Rational Choice and Politics:

An Introduction to the Research Program and Methodology of Public Choice

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I. Public Choice as Rational Choice Politics

This chapter provides a general roadmap to the methodology and main lines of research undertaken by public choice researchers. The public choice literature is, with minor exceptions, characterized by its use of rational-choice models to understand politics: how policy choices are made, how political institutions affect such choices, and how those institutions emerge and evolve. It is thus appropriate to begin with a short review of the rational choice principle and rational-choice–based modeling. Readers who are fully familiar with the rational choice principle and accept it with little reservation might want to skip the first part of this essay and proceed to part II which provides an overview of the public choice research program.

The use of the rational-choice principle to understand politics and political systems is among the oldest and most enduring methodologies in social science. It has been used since Aristotle and has greatly enhanced our understanding of both governance and the institutions of governance. Nonetheless, the rational choice principle is often misunderstood by persons who encounter it for the first time. This is partly because the term "rational" is used somewhat differently by those who use it in research than it is used in day-to-day English. Researchers use the term "rational" to mean "deliberate" or "purposeful," rather than intellectually detached and sophisticated. A "rational action" is undertaken with particular consequences in mind. Such choices are not necessarily—or even usually—based on a thorough scientific analysis of possible consequences or a deep philosophical examination of the best objectives for human action.

There are several ways to justify the use of the rational-choice principle. The one most common is what might be called the post-Kantian utilitarian or pragmatic explanation. That defense argues that the rational choice principle and models grounded on that principle are

used simply because they are useful (Friedman 1966, Hamlin, 2017). Rational choice models provide insights that ultimately allow us to live more effective, fruitful, satisfying lives.

An alternative defense is sketched out below. It suggests that the rational choice principle is grounded in natural law, rather than convenience. As a consequence, the rational choice principle provides a partial characterization of all deliberate action in much the same manner that the gravity principle provides a partial explanation for the paths of all inanimate objects on earth and among the stars.

A. Principles of Motion

The philosophical and scientific approaches to the universe begin with the assumption that the world is simpler than it appears—that a handful of principles can account for the complex phenomena that we observe around us and experience in our lives. This is not obviously the case, and many scientists believe that such general principles do not exist for biology or social science. For them, the case study method is the only approach possible and any principles discovered are at best only rough approximations that are relevant only for very narrow circumstances. In defense of the case-study perspective, advocates can point out that every "law of nature" is less than perfectly true. There are exceptions to all explanatory principles.

Those believing that truly general principles exist suggest that such principles are often found after first identifying regularities among well-understood cases. Although there may be thousands of local regularities, these are ultimately accounted for by a handful of deeper more general principles. We know from personal experience, for example, that a sheet of paper or leaf falling from a tree will reach the ground more slowly than a stone or plumb bob dropped from the same height. Nonetheless, all reach the ground or some similar place of rest. The gravity principle implies that all objects fall toward the ground. Indeed, as Galileo's research implied, all would fall at the same rate on a given planet, except for the effects of other forces such as those produced by the air and wind.

Although exceptions may exist, much is explained, and much is implied and understood that could not have been without such general principles. Indeed, most of what we learn in school is based on lectures, exercises, and case studies selected to illustrate

general principles. Principle–based knowledge allows us to understand much that would otherwise be hidden in the complexity and chance events of personal experience. It is also far easier to pass on to the subsequent generations than a catalog of correlations and haphazard personal experiences.

Developing principles that account for the actions of living things is clearly more difficult than characterizing the paths of inanimate objects. Had Galileo dropped two living birds of different weight from the Tower of Pisa, rather than two lead balls, his experiment would have revealed little about gravity. Animate objects do not merely fall or react passively to external forces, although they too are subject to such forces and their paths are partly explained by the gravity principle and Newton's three laws of motion. Animate objects, in contrast to inanimate objects, produce and direct the forces at their disposal.

An animate object's ability to store and direct the energy at its disposal has several implications for its paths. For example, each living creature has material and energy needs that must be met if it is to remain animate in the environment in which it finds itself. The energy sources and materials required to sustain animation characterize the necessities of life. In rich settings, random actions are often sufficient to acquire those necessities; however, in difficult environments, only a subset of possible actions are likely to do so. In such settings, purposeful actions are required—namely, those which tend to yield sufficient (net) energy and material to sustain life and allow reproduction.

This in turn implies that survival in demanding settings is enhanced by the ability to identify possibilities and determine the actions that maximize survival prospects. No creature can afford to waste energy by repeatedly choosing unfruitful or risky paths. It is thus necessity which provides the biological foundation for the rational-choice principle. Mobile creatures are genetically predisposed to effectively use the resources at their disposal. They must in order to survive.

For mobile creatures living in challenging circumstances, the rational choice principle is thus an essential part of their nature. It is a prerequisite for survival.

B. Principles and Human Action

What distinguishes human optimization from that of other creatures is our ability to more completely anticipate the likely consequences of alternative sequences of actions and to select among possible sequences actions with those consequences in mind (our ability to plan). Both our ability to anticipate and choose have been enhanced by our ability to develop and apply principle-based knowledge.

That principles guide a good deal of human action is obvious, once noted. For example, choices about what to eat, what to wear, and about the kinds of careers that lead to good or at least satisfactory lives are influenced by principles from nutrition, fashion, economics and ethics, among others. On a wintery day, principles of friction and thermodynamics inform our choice of transportation and clothing. The maxims and rules of thumb that most of us use in our daily lives are often grounded in general principles—ideas that can be used to anticipate the consequences of actions in a broader range of circumstances than experienced by any single person.

Insofar as better principles allow better lives to be lived, scientific and philosophical progress systematically improve the paths chosen by individual members of the human species. The accumulation and transmission of principles across generations has thereby vastly enriched the domain of human life and is also a distinguishing characteristic of our species. Thus it is clear that a variety of principles need be taken into account if human actions are to be understood.

That all purposeful actions might be influenced by a single principle may strike some readers as absurd. Yet, all mobile creatures have limited resources (time, energy, material, social relationships, knowledge, creativity, etc.) available for pursuing the necessities of life. To effectively advance one's interests with the resources at hand requires optimization. As a consequence of the mathematics of optimization, all deliberate actions exhibit common properties and are, within familiar circumstances, largely predictable.[1]

[1] This is not to say that the actions chosen are fully predictable. Although there are common human interests, their relative importance and conclusions about the best means for advancing those interests vary somewhat among persons. There are cases in which random behavior is the best method of advancing one's end, as in many children's games (paper, scissor, rock) and in military and other grownup contests where surprise increases prospects for success.

C. The Rationality Principle and Methodological Individualism

The public choice research program is one of many deliberate efforts to use and extend our principle-based knowledge of social and psychological phenomena. It is grounded on the rational choice principle (the necessity of optimization) and is focused on particular choice settings, namely those that determine government policies. The analysis undertaken tends to be "individualistic" in that it regards life in society to be the joint product of individual choices and actions. Although shorthand descriptions of groups and organizations are often useful, the rational choice approach reminds us that actions are chosen and undertaken by individuals. Even when acting in groups, individuals decide whether and the extent to which group decisions are followed.

The rationality principle does not imply that individual choices are entirely independent of one another, nor that families or communities are unimportant. Individuals often seek information and advice from others; they may seek the approval of others through their actions; their aims may include the welfare of others. It does, however, imply that it is individuals that choose and undertake actions.

Because groups can often achieve more together than acting separately, group activities are often undertaken. To do so, the individual members of a group must be "organized" in some way, because the individuality of human decision making and action generates numerous problems that groups have to overcome to effectively advance their shared interests. There are, for example, numerous free rider and coordination problems.

Solutions to these problems often require a formal method of making group decisions and rules that encourage group members to act in accord with decisions reached. Successful organizations create procedures and rules to address such problems. Governments and governance, as one of many such organized groups, emerge through such efforts.

D. Rational Choice Models

At this level of generality, the use of the rational-choice principle to understand human affairs and history is nothing new. Literature, history, religion, and social science have been populated with persons exhibiting purposeful behavior and facing challenging tradeoffs and

constraints since the days when efforts to discern principles for living and governance first emerged.

The rational choice principle implies that people attempt to determine the actions that produce the most desirable consequences given various constraints on what is possible. Knowledge of an individual's interests and circumstances provides a good deal of insight into the actions chosen in the past or to be chosen in the future, and of the factors that generally influence such choices. What distinguishes public choice and economic research from most other rational choice–based research is its use of mathematical representations (models) of the processes of deliberation, choice, and action.

Mathematical models normally assume that what individuals ultimately desire can be represented with a single over-arching goal, as argued long ago by Aristotle in his book on ethics and subsequently by utilitarians from Jeromy Bentham onward.

> Happiness is ... choose[n] always for its own sake, and never with a view to anything further. Honor, pleasure, intellect, in fact every excellence we choose for their own sakes, it is true, because we would choose each of these even if no result were to follow, but we choose them also with a view to happiness.
>
> Happiness is manifestly something final and self-sufficient, being the end of all things which are and may be done. (Aristotle [330 BC]. *Nicomachean Ethics*, p. 33-4).
>
> By utility is meant that property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness (all this in the present case comes to the same thing), or (what comes again to the same thing) to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered. (Bentham, J. [1780]. *An Introduction to the Principles of Morals and Legislation*, KL 3526-3528).

This not to say that the best methods for achieving eudaimonia or utility are one-dimensional. Neither Aristotle nor Bentham would argue that, nor would contemporary model builders.

Constructing models of choice based on the Aristotelean or utilitarian approach requires mappings of actions into consequences (utility or net benefit functions). It also requires characterizing the actions that are possible in particular circumstances (feasible or opportunity sets).

Any observations contrary to the implications of rationality in this sense is normally attributed to an analyst's misunderstanding of the goals or constraints of the individual(s) of interest, or to aspects of the persons or settings that were abstracted from to facilitate analysis. For example, few individuals work as hard or effectively as possible, even though doing so would increase their income and thereby capacity for advancing material goals. However, such behavior can readily be accounted for by including desires for other activities (recreation, reflection) or limits on individual physical or mental capacities (stamina, knowledge, scarce time and attention).

A person who wants "U" will use his or her available time, energy, talent, and other resources to achieve as much of "U" as possible. After all, why would anyone use their resources less well than they could, given what they know to be possible? [2] To those employing utility representations of the ultimate goal of deliberate action, the term "rational" came to mean utility-maximizing.[3]

E. The Geometry of Choice

The simplest rational choice models assume that individuals have an ideal point that represents the combination of goods and services or strategies that generate the highest possible level of utility, a bliss point. The further one moves away from that ideal, the lower utility tends to be. This "spatial" characterization of tradeoffs implies that "distance" from one's ideal point can be used to rank the alternatives.

Figure 1 about here.

[2] Model builders routinely abstract from issues concerning whether persons have achieved what Aristotle referred to as self-mastery and so can always implement the decisions that emerge from one's deliberations. To deliberate is to choose, to choose is to act.

[3] In the mid twentieth century, a few theorists moved away from the utility representation of human choice, and demonstrated that models could be based on preference orderings without the assumption that choices had a common purpose or metric. See for example Debreu (1959) or Sen (2014). Those models, however, never became fully mainstream in microeconomics or game theory, and were rarely applied in public choice or political research.

Two-dimensional choice settings can be represented geometrically as in figure 1. In such diagrams, utility levels are represented in a manner analogous to a topological map, with "indifference curves" (the circles) representing utility levels rather than feet or meters above sea level. The inner circles are normally assumed to have higher utility levels than the outer ones. The bullseye in the middle (x*, z*) is this individual's ideal or bliss point in the X and Y domain of choice.

The possibilities available to an individual can also be represented geometrically. The wavy line running represents the upper bound of this individual's "opportunity set." The feasible possibilities are the points below and along the wavy line. The highest utility level that can be reached in this opportunity set is that associated with (x', z'), which is the choice that a utility-maximizing person with these goals (indifference curves) and opportunities (constraints) would choose. The geometry of the model clearly implies that as opportunities change, so will choices and in predictable ways.

The most general implications of rational choice models are those associated with changes in opportunity sets. These require an understanding of shared human interests, but not of the specific preferences of individual members of a community.

Differences among individuals are predictable consequences of optimization whenever their mappings from outcomes into utility (tastes) differ or when perceptions about what is possible differ. Individuals facing similar constraints take different actions because their tastes or aspirations differ. Individuals with identical goals may act differently because their constraints differ. In either case, individuals are presumed to do approximately the best they can to advance their goals, given their resources.

It bears noting that accepting the rational choice principle as a natural law does not imply that every rational choice model sheds light on human behavior, because the models abstract from many details of real choice settings. At this point, the post-Kantian utilitarian defense returns to relevance. A particular model's assumptions may be justified (partly) because they provide useful insights into a real phenomenon that would otherwise have been missed or misunderstood.

II. Rational Choice Politics and Public Choice

The rational choice principle has long been applied to understand public policies and institutions. The first book in political science, Aristotle's *Politics,* made use of it, as have many other classic works in political science and economics. What distinguishes public choice research from the classical rational-choice approach to politics is not the application of the rational choice principle, per se, but its use of rational-choice models and also of statistical and experimental methods to test propositions that emerge from those models.

The first rational choice models of politics were developed by and Borda (1784) and Condorcet (1785), who used numerical representations of preferences to analyze voting rules.[4] Rational choice–based models of markets and price determination were worked out in the next century by specialists who came to be called economists. After World War II rational-choice models were used to analyze human interactions in settings of rivalry and cooperation by specialists who came to be known as game theorists.

Public choice models were worked out after that war was over and the West returned to normalcy.

A. A Point of Departure: Rational Voters and the Median Voter

Voter decisions are often relatively simple ones if we assume that voters understand how alternative public policies affect their interests. In most cases, the matters voted on consist of handful of alternatives: yes or no on a referendum, or a few candidates or parties in elections for representatives. If voters vote sincerely, they will cast their votes for the policies or candidates that are expected to most advance their interests.

Figure 2 retains most of the geometry of the Figure 1, but the axes now represent government services or other government policies. Government service 1 may be public education and government service 2 may be healthcare. The feasible set consists of two alternatives to be voted on in a referendum: two specific combinations of government services, R_1 and R_2. The former, R_1, may represent the status quo and the latter, R_2, a proposed change of some kind. Note that R_1 is closer to this voter's ideal point and so is on

[4] See Young (1988) for an overview of Condorcet and Borda's reasoning. See McLean and Urken (1995) for a history of the application of rational choice models to politics. See also chapter 85.

a higher indifference curve. This voter thus prefers R_1 to R_2, and will vote against the proposed reform—although neither policy combination is ideal from his or her perspective.

Figure 2 around here.

Once models of voter deliberations and choice are worked out, they can be used to analyze elections and other methods for making group decisions. The collective choice method first analyzed by public choice scholars was majority rule. The cases that attracted interest were those in which voters disagreed about the best policy because of differences in goals, circumstances, information, or ideology. The collective decisions analyzed included public policies, representatives, and constitutional reforms.

Figure 3 illustrates an election between two alternatives (R_1 and R_2) among three spatial voters (A, B, and C) whose ideal points lie along a straight line. Given these voter preferences and possibilities, R_2 wins the electoral contest because it is closer to a majority of voter ideal points (A and B vote for R_2, while C votes for R_1.) If the votes are being cast in a referendum and R_1 is the status quo, the outcome changes the combination of services provided (from R_1 to R_2). If R_1 and R_2 are policies supported by candidates 1 and 2, candidate 2 wins the election. His or her platform, R_2 will be adopted, however, only if candidate 2 is honest and plays a decisive role in the representative body to which he or she is elected.

Figure 3 around here.

One interesting property of the assumed linear alignment of voter ideal points is that whenever the voter in the middle's ideal point is one of the two alternatives voted on, that policy combination will receive majority support. For example, when posed against R_2, B and C support "B" over R_2. When posed against R_1, A and B support "B" over R_1. In the diagram, B's ideal point is the median of the distribution of voter ideal points and it will defeat any other policy proposal. B is said to be the median or pivotal voter and his or her

ideal point is said to be the Condorcet winner. It can defeat any other alternative in a referendum decided by majority rule. This is not a property of all three voter contests, but is implied by all linear alignments of spatial voter ideal points.

One can add one voter to each side of B whose ideal points are along the same line without changing the results, or N voters on each side of B with their ideal points distributed along the same straight line. As long as B remains the median voter, his or her ideal policy remains the Condorcet winner.

This result is of interest for democratic politics, because candidates for elective office tend to be drawn towards platforms resembling "B." The candidate whose platform is closest to the median ideal point tends to win the election. Indeed, in elections between two pragmatists who strongly want to win office and are indifferent about policies both platforms tend to converge to "B." In such cases, one can imagine rival candidates reading each other's speeches—albeit with their own unique method of reading—without surprising any of their supporters.[5]

Convergence to moderate positions has long been noted by political observers of democracies, but the median-voter equilibrium of electoral competition was not formally developed until Anthony Down's (1957) *Economic Theory of Democracy*.

B. Electoral Disequilibria

The median-voter equilibrium depends on the linear distribution of ideal points—or more generally on a distribution of ideal points that has a unique multidimensional median or pivotal voter (Plott, 1967). Unfortunately for those who believe in majority-rule based governance, many distributions of voter preferences lack this property.

An example of instability can be created by moving Al's ideal point up and/or to the right. Figure 4 illustrates one of the great puzzles of rational choice models of elections, the so-call cycling or intransitivity problem. Note that in a contest between R_1 and R_2, R_2 will win because it is closer to A's and B's respective ideal points. In a contest between R_2 and

[5] In cases in which there are an even number of voters, there is no unique Condorcet winner. But the convergence toward central positions still occurs because points on the interval between the two most central voters tend to be majority preferred to points (platforms) that are significantly outside that interval. The more voters there are, the shorter this interval tends to be.

R_3, R_3 will win because its closer to B's and C's ideal points. Nonetheless, in a contest between R_1 and R_3, R_1 wins. (R_2 defeats R_1 and R_3 defeats R_2, but R_1 defeats R_3.) The majoritarian ordering in this case is intransitive and there is no policy that can defeat all others. In the absence of a linear or symmetrical distributions of special voter preferences, there is no unique electoral center of gravity for a group of spatial voters.

Figure 4 around here.

The intransitivity/cycling problem was noted by Duncan Black (1948) in a paper that launched the public choice research program and which was generalized by Arrow (1951) a few years later. McKelvy (1976, 1979) demonstrated that essentially any outcome is possible under majority rule in electorates that lack a median voter.

Given the relative stability of Western democracies, the ease with which cycles can be generated in rational choice–based electoral models created a major puzzle. If voter deliberations can be characterized in the manner of rational-voter models, there must be other factors in well-functioning democracies that are missing from simple rational choice–based models of elections.

One possible explanation for the observed stability of most policies in Western democracies is that the distributions of voter ideal points in the West are approximately linear. Sowell (2007), among other, argues that there are natural associations among ideas that tend to reduce the effective dimensionality of voter preferences. Evidence in support of that possibility was provided by Poole and Rosenthall (1985) who developed a methodology for analyzing the implicit dimensionality of voter preferences over issues (See chapters 86 and 87). They found that a single dimension (linear representation of ideal points) can explain more than 70% of all roll call voting in the U. S. Congress.

Another possible explanation takes account of the fact that the standing procedures through which policies are actually chosen in stable democracies are far more complex than majority rule. It is possible that these more complex procedures may produce the observed

stability. Shepsle and Weingast (1981) demonstrated that a variety of procedural rules can eliminate or reduce the likelihood of cycles.

Note that both these solutions provide possible explanations for the dearth of democratic countries in world history. Without a linear distribution of voter preferences or good fortune in standing procedures for making collective decisions, majoritarian governments tend to be indecisive and unstable, and so unlikely to survive in contests against authoritarian regimes.[6]

C. Political Agency Problems and the Influence of Interest Groups

In cases in which voters are well informed, elections are competitive, and institutions supportive of stability, but not themselves otherwise influential, democratic policies tend to advance the interests of moderate voters. As a consequence, relatively extreme voters on the "left" and "right" will be constantly disappointed with the policies adopted. Nonetheless, any deviation from policies that advance moderate voter interests will be punished in the next election. These are not the only theoretical possibilities, but they accord well with the experience of liberal democracies, and were noted by scholars well before the median vote model provided a plausible explanation for that regularity.[7]

However, rational choice models also imply that in policy areas in which voters are largely uninformed or ignorant, elected officials are free to advance their own interests even if they fail to advance median voter interests. Fear of scandals disciplines elected officials and

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[6] An alternative explanation for the stability of contemporary Western democracies is that voters are error prone in a particular way. The stochastic voter literature (Hinich 1977, Coughlin and Nitzan 1981) demonstrated that if voters were more likely to vote for the candidate whose platforms generated the greatest utility, but would at least occasionally vote for candidates whose platforms produced less utility, that multidimensional majoritarian elections tended to generate stable moderate outcomes. In a two candidate election, the usual representation assumed that the probability of voting for candidate 1 can be written as $P_1 = (U_1/(U_1+U_2)$ and the probability of voting for candidate 2 is $P_2=U_2/(U_1+U_2)$ where U_1 and U_2 are the utility levels realized by the voter of interest from candidate 1 and 2's platforms respectively. This line of research is neglected in this chapter to focus on the models that rely upon the usual utility maximizing characterization of rationality.

[7] Aristotle (330 BCE/2013), for example, notes the pivotal and stabilizing role of the middle class in democratic polities: "It is clear, therefore, that the political community that depends on the middling sort is best as well, and that those cities are capable of being well governed in which the middling element is numerous— most particularly if it is superior to both of the other parts, but if not, superior to either of them; for when added to one it will tip the scale and prevent the opposing excesses from arising. (Aristotle's "Politics": Second Edition (pp. 115-116). University of Chicago Press.

"Any one of them taken singly is perhaps inferior in comparison [to the best man]; but the city is made up of many persons, just as a feast to which many contribute is finer than a single and simple one, and on this account a crowd also judges many matters better than any single person. Aristotle's "Politics": (pp. 90-91).

their staffs in these unstudied areas of policy to some extent, but significant discretion remains (McCubbins and Schwartz,1984).

Whenever the interests of government officials differ from those of middle-of-the-road supporters, agency problems are likely to emerge. For example, agency problems can arise in electoral campaigns. To raise funds for such a campaign, candidates may in effect "sell" little-known tax preferences, regulations, tariff barriers, government contracts, and so forth to groups that benefit from such policy preferences in exchange for campaign contributions or other promises of electoral support. Modest changes in rules for calculating taxable income, effluent emissions, energy consumption, price supports for agricultural products, eligibility for government contracts, etc. that pass unnoticed by most voters can be worth millions of dollars to the firms, unions, and industries affected by those rules. Such groups are likely to contribute to the campaigns of candidates on the "right side" of tax and regulatory issues.

If the resources obtained from such agreements can be used to persuade voters that a particular candidate or party is more worthy of office than others striving for the same office, such "shady deals" will be rewarded with electoral success and high office.

Olson's (1965) rational-choice model of group actions implies that relatively small groups with relatively intense or large interests are the most likely to organize to support such rules and exemptions. After the elections are over, the same groups will monitor relevant lawmakers to assure that they follow through on their campaign promises and will continue making the case for their preferred policies to relevant officials. Such lobbying contests may ultimately determine the details of public policies from taxation to safety regulation.

In many cases, contests among organized groups that oppose one another take place. For example, a baker's association might attempt to counter a farming cooperative's efforts to increase price supports for wheat, arguing that urban economies will suffer and that some people will no longer be able to afford their daily bread. Such contests over secondary features of policies are often extensive and can consume significant resources (Tullock 1967,

1980, Hillman and Riley 1989). Overviews of this "rent seeking" literature are provided in chapters 24-28.

In addition to the agency problems that exist between partially informed voters and their elected representatives, there are the usual agency problems that every large organization confronts. The interests of those working within an organization are rarely perfectly aligned with their organization's overall goals, whether it is maximizing profits, social welfare, or the interests of moderate voters. The simplest of the many manifestations of agency costs are conflicts over budgets. The individuals that work within the government agencies that develop and implement most policies nearly always benefit from additional resources and so tend to lobby for budgets that are greater than those that best advance moderate voter interests (net of taxes).

This bureaucratic interest in maximizing budgets was noted by Niskanen (1971) about a decade before the agency cost literature emerged in economics. Since expert bureaucrats typically know more about the possibilities for creating and implementing public policies than elected representatives or voters, they can use their informational advantage to persuade legislators to adopt larger budgets than truly optimal for moderate voters (Breton and Wintrobe 1975). They may also lobby for greater discretion over policies than necessary (Migue, Balanger, and Niskanen 1974). Indeed, bureaucratic discretion and its associated inertia may account for a good deal of the observed stability of governmental policies (Congleton1982).

Of course, it is one thing to note that voters do not know the exact manner in which agency problems manifest themselves and another to say that they are ignorant of the possibility of such problems. Reports of vote buying, bribery, and cost overruns often appear in newspapers and other mass media. Insofar as agency problems are costly to voters and those costs can be reduced through general rules that ban narrow policy preferences or the methods through which they are normally obtained, voters will support candidates that promise to adopt such laws. As a consequence, a variety of anti-privilege and anti-corruption statutes have been adopted, along with standing procedures for enforcing those rules.

Unfortunately, rationality combined with limited time and attention also implies that relatively few voters will read the anti-corruption, conflict-of-interest, and revolving-door statutes adopted. Doing so would be too costly (a waste of time) for non-specialists. Consequently, provisions may be included that allow a subset of shady deals to be lawfully consummated—especially ones that advance the interests of elected representatives.

The rational choice principle together with information costs imply both the existence of agency problems and of systematic efforts to address those problems, but also implies that the solutions adopted will be less than perfect.

D. Rational Choice and Constitutional Design

All the above implies that the standing procedures through which public policies are chosen and implemented matter. Elections can be more or less competitive, policies can be chosen in more or less transparent ways, agency problems can be more or less well addressed, and any laws adopted may be more or less well-conceived and enforced. Indeed, the viability of majority rule–based decision making may ultimately rest on institutional details.

The rational-choice based study of the core procedures and constraints of governance has come to be known as constitutional political economy (CPE). Study of the effects of constitutional design, like politics itself, is an ancient field of study stretching back to Aristotle and beyond. What distinguishes the public choice approach from earlier rational choice–based analyses is again the use of rational choice models to understand how constitutional systems operate and the use of statistical and experimental methods to test the hypotheses generated by those models. CPE analysis uses various combinations of electoral, legislative, and interest group models, to deepen our understanding of how the "rules of the game" affect political and economic outcomes.

The constitutional strand of public choice research began with a classic book by Buchanan and Tullock (1962) that analyzed various aspects of the constitution of the United States. They examined the effects of majority rule versus other voting rules, and the effects of bicameralism and federalism. In general, they found that majority rules, bicameralism, and federalism have predictable effects on policy choices. They also demonstrated that those

institutions tend to increase the average net benefits from day-to-day policy making for most voters.

Figure 5 around here.

Figure 5 illustrates one of the models developed in the *Calculus of Consent*. It characterizes two tradeoffs among alternative voting rules. Buchanan and Tullock began by imagining a rational participant at a meeting to select among voter rules. Such a voter will anticipate cases in which his or her desired policy passes and net benefits are realized. The same person will also anticipate cases in which he or she is in the minority and bears net costs from the programs adopted. Lowering the required level of consensus (reducing K) makes it likely that more of one's preferred policies will be adopted, but also increases the likely costs borne in cases in which one is on the losing side. As K rises, the average loss from being in the minority declines because the likelihood that a proposal is blocked increases. What Buchanan and Tullock refer to as the external cost curve (C_X) thus tends to decline as K increases. However, as K increases, both the time spent in deliberations and the number of privately beneficial policies that fail to be adopted tend to rise. What they refer to as the transactions cost curve (C_t) thus tend to rise with K. Adding these two cost curves together for the policy domain of interest allows the voter at a constitutional convention to identify the best decision rule for a given domain of policies.

In their analysis, the best rule, K*, minimizes the overall cost of collective decision making, which in figure 5 is approximately majority rule (K = 0.50). In policy domains in where external costs are likely to be greater or more frequent, the average external-cost curve rises (from Cx to Cx'), which changes the shape of the total cost curve (to C') in a manner that implies that a larger K becomes optimal for a typical voter. The best decision rule thus varies with the types of policies under consideration.[8] The Buchanan and Tullock analysis

[8] Buchanan, as a contractarian, anticipates that the uncertainties involved with long term commitments regarding rules for selecting future policies implies that each person comes to regard him or herself as the "average" person in society, and therefore there will be a good deal of agreement about what the best voting/decision rules are. Indeed, he argues that such rules may be unanimously chosen, and thus satisfy contractarian norms. This normative aspect of the analysis, which is important to Buchanan, however, does not have to be accepted to appreciate their genius at using

implies that there is nothing magical about majority rule; fifty percent is simply one of many thresholds that can be used for making group decisions.

The nature of the "best rule," however, is not entirely obvious. This is partly because norms for social choice may vary among voters, but also because they vary among scholars analyzing constitutions. The *Calculus of Consent* uses the contractarian norms for most of its normative analysis. Mueller (1973, 1996) sketches out how utilitarians should approach issues associated with constitutional design. There are other possibilities as well, as developed in Section IV. Assessing the relative merits of alternative constitutional designs requires solutions to numerous positive and normative puzzles.

During the past two decades both theoretical and statistical analysis of the effects of constitutions on public policies have greatly accelerated. The results have largely confirmed the conjecture that the "rules of the game" matter (Voigt 2011). Papers that launched the late twentieth century surge in empirical research on the effects of constitutions include Tullock and Grier (1989), which showed that democracies tend to be richer and grow faster than dictatorships; Knack and Kiefer (1997) which demonstrated that culture matters; Frey and Stutzer (2000) which showed that institutions affect citizen happiness; Persson, Roland and Tabellini (2000) which showed that different electoral rules have consequences on the level and composition of national expenditures within democracies; and Feld and Voigt (2003), which showed that economic development was correlated with the independence of the highest court in the countries of interest.

Given the importance of constitutions, recent CPE research has focused more attention on the origins and evolution of formal and informal constitution procedures. Among the first public choice scholars to analyze the origins of governments using rational choice–based analysis were Buchanan (1975) and Olson (1993). Buchanan analyzes how law and government institutions may emerge from Hobbesian anarchy through voluntary agreements. Olson notes that governments that emerge through conquest have good

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rational choice models to examine the selection of organizational and governmental voting rules and divided forms of governance. The use of rational choice models and statistical evidence to better understand the effects of constitutional rules, constraints, and architecture has continued since the publication of the *Calculus of Consent*, but with a substantial increase in interest after the collapse of the Soviet Union.

economic reasons (maximizing their tax revenues) to provide a variety of useful services, including law enforcement and national defense.

Among the first to use rational choice–based analysis to explore the way constitutions are revised through time were Voigt (1999) and Congleton (2001). Indeed, Congleton (2011) argues that western democracy emerged through such negotiations. Most of this work implies that peaceful negotiations can induce significant reforms, although revolutionary threats may also induce constitutional reform. Section V provides an overview of public choice contributions to constitutional research.

E. Human Nature, Ignorance, and the Nature of Voter Ideal Points

The last twenty years has also witnessed increased interest among public choice scholars in what might be called the nature of voter interests. To what extent can human action be regarded as motivated by wealth and material comfort? To what extent do moral or other aspirations affect the deliberations and actions of a typical voter or government official? Is it always the case that a person's deliberations when purchasing goods in a grocery store are essentially the same as when choosing among candidates or party platforms in a voting booth?

Most public choice research assumes that that individuals behave similarly in grocery stores and voting booths. This approach both simplifies the models and accounts for the fact that the same minds undertake both choices. There are, however, differences in the extent of control that a person's exercises over his or her grocery cart and over electoral outcomes. The contents of a grocery cart are directly under an individual's or family's control, but this is not the case for electoral outcomes.

This difference may induce individuals to behave differently in the two choice settings. For example, that difference implies that voters have weaker incentives to be informed about alternative policies than alternative items on grocery store shelves (Downs 1957). They may thus be somewhat more mistake prone in their electoral choices than in their grocery store purchases. It is also possible that the disconnection between voting and outcomes may induce voting behavior that is divorced from policy consequences. Voters may cast a vote that increases their self-esteem at a lower cost in the election booth than in the grocery store.

One may be proud of one's virtuous vote after it is cast regardless of the electoral outcome, but would have to eat his or her virtuous fare for supper after purchasing it at the grocery store. In recent decades, models that include such "expressive" interests have been developed and employed in a subset of economic and public choice research (Brennan and Hamlin 1998, Caplan 2001). (See also chapters xx).

It is also possible that some interests are given greater weight in political choices than in private choices. Voters may, for example, take greater account of the effects of their electoral choices on others, because public policies have more obvious effects on others than their's choice of fruit or computers. Attempts to identify such broad interests have also motivated a good deal of recent experimental research on voting and to a lesser extent on interest groups. See, for example, chapters 16, 17, 36, and 90.

Another area in which consumers and voters may differ concerns informational constraints. The benefits and costs of public policies are often indirect and not completely obvious. Even professionals often disagree about program net benefits. Thus, it is easy to believe that voters confront more difficult problems when determining their policy ideal points than consumers do when making choices in a grocery store. Public choice research has long placed greater emphasis on informational problems than microeconomics has.

In policy areas in which voter knowledge is less than precise, systematic errors may be made in estimating their benefits and costs for government services. This problem is thought serious enough to have earned a name, fiscal illusion. Insofar as voters have fiscal illusions, their ideal points will be misplaced, and errors in voting will be made in the sense that the policies or politicians voter for generate outcomes that are actually worse than the alternatives rejected.

How rational voters cope with self-acknowledged ignorance is also of interest. They may use general ideological theories to make their assessments (Riker and Ordeshook, 1973), they may vote for candidates based on party platforms rather than individual candidate platforms (Downs 1957), or they may assess candidates based on their evident talent and trustworthiness insofar as these are easier to assess (Besley 2005).

Electoral contestants are, of course, well aware of the informational problems that voters confront and so engage in various informative and persuasive efforts, as noted above. These may reduce (Stratmann and Mueller (1994) or increase information problems (Congleton 1986). Fortunately, some informational problems are solved through the aggregation effects of majority decisions themselves (Grofman, Owen, and Feld, 1983; Grofman and Skaperdas,1995; Congleton, 2007). It is likely that it is this "Condorcet Jury Theorem Effect" accounts for the relatively good policies and success of Western democracies, although liberal ideology may also have played an important role. See chapters 33, 34, and 75.

III. Conclusion: A Deepened Understanding of Political Phenomena

In their critique of the rational choice approach to politics, Green and Shapiro (1994) asked "what has been learned about politics?" What has the rational-choice approach, and in particular the post-WWII models, added to our understanding of politics? This chapter and these two volumes provide answers to that and many other questions.

The public choice approach to politics has extended the older rational-choice perspective by developing models that allow complex relationships to be untangled and better understood, and by submitting their implications to a variety of statistical, experimental, and historical tests. As true of other principle-driven research, models grounded in the rational choice principle do not account for everything. There are anomalies and exceptions. However, they account for a very broad range of political and economic phenomena, and do so within a relatively simple easily understood framework. The second part of this chapter has provided an overview of the main lines of research undertaken and some of the novel results produced by it.

Of course, not all of the arguments or results are new. Rational choice models do not have to be mathematical to provide genuine insights, and a non-trivial fraction of the new research could be said to have confirmed or deepened conclusions that were previously reached or at least hinted at. Nonetheless, many new questions were raised, and both new and old conclusions were subjected to extensive statistical tests that were previously unavailable to students of government.

Aristotle, for example, was aware of many of the properties of majority rule–based elections, of the tensions among persons with different incomes within a polity, and of the stabilizing influence of a middle class. He was also aware of long term stability problems of all institutional designs. These were conclusions drawn from an interest-based analysis of politics and case-study evidence from Greek political history. His conclusions were and were intended to be more general than would have been associated with a less principle-based historical analysis of particular Greek polities, cultures, and individuals. Principle-based analysis is also evident in the work of other political theorists such as Machiavelli, Hobbes, Montesquieu, Madison, and Mill.

Although Aristotle and Tocqueville were both aware that moderate results emerge from democracies with a broad middle class, the median-voter model clearly sharpened and deepened our understanding of that tendency. The model demonstrated, for example, why the candidate closest to the median voter's ideal point tends to win elections. This is a much sharper prediction than such comments as "the people" rejected candidate X because he or she was "too" extreme, and it does not require ignoring the existence of an often substantial minority.

Electoral models account for why "rejected" candidates also receive millions of votes and why it is commonplace for polls to find that a majority of persons believe that the country is headed in the wrong direction both before and after elections. For voters well away from the median (conservatives, social democrats, libertarians, greens, etc.) their country is heading in the "wrong" direction although such alienated persons disagree about what the "right" direction is. Such disgruntled voters may nonetheless vote for moderate policies, candidates, or parties when there are only a few alternatives on the ballot.

Interest group models have similarly sharpened our understanding of which groups are most likely to organize and of the nature and cost of interest group activities. Organized interest group activity is not new and was not entirely neglected by previous political research grounded in the rational-choice principle. However, the Olson analysis and extensions of it demonstrated why some groups are more likely to organize than others. The rent seeking and extraction literatures in turn help to explain why many policies in well-

functioning democracies fail to advance the interest of moderate voters. A good deal of the observed inequality of income is likely to be a consequence of the effects of organized interest groups on public policy.

Explicit electoral, interest group, and agency-cost models all imply that assumptions about the range of possible strategies and the rewards associated with those strategies affect individual behavior and thereby political outcomes. Insofar as standing rules determine the alternatives and payoffs for every contestant in society's grand game, such models also demonstrated why the "rules of the political game" matter. Constitutions from a public choice perspective are not mere framing or symbolic norms, but have effects on the relative rewards of individual actions. Both theoretical and statistical research demonstrate that even relatively small differences in constitutional designs can have substantial effects on public policy. This is true of liberal democracies (Congleton and Swedenborg 2006), and dictatorships (Tullock 2012; Wintrobe 2000) and governments in between.

All this is not to say that the rational choice principle accounts for all of human behavior or all of politics, any more than the gravity principle or Newton's three laws of motion account for the paths of all inanimate objects. It is to say that our understanding of politics has been improved by the careful applications of that principle during the past half century of public choice research as the breadth and depth of the reseach surveyed in these volumes clearly demonstrate.

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Figures

Figure 1: the Geometry of Choice

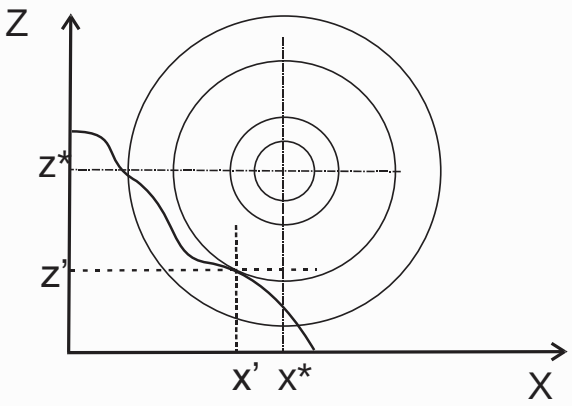

Figure 2: the Geometry of Voting

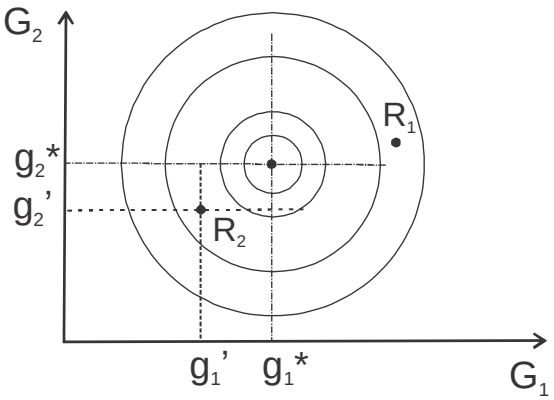

Figure 3: the Geometry of Elections (i)

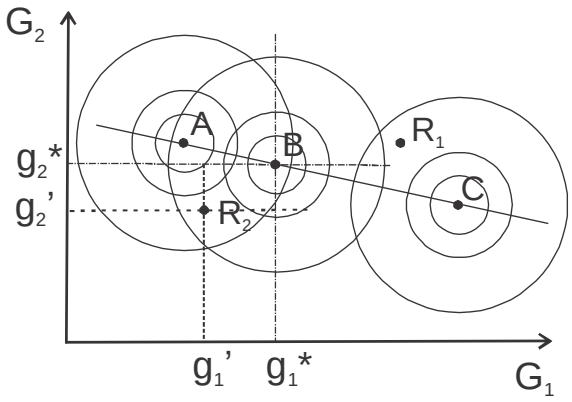

Figure 4: the Geometry of Elections (ii)

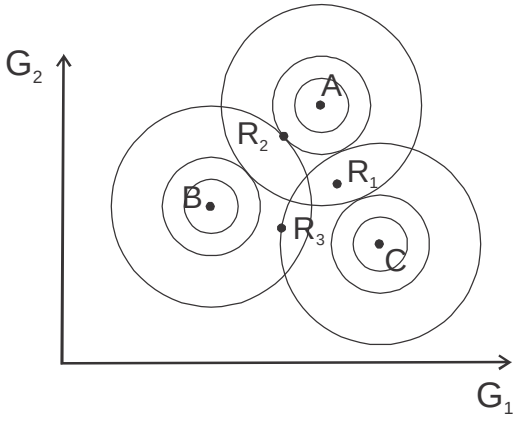

Figure 5: the Geometry of Voting Rules