Voting Choice and Rational Choice

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Summary and Keywords

Rational choice theory may seem like a separate theoretical approach with its own forbidding mathematics. However, the central assumptions of rational choice theory are very similar to those in mainstream political behavior and even interpretive sociology. Indeed, many of the statistical methods used in empirical political behavior assume axiomatic models of voter choice. When we consider individual voting behavior, the contribution of rational choice has been to formalize what empirical political scientists do anyway, and provide some new tools. However, it is when we consider collective voting choice—what elections mean and what kind of policy outcomes result—that rational choice leads to new, counterintuitive insights. Rational choice also has a normative dimension. Without voter rationality the traditional understanding of democracy as popular choice makes little sense.

Keywords: rational choice, voting, social choice, elections, rationality

Introduction

Rational choice theory is now a significant subfield of political science. It starts with basic assumptions about rational action and then deduces the behavior of actors using mathematical methods. This allows the investigation of individual behavior and the effect of institutions in a variety of contexts from elections to crisis bargaining. Although the field may seem somewhat esoteric given the use of mathematical notations and the occasional presence of hard mathematics, it in fact addresses concerns that are central to the study of politics. The application of rational choice theory to the study of voting choice is considered here.

The Rational Choice Approach

We can distinguish between rational choice as a theory of individual choice and as a theory of collective choice. On one hand, we can look at the micro level and consider the effect of assuming rationality on individual voting behavior. On the other, we can take a
macro view and consider the effect of rational behavior on aggregate choice. The assumptions of rational behavior on individual choice, while not completely uncontroversial, are rather mundane. In fact, they are assumptions made in a great deal of research in voting behavior, including that by many researchers who do not think of themselves as doing “rational choice.” It is when we consider collective choice that rational choice models yield results that are both more controversial, but also potentially fruitful.

To consider the application of rational choice to individual voter behavior, it is first necessary to define what we mean by rational choice. The word “rational” is highly loaded normatively. However, the definition of rationality in rational choice is very minimal. Rationality consists of two components: Choice must be consistent and it must be instrumental. A choice is rational if it is the best way of achieving a certain, logically consistent end. No judgement is made as to whether this end is normatively desirable.

Let us begin with consistency. Choice is consistent if it is possible to rank all alternatives in a transitive way. For example, in deciding between apples, pears, and peaches, I need to have a preference between each of them, or at least be able to say that I like them equally. Furthermore, if I prefer apples to pears, and prefer pears to peaches, then I must prefer apples to peaches. This amounts to saying that I can rank order the various things I have to decide between. I can take a piece of paper and write the thing(s) I like most on the first line, the thing(s) I like second best on the second line, etc. If I then put a number on each line, I have a simple utility function. When discussing “utility” it is not necessary to believe that such a thing exists in a metaphysical sense but instead just to claim that the alternatives can be rank ordered consistently. Of course, it may be the case that sometimes voters’ preferences are not consistent empirically. However, if voters’ choices are not consistent as a rule, it is very difficult to see how they could be modeled effectively. After all, consistent patterns are being searched for when trying to explain how people vote.

It should be noted that the statistical methods used by many voting behavior researchers implicitly assume this kind of consistency. Many researchers use techniques such as logistic regression and probit (or the multinomial versions of these techniques) to study the effect of various factors on vote choice. However, both logistic regression and probit assume an axiomatic utility model. Many empirical researchers are actually engaging in rational choice modeling without necessarily realizing it.

The second component of rationality is instrumentality. In plain English this means that people do things for a reason. Again, this assumption is not unique to people doing “rational choice” modeling. Indeed Weber (1978) argued that it was essential to doing any kind of interpretive social science. To understand why someone is doing something, we have to ask what their reasons are. To follow Weber’s example, to interpret the significance of someone we see chopping wood, we have to ask what their reasons are for doing it—do they need firewood, are they discharging a feudal obligation, or are they just seeking exercise? Weber argues that to do interpretive social science it is necessary to adopt a stance of methodological rationalism—to assume that people are rational, at least initial-
Of course, people may turn out to be irrational, but this can be learned only by attempting to find rational explanations and eliminating them.

### Rational Choice and Individual Vote Choice

The assumptions made by rational choice modelers—that people choose consistently and that they do things for a reason, anticipating the consequences—are not particularly exceptional and are widely adopted by many researchers, at least as approximations. What kinds of models of vote choice are consistent with these assumptions? The most obvious candidate is a model of issue or ideological voting. This amounts to saying that people vote for parties that they agree with. People prefer some government policies as opposed to others, so they vote for the parties that advance those policies. Alternatively, voters may use ideology as heuristic if their knowledge of policy is limited. A voter may not know the precise details of tax policy, but he or she does know which party is more in favor of redistribution as opposed to lower taxes.

The degree to which voters vote ideologically is, of course, an empirical issue. There is a considerable literature attempting to explain individual vote choice in terms of the voter’s ideological position (see, for example, Kitschelt & McGann, 1995). It is clear that the degree of ideological voting varies greatly between countries, based on factors such as history, culture, the number of parties, and political institutions. It is also apparent that the ideological dimensions that matter vary between countries—for example, in Sweden economic and welfare-state issues seem to explain vote choice, while in Germany sociocultural issues (perhaps related to the historical religious cleavage) seem more important.

Another kind of vote model quite consistent with rational choice assumptions is a model where voters choose on the basis of government performance or their expectations of government performance. Essentially, voters choose parties that they expect to produce outcomes (economic growth, competent government, lack of corruption, low inflation) that they prefer. Often the best indicator of whether a government can achieve these kinds of things is how they have performed in the past. Although it is just as consistent with the assumptions of rational choice, the logic is quite different from that of ideological models of voter choice. In ideological models, voter preferences are *positional*—they prefer the parties whose positions are closest to their own. In the performance models, the issues are *valence* issues—people agree that, say, low inflation is a good thing. The primary question is which party or candidate is best able to deliver it. As will be noted later, it is possible to combine valence and ideological issues into a single model, and the interaction can produce very interesting results (Schofield & Sened, 2005).

One particularly notable kind of valence or performance- or valence-based model is economic voting (see Lewis-Beck & Stegmaier, 2007). People vote for a party if it has produced desirable economic outcomes and against it otherwise. This can be retrospective (they base their vote on how the incumbent government has performed) or prospective (they vote on how they think the government would do compared to the alternative). In either case, the assessment can be based on personal economic outcomes or can be so-
ciotropic (how the economy in general has done for everyone). There is a large literature explaining both individual vote choice and electoral outcomes on the basis of recent economic performance.

If voters are rational in the sense that they are voting in order to seek some instrumental end, then it will not always be the case that they will vote for the alternative that they prefer. Sometimes they may be able to achieve a better outcome by strategic voting—by voting for a party or candidate which is not their favorite, but which produces a better eventual outcome than voting for their preferred alternative. This is most obviously the case when considering a single-member district plurality electoral system, where rational voters may often vote for a larger or more electable party to avoid “wasting their vote.” This can also be the case with proportional representation elections. Voters may have to decide whether to vote for a small party that fits their preferences very well, or a larger party that may have more weight in coalition negotiations. There is a considerable literature on the degree to which voters actually vote strategically or not (see Abramson et al., 2010).

The assumptions of rational choice might seem so innocuous that any explanation of voter behavior can be “rationalized.” Actually, many plausible and widely advanced theories of voting do not fit the rational choice paradigm. One example is voter choice based strictly on affective criteria. For example, suppose voters vote for candidates just because they like their personalities. This would be rational in the sense of being consistent—voters presumably know what they want and can rank candidates based on desirable personality traits. However, it is not really instrumental. They are not voting in order to achieve a desired state of the world. We could perhaps press the point and argue that voters are voting to maximize the amount of “affability” in government and that in this sense they are rational. This, however, would be stretching the definition of rationality to the point of becoming meaningless. Another plausible non-rational behavior would be a bandwagon or underdog effect. Here voters vote not based on their assessments of the candidates or desire to bring about a certain state of the world, but instead on how they expect other people to vote.

Explanations of voting based directly on group membership or identity can also be incompatible with rational choice. This is because vote choice in these models is not based on the current beliefs, intentions, or goals but rather on some deep sense of identity. This identity may be the result of birth or belonging to a community, or it may be something entrenched by early socialization. The key is that voting behavior is determined before rational reflection about interests and goals.

An example of this would be the classic explanation of voting behavior in the United States based on party identification in *The American Voter* (Campbell, Converse, Miller, & Stokes, 1960). In the United States, it makes sense to talk about party identification separately from vote choice. Nevertheless, the authors found that party identification was a strong predictor of vote choice. Furthermore, party identification seemed to depend on early childhood socialization and the party identification of one’s parents. Thus voter
choice was not the result of rationally considering the alternatives. The key factor here is that party identification is determined by socialization. It is quite possible to integrate party identification into rational choice models if party identification is simply a heuristic for evaluating the parties (Achen, 1975; Adams, Merrill, & Grofman, 2005). In these models party identification may be a shortcut to making voting choices, but voters update their party identification based on (say) the parties’ ideology or their performance. A similar argument can be made about class voting (see Oddbjørn Knutsen's "Social Structure and Voting Choice" in ORE Politics). Class voting certainly can be the result of rational choice—a voter is working class and rationally chooses to vote for the party that advances his or her interests. On the other hand, class could also be a social identity, so that a voter from a working-class background continues to vote for the party of the working class, even though that person no longer believes in its goals.

Whether rational or non-rational models best explain voter choice is, of course, an empirical question. The results will doubtlessly vary over time and across countries. Nevertheless, the outcome of this question is normatively significant. Democracy requires that voters be able to hold governments to account. If voters do not vote with any degree of rationality, it is hard to see how this can be the case. If voters can assess government performance and use this to reward and sanction, then there is a line of accountability. If voters can assess the ideology of governments and vote for parties they agree with, then similarly there is accountability. If voters are irrational, it is hard to see where this accountability can come from. There is a considerable literature in political behavior addressing whether voters have (or can obtain) sufficient information to make informed decisions (see Dalton, 1988). Parallels can be drawn with this literature. If skeptical conclusions are drawn about voters’ rationality or voters’ ability to process information, then it is hard to escape skeptical conclusions about the value of democracy.

Rational Choice and Collective Vote Choice

The argument has been made that when applied to individual voting choice, rational choice theory is mostly a formalization of what is often argued anyway. For example, rational choice amounts to saying that voters vote for parties they agree with, or for parties that provide good economic performance. It is true that the claim of rationality is normatively important, and that the formalization of rationality is implicit in commonly used statistical tools, such as logit and probit. However, it is when collective choice—in particular the spatial model of voting—is considered that rational choice models provide results that are counterintuitive and significant.

The spatial model of voting provides a way to link individual preferences on policy or ideology to collective choice. The spatial model was introduced to the study of politics by Duncan Black in a series of articles that were summarized in A Theory of Committees and Elections (Black, 1971). The spatial left-right metaphor had been used in politics since the French Revolution, but it was Black who developed it formally. It is the source of the famous median voter result. Essentially, if there is a legislature where legislators have
different preferences over one issue (say the level of government spending or taxation) and everyone prefers a policy closer to their ideal tax rate to one further away (single peaked preferences in one dimension, in technical terms), then the outcome will be the one preferred by the median legislator. That is, if 50 legislators would like a tax rate of less than 40% and 50 legislators would like a tax rate of more than 40%, then 40% will be the agreed tax rate. This is because once the tax rate is at 40%, it is not possible to find a majority coalition to raise taxes above 40%, nor is it possible to find a majority coalition to lower it. Given the preferences of the legislators, we can predict the outcome.

Of course, Black realized that this result held only if just one policy was being considered. If multiple policies are being considered, then it is possible for a minority on issue 1 and a minority on issue 2 to join together and form a majority that could enact their preferred policies. Thus in multidimensional choice situations, there is not necessarily a stable equilibrium outcome. In fact, unless very strict conditions are met, there is no equilibrium, and some majority can defeat any policy proposal. This has profound consequences for how we understand democracy.

Anthony Downs’s *An Economic Theory of Democracy* (Downs, 1957) extended the median voter argument to party competition. Downs was extremely aware of the problem of multidimensional competition, and in the first four chapters developed a model of multi-issue choice. However, in the fifth chapter he argues that parties do not offer voters a choice between issue positions, but between ideologies. Ideologies are essentially packages, visions of society that summarize what parties stand for. This allows parties to reduce competition to a simple left-right dimension. Given this unidimensional competition, a median voter result applies. That is, it is optimal for both parties to position themselves at the preference of the median voter. Any party that does not do this will lose to the party that does. As a result, parties should converge to the position of the median voter.

The median voter results, in either the Black or Downs variety, has profound consequences for voter choice. On the one hand, the outcome depends in a predictable way on voters’ preferences. In this sense democracy “works,” in that the voters get what they want. On the other hand, the individual voters do not get much of a choice. Both parties anticipate what the voters will choose, thus removing any variety of choice.

The convergence result itself relies on a very strict set of conditions. Clearly parties do not always converge at the median, and there are many reasons why they would not be expected to. For example, the convergence results break down if there are more than two parties—if there are three parties, the party in the middle will be “squeezed” as its neighbors converge and thus will have an incentive to leapfrog to the flanks (see Eaton & Lipsey, 1975). It also breaks down if voters consider valence issues (such as candidate quality) as well as spatial position (see Schofield & Sened, 2006). If voters prefer one candidate to another for non-policy reasons, it is necessary for the less popular candidate to take a distinctive ideological position so that person at least wins some votes from citizens with whom he or she shares ideology. Another reason why convergence might not be expected is that party leaders may have to answer to their ideological activists and fun-
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ders as well as the electorate at large. And, as already noted, if there are multiple dimensions of party competition, the median voter result would not apply.

The question of multidimensional choice poses profound questions to any theory of voter choice. Indeed, William Riker in his influential book *Liberalism against Populism* (Riker, 1982) argued that it made the whole idea of voter choice an illusion. In the 1970s Richard McKelvey and Norman Schofield (McKelvey, 1976; Schofield, 1978) had shown that majority rule could produce global cycling. That is to say, if the amendments to be voted upon were put in the right order, a skillful agenda setter could get a legislature to vote for absolutely any outcome. Riker used this result and those of Kenneth Arrow (Arrow, 1963) among others to argue that the populist conception of democracy (the idea that democracy is about the people deciding what they want through voting) is incoherent. He also argued that it did not matter how fair or unfair a voting system was. If the outcome is just the result of arbitrary agenda manipulation, what does it matter?

The reaction of many political scientists to Riker’s book was to deny the existence of cycling and the instability that goes with it. They argued that the results were just a mathematical curiosity, without relevance to the real world. I find this approach profoundly misguided. First of all, the results are mathematically compelling (and correct). They cannot be imagined away. Secondly, they explain many phenomena that can be observed in the real world. For example, logrolling (voting for something you do not want as part of a deal to get something you do) is pervasive in politics. However, the existence of logrolling logically implies the existence of cycles. Whenever you have a situation in a multiparty legislature where party A could form a government with party B, party B could form a government with party C or party C could form a government with party A, you have cycling majorities. Social choice theorists discovered something real about how democracy works—there are frequently overlapping majorities as opposed to one majority dominating everyone. However, just because the social choice results are compelling does not mean Riker’s interpretation of them must be accepted.

Fortunately in this regard, more recent results in social choice theory are rather more favorable to the idea of democracy as voter choice. Nicholas Miller (Miller, 1980) showed that under a wide range of institutions, the outcome of majority rule bargaining falls in something called the “uncovered set.” This is generally a relatively small centrally located area of overlapping policy positions. It turns out that the kind of heroic agenda manipulation that Riker talks about is only possible when the agenda setter behaves strategically, but the rest of the legislators do not, and allow themselves to be led down the proverbial garden path. If everyone behaves strategically, the outcome must fall in the uncovered set. The uncovered set also turns out to explain the outcomes of experimental voting games extremely well (Bianco, Lynch, Miller, & Sened, 2006). Calculating the uncovered set from voter ideal points is extremely computationally intensive. However, in recent years it has become possible to do this. Bianco, Jeliazkov, and Sened (2004) calculated the uncovered set for the U.S. House after various elections using NOMINATE scores to estimate ideology. They found that the uncovered set is limited in size but not insignificant: “The point is not that ‘anything can happen,’ as suggested by an earlier generation of
work. Rather, a whole lot can happen, leaving much room for agenda setting, strategic voting, or arm-twisting.” Schofield and Sened (2006) calculated a similar solution concept (“the heart”) for several multiparty democracies. They found that the size of the heart varies considerably based on rather small changes in the position and size of the parties but that it is always a central area.

Thus it turns out that the findings of social choice theory are compatible with the traditional theory of democracy as voter choice, in spite of Riker’s interpretation of them. Political outcomes do depend to a large degree on voter preferences, even when policy choice are considered in multiple dimensions. It is true that the uncovered set in multiple dimensions only constrains the outcomes that politicians can negotiate, and does not uniquely determine the outcome in the way the median voter result does with one policy dimension. Nevertheless, if public opinion moves substantially to (say) the left, the uncovered set and the eventual outcome would be expected to do likewise. As a result it does matter if the voting system is unfair, because the eventual outcome depends on the balance of opinion in the legislature. In fact, the multidimensional scenario may even be more favorable to traditional democratic theory than the unidimensional one. Individual voters are not denied a meaningful choice as they are in the median voter scenario. Instead, the parties would be expected to diverge in terms of the programs they offer.

Another similarity between the two-party median voter scenario and the multidimensional uncovered set scenario is that it does not necessarily matter who forms the government. In the median voter scenario it does not matter because both parties propose the same (median) program. In the case of the uncovered set, who is in government may not matter much because whoever is in government has to implement a program in the uncovered set. That is, in order to govern, it is necessary to form a coalition and defend it against counter-offers from the excluded parties. Thus, the excluded parties matter in terms of negotiating government policy, not just the parties in the governing coalition. This explains why non-government parties often have considerable power in multiparty systems, and why this power is often given institutional form, for example in strong committee systems. Majority rule does not mean rule by “the” majority but rather a system in which there are many possible majorities, all of whom check each other.

All of the preceding comments assume legislative decision making by majority rule. However, most legislatures do not use simple majority rule. Rather, there are various checks and balances that make decision making effectively super-majoritarian (requiring more than the support of 50% to pass legislation). Some legislatures have explicitly super-majoritarian rules, such as the 60% required in the U.S. Senate to overcome a filibuster. In most cases, however, it is some division of power, such as bicameralism (especially when the legislatures are elected with different methods and calendars) or presidentialism, that makes it easier to block legislation than pass it. Super-majoritarian rules make voter choice far more complicated. There is no good model of social choice in multiple dimensions under super-majority rule. Krehbiel’s *Pivotal Politics* (Krehbiel, 1998) provides a model of the U.S. Congress with one policy dimension. Modeling super-majoritarian choice is far more complex than modeling majority rule. With majority rule we can pre-
dict that the outcome will be in a relatively small region, based solely on the current preferences of voters and legislators. However, with super-majority rule, the outcome also depends on the status quo from the previous period. In the short run, super-majoritarian systems are more stable and prone to gridlock. In the long run, however, there is little understanding about how public opinion conditions the evolution of policy.

Up to this point it has been argued that social choice results such as the median voter result and the uncovered set suggest that collective choice depends on the overall distribution of public opinion. The relationship of this to individual choice has been considered as if it was a problem. However, there is a different point of view. It could be argued that collective choice is more “rational” than individual choice. (“Rational” has been put in quotation marks because this does not refer to the technical definition of rationality previously given, meaning consistent and instrumental choice, but rather the idea that collective choice may make better use of information than individual choice.) It could be argued that the dependence on aggregate features of the public opinion is a virtue.

Erikson, MacKuen, and Stimson (2002) argue this point in The Macro Polity. They address the common argument that American voters are typically poorly informed. They argue that even if this is the case, public opinion effectively aggregates the information that exists. This essentially relies on a law of large numbers principle. Some voters may hold random, irrational beliefs and attitudes. However, when public opinion is aggregated, these random components cancel out, leaving an accurate assessment of the situation. Thus, democratic accountability is possible through collective choice, even when individuals are poorly informed.

Interestingly, Erikson, MacKuen, and Stimson’s (2002) results seems very compatible with what would be expected from a social choice model. Policy seems to some degree to follow public mood—as public opinion becomes more conservative, government policy reflects this. However, public opinion also reacts to policy. As policy becomes more liberal, public opinion moves in a conservative direction. This can be compared to the thermostat-like model of Wlezien (1995). In this model the public has a preference for a certain level of public expenditure. If that expenditure is exceeded, then public opinion moves to the right to correct it, and vice versa when expenditure falls. Bartle, Dellepiane-Avellaneda, and Stimson (2011) find a similar relationship in the United Kingdom.

Quite apart from its intrinsic interest, the macro-polity approach provides an intriguing way to test rational choice models of collective choice. Both the macro-polity approach and rational choice predict that policy outcomes should depend on the overall distribution of public opinion. The fact that only the overall distribution matters here is extremely important. Individual level data that is comparable over time is difficult to obtain, as panel studies are rare. However, public opinion surveys asking relevant questions for which the aggregate results can be compared over time are far more common. What is needed is a way to generate a measure of public opinion on (say) government spending over time, even though the same questions are not asked every year. James Stimson in Erikson, MacKuen, and Stimson (2002) and elsewhere provides an algorithm that does just this,
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and there are newer methods based on item response theory. This provides a new opportunity to test the relationship between public opinion and policy predicted by rational choice theory. It also returns us to the normative questions central to theories of democracy—can the public hold politicians accountable through electoral democracy and can elections bring about the policies people desire?

Conclusion

Rational choice makes a crucial contribution to the understanding of voter choice and of democracy. Rational choice as a theory of individual choice has been distinguished from rational choice as a theory of collective choice. In case of individual voter choice, mathematical social choice theorists are certainly not alone in claiming that voters are rational. Indeed, there is a danger that rational choice theory will simply seem like an extremely formal way of saying things like, “People vote for parties they agree with,” or “People vote for parties who perform well in office.” It can be argued that the formalism is useful. Rational choice theory, for example, has assisted the development of some of the statistical tools, such as logit and probit, that are used to test theories of voting behavior.

The question of whether voters are rational is of crucial normative importance. Democracy requires that people are able to hold politicians to account. If voters do not act rationally, it is hard to see how this is possible. Democracy is also based on the principle of political equality—the idea that everyone has an equal say in making collective decisions. But this equal say is surely empty if people cannot rationally choose representatives who advance the kind of collective decisions they desire. There is a very large literature in political science that questions whether electorates have the information and cognitive capabilities to make democracy work in a meaningful way. Whether voters have the required knowledge and rationality is, of course, an empirical question. The starting point of rational choice theory, however, tends to be that people (or at least enough people) do.

The main contribution of rational choice theory is to the understanding of collective choice by voters. It provides a theoretical mechanism linking voter preferences on one hand, and political outcomes on the other. It also challenges preconceptions of the way democracy works. For example, we are used to thinking of majority rule as the rule of “the majority.” Rational choice theory, however, forces us to reconsider this. Often majority rule means that there are multiple, overlapping majorities. Sometimes parties who are not in power may have considerable influence because they could have been in power or might be in the next government. We are still in the process of coming to terms with the consequences of the advances in voting theory that have occurred since the late 20th century. In particular, the consequences of these models are just beginning to be tested empirically.
References


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Notes:

(1.) Logistic regression assumes the Luce choice axioms (Luce, 1959). Probit assumes a random expected utility model (Savage, 1954; Von Neumann & Morgenstern, 1953).

(2.) This includes one notable article co-authored with R. A. Newing.

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