this case there is a two-thirds chance of each legislator being in a minimal winning coalition, with an ex ante expected payoff of  $2/3$ .<sup>6</sup> This expected payoff is, indeed, less than the payoff of universalism, in which all bills pass and each receives a payoff of 1. Again, some form of a priori commitment is necessary, and universalism theorems show that it is possible, but not necessary, for a "norm" of universalism to develop.

As we saw above, forming a (minimal winning) party yielded the winners a payoff of 2 each. This is not a counterexample to Weingast's theorem, because the formation of a party means there is ex ante certainty about which coalition will form, not the equal probability of his theorem. That, of course, is the point. The reason to enter a party is to win more, and here that means reducing uncertainty over future outcomes. The majority party can pass any bill, so it can yield each more than acting independently, more than forming majority coalitions piecemeal, and more than under a universalism norm. It is thus possible that rational legislators would choose to form a party, because they would win more than otherwise.

We have seen that pork barrel legislation gives an incentive for a political party to form. That incentive exists whether or not there is a collective action problem. Consider table 2.3 again, but suppose that the winner receives 2. This is not a collective action problem, for each receives the same payoff if all bills pass or if none do, but there is still an incentive for a long, narrow coalition. The two, say A and B, would agree to pass the two bills that give each one a payoff of 2, and each would receive a payoff of 1, better than they could get playing individually or in a universal coalition.

Is this set of examples at all general? Schwartz proves that as long as the bills are distributive policies, there will be incentives for a majority to form a minimal winning party. Suppose there are  $n$  legislators, and  $m$  denotes (minimal) majority size. Passing any bill yields benefits to a winner of, say,  $b$ . If costs,  $c$ , are divided equally, each pays a cost of  $c/n$ . Each legislator, if choosing independently, will vote for any bill for which  $b - c > 0$ . If a simple majority forms, they will pass pork barrel legislation such that  $b - mc > 0$  for all members of the coalition. The rest lose an amount of  $-mc$ . What Schwartz shows is that it is better for winners to be in a permanent coalition a priori, that is, in the majority party. Whatever the situation, each member can calculate that there is an a priori probability,  $p$ , of being in the winning coalition. If only minimal winning coalitions will form, each expects to receive an amount equal to  $pb - mc$ . Weingast's theorem assumes that  $p$  is based on every minimal winning coalition's being equally likely and thus assumes its

lowest value. The larger  $p$  is, the higher each winner's payoff. When  $p$  equals 1, each of the  $m$  winners expects to receive a full  $b - mc$ . Thus members of the majority each prefer to know with certainty that they are the winning coalition. These  $m$  individuals will be worse off with any degree of uncertainty. That is the incentive for forming a binding coalition—for forming a political party.

One might argue that there are transactions costs that must be paid for forming and maintaining a party coalition. Although this is true, there are also transactions costs for forming each winning coalition. No one knows how large either set of costs is, but it is likely that transactions costs for parties are far less, at least over the long haul, than those for forming new majorities for each piece of legislation. Thus an additional incentive for intralegislative party formation is to reduce costs of legislative coalition formation over the long haul.

We can also exploit the structure of bicameralism to extend Schwartz's argument. Suppose there are two chambers and the two have to agree for a bill to become law. An example similar to the United States House and Senate is displayed in table 2.4. Here, the seven-member House faces proposals like those in table 2.3. The Senate comprises three members whose states are composed of House districts. Thus, Q's state consists of the House districts, A, B, and C, and so on. Senators' payoffs are assumed to be the sum of those in the component House district. Here, if a party of D, E, F, and G forms in the House, it will pass bills W, X, Y, and Z, with each partisan receiving +4 and the rest receiving -4. R and S have an incentive to join the House's majority party, since they would like to pass the same bills and reject the rest. R and S would then receive +8, while Q receives a payoff of -12. With geographic definitions of districts and of the distribution of legislative benefits, we would expect parties to form along regional lines, and bicameralism would accentuate the value of partisan regional bases.<sup>7</sup>

## SOCIAL CHOICE PROBLEMS WITHIN THE GOVERNMENT

### The Social Choice Problem in Policymaking

Social choice theory in political science concerns Arrow's general possibility theorem and its implications for the theory of majority voting (1951; see also Riker 1982a). Its typical example, the "paradox of voting," is illustrated in table 2.5. Here there are three alternatives—say, a bill, an amendment, and the status quo (or reversion outcome). The three legislators have preferences over these outcomes. Suppose

Table 2.4 An Example of Bicameralism with Districts Defined Geographically and with Incentives for Regional Party Bases

House	Bill					
	T	U	V	W	X	Z
A	7	-1	-1	-1	-1	-1
B	-1	7	-1	-1	-1	-1
C	-1	-1	7	-1	-1	-1
D	-1	-1	-1	7	-1	-1
E	-1	-1	-1	-1	7	-1
F	-1	-1	-1	-1	-1	7
G	-1	-1	-1	-1	-1	-1
Senate <sup>a</sup>						
Q (= A + B + C)	5	5	5	-3	-3	-3
R (= D + E)	-2	-2	-2	6	6	-2
S (= F + G)	-2	-2	-2	-2	-2	6

*Independent Voting* Outcome: All bills fail with a payoff of 0 to all.

*Pareto optimal result* All bills pass with a payoff of 1 to all.

*"Natural" geographic basis for parties* Suppose D-E-F-G and R-S formed a party, passing (W, X, Y, Z). Then:

A, B, and C receive -4; D, E, F, and G receive +4 each  
 Q receives -12; R and S receive +8 each

This is the highest these parties could have obtained, and it is higher than either independent voting or the Pareto optimal (universalism) outcome.

Other parties are possible, but only those with a geographic basis are of much value. For example, suppose the House majority party was A-B-D-F. By passing (T, U, W, Y), each of them would receive +4, while the others in the House would receive -4. Q would be a winner in the Senate (+4), while R and S would receive 0. Alternatively, the majority A-B-C-D could form a party and pass (T, U, V, W) in the House. Q would win 12, R would receive 0, and S would get -8. Thus the nongeographic coalition in the House could succeed there but would get support in the Senate only from Q. The last, which is also a geographic coalition, shows that not all are advantaged. Rather, the small state coalition in the House is, when interchamber majorities are necessary. Although both of these examples could yield interchamber parties, only the first is truly advantageous for all members.

<sup>a</sup>Senate payoffs are the sum of the payoffs to that state's House districts.

that voting is by round-robin majority rule and that each legislator votes for the preferred alternative at each vote. Then X beats Y by a 2-1 vote, and Y defeats Z 2-1. We might expect transitivity to hold, so that if X beats Y and Y beats Z, then X should defeat Z. In fact, Z defeats X 2-1. This is called a majority "cycle," since voting can cycle the social choice from Z to Y to X and back to Z.

Payoff values are assigned to the alternatives in table 2.5, with 4 for the most preferred alternative, 3 for the second most preferred, and -9 for the least liked alternative. Note that these reproduce the payoffs from table 2.1, except over competing versions of the same bill

rather than three different bills. Thus, at least in this case, the same preferences that led to a collective action problem also lead to a social choice problem. Table 2.5 does not look like pork barrel preferences, and indeed it has many interpretations in addition to preferences for pork. In other words, preferences that could lead to a collective action problem need not be of distributive policies, so that the previous section is actually more general than it appears.

**The Nature of the Social Choice Problem**

Arrow's general possibility theorem is essentially that cycles are always possible—not that they *must* exist, but that they can never be ruled out. His theorem is about preferences. All legislators have noncyclical preferences. Is there a sense in which we could say that this three-person society also has noncyclical preferences? Is there a socially preferred outcome? Round-robin majority voting (or the method of majority voting generally; see Sen 1970; Riker 1982a), if it is used to define "social

Table 2.5 A Social Choice Problem and Incentives for Party Formation

Legislator	Preference ranking		
	1st	2nd	3rd
A	X	Y	Z
B	Z	X	Y
C	Y	Z	X
Utility value	4	3	-9

*Round-robin tournament, voting independently and sincerely*  
 X beats Y (A, B) Y beats Z (A, C) Z beats X (B, C): **Outcome: ?**

*Sequential agenda: sincere voting*

1st vote	Final vote outcome	Payoff to (A, B, C)
a. (X, Y) = X <sup>a</sup>	(X, Z) = Z	(-9, 4, 3)
b. (X, Z) = Z	(Z, Y) = Y	(3, -9, 4)
c. (Y, Z) = Y	(Y, X) = X	(4, 3, -9)

*Sequential agenda: sophisticated voting*

a. (X, Y) = Y	(Y, Z) = Y	(3, -9, 4)
b. (X, Z) = X	(X, Y) = X	(4, 3, -9)
c. (Y, Z) = Z	(Z, X) = Z	(-9, 4, 3)

*Equiprobable order of voting* Expected outcome: (2/3, 2/3, 2/3)  
*Temporary coalitions* A and B coalesce, yielding X;  
 C offers to coalesce with B, yielding Z;  
 A offers to coalesce with C, yielding Y;  
 B offers to coalesce with A again.  
 Thus, there is a cycle in coalitions.  
**Party of A and B** Outcome: Pass X. Payoff (4, 3, -9)

<sup>a</sup>(X, Y) = X, for example, denotes that alternative X is voted against Y with X winning. Boldface denotes the final, winning outcome.

preference," says no. Arrow's theorem says no method of choosing can guarantee that noncyclical social "preferences" can be obtained from noncyclical individual preferences.<sup>8</sup>

Voting theory is about how preferences lead to choices, that is, about behavior, as well as about the normative questions Arrow considered. In the example, legislators always choose to vote for the preferred alternative in any pair, illustrating how Arrow's theorem can be translated into a form for studying behavior. This has been done mostly in terms of majority voting procedures, either in large electorates or in "committees," that is, smaller bodies such as legislatures. The central problem in this literature is a search for equilibria in behavior, and the literature divides into two streams of research.

One stream consists of what may be referred to as the "positive" results. It seeks conditions that yield a behavioral equilibrium, which would tell us what society would choose. The most famous result is Duncan Black's "median voter" theorem (1958). This theorem says that if it is possible to arrange alternatives so that every voter's preferences are "single peaked" in one dimension, then there is a behavioral equilibrium.<sup>9</sup> Calling each voter's most preferred alternative an "ideal point," the result is that the ideal point of the median voter is the equilibrium. Black proved this result for the case of committees, and Anthony Downs (1957) provided the comparable result for large electorates. Two candidates competing along a single dimension (e.g., a left/right ideological dimension) and seeking only to win the election would be led to "converge" to the ideal point of the median voter (see chap. 6 for further development). Some generalization is possible, but these results are marginal emendations of Black's theorem (see Sen 1970). Black's theorem has been employed in a variety of forms. For example, Shepsle (1979) used the median voter theorem as his institutional model of a legislature with a committee system, and there are a number of other results that involve voting on one dimension at a time or that in some other way constrain multidimensional choice settings to single dimensions. In general, however, the median voter result is extraordinarily fragile, itself, as deviation from exact unidimensionality utterly destroys equilibrium (Kramer 1973).

Black also searched for equilibrium in multidimensional spaces.<sup>10</sup> Stated more generally by Plott (1967), this attempt to generalize the median voter theorem effectively requires the existence of a multivariate median.<sup>11</sup> A multivariate median, however, exists only in symmetric distributions (e.g., of ideal points). Davis and Hinich (e.g., 1966; see also Davis, Hinich, and Ordeshook 1970) extended the Downsian spatial model to multiple dimensions, and they also needed symmetry conditions to yield a behavioral equilibrium.<sup>12</sup>

This apparent necessity for symmetry underlies the second, "negative," stream of research. Unidimensionality cannot be assumed; it is empirically rare if not nonexistent. Most certainly, symmetry of preferences can be dismissed as wildly implausible. Thus the failure to find a multidimensional generalization of Black's theorem in anything like a useful set of conditions means that cycling in social choices holds almost invariably. One must begin with the premise that there is no behavioral equilibrium. Thus Plott's basic argument was that disequilibrium was ordinarily the case, and the two-candidate spatial model also founded on such impossibility results.

More "impossibility" results followed. It was shown, for example, that Arrow's theorem was coincident with the nonexistence of the game theoretic solution concept of the core, thus providing a formal tie between Arrow's preference cycling and behavior.<sup>13</sup> Kramer (1973) then showed that the median voter result was just as rare and fragile, as noted above. The ultimate in negative results are the series of "chaos" theorems (e.g., McKelvey 1976; Schofield 1978; McKelvey and Schofield 1986). These showed that if there was no behavioral equilibrium, majority voting could lead from any one outcome to any other, no matter how far apart, even to alternatives that were unanimously disfavored. Pairwise majority voting, they showed, *could* result in "anything happening."<sup>14</sup> In fact, even in his initial paper, McKelvey (1976) argued that this result did not lead to "chaos" but instead provided the opportunity for institutional effects, illustrating his claim by use of agenda setting. This stream of research was effectively summarized by Riker's calling politics "truly the dismal science" (1980).<sup>15</sup>

Give the implausibility of a single dimension of choice and of multidimensional symmetry, the presumed pervasiveness of disequilibrium has led to two newer directions in research. One is the new institutionalism, such as the work of Shepsle and Weingast. This is in part the search for equilibria due to the combination of preferences and institutional arrangements (called "structure-induced equilibria" or SIEs), with the knowledge that equilibria under majority rule based on preferences alone ("preference-induced equilibria," or PIEs) are virtually nonexistent. This will be explored in the party setting in chapter 7. The second has examined choice without imposing (much in the way of) institutional arrangements. The search, instead, is for alternative solution concepts. Most notable here are such concepts as the "uncovered set" (e.g., McKelvey 1986) or the "minimax set" (e.g., Kramer 1977). The general thrust of this literature is that though there may be no equilibrium akin to Black's median voter theorem, all of these concepts tend to lead to voting outcomes near the center. Perhaps, then, there may be some weaker form of generalization of the

median voter revealing a tendency toward choice at, or convergence to, the policy center.

### Incentives for Party Formation in the Presence of a Social Choice Problem

Table 2.5 was used to illustrate the paradox of voting with round-robin voting. Legislatures, of course, adopt rules for determining the agenda, such as that the first vote is on the amendment, equivalent to voting for the unamended versus the amended bill. The winner then faces the status quo, which determines the final outcome.

Cyclical preferences would not be revealed with such an agenda, since not all pairs are matched. This does not mean the paradoxical arrangement of preferences is inconsequential. To examine this, we need a behavioral rule to guide us in understanding how rational legislators would choose. There are two commonly used choice rules, called "sincere" and "sophisticated" voting. Voting is sincere if legislators always vote for whichever alternative they prefer. Voting is sophisticated if legislators look ahead to see the consequences of their current votes for later choices. One might vote against a preferred alternative early on to avoid ending up with an even worse outcome at the end of the process (see Clinton and Meirowitz 2004 for application). Obviously sophisticated voting requires, in addition to anything else, information about the preferences of the other votes. Thus sincere voting is plausible when legislators or voters know little about each other, whereas sophisticated voting is more likely when legislators or voters know each other well.<sup>16</sup>

Under sincere voting as shown in table 2.5, the status quo always wins. For example, if X is an amended form of bill Y, X wins in the first vote but loses to the status quo (Z) in the second vote. Any of these three alternatives can win, depending only on the order in which they are voted on, with the winner being the last one to enter voting. Under sophisticated voting, any of the three alternatives can win, although in this case the status quo (that is, the last alternative to enter voting) always loses. Thus, with the same preferences, the outcome depends on the order of voting, sometimes called "path dependence" because the outcome depends on the "path" or agenda followed. The outcome also depends on whether voters are sincere or sophisticated and thus presumably on the availability and costs of information, among other things.

In table 2.6 there is a behavioral equilibrium in preferences. In this case X defeats Y and Y defeats Z, as before, but X also defeats Z. That is, X defeats both alternatives in pairwise voting and is called a "Condorcet winner." X is also the median voter result, with A the median voter. X is chosen under any of the three methods of voting: the round-robin

Table 2.6 The Absence of a Social Choice Problem and the Absence of Incentives for Party Formation

Legislator	Preference ranking		
	1st	2nd	3rd
A	X	Y	Z
B	Z	X	Y
C	Y	X	Z
Utility value	4	3	-9

*Round-robin tournament, voting independently and sincerely*  
 X beats Y (A, B) Y beats Z (A, C) X beats Z (A, C) **Outcome: X**

*Sequential agenda: sincere voting*

1st vote	Final vote outcome	Payoff to (A, B, C)
a. (X, Y) = X*	(X, Z) = X	(4, 3, 3)
b. (X, Z) = X	(X, Y) = X	(4, 3, 3)
c. (Y, Z) = Y	(Y, X) = X	(4, 3, 3)

*Sequential agenda: sophisticated voting*

1st vote	Final vote outcome	Payoff to (A, B, C)
a. (X, Y) = X	(X, Z) = X	(4, 3, 3)
b. (X, Z) = X	(X, Y) = X	(4, 3, 3)
c. (Y, Z) = Y	(Y, X) = X	(4, 3, 3)

*Random, equiprobable, ordering of voting* All pass X Payoff (4, 3, 3)

*Temporary coalitions (A, B), (B, C), (A, C) pass X* Payoff (4, 3, 3)

*Party of A and B* Outcome: X Payoff (4, 3, 3)

This is true for any party of two. Thus, there is no incentive for a party (or for a universalism norm, etc.) with a voting equilibrium.

\* (X, Y) = X, for example, denotes that alternative X is voted against Y with X winning. Boldface denotes the final, winning outcome.

tournament, the sequential agenda with sincere voting, or the agenda with sophisticated voting. The choice no longer depends on the path or on the decision rules followed by the actors.

What, then, of parties? Here "length" is not meaningful, since these are three alternatives under simultaneous consideration. Think first of a party as a coalition, say of A and B. In the situation depicted in table 2.5, A and B could agree to support X over the other two bills, and as a majority they could ensure that X passes, yielding payoffs to A of 4, B of 3, and C of -9. If this were a mere coalition, however, it would be vulnerable: C could offer to join with B, agreeing on passage of Z. This would make them both better off, giving B 4 and C 3. Now A could offer to join with C, making both better off, giving C the 4 payoff and A the 3. But then B could reoffer the A-B coalition. In short, if a party were a mere coalition formed around a single issue, there would be a cycle among coalitions, mirroring the cycle in preferences. To be a party, then, must mean more than being a temporary coalition of immediate interests. It could be a long coalition, in which A and B would agree to commit



to a coalition over a series of bills, and anytime such a case of cycling arose, they would determine a joint course of action. In this particular case B could do better, but by entering the A-B party, B could ensure never being in C's circumstance of being the worst off. Again, the value of the party would be to institutionalize for the long haul (and over issues) and reduce uncertainty, ensuring each member some benefits for being in this party, such as here in avoiding the worst outcome.

In table 2.6, any two-legislator coalition will agree on X. That is, there is nothing to be gained by coalition, and thus by forming a political party. The virtue of an equilibrium due to preferences alone is that the PIE will be chosen under a wide array of institutional rules added to majority rule. When there is a well-defined sense of what the majority prefers, the majority will work its will.<sup>17</sup>

Is this at all general? Consider the five-person legislature in figure 2.1, where with single-peaked preferences, C is the median voter. As long as C's most preferred option is proposed at all, it will be chosen under majority rule.

We can divide all winning coalitions into two classes, those that include C and those that do not. C has no incentive to form such a coalition, since his or her ideal policy will be chosen without doing so. Coalescing with, say, A and B might lead that majority to agree on C's ideal point, but it might also choose some other option. It might, for example, agree to choose B's ideal point, since that is the median position in the coalition, thereby making C worse off. Even if the median, or C's ideal point, wins in coalition, forming a coalition would involve paying needless transactions costs, and it might be that the median would not win, thus making C worse off.

Consider, then, coalitions that exclude C. Any majority coalition that excludes C has to include legislators on both "sides" of C. Suppose A, B, and D form a coalition. Anything that A and B find more attractive than C's ideal point, D likes less, and vice versa. As Axelrod

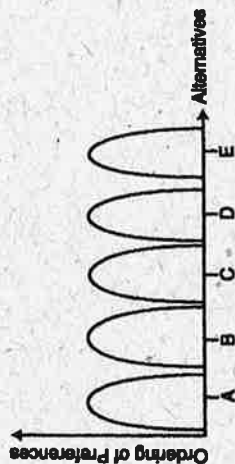


Figure 2.1. An example of single-peaked preferences.  
Source: Compiled by author.

pointed out (1970), the coalition that has the least internal conflict of interest (or in other words has the most in common) is "connected," having adjacent ideal point locations. Any such connected coalition must therefore include C. Skipping over C, such as forming A-B-D, involves greater conflict of interest than, say, forming A-B-C or B-C-D, and A-B-D may be able to agree to no more than selecting C's ideal point, which they could get without coalescing.<sup>18</sup>

Thus there is no incentive to form a coalition when there is an equilibrium. From a social choice theory perspective, the existence of incentives to form a political party is found in the absence of an equilibrium (whereas, for the collective action problem, incentives came in trying to upset an inferior equilibrium). Social choice theory, however, tells us that most of the time we should expect there to be no voting equilibrium, which means; then, that there generally are incentives to form a long coalition, that is, a party. One might argue that if a coalition such as A-B-D has formed for other reasons, it might face the possibility of figure 2.1 sometime in the future. Even so, the coalition of A-B-D can always agree on C's ideal point—or equivalently, agree not to act in coalition on this policy—and the members will receive no worse than they would have without forming (or employing) the party. They will have won at least as much as they would have without the party, and in the presumably common cases where there is a paradoxical arrangement of preferences, they can win more.

If the lesson of voting theory in committee settings is that PIEs are rare, then there are always incentives to form a party. Riker's dismal conclusion turns out to provide a strong case for the formation of political parties.

The new institutionalism (e.g., Shepsle 1979) emerged in response to the ordinary absence of (pure) voting equilibriums. Two points discussed below and in later chapters are also relevant here. First, many different institutional arrangements can be sufficient to yield (structure-induced) equilibriums, such as committee systems, agenda designs, and separated powers. None of these are necessary—like parties, all yield possibility results. Second, partisan institutions are virtually always one of those institutions.

## COLLECTIVE ACTION AND ELECTORAL MOBILIZATION

### The Problem of Collective Action in Elections

The Federalist and Jeffersonian Republican Parties began with the government as a means of solving a social choice problem (see chap. 3).

Such parties-in-government may also become electoral parties. The most obvious motivation lies with the minority. The examples above demonstrated incentives for some majority to form a party. If this happens, some or all of those excluded might form a party in reaction, seeking to become the legislative majority. Failing to reach majority size, the minority would naturally turn to the public, seeking to elect more of its members. That is essentially what the Jeffersonians did when facing a Hamiltonian majority. Later parties, notably the Jacksonian Democratic party, formed more directly for electoral purposes (see chap. 4). The question for this section and the next, then, is what set of incentives candidates for elective office might have that would lead them to form or join a political party. In this section we examine incentives that arise from attempting to mobilize the electorate. Mobilizing the electorate by definition is getting the public to turn out to vote for, or otherwise support, a candidate. Examining the logic of voting among citizens introduces the second form in which problems of collective action are studied, and in this case turnout is the quintessential example.

#### The Nature of the Problem of Collective Action and Mobilization

Turnout is ordinarily seen as a problem in individual decision-making, unlike the prisoners' dilemma. Both can be put in game theoretic terms, but in the latter case, the strategic interaction between the players is central. Both players have an immediate and direct impact on the outcome, and each player would be wise to at least consider the strategic possibilities of the other player. In large electorates the outcome depends on the actions taken by all, but strategic interaction is so remote that it can be effectively ignored: how one citizen decides to act has very little effect on the decisions of any others. Sheer size all but eliminates strategic interaction, reducing the problem to one of individual decision making.

The standard theory, called the "calculus of voting," employs expected utility maximization (see Downs 1957; Riker and Ordeshook 1968, 1973). If there are two candidates, the calculus, like all rational choice models, predicts voting for the more preferred one. The question is whether to vote at all. The calculus for choosing whether one votes or abstains is

$$(2.1) \quad R = PB + D - C.$$

R denotes the reward (expected utility) for casting a vote, and one votes if R is positive and abstains if not. P represents the probability that the vote will affect the outcome, roughly the probability of cast-

ing the vote that makes or breaks a tie.<sup>19</sup> B represents the differential benefit the citizen receives from the election of the more preferred candidate. The D term, for duty, measures any positive rewards received from the act of voting itself, which may include the satisfaction of having done one's duty as a citizen, the value of expressing support for the preferred candidate or party, and so on. Finally, C stands for the costs of voting, including the time and effort needed to register and go to the polls and the costs of decision making.<sup>20</sup> C and D, therefore, come with the act of voting itself and do not depend on the outcome. Only B depends on the outcome, and it is discounted by the impact of P, the effect this one vote would have on determining that outcome.

This calculus is a typical example of expected utility maximizing. It thus serves as a template for a large number of other expected utility maximization problems. One example is the "calculus of candidacy" that will be examined in the next section. It also serves as a calculus for political participation more generally. Olson (1965) analyzed the problem of collective action for participating in interest groups, for example, and his logic is effectively equivalent to this calculus.

The calculus is a model of individual decision making, but the outcome sought is a public good. The winning candidate is "jointly supplied," no one can be excluded from "consuming" the good, and indeed no one can avoid consuming it, no matter whether they voted for or against the winner or did not vote at all. The question, then, is under what conditions it is rational for the individual to contribute to (or "cooperate in") the provision of this public good.

The collective action problem follows immediately from the calculus and the observation that, in any large group, the P term is almost invariably very small. A near-zero P makes the PB term tiny unless B is immense. Thus all those who share an interest in seeing a candidate elected nonetheless are motivated to act primarily on the D and C terms, that is, the intrinsic costs and benefits to voting, and very little in terms of their collectively shared interest in the candidate. If we set aside the D term for the moment (as Barry [1970] and others argue should be done), then one votes if  $PB > C$ . If P is effectively zero, then no one should vote. As in the prisoners' dilemma, the rational citizen should "defect" by abstaining.<sup>21</sup>

The calculus of voting includes a second, prior "collective action" problem: becoming informed. A citizen concerned about the electoral outcome needs to determine what outcome is desired. Which candidate, in other words, does the citizen want to see elected, and how important is the outcome—that is, how large is the B term?

The citizen must expend decision-making costs to gather and process information to determine this, but if a vote has a negligible impact on the outcome, why should anyone pay these costs? Downs (1957) explained why it is rational for citizens to be ill informed except as they "accidentally" acquire information or obtain it for other reasons.

#### Incentives for Candidates in Electoral Mobilization

Candidates want to win elections. To do so, they need to convince more citizens to prefer them than prefer their opponent(s), and they need to convince these supporters to vote in greater numbers than their opposition. Citizens may not have incentives to turn out or even to ascertain their preferences over candidates. Candidates, however, do have strong personal incentives to solve these collective action problems for citizens, if only for their supporters. Campaigns therefore can be understood as attempts to create supporters and get them to turn out in the face of these two collective action problems.

There are a number of ways candidates can generate supporters and get them to vote, and these can be seen as attempts to manipulate terms in the calculus of voting. Most important are the common efforts to lower the costs of voting, such as exhortations to register and vote and formally organized mobilization drives. Candidates also can lower decision-making costs for voters by providing as much information as possible in a readily available form, seeking to "instruct" voters that the candidate values what they do, thus also seeking to generate a favorable B term as well as lowering C. At the same time, "allocating emphasis," to use Page's term (1976), or even outright exaggeration, may make the B differential appear large.

Exhortations that all citizens should do their duty by voting seek to increase the intrinsic rewards of voting, while claims that "everyone's vote counts" seek to make the P term seem high. These claims strike everyone, however, opponents and supporters alike, so candidates typically leave them to editorial writers and the League of Women Voters. But candidates do manipulate the P, B, C, and D terms more selectively. Thus candidates and parties focus their campaign appeals and mobilization drives on those they believe already are, or are most likely to become, their supporters.

Although candidates employ many particular tactics to make it seem in their supporters' personal interests to turn out and vote, the general points are that candidates have private incentives to seek to overcome these collective action problems, and that these tactics, to be successful, must be chosen in light of the collective action problems facing the

electorate. Implementing these tactics takes resources. It is probably not very expensive to generate the largely private benefits sufficient for overcoming the free riding incentives an individual citizen faces, but these small per capita costs become substantial in a large electorate. Yet as a great deal of empirical work has demonstrated (e.g., Patterson and Caldeira 1983; Rosenstone and Hansen 1993), wise expenditures of resources pays off in increased turnout.

#### Incentives for Party Affiliation for Candidates

That candidates have private incentives to reduce collective action problems among their supporters does not necessarily mean they have incentives to form a party. Today's elections are typically described as "candidate centered," and a large part of that claim is that it has become feasible for individual candidates to raise and expend resources on their own (see chap. 6 and 8). So part of the answer must be historically contingent, but part must continue to apply, since candidates with any serious hopes are almost invariably partisan.

Affiliation with a party provides a candidate with, among other things, a "brand name." In advertising, successful brand names convey a great deal of information cheaply: they cue an established reputation (see Downs 1957). Travelers, for example, know little about a local hamburger stand but know that McDonald's provides a certain type of product with standards for cleanliness, service, and so on. A party label can convey a great deal of information as well. *The American Voter* popularized the view that political parties provide cues and partisan images (Campbell et al. 1960). Key (1966) referred to party identification as a "standing decision": partisans vote for their preferred party's candidates until and unless given good reasons not to.

In the last few years, several important game theoretic models of party reputation have advanced the technical understanding of the value of a reputation to a party's candidates (see, for example, Snyder and Ting 2002; Grynavski 2010). They have also examined some of the conditions under which they are useful to such candidates, particularly so for less well-known and experienced candidates, who can use the party's reputation to establish a basis of choice among their constituents. Of course, if the reputation is a negative for the candidate (the party is liberal, while the constituents are not, and so on), then the reputation is harmful. And, if they were to successfully develop a different reputation, doing so weakens the value of the party label for all others, as it signifies less certainly what the party stands for. Some therefore have argued that there are really two possibilities. One possibility is that (nearly) every candidate and officeholder hews

closely to the party reputational positions in their own personal campaigns, thereby maintaining a high value to the reputation (clarity of party positioning) for everyone. The other is that defections from that position by well-known figures weaken the reputation for everyone else, leading to further defections, such that the value of the party position as a reputation is low for all (see, for example, Castanheira and Crutzen, 2009). The conditions under which politicians choose a strong reputation for the party (that is, adopt something very close to the party platform as their own) is when there is relatively high agreement on that platform *a priori*. A divided party would choose to let the party stand for little, with every partisan running on their own best choice of platform for winning office. This is very similar to the argument about "conditional party government" that will be discussed in later chapters.

The candidate's party affiliation therefore provides a very inexpensive way to infer a great deal: assumptions about what a typical Democrat or Republican is like. To be sure, other sources of reputation could serve much the same as party affiliation. A reputation as a liberal or conservative, for example, is a similar cost-saving device for voters. The empirical dominance of party cues (and their not coincidental relation to what is popularly understood by "liberal" and "conservative") in the public suggests, of course, that the affiliation of a candidate with a party has proved useful. Thus the collective action problem for voters of becoming sufficiently informed to make a (possibly preliminary) determination of whom they favor is greatly attenuated, given party affiliation and perhaps other reputational cues. This effect is exaggerated to the extent that voters' choices are correlated among candidates of the same party. The correlation is, of course, partially endogenous to the actions and the stances of a party's candidates (as well as to institutional features such as ballot forms that ease or hinder split-ticket voting). Even today, however, many vote straight tickets, or close to it, and as Cox and McCubbins (1993) have shown, there is a substantial impact of party identification on even the highly candidate-centered (especially incumbent-centered) voting for Congress.

Affiliation with a party not only brings the candidate a "natural" reputation, it also provides economies of scale. This is especially important for turnout. Campaigns may reduce free riding incentives in the public, but they are costly for the candidates. The campaign budget imposes real constraints, especially at lower levels of office and for nonincumbents. A turnout drive by the party's presidential nominee reduces or eliminates the costs of getting partisans to the polls for

other candidates of that party, for example. Once the voter is there, the additional costs of voting for remaining offices are very small, especially if party-line votes are possible. Thus the tide of partisans turning out to vote for president lifts the boats for all of the rest of that party's nominees.

The combination of office-seeking ambition and the very nature of electoral institutions generates incentives for candidates to solve the two collective action problems affecting voters: becoming informed and turning out to vote. Candidates have two kinds of incentives to affiliate with a political party, ameliorating both of the public's collective action problems. Party affiliation provides an initial reputation that reduces decision-making costs and provides a core of likely supporters. Long-term incumbents may develop their own personal reputations in addition to partisan reputations, and this fact has been of great empirical significance for understanding the U.S. House in particular (see Jacobson 2008). Many offices have shorter tenures, with ambitious politicians therefore seeking to climb higher up the list of offices. Each time they strike out into a new electorate, party reputations become more valuable again.

Party campaign efforts, whether conducted by the party organization itself or by its various candidates, provide economies of scale for all of the party's candidates as they seek to reduce the costs and increase the benefits for supporters to come to the polls. As before, these incentives create the possibility that candidates might want to affiliate with a party. There are other means of reaching the same ends. Moreover, affiliation is not costless. The reputational effects of being a Democrat or Republican need not be entirely positive and at times can be quite negative. Until recently being a Republican in the South provided a reputation, but one that made winning all but impossible. Any partisan image undoubtedly mixes positives and negatives for any candidate. Yet the ambitious politician seeking a long and successful career almost invariably affiliates with one or the other major party, in part owing to reputational effects and economies of scale.

One of the tensions facing partisan candidates is the need to solve another collective action problem, that of generating the many activists needed to secure the labor and financial (and other) resources needed to achieve mobilization. This may yield tension, because the best appeal to activists may differ from what would best mobilize voters. Indeed, these (commonly) opposing forces of appealing to the base versus appealing to the independent or unaffiliated voter yield some of the highest levels of tension, requiring a careful balancing of centripetal and centrifugal forces in the contemporary era. Resolution