Notes

CHAPTER 1

1. Schama (1989, p. 648).
2. The hierarchy described here was buttressed and legitimized by the ideological heritage of the Catholic Church, particularly its great thinkers, Augustine and Aquinas, themselves relying on Plato and, to a lesser extent, Aristotle.
3. As Monroe (1995) points out, the "collective wisdom" idea is better credited to Aristotle, though Rousseau most clearly develops it. Monroe cites Aristotle's *Politics,* book 3, chapter 11: "For it is possible that the many, no one of whom taken singly is a sound man, may yet, taken all together, be better than the few, not individually, but collectively."

CHAPTER 2

1. "Constitution" should not be taken here in the modern meaning of a document defining rights and constraining government. Instead, constitution means the way government is designed and justified. More generally, the words "class" in the quotations, or the word "preference" we use to describe Aristotle's citizens, should not be interpreted too literally. Modern ideas about government and citizens are very different from those of the Greeks in 400 B.C., and the use of Aristotle's "spatial theory" is intended more as an illustration than as a substantive interpretation of his theory.
2. By "unique," we mean that no person has more than one ideal point. Several (or all) members may share a single ideal point, however.
3. The mean may be important if voters try to "balance" in elections, as suggested by Alesina and Rosenthal (1995). The mode is important in a plurality rule system, if alternatives are discrete.
4. "CONVENTION. When n, the number of members, is odd, let us denote $O_{1/2*(n+1)}$ by O_{med}. When n is even and the chairman's optimum is at $O_{1/2n}$ or lower, let us denote $O_{1/2n}$ by O_{med}; or when n is even and the chairman's optimum is at $O_{1/2(n+1)}$ or higher, let us denote $O_{1/2(n+1)}$ by O_{med}" (Black, 1958, p. 18).

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5. A closed interval is a line segment that contains its end points.
6. "THEOREM. If the members' curves are single-peaked, O_{med} will be able to get a simple majority over any of the other motions $a_1, \ldots, a_m$ put forward" (Black, 1958, p. 18). Though Black was the first to state the theorem clearly, he points out that the logic of the result has clear antecedents in earlier work. Black identifies Condorcet, Borda, and Dodgson as being perhaps the most important groundwork for the result. Interestingly, much of what we know about these antecedents comes from Black's own meticulous archival research, tracking down, translating, and reproducing the original documents in chapters 18–20 of *The Theories of Committees and Elections.* To put it more bluntly, Black might well receive more credit for his exposition of the MVT and its corollaries, save for two things: (1) He was a scholar of the first rank, and (2) he was an honest man.
7. Condorcet's "jury theorem," as argued in Grofman and Feld (1986) and Ladha (1992), states that the probability that a majority votes for the objectively "better" alternative (when the better state is unknown to anyone) goes to unity as the number of voters goes to infinity. This "voting system as consistent estimator of truth" approach is called the "epistemic interpretation" of democracy by Monroe (1995). Austen-Smith and Banks (1996) argue that even if there are only two alternatives and the other assumptions of the jury theorem are met, this conclusion makes unrealistic assumptions about the likely voting behavior of participants. In particular, the assumption that the probabilities of voting for the right alternative are parametric is shown to be inconsistent with rational behavior. These claims, however, are debatable, and counterarguments are offered by Ladha and Miller (1996).
8. Black (1958) examines this question exhaustively and finds that several people came very close to identifying the problem. The interested reader should examine "Part II" of Black (1958, pp. 156–238). However, we believe that in terms of the actual recognition of the definition of single-peakedness and its implications for stability in social choice, Duncan Black himself should receive great credit.
9. On the other hand, the assumption of single-peakedness need not be arbitrary or restrictive. Consider the standard utility maximization subject to a budget constraint in microeconomics, where one good is public and the other is private. Preference relations that are single-peaked are consistent with "normal" indifference curves, drawn assuming *quasi-concave* utility functions (see Glossary). In one dimension, non-single-peaked preferences require a violation of the standard *convexity* assumptions about indifference curves. However, in the more general case where there is more than one public good and more than one private good, it is quite possible to have non-single-peaked preferences even with quasi-concave utility functions. For a general discussion see Coughlin and Hinich (1984).
10. No, it doesn't! But for the sake of example we will ignore the fact that the

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Security Council is actually a "collegium," with veto powers for all members, so that unanimity is required to pass any resolution.

11. In fact, the three discrete choices may not even satisfy the assumption of an ordered dimension. There is nothing inherently spatial about the Hun–Gats' choice problem. In that case (i.e., no ordered dimension), single-peakedness is a slightly different problem. One way to approach it would be this: Given alternatives, and preferences over those alternatives, is it possible to order the alternatives so that the associated preferences are single-peaked? If the answer is yes, single-peakedness is satisfied.
12. For background on Rousseau's ideas of the possibilities of representation, see Fralin (1978).

CHAPTER 3

1. This is a point of fundamental importance, both in rational choice theory and political psychology. One important recent development is the measurement of preferences that appear to drift or change depending on context (Zaller, 1992). However, this "framing" effect is precisely observationally equivalent to nonseparability under many circumstances, as Lacy (1996a, 1996b) has argued.
2. See also McKelvey (1976a, 1976b), Schwartz (1977), and Enelow and Hinich (1984b).
3. One other solution concept, the "uncovered set" (Miller, 1980; Feld et al., 1987), is commonly seen in technical articles. The definition of the "uncovered" set is the set of all feasible policy alternatives u such that, for all other feasible points y *either* (i) u beats y in a majority rule election, or (ii) there exists a feasible alternative $\tilde{y}$ such that u beats $\tilde{y}$ beats y in a majority rule election. The uncovered set can be, at most, the Pareto set, but it can be much smaller. If it is a singleton, the uncovered set is the Condorcet winner. For a review, see Mueller (1989).

   There are several other solution concepts, including the *yolk,* the *heart,* and the *Banks set,* that are beyond the scope of this book. For more information, see McKelvey (1986) and Schofield (1993). For an excellent overview of the technical literature, see Miller (1995).
4. There is an important sense in which this instability is an example of a more general indeterminacy of outcomes in games where there is disagreement over division of losses and gains. For very general but intuitive treatments of this problem, see Myerson (1991) and Brams and Taylor (1996).
5. A growing experimental literature on the "Pareto set," and the outcomes of voting processes in the laboratory, bears on this question. The original work was Fiorina and Plott (1978). For more recent experimental research, see Wilson (1986a, 1986b), Collier, McKelvey, Ordeshook, and Williams (1987), Eckel and Holt (1989), McKelvey and Ordeshook (1990), and the papers in Palfrey (1991), especially Plott (1991b). For a very different (but

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potentially important) approach to mapping out patterns of positions taken by parties, see Kollman, Miller, and Page (1992).

6. There is some question whether the "distributive" efficiency form of legislative organization implied by the Shepsle–Weingast work actually explains the institutions we observe. For an aggressively opposing view, see Krehbiel (1991).
7. A median in all directions, if it exists, is the intersection of dimensional medians (or an element of the closed interval of same), but the reverse is not true.
8. One difficulty with the "structure-induced" equilibrium approach is the question of what members perceive to be their range of choices. Denzau and Mackay (1981) examine the role of expectations, considering whether there is a consistent agenda and whether members could predict that agenda. See also Enelow and Hinich (1983b, 1983c).
9. For an extended account of the role of redistribution and race in organizing much of American political conflict, see Poole and Rosenthal (1991, 1993, 1996). Fiorina and Shepsle (1982) give a critical review of the tensions over equilibrium models in analytical political theory.
10. McKelvey (1976a, 1976b) showed that if there is no median position, if voting is sincere, and the sequence of alternatives can be chosen by an outside agenda setter, then it is possible to choose an agenda (sequence of pairwise votes) that leads to virtually any outcome in the policy space. McKelvey and Schofield (1986) show that the stability of a political system may fundamentally depend on the number of different dimensions among alternatives.

CHAPTER 4

1. The Kelvin scale does have a nonarbitrary zero point, corresponding to −273° Celsius. This zero point is theoretically rather than empirically anchored, because it represents the "temperature" where there is no heat, or where Brownian motion ceases completely. There is no way to produce this condition experimentally, since any insulator has heat conduction greater than zero, and only perfect insulation would produce 0°K.
2. Technically $a_{12} = a_{21}$ means that the **A** matrix is symmetric. Intuitively, it means that the effect of the expected level of one policy on the marginal value of another is the same, regardless of which policy is fixed first. It is worth noting that there is nothing inherent in the model that requires **A** to be symmetric, however, and an interesting area for future research would be to consider the implications if order of consideration determines marginal valuation for this reason. Finally, in order for indifference curves to be ellipses, it must be true that $a_{11} \times a_{22} - a_{12} \times a_{21} > 0$. Since this condition has no obvious intuitive content for political preferences, we will simply mention it in passing.

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3. Well, sort of. For the real proof, see Davis, DeGroot, and Hinich (1972) and McKelvey (1976a, 1976b).

CHAPTER 5

1. It is possible to question whether the "individually transitive, collectively intransitive" contradiction is a genuine paradox. Buchanan (1954, 1975), Tullock (1970), and Plott (1972) argue that "paradox" simply results from an indefensible insistence on an organic conception of societies. For a review, see Mueller (1989, pp. 388–92).
2. Coase (1960) points out that markets may allow enfranchisement of the downwind citizens, assuming transaction costs and wealth effects are negligible, and that distributional equity can be ignored. Coase's argument is that such arrangements can be noncollective, yet solve public problems. But this observation actually proves our point: Such a "market" requires a well-developed set of institutions for defining, enforcing, and transferring property rights, as well as a currency or accepted medium of exchange for effecting the transfer. Obviously, some collective decision, if only to define rights and afford some means for enforcing them, has taken place if a market solution can work.
3. It is commonly argued that both such activities do affect others, of course. "Immoral" sexual practices may offend others. If some people refuse to use helmets the result may be higher insurance rates for everyone. However, each of these may also be post hoc rationales. The point is that it is clearly possible, in principle, for the larger group to *determine* whether an action is private, quite separate from what the actors themselves believe.
4. The reader interested in pursuing public goods, externalities, and enfranchisement rules may find an extensive review in Mueller (1989).
5. There are many statements of Arrow's paradox. Ours is closest in spirit to that of Riker (1982, p. 18). An important general discussion, and some extensions, can be found in Sen (1970).
6. This statement is too strong. It is quite possible that societies are locked into conventions that nearly everyone knows are not Pareto optimal. See Schelling (1960), Lewis (1969), North (1981, 1990), Arthur (1989), and Denzau and North (1994).
7. It is important to note that rules requiring a fixed $K/N < 50\%$ vote apply only to access, and can allow but two alternatives: Reject the proposal, or pass the proposal along for further consideration. There is no inherent problem with access decisions if multiple alternatives "pass," since all this means is that the alternatives (bills, court cases, etc.) then continue through the process for disposition. The subject of concern in this book is for making a single choice among mutually exclusive alternatives. Consequently, we will restrict our attention to $K/N > 50\%$.
8. The KMVT we present is greatly simplified, compared with the more rigor-

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ous treatments in Slutsky (1979). Slutsky's analysis has a different object, however, in that it compares mechanisms for achieving Pareto optimality in public goods provision with endogenous tax shares. The reader interested in the properties of different majorities required for decisiveness should also consult May (1952) and Sen (1970).

9. Quoted in Black (1958, p. 182), quoting from J. Mascart's *La Vie . . . de Borda* (1919).
10. Strategic voting is generally beyond the scope of this book. See Cox (1997) on the importance and breadth of strategic action in politics.
11. For an in-depth treatment of approval voting, see Brams and Fishburn (1984), and Brams and Nagel (1991). For some interesting background on approval voting, see Cox (1984b).
12. On the other hand, if each group selects only its first alternative as being acceptable, A will win, receiving eight votes compared with seven for B and six for C. Consequently, one might expect the middle and last groups to vote strategically, and include B and C in the acceptable category. This would ensure at worst a second-place rather than worst result for voters in those groups.
13. On "independence of path," see Plott (1973), Parks (1976), and Ferejohn and Grether (1977); on "multi-stage choice processes," see Schwartz (1986). For quite a different interpretation of the problem of social choice in general, see Nitzan and Paroush (1985).
14. For a variety of comparisons between PR and presidential systems, see Grofman and Lijphart (1992).

CHAPTER 6

1. If the object were to be *exactly* right, of course, the candidates would choose the modal median. However, the object is to be closest, so the mean median is the optimal platform. Nevertheless, there may not be any well-defined middle in a multi-dimensional space of legislator ideal points, as Goff and Grier (1993) point out.
2. Another possibility, beyond the scope of this book, is that the shape of the distribution is sharply bimodal, so that the identity of the median voter is highly discontinuous with respect to small changes in turnout. Further, the issue of how information is obtained is difficult. It is quite possible that campaigns all jealously guard their private knowledge of voter location. For an attempt to model this situation, see Ferejohn and Noll (1978).
3. As Calvert points out: "Candidates . . . may choose very different platforms in equilibrium if they have very different ideas about the probabilities of winning. However, this should properly be regarded not as a feature of the electoral institutions themselves, but as a direct result of the candidates' disagreement" (1985, p. 80).
4. For significant work on this point, see Ferejohn and Noll (1978), Ferejohn (1986), and Banks (1990, 1991).

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5. It is quite possible that the distribution of expected positions is not symmetric, of course. A slightly different modification would allow the mean of the distribution of expected policy to differ from the candidate's announced positions. The latter possibility would require some prior distribution on candidate action, which might or might not be updated in response to new candidate messages. For one, relatively simple updating process using Bayes's rule, see Hinich and Munger (1994).
6. For some alternative ways of inducing voter beliefs over candidates, see Zaller (1992) or Jones (1994). Further, an important contribution to the experimental literature is the demonstration that voters may rely on endorsements or cues rather than direct experience (McKelvey and Ordeshook, 1985; Collier et al., 1987; Williams, 1994). The implication of this work is that elections may look as if all voters had accurate perceptions, even if only some have complete information.
7. A model that incorporates some of this reasoning (winning candidates must be extreme, but not "too" extreme) is the "directional theory" of Rabinowitz and Macdonald (1989). Hinich and Munger (1994) also make an argument for divergence, based on the need for a coherent heterodoxy, or opposition ideology, to defeat incumbents. Alesina and Rosenthal (1995) examine the implications of divergence of parties for the U.S. federal system of government.
8. For a discussion of the process of selection of candidates in U.S. presidential elections, see Aldrich (1980). For an example of a selection game at a more abstract level, see Hinich and Munger (1994, chapter 9). There is some persuasive, though indirect empirical evidence that elected officials pursue consistent policy goals, even if they are not subject to the reelection constraint. For a review of recent literature, see Bender and Lott (1996).
9. The reader interested in further learning may want to consult Binmore (1992) or Osborne and Rubinstein (1994). For an overview of the work game theorists have done, see Ordeshook (1989).
10. This assumption is called the "common knowledge" assumption. A more complete definition can be found in Binmore: "In game theory, something is common knowledge if everybody knows it; everybody knows that everybody knows it; everybody knows that everybody knows that everybody knows it; and so on. Game theorists usually assume that the rules of the game and the preferences of the players are common knowledge" (1992, p. 150).
11. The Nash solution concept (Nash, 1950) is a generalization of Cournot's equilibrium. But the dynamics of reaching an equilibrium, or moving from one equilibrium to another, are outside the logic of the Nash concept.
12. For a review of the political science literature on this question, see Bianco (1994). For a review of the "public choice" perspective, see Bender and Lott (1996).
13. Further, several authors have argued that no such variations in voting occur. See Lott (1987) and Lott and Davis (1992). For a different view, based

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on the institutional implications of "discretion" as a goal of legislators, see Parker (1992). A more formal examination of the "rational" theory of leadership can be found in Frohlich and Oppenheimer (1971).

CHAPTER 7

1. We thank Gary Cox for calling our attention to this example of nonvoting.
2. According to the U.S. Constitution (Article I, Section 2, Part 1), "The electors in each State shall have the qualifications requisite for electors for the most numerous branch of the State legislature." Since state election laws differ, there can be wide variations in the definition of eligibility, even when voters are choosing among candidates for national office. Further, states have significant differences in registration requirements, purging of registration lists, and even poll hours. See Rosenstone and Wolfinger (1978), Wolfinger and Rosenstone (1980) and Cox and Munger (1989) for a discussion of some of these effects.
3. Some have argued that the registration decision is actually the key decision, and that analysis of turnout without accounting for differences in registration is misleading. See, for example, Kelley, Ayres, and Bowen (1967) and Erikson (1981).
4. Downs (1957) and Riker and Ordeshook (1968) model indifference. Ordeshook (1969), Hinich and Ordeshook (1969, 1970), and Hinich, Ledyard, and Ordeshook (1972) extend the Downsian model to account for alienation.
5. In principle, the radius of the circles depicting the regions of nonalienation might differ by candidate, since voters may care enough to vote for some candidates for reasons that have little to do with distance. This possibility can be accounted for using "probabilistic voting," as we discuss in Chapter 8.
6. We thank David Scocca for correcting and clarifying this diagram. In particular, Scocca made precise the curvature of the region of indifference, whereas the earlier Enelow and Hinich diagram made the borders of the region linear.
7. For a review of this literature, see Cox and Munger (1989).
8. Knack (1994) considers a variety of explanations for the effect of weather on turnout and outcomes.
9. We have also given short shrift to an important empirical perspective on the factors voters use in deciding among candidates: *retrospective* voting. According to this view (Key, 1966; Fiorina, 1989), voters evaluate the performance of the party or candidate now in office. If the incumbent has performed well (in the voters' judgment), he or she is returned to office. If the incumbent has botched things, voters vote for someone else, punishing poor performance after the fact. Retrospective voting is not completely contradictory to the classical spatial model, because there is an implicit comparison between the actual performance of incumbents and the expected performance of challengers. Still, the emphasis in the retrospective voting approach is clearly on the evaluation of the effectiveness of incumbents.

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10. See also Barzel and Silberberg (1973).
11. Hinich (1981) goes further and conceives of voting as if it were an act of contribution. Contributions are usually thought of as monetary, but the time and effort required to vote can be thought of as a sacrifice by the voter for the sake of the candidate. Fiorina (1976) compares the "expressive" and investment-oriented, or "instrumental," motives for voting.
12. See Tullock (1967), Tollison, Crain, and Paulter (1975), and Silberman and Durden (1975). For a review, see Matsusaka and Palda (1993).
13. An interesting, and potentially important, new result is the "swing voter's curse" (Feddersen and Pesendorfer, 1996). They show that if other voters have private information (i.e., not all information about the alternatives is common knowledge), voters may be strictly better off abstaining than voting for either candidate, even if the costs of voting are not taken into account. This result hinges on the set of conditions that must be true about the world if the voter turns out to be the "swing" voter, or the vote that determines the outcome. For some policy implications on using polls, rather than votes, to determine public policy, see Brehm (1993). A more ambitious approach to "deliberative" decision making using polls is Fishkin (1991).
14. For a review of turnout over a longer period, see Aldrich (1976), Aldrich and Simon (1986), and Foster (1984).

CHAPTER 8

1. John Kingdon's classic book *Congressmen's Voting Decisions* (1981) lists what he believes to be the six most important factors in legislators' vote choices. These factors include: (1) desires of the constituency, (2) cues given by fellow members of Congress and by party leaders, (3) interest group pressures, (4) goals of the executive branch, (5) advice of staff, and (6) attention from the media.
2. "Agenda formation" incorporates changes in both public desires and interest group focus. For a review and some important new contributions, see Baumgartner and Jones (1993) and Jones (1994).
3. An important related result is the Romer and Rosenthal (1978, 1979) "setter" model, where the setter gets to choose a reversion level and then make a take it or leave it proposal.
4. One difficulty with this claim, of course, is that politicians may have to explain their vote on a specific issue, and it may prove difficult to explain that the vote was strategic. On the other hand, however, legislators who have won the trust of constituents may not need to make such explanations very often. For more on "trust," see Bianco (1994). Denzau and Munger (1986) describe the importance of different constituencies and levels of information in determining how voters' interests are represented.
5. For a more general discussion of the topics in this section, see Mueller (1989).

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6. In fact, the result can be *derived* directly from Arrow's "impossibility" theorem and its proof, as was shown by Blin and Satterthwaite (1978) and Schmeidler and Sonnenschein (1978). For a useful and intuitive review of the technical basis of manipulability, see Kelly (1988, chapter 10, pp. 101–18). On the other hand, there are important differences between Arrow's result and the Gibbard–Satterthwaite impossibility conclusions (see, e.g., Border, 1984).
7. In his review of this literature, Schwartz (1986) points out that the Gibbard–Satterthwaite theorem applies to "resolute" voting rules, or rules that choose a single outcome from the choice set. Schwartz (1982) extends the theorem to (as he might say) "irresolute" collective choice processes.
8. This theory has spawned a contentious literature on the power of committees in the U.S. Congress. For a review, see Krehbiel (1991).
9. The argument is laid out in detail in Shepsle and Weingast (1987).
10. See Weingast (1979) and Niou and Ordeshook (1985).
11. It would be more accurate to say that the process of developing expectations about the package of all budgets becomes more important. See Denzau and Mackay (1981), Enelow and Hinich (1983b, 1983c), and Hinich (1986). For an experimental investigation of the applicability of structure-induced equilibrium to an abstract committee voting setting, see Wilson (1986a).
12. The question of whether anything like this actually happens is the subject of debate. For a recent review, see Shepsle and Weingast (1994) and Gilligan and Krehbiel (1994).

CHAPTER 9

1. The issue of issues is itself quite complicated. For a variety of perspectives on what constitutes an "issue" and for various typologies, see Riker (1959, 1963), MacRae (1965, 1970), Sundquist (1973), Zaller (1992), and Hinich and Munger (1994).
2. For a discussion of the differences between the "Downsian" (classical) model and Downs's model, see Hinich and Munger (1994).
3. Some wag has suggested that the definition of "issue" in political science is this: If someone at the University of Michigan asks someone else a question, and the answer is then coded and recorded by the Interuniversity Consortium for Political Science Research, that is an issue. Not surprisingly, there are many such issues. Whether these issues are actually distinct from each other in any global sense is another thing altogether.
4. In particular, Weisberg (1974) noted that in the Swedish Riksdag, members of "extreme" parties of the left and right would sometimes vote together in ad hoc coalitions against the center, or moderate members.
5. It might be objected that this "distribution on a circle" result is commonly found in multidimensional scaling procedures. This suggests that the fact that no voters appear in the middle of the issue space may be an artifact

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of the *procedure* used to measure preferences, rather than a property of the preferences themselves. But the theoretical predictions of Rabinowitz's model have held up remarkably well in a wide variety of very different empirical tests (see, e.g., Poole and Rosenthal, 1984; Rabinowitz and Macdonald, 1989; Macdonald, Listhaug, and Rabinowitz, 1991, 1995; Macdonald and Rabinowitz, 1993; Merrill, 1993).

6. The question of whether a nondiagonal **A** matrix makes sense for directional theory is an open one and an interesting area for future research. The nature of interactions in directional theory are, at this point, unspecified. There is nothing in the logic of the model, however, that rules out such interactions. See Macdonald and Rabinowitz (1993) for some insights into linkages across issues in directional theory and Macdonald, Listhaug, and Rabinowitz (1995) for information on salience in directional models.
7. See also Iverson (1994) for a contrast of types of spatial models used in a comparative context.
8. The problem of commitment is long recognized in analytical politics. Three important treatments are Barro (1973), Ferejohn (1986), and Banks (1991). On the question of ideology as a filter and commitment device in particular, Kau and Rubin (1981) is the seminal work. Two other papers that follow this perspective are Lott (1987) and Dougan and Munger (1989).
9. Two important recent books on American parties and party control of legislative function are Cox and McCubbins (1993) and Aldrich (1995).
10. Our source for this information is Keith Poole, in private conversations.
11. Downs recognizes this, and offers the following explanation: "This dualism can be depicted on our graph of political space. . . . Each party takes stands on many issues, and each stand can be assigned a position on our left–right scale. Then the party's net position on this scale is a weighted average of all the particular policies it upholds. . . . Each citizen may apply different weights to the individual policies, since each policy affects some citizens more than others" (1957, pp. 132–3).
12. The "subconscious associations" may take any of a variety of forms, from a set of stereotypes the voter uses to interpret "liberal" and "conservative" to projections of the voter's own beliefs onto these concepts or labels. For an introduction to the political psychology literature on the formation of stereotypes by individuals, see Conover and Feldman (1982, 1984), Lau and Sears (1986), Krosnick (1991), Rahn (1993), and Zaller (1992).
13. There is significant support within the formal theory literature, also. See Enelow and Hinich (1984b, 1989, 1994), Enelow, Hinich, and Mendell (1986), and Hinich and Munger (1992, 1994).
14. For interesting evidence on this claim, see Budge (1994).
15. There is a crucial distinction between the "constraint" considered by Converse (1964) and that intended here. In Converse's "mass belief systems," constraint is imposed by coherent and consistent individual belief systems. Since this kind of constraint is rarely observed except among sophisticated citizens, beliefs do not appear to be coherent in this way. In our conception,

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constraint is imposed by people's experience and their understanding of the regularities of political discourse. The notion of consistency is not logical, but is rather temporal: Similar messages have similar meanings.

16. The Poole and Rosenthal results show that, as an *empirical* matter, the dimensionality of the space of political debate is usually one. There is no theoretical reason to expect one dimension, rather than two or even three, is to be expected. The theory only implies we should expect many fewer ideological dimensions than there are issues.
17. To know whether an ideology is shared, researchers must grapple with difficult questions of both definition and measurement. A potentially path-breaking line of inquiry is suggested by Lupia (1994), who notes that decision rules and an understanding of cues need not be universal to achieve the benefits of the evolution of such rules. Whether ideologies are in fact one such kind of decision rule is part of the remaining research agenda.
18. In our example, this means that there is no party associated with the "more tanks–more school lunches" position.
19. For a review of recent work relating to information and democratic choice, see Ferejohn and Kuklinski (1990).

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