

## Rational Choice Politics

(Background Material for Constitutional and Political Economy Courses)

### I. Rational Choice and Institutions

#### A. What is rational choice?

#### B. The rational choice approach to social science is based on three principles:

- i. **Methodological individualism** is the principle that all group activities can be explained as consequences of decisions made by the *individual* group members within the social setting of interest.
- ii. **Goal Oriented Behavior.** Rational choice theorists assume that all individuals have goals and make choices to advance those goals. Goal-oriented behavior implies that individual decision making is both *forward looking* and (more or less) *internally consistent*.
  - a. Goals need not be "self centered" although each individual's goals are personal and idiosyncratic.
  - b. The decisions of egoists and altruists, of saints and sinners, policeman and criminals, politicians and voters, and consumers and firms can be represented as goal-oriented behavior.
- iii. **Optimizing Decisionmaking:** in most situations individuals cannot fully reach their goals because of various informational, economic, political, and social constraints.
  - a. These constraints define what is actually possible in a given choice setting, and *individuals take account of their constraints* when they choose methods for advancing their goals.
  - b. (They optimize; they choose the best of the *available* means to advance their goals.)
  - c. Because constraints affect decisions, *changes in constraints* will induce changes in individual behavior, many of which are regular and predictable.
  - d. The fact that individuals optimize does not mean that people never make mistakes, but it does imply that rational *individuals do not make systematic mistakes*, given what they understand about the range of possibilities available to them.
  - e. Examples of rational choices: (a) choosing a route to class, (b) choosing a field of study at college, (c) dividing time between work and play, (d) shopping: dividing money up among goods and services, (e) saving: dividing money up between now and the future, (f) producing goods and services, (h) decisions to join or leave clubs, (i) voting for political parties...

#### C. Institutions from a rational choice perspective are stable (equilibrium) procedures and constraints that determine the "rules of social games" and the penalties for violating those rules.

- i. Institutions can have large effects on individual decisions because institutions often affect the range of possibilities from which individuals make choices (their **opportunity sets** or feasible sets).

- a. Institutions may directly determine an individual's opportunity set as may be said of the rules that define some sporting events, or institutions may indirectly determine an individual's opportunity set by creating a game in which opportunities may be created or eliminated.
- b. (This latter might be said of the **civil law** with respect to market transactions, or a national **political constitutions** with respect to the decisions of politicians and interest groups.)
- ii. "Opportunity sets" are rarely completely determined by institutions because nature, knowledge, and imagination also constrains the range of choice available to individuals and organized groups.
  - a. Nonetheless, institutions are clearly important determinants of choice in most societies, because most individual choice settings are at least partly defined by a society's long-standing organizations, as with civil law, markets, courts, and constitutions.
  - b. Within a rational choice model, institutions affect individual behavior in areas of choice where they affect a typical individual's "opportunity set."
  - c. For example, an individual that works for a public agency tends to have a stronger interest in the budget and authority of his agency than ordinary citizens, but the budget and authority of the agency have more direct on his own opportunities! (His or her agency's budget largely determine opportunities for interesting work, travel, and career advancement.)
  - d. Changes in institutions also affect an individual decisions (behavior) insofar as they directly or indirectly change the "opportunity sets" available to individuals at moments of choice.
- iii. **Illustrations: Goals and constraints as diagrams.**
- iv. **Readings:** Shepsle and Bonchek: Ch. 2, 3, 10; Hall and Taylor (1996); Ostrom (1986).

## **II. Rational Choice, Model Building, and Elections**

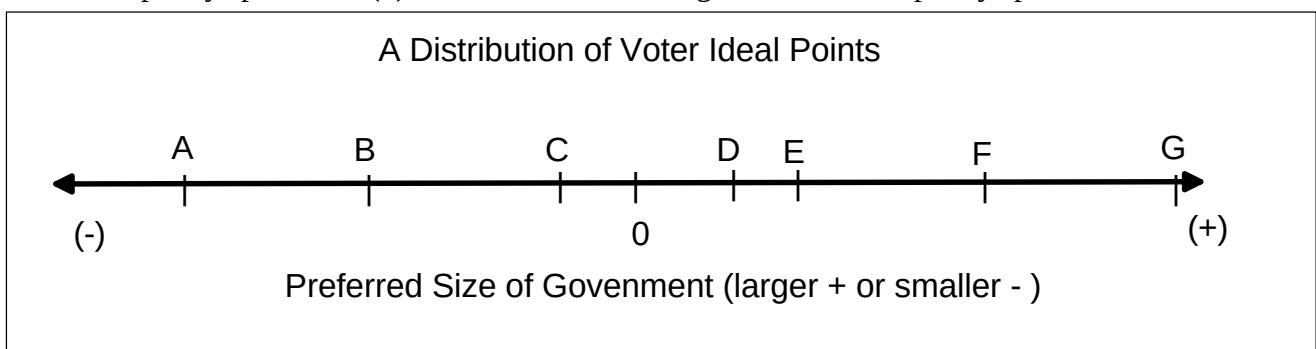
- i. One can use rational choice analysis to analyze the effects of institutions and institutional change without developing formal (geometric or mathematical) models, as historians do when they explain important historical events by analyzing the interests and opportunities of key decision makers in particular times and places.
  - a. One can for example, use rational choice analysis to explain William III decision to invade England in 1688, and the English Parliament's decision to make him king in 1689.
  - b. One can also analyze Willem Thorbecke's choice of constitutional design in 1848 in terms of the opportunities for reform that the existing institutions and people permitted--in part because of the expected consequences of new political institutions.
  - c. Similarly, possibilities for reforming the existing governmental structure of the European Union can be analyzed by considering the interests of the major decision makers (national representatives) and the likely effects of institutional reform on those interests.
  - d. (In each case, a "rational choice" historian analyzes the decision maker's goals and the methods available for achieving those goals. At this "explanatory" level of analysis, the rational choice approach is largely "common sense.")
  - e. The idea that interests and opportunities matter, allow a good deal of history and a good deal of ordinary experience to be understood.
- ii. Another strength of the rational choice methodology is that it allows human decisionmaking to be represented (modeled) with relatively simple mathematical tools.

iii. Mathematical **models** allow social scientists to analyze human decision making in a wide range of settings, including ones that cannot be easily observed and even ones that have never existed.

- a. You should keep in mind that *a model is a model!* That is to say, a mathematical model always ignores some of the details of the choice setting faced by an individual decision maker. This is done to make the mathematics "tractable" and also to focus on what appear to be the essential features of the decision setting.
- b. (It is useful to remember a bit about the details that are being ignored, because sometimes they turn out to be more important than a particular social scientist or model builder imagined! On the other hand, in many cases the details can be ignored without substantial loss. Knowing the color of a car or bicycle does not help explain how fast it will go.)
- c. Mathematical models also allow social scientists to analyze how individual decisions and social outcomes are affected by *institutions and by changes* in individual circumstances (opportunity sets).
- d. For example, one can analyze how changes in voting rules will change incentives, individual decisions, political outcomes, and policy choices. Does it matter whether a nation uses plurality rule or proportional representation to select its parliament or legislature.
- e. (In many cases, the predicted effect on behavior is largely independent of the particular goals that individuals have. The prediction that individuals buy less of a product as its price increases, evidently holds for most products and most individual goals.)

**A. The Spatial Voting Model is one of the most widely used representations of voter behavior in "rational choice" political science.**

- i. The spatial voting model assumes that it is possible to represent an individual's ideal combination of public policies as a "point" on a diagram of "policy space."
  - a. *Distance from an individual's ideal point* (policy goal) is then used to represent a voter's preferences over other "less ideal" policy options.
  - b. Voters cannot usually choose their ideal policy or candidate, because those policies or candidates are not on the ballot. So, instead, voters vote for the "best" (most preferred) of the available policies or candidates.
  - c. In the spatial representation of voter preferences, a voter prefers a policy or politician "A" to policy or politician "B" *if and only if* "A" is closer to his or her ideal point than is "B".
  - d. Illustrations of voting (1) in a referendum, (2) for 2 candidates in a single dimensioned policy space, and (3) for 5 candidates in single dimensioned policy space.



**B. An important implication of the spatial voting model (within a single dimensioned issue space) is the Median Voter Theorem .**

- i. To see this, place any odd number of voter ideal points along a straight line. (Any set of policy issues that can be arranged along a straight line is a one-dimensional issue space).
  - a. In the figure above there are seven voters who disagree about the proper size of government programs. And since each voter has his or her own opinion about the ideal policy, there are seven voter ideal points.
- ii. **Who is the median voter?**
  - a. The median voter is always the voter in the exact middle of the "distribution" of ideal points. (That is to say, the median voter is the voter with the same number of voters on her left as on her right.)
  - b. In the figure above the median voter is D. There are 3 voters that prefer larger governments than D, and 3 voters that prefer smaller governments.
- iii. **Why is the median voter important?**
  - a. Note first that in any election between two candidates or two policies that the median voter always votes for the policy that wins. This is the *weak form of the median voter theorem*. The median voter always is a member of the majority coalition.
  - b. Note also that the median voter's ideal point can "beat" any other proposal in a referendum.
  - c. To see that the median voter's ideal point is "majority preferred" to every other policy, use the logic of spatial voting to conduct a few elections or referenda with alternative policies to the left or right of the median voter.
  - d. When you use the spatial voting model to "count up the votes," you will find that the median voter's ideal policy always wins. (The median policy is, thus, the "Condorcet Winner.")
  - e. For example, in a contest between D and E above, note that E, F, and G voter for E since E is closer to their ideal points than D is. A, B, C, and D vote for D since D is closer to their ideal points than E is. Thus, **D wins**, 4 votes to 3.
  - f. The same logic holds for a **political candidate** who promises to implement the median voter's ideal point. Such a candidate can "beat" any other candidate in a two candidate or two party election.
  - g. (If the other candidate also promises to implement the median voter's ideal policy, then the predicted result is a "tie," but the median voter still gets her way!)
  - h. The *strong form of the median voter theorem* says that the median voter gets exactly what she or he wants from public policy.
  - i. (The strong form of the median voter theorem may hold because of candidate competition, or because once public policy "stumbles" onto the median voter's preferred policy, there is no other policy that can beat it.)
- iv. The strong form of the median voter theorem can be used to analyze and predict a wide range of public policy outcomes within democracies.
  - a. If the median always gets what she wants, then *any change in the median voter's circumstances tends to change public policy*.
  - b. Thus, policy is predicted to change as the median voter becomes older, richer, more educated, or more risk averse.
  - c. Policy is also predicted to change as suffrage laws change in a manner that changes the median, which of course they did during the nineteenth and early twentieth century in most

parts of Europe as successively poorer voters were added to the electorate and as women received the vote.

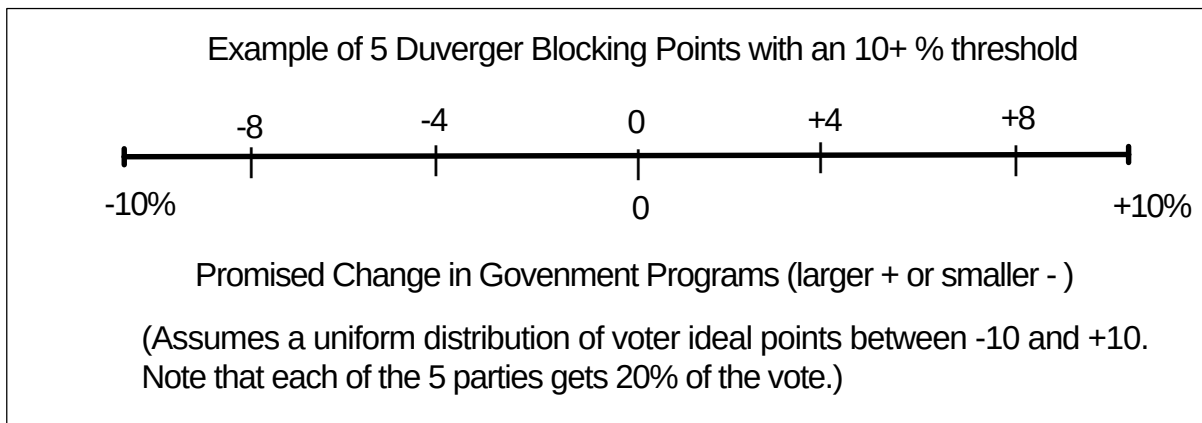
- d. Note that the median voter theorem is *institutionally dependent*. That is to say, it is a model of outcomes within a specific institution: majority rule.
- v. The median voter model is the simplest, yet in many ways the most powerful, of the rational choice models of democratic political decision making. (It is comparable in importance and power to the "competitive model" widely used by economists to analyze market prices and outputs.)
- vi. Unfortunately, there are several theoretical **limitations** to the median voter model which become evident when you drop or weaken some of the assumptions used in the one-dimensional spatial model.
  - a. For example, if there are two or more important policy dimensions, it is less likely that a median voter will exist.
  - b. [Illustration: ***the dividing the pie game***: note that a majority cycle exists between (.3, .3, .4), (0, .5, .5), and (.25, 0, .75) -- the 3 voter shares of the pie are represented as (a, b, c). ]
  - c. It turns out that in the absence of a median voter, political choices under democracy can be chaotic--essentially anything can happen!
  - d. In this case, democracy can only work if other institutions or norms somehow limit political choices or reduce complex political choices back to one-dimensional choices.
  - e. (Rational choice analysis suggests that successful democracies will have to overcome majority cycling, the paradox of voter participation, and voter rational ignorance.
  - f. It is also possible that some voters do not behave as spatial voting models predict.
  - g. (If preferences are not "single peaked" then it is possible to have cycles in one-dimensional models as well.)
- vii. Fortunately, a good deal of statistical work suggests that the median voter model is a useful first approximation of majoritarian political outcomes for a wide range of policies.
  - a. These results suggest that the assumption of "one-dimensional" policy spaces is a good approximation of how voters actually choose policies.
  - b. (A policy space can be considered to be "one dimensional" as long as all voter ideal points lie along a straight line--a left-right political spectrum--even if there are many relevant policy dimensions.)
  - c. (Alternatively, it might be the case the other institutional features of real world democracies solve the cycling problem. Perhaps, institutions "induce" equilibria because of features other than elections.)

### C. Readings: Shepsle and Bonchek: Ch. 4, 5, 7

### III. Rational Choice, Political Parties, and Electoral Institutions

#### A. Political Parties under Plurality and Proportional Representation Electoral Systems

- i. Political parties can be thought of "clubs" formed by politically active people with similar views about ideal public policies.
  - a. One of the most important "club goods" produced by political parties is **information**.
  - b. Political parties select their own members (and exclude other nonconforming politicians) so that a candidate's "party label" tells voters a lot about his or her political views.
  - c. Modern political parties also choose a party platform or manifesto which all of its members are supposed to support. Party platforms or manifestos also allow voters to more easily know what policies its members favor.
  - d. Political parties also help organize, fund, and coordinate candidate campaigns for elective office.
  - e. All of these club services give members in political parties an electoral advantage over independent candidates. (All these practices increase the likelihood that voters will vote in favor of a party's candidate over an independent, other things being equal!) This makes politicians willing to "pay a price" to belong to a political party.
- ii. According to **Duverger's Law**, the *number of viable political parties* varies with the voting rule used.
  - a. Duverger argues that in equilibrium parties adopt platforms that prevent additional parties from entering and winning an election. (These platforms are sometimes called "blocking positions.")
  - b. Consequently, under plurality rule, there is a tendencies for only two major parties to be supported. One party takes a center right position and the other takes a center left position. (Under plurality rule, the candidate with the most votes wins office. This electoral rule is sometimes also called the "first past the post" electoral system.)
- iii. Under proportional rule many more parties tend to be viable in equilibrium.
  - a. The number of parties supported under PR depends on the electoral threshold which determines eligibility for seats in parliament.
  - b. There can be more than one stable set of "blocking positions" for a given participation threshold. However, they share the property that each party receives just less than twice the threshold vote, just under 20% of the vote in the case of a 10% threshold. This alignment of parties prevents the entry of a new party.
  - c. In the illustration below, there is a 10.1% participation threshold, which can support a **minimum of 5 parties** at Duverger blocking positions.
- iv. *Coalition Governance is a predicted consequence of PR electoral rules*, as is the relative importance of political parties and party leadership.
  - a. Many more parties tend to exist under PR election rules, and thus it is unlikely that any single party will have a majority of the seats in parliament.
  - b. Because the order of candidates on party lists determines what people actually hold office, party leaders can control who serves in government by controlling the order of candidates on the lists.



## B. Coalition Governance

- i. The constitutional rules that determine how a government is formed and the "dimensionality" of political competition can both affect public policy within PR systems.
  - a. In cases in which a single party is asked to form a government, the party chosen has bargaining power. It has agenda control, and can make offers to potential coalition partners to the right and left which allow it to implement more of its platform, to secure the most valued ministries, and also to provide other policy advantages to its supporters, as for example with special tax laws.
  - b. (A "formateur" party can make "all or nothing" offers to prospective coalition partners, and assemble a coalition without compromising very much in terms of its platform.)
- ii. In other government formation rules, several parties may compete to assemble majority coalitions. Platforms will have to be adjusted in this case to attract enough coalition partners to form a government.
  - a. In such cases, the "compromises" necessary to build a majority coalition will tend to move policy toward the median voter's ideal point.
  - b. Recall that in a one-dimensional policy space, the winning coalition must secure the membership of the **median representative** or MP.
  - c. If competition is relatively intense along a one-dimensional policy space, the coalition organizers will have to offer the median representative exactly what "she wants," or risk losing her support.
- iii. In multidimensional policy domains, coalitional government often tends to be **unstable** without other supporting institutions or norms.
  - a. The problem of majority rule cycles mentioned above can also be interpreted as a coalition instability problem under majority rule. [Illustration: see the dividing the pie game above.]
  - b. Coalitional instability, as in Denmark and Italy, is thus a predicted consequence of parliamentary governance within PR election rules.
  - c. However, coalitional instability does not necessarily mean that government policies are unstable, because most members of the ruling coalition typically remain in office while a few "partners" come and go. (Moreover, the national bureaucracy is largely unaffected by the turn over over governments.)

## C. Readings: Shepsle and Bonchek: Ch. 7, 11, 16

## IV. Rational Choice Dilemmas and Institutional Solutions

### A. Productive institutions as solutions to public goods and externality problems

#### i. The **Prisoner's Dilemma** (PD) game.

- a. In many social settings (although not all), independent self-interested decision making generates socially perverse outcomes, in the sense that all parties are worse off than they could be if they coordinated their decisions.

b: Illustration of a Prisoner's dilemma

|              | Bob's Choices |              |
|--------------|---------------|--------------|
| Al's Choices | cooperate     | defect       |
| cooperate    | (3,3)         | (1,4)        |
| defect       | (4,1)         | <b>(2,2)</b> |

The numbers inside the parentheses are individual payoffs. They are written as (Al, Bob) for each (row, column) combination of strategies.

- c. Rational choice implies that when Al decides whether to "cooperate" or "defect," she chooses the strategy that **maximizes her expected payoff**.
- ii. To maximize her expected payoff, Al must consider her payoffs if Bob cooperates (3 or 4) and also her payoffs if Bob defects (1 or 2). Notice that in this case, **Al is better off defecting** regardless of what Bob does because  $4 > 3$  and  $2 > 1$ .
- a. (In such cases, Al is said to have a *dominant strategy*, and rational choice implies that Al will "defect.")
- b. If you repeat this process for Bob, you will find that Bob also will choose to defect. Again,  $4 > 3$  and  $2 > 1$ .
- c. Thus the independent rational choice equilibrium of the PD game is (defect, defect) which yields payoffs of "2" for Al and Bob (2,2).
- d. At this (**Nash**) equilibrium, neither Al nor Bob can change their own strategy without making themselves worse off.
- e. (Nash won a Nobel Prize in economics for his contributions to game theory.)
- iii. However, note that both Al and Bob would be better off if they both cooperated:  $(3,3) > (2,2)$ . This is the "**dilemma**" of all PD games.
- a. Note that the "dilemma" depends only on the relative size of the payoffs and not their levels.
- b. For example, the same equilibrium and same problem would also follow from a game in which the payoffs were ten times as large, 3 units smaller, or each payoff was squared.
- c. The logic of PD games applies to a surprisingly wide range of social interaction, because it can be easily extended to multi-player and multi-strategy settings.
- d. Not every "non cooperative" game generates a "dilemma," but there are a wide range of settings in which individuals would all be better off if they "cooperated" rather than "defected."

#### iv. Solving PD problems



- a. The rational choice model implies that "pay offs" of the PD game will have to be changed to achieve cooperation, because mutual defection is always the equilibrium given PD payoffs.
- b. One possibility is to form a "club" that punishes club members for defection.
- c. Another possible solution is for Bob and Al to sign a contract that commits them both to cooperation, and the contract will be enforced by a judicial system.
- d. In either case, the rational choice model implies that solutions to PD games *require changing the private payoffs of defection*--either by club punishments or by the court imposed penalties for breach of contract.
- v. If institutions can be found that solve a PD problem, the affected parties have an incentive to adopt them--as long as the institutions are not too expensive to implement.
  - a. In the example, Bob and Al would each pay up to "1" unit to avoid the PD outcome.
  - b. Many of the best policies and most valuable services that modern democratic governments provide can be thought of as solutions to various PD games that emerge in large groups of strangers.
  - c. Many of the "social norms" that people use in their private lives also tend to solve small scale PD games that are common in small groups.
  - d. (The existence of such norms provide the most plausible explanation of the experimental results on prisoner's dilemma games, which find considerably less defection than is predicted by simple rational choice models.)
  - e. However, it also bears noting that not all PD games have inexpensive institutional solutions.
- vi. Application: the PD game applied to a public goods problem: building a dike (Solution: cost sharing).
- vii. Application: local externality problems: tragedy of the commons (Solutions: private property or collective management)
- viii. Application: Mancur Olson's dilemma of collective action (Solutions: standing organizations such as local or national governments and elections)
- ix. Application: international relations and environmental problems (Are there solutions?)

## **B. Other Related Political Agency Problems and Institutional Solutions**

- i. William Niskanen argues that public policy institutions cause most bureaucrats to prefer larger budgets to smaller budgets because larger budgets allow the agency to better implement its policy mandates and also because larger budgets can be used to provide the bureaucrats, themselves, with more comfortable and interesting lives.
  - a. Bureaucrats will, thus, use their informational advantage to negotiate for larger budgets than in the interest of government or voters.
  - b. [Niskanen's model of a budget maximizing bureaucracy assumes that bureaus know the feasible range of regulations and/or the methods through which public services can be produced far better than their "political principals" (members of parliament or voters).]
  - c. Institutional solutions include: bureau competition, audits by outside experts, and protection of whistle blowers.
- ii. The informational problems associated with monitoring the bureaucracy are fairly general and apply to democratic politics in general.

- a. Voters have very weak incentives to be informed on political platforms or candidates.
  - b. "Rational ignorance" is a sensible choice for most voters.
  - c. Institutional remedies include free speech, unregulated newspapers, and public education.
  - d. (Fortunately, the voter ignorance problem is moderated somewhat by majority rule itself which can aggregate information in a manner that allows far better "median voter" decisions than would be made by a typical voter--see the Condorcet jury theorem.)
- iii. In cases where voters care about a number of policy dimensions and their ideal points are not symmetrically distributed about some pivotal voter (a multidimensional median voter), majority rule is cycle prone.
- a. The cycling majority problem implies that democracy cannot actually make decisions!
  - b. Moreover, in that case, a powerful "agenda setter" can organize a series of votes so that she or he always get their way.
  - c. Solutions: divide agenda control to reduce the concentration of power, yet still reduce the range of possible proposals, as with committee and subcommittees, and Robert's Rules of Order. (Other non-majoritarian decision rules could also be used . for example, cost-benefit analysis could also be used to decide some policies.)
  - d. The cyclic-majority problem is moderated by voter ideology which tends to reduce the dimensionality of the issue space. In the limit, ideological competition can create a single dimensioned issue space, as with the "left-right" political & policy spectrum.
  - e. Widely, held social norms may also reduce the number of acceptable policy proposals in a manner that reduces the likelihood of cycles.

**C. Readings: Shepsle and Bonchek Ch. 8, 9, 10, 13**