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THE ROCHESTER SCHOOL: The Origins of Positive Political Theory

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ABSTRACT

The Rochester school of political science, led by William H Riker, pioneered the new method of positive political theory. Positive political theory, or rational choice theory, represents the attempt to build formal models of collective decision-making processes, often relying on the assumption of self-interested rational action. This method has been used to study such political processes as elections, legislative behavior, public goods, and treaty formation and diplomatic strategy in international relations. In this article, we provide a retrospective account of the Rochester school, which discusses Riker's theoretical synthesis and his institution building in the 1950s, 1960s, and 1970s. We discuss some of the most important Rochester school contributions related to spatial models of voting, agenda setting, structure-induced equilibria, heresthetics, game theory, and political theory. We also briefly situate positive political theory within the larger context of political science and economics.

INTRODUCTION

Over the past three decades, positive political theory has become a central and widely accepted method for studying politics. At the beginning of the 1960s, however, the Rochester school, which launched the positive political theory revolution in political science, was no more than the idea of a lone intellec-

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tual, William H Riker. He was the visionary and institution builder who founded and established the Rochester school of political science with the aid of his University of Rochester colleagues and students. Because Riker masterminded positive political theory himself, and because he trained so many of the political scientists who spread the Rochester approach to other universities and established it as mainstream within the field of political science, to a large extent the name William H Riker is synonymous with the Rochester school.

The Rochester approach to political science, which Riker called positive political theory, and which in contemporary parlance is a variant of rational choice theory, has two essential elements. First, it upholds a methodological commitment to placing political science on the same foundation as other scientific disciplines, such as the physical sciences or economics. Thus, it holds that political theory should be comprised of statements deduced from basic principles that accurately describe the world of political events. The goal of positive political theorists is to make positive statements about political phenomena, or descriptive generalizations that can be subjected to empirical verification. This commitment to scientifically explaining political processes involves the use of formal language, including set theory, mathematical models, statistical analysis, game theory, and decision theory, as well as historical narrative and experiments.

Second, positive political theory looks to individual decision making as the source of collective political outcomes and postulates that the individual functions according to the logic of rational self-interest. Individuals are thought to rank their preferences consistently over a set of possible outcomes, taking risk and uncertainty into consideration and acting to maximize their expected payoffs (Austen-Smith & Banks 1998). Through the assumptions of rational self-interest, positive political theory postulates a specific motivational foundation for behavior. Interests, as opposed to attitudes, which are the subject of study in much behavioral research, are thought to be the well-spring of action.

The goal of positive political theorists is to build models that predict how individuals' self-oriented actions combine to yield collective outcomes. This method is applied to political processes (such as elections and the platform formation of political parties), legislative behavior (such as coalition formation and bargaining), public goods (such as the "tragedy of the commons" and the "free rider"), and treaty formation and diplomatic strategy in international relations. Using game theory and formal models, positive political theorists strive to determine whether these complex, strategic political interactions have predictable, law-like outcomes that exhibit stability. Stable outcomes, referred to as equilibria, signify that agents' actions combine in such a way that, given the collective social outcome of agents' self-oriented actions, no individual could achieve a greater (expected) payoff if he had unilaterally selected an alternative course of action. Equilibria are significant to positive political theo-

rists because they indicate that the political processes under investigation result in predictable, stable social outcomes that best serve individuals' constituent interests, given the constraints imposed by the situation. The sequence of strategic choices that form an equilibrium and that imply specific outcome events constitutes the core of a predictive science of politics. The motivation to maximize expected payoffs provides the explanation of political action and provides the basis for predictions about processes that lead to outcomes.

This essay covers several aspects of the Rochester school. In order to contrast the accomplishments of positive political theory with its early competitors in the 1950s, we discuss the state of political science during Riker's training and early academic career. This is followed by a discussion of Riker's theoretical synthesis, which occurred between 1955 and 1962. This section, which culminates with *The Theory of Political Coalitions*, shows the breadth and consistency of Riker's vision for political science, and identifies the preexisting tools he used in developing the method of positive political theory. A brief discussion of the Public Choice Society is included to show that although Riker was a solitary pioneer within political science, other disciplines (such as mathematics, economics, psychology, sociology, philosophy, and public policy) also had rational choice pioneers, who could bolster and critique each other's efforts by providing a common, supportive network, and supplying institutional support to an emerging cross-disciplinary shared method. Riker's vital period of institution building at the University of Rochester occurred between 1963 and 1973, by which time positive political theory existed as an identifiable, if not widely shared, scientific paradigm. The next section highlights the institutional milestones between 1975 and the 1990s, by which time positive political theory must be acknowledged as a dominant force within political science. We then discuss the content of the scholarship contributed by the Rochester theorists. It includes spatial models of collective choice over one or more issues; coalition building; agenda formation; structure induced equilibria and heresthetics; cooperative and noncooperative game theory; democratic theory; and epistemological advances. Each of these general areas of inquiry has resulted in theoretical and empirical insights about American politics, comparative politics, and international relations. Two concluding sections revisit the "economics imperialism" thesis and touch on the nature of recent controversies in which positive political theory (within political science) has become embroiled.

STATE OF POLITICAL SCIENCE 1945–1955

Following World War II, political science lacked a unifying method. Instead, American political scientists debated over the appropriate method and substance of their field, leading some to despair, "The political sciences are a very

fair illustration of the following: as a whole they are sure neither of their methods nor even of their subject matter, but [are] hesitant and groping; and further, taking it all in all, can they really boast of a sufficiently abundant harvest of achievement to resolve doubts about their essential premises?" (Eisenmann 1950:91). In the postwar period there were two articulated, mutually opposed tendencies in the field. Some political scientists sought to "emulat[e]...the natural sciences.… Objective description and precise measurement have become their ideals." Others promoted political science as a normative enterprise in which the study of particular political institutions is guided by values and ethical postulates (Cook 1950:75). Variants of political science practice included the historical, case-study approach that resonated with then-popular public law and public administration studies (exemplified by the work of Leonard D White); public opinion and survey research (Walter Lippman); psychological approaches (Harold D Lasswell); political and democratic theory (John Dewey); and the growing behaviorist approach emphasizing surveys and statistics (Charles E Merriam and David Easton).

Although there was already a clear tendency to promote statistical methods and quantitative techniques, especially evident in the behavioral school, nothing on the intellectual map of political science remotely resembled what would come to be known as positive political theory or rational choice theory. (For detailed analysis of the forces behind increasing formalization of the American social sciences including political science during the twentieth century, see Klausner & Lidz 1986.) Its seemingly closest cousin, the then-flourishing behavioral approach, emphasized statistical correlation and empirical testing but lacked the concept of axiomatic treatment of human behavior and the reliance on minimalist assumptions that yield general laws. The behavioral approach instead generally focused on psychological attitudes to derive empirical generalizations.

RIKER'S THEORETICAL SYNTHESIS AND THE ORIGINS OF POSITIVE POLITICAL THEORY (1955–1962)

Riker graduated with his PhD in political science from Harvard University in 1948, studying under Carl Friedrich. His dissertation, on the Council of Industrial Organizations, reflected the then-popular case-study approach. Upon completion of his graduate studies, Riker accepted a faculty position at Lawrence College in Wisconsin in 1949. There he remained for the next decade, building up a small political science department and striving to articulate his thoughts on political science methodology. During this period he was awarded two fellowships: a Ford Foundation education grant, which he relied on while writing his first textbook, and a Rockefeller fellowship, which he used to assemble his thoughts on a new approach to the science of politics.

As significant as the contrast would be between Riker's work and other work characteristic of political science in the 1950s, Riker's textbook, *Democracy in the United States* (1953), shows that an equally dramatic shift occurred within his own thinking. Whereas all his writings after 1955 exhibited a remarkable consistency, this textbook is indicative of Riker's own roots in a discipline of political science governed by normative conclusions. In this text, Riker proclaims, "Democracy is self-respect for everybody. Within this simple phrase is all that is and ought to be the democratic ideal.... If self-respect is the democratic good, then all things that prevent its attainment are democratic evils" (1953:19). Riker's upcoming dramatic personal conversion to the vocabulary of self-interested rational action would signify the profound change in the language that would increasingly come to structure insights into politics.

Ever since his days as a graduate student, Riker had been intellectually dissatisfied with the dominant case-study approach, which political science shared with the overlapping fields of legal history and public administration. He was casting about for a new method to serve as the platform on which to build a sturdy science of politics. In 1954, two RAND scholars, LS Shapley and Martin Shubik, published a paper with a formal treatment of what they called a power index. This paper defined the power index as a mathematical formula expressing a legislator's power as a function of his ability to swing decisions (Shapley & Shubik 1954). It exemplified a new vein of literature that addressed political processes in the language of mathematics, including the work of John von Neumann and Oskar Morgenstern, Duncan Black, Kenneth Arrow, and Anthony Downs. Riker rapidly introduced this work into his curriculum at Lawrence College and used it as the basis for his new science of politics.

Von Neumann & Morgenstern's *The Theory of Games and Economic Behavior* (1944), Black's "On the Rationale of Group Decision Making" (1948), Arrow's *Social Choice and Individual Values* (1963 [1951]), and Downs's *An Economic Theory of Democracy* (1957), which have subsequently earned a reputation as the first texts of the rational choice canon, served as rich fertilizer for Riker's ambitious program of placing political science on a scientific footing. Each text contributed to the brew of ideas that Riker fermented to produce positive political theory.

Von Neumann & Morgenstern's classic text served as the definitive point of origin of a rational choice theory of human action because this text axiomatized the principles of rational agency. It took the hubris of von Neumann, a Hungarian-trained physicist and mathematician, to announce, "We wish to find the mathematically complete principles which define 'rational behavior' for the participants in a social economy.... The immediate concept of a solution is plausibly a set of rules for each participant which will tell him how to behave in every situation which might conceivably arise" (von Neumann & Morgenstern 1944:31). *The Theory of Games and Economic Behavior* was innovative

in its set-theoretic presentation, which was unprecedented in the social sciences; it was path-breaking in modeling an economy as a deliberate, strategic competition; and it developed game theory as a new form of mathematics. However, although this text was certainly foundational, its target audience, economists, found it of little value, in part because it concentrated on a two-person, zero-sum game of dubious relevance to voluntary market exchange. The book received little attention outside of the RAND Corporation, where mathematicians were assigned the task of exploring its relevance for nuclear brinkmanship (see Leonard 1992).

Black's "On the Rationale of Group Decision Making" (1948) contributed a new way of considering the problem of collective outcomes reached by non-market means such as voting. Black revisited the eighteenth-century Condorcet paradox, which demonstrated that if three individuals democratically vote among three possible outcomes, there is no guarantee that the final result is independent from the means by which the votes are aggregated. Specifically, consider the case in which a collective choice is to be made among three options, *A*, *B*, and *C*. Suppose that one decision maker prefers *A* to *B* and *B* to *C*; a second prefers *B* to *C* and *C* to *A*; and the third prefers *C* to *A* and *A* to *B*. Given these individual preference orderings, following majority rule, the resulting collective preference ordering is intransitive; that is, *A* is preferred to *B*, *B* is preferred to *C*, *and C* is preferred to *A*. This intransitive collective preference, with no definitive winner, is said to cycle. The existence of such cycles, arising from preference aggregation, alerted Riker to the importance of agenda setting in politics and raised for him a persistent desire to understand how the cycling phenomenon predicted in theory related to actual political practice.

Black (1948) saw a way out of the Condorcet paradox, although his solution assumes a restriction on freedom of choice. He extended the discussion of the voting paradox to *n* voters, and he proved that the arbitrariness of the result could be avoided by stipulating that voters' preferences be single-peaked, so that if, for instance, *A*, *B*, and *C* are aligned in that order, then it is not possible to least prefer *B*. Black was original in addressing the voting problem as a spatial model using the formal language of individual preference orderings, and he recognized the power of mathematical analysis to provide insight into the problem of arriving at collective decisions through non-market means.

Arrow's classic *Social Choice and Individual Values* (1951), which grew out of the earlier paper "A Difficulty in the Concept of Social Welfare" (1950), was the product of three disparate approaches. Working in the late 1940s at RAND, where game theory was in vogue, Arrow was drawn to von Neumann & Morgenstern's set theoretic treatment of rationality. Arrow's boss at RAND, Olaf Helmer, assigned him the task of deriving a single mathematical function that would predict the collective political outcomes for the entire Soviet Union. In attempting to meet this challenge, Arrow drew on his familiarity

with the Bergsonian social welfare function that attempted to translate private preferences into a single public choice. It is also likely that Arrow encountered a copy of Black's "On the Rationale of Group Decision Making" when he served as a reviewer for *Econometrica* (for more information on the priority dispute between Black and Arrow, see Coase 1998). Combining these three approaches—a set-theoretic treatment of decision making, the social welfare function, and a formal analysis of voting—led Arrow to derive his famous Impossibility Theorem. Arrow's Impossibility Theorem proved that Condorcet's paradox of three voters and three outcomes could be extended to *n* voters, showing that democratic voting procedures obeying the most limited strictures do not necessarily result in meaningful, nonarbitrary, collective outcomes. Arrow's text would spawn a vast literature and transform the foundations of welfare economics, but it was wholly unrecognized as relevant to political science. For instance, *The American Political Science Review* did not review the book.

Arrow's student, Anthony Downs, published his dissertation, *An Economic Theory of Democracy,* in 1957. Downs argued that in studying democratic institutions, the ends that government serves must be evaluated in terms of the individuals comprising it. In arguing that political agents must be thought of as seeking their own gains, he challenged the concepts of public interest and public service. Downs concluded that in seeking to win elections and maximize their votes, political parties move to the center in order to cater to the median voter.

In the mid-1950s, Riker had a stimulating collection of approaches to the study of political phenomena, including methodological individualism, an emphasis on micro-foundations, game theory, spatial models, axiomatic set-theoretic treatment of rational action, and generalized Condorcet results questioning the validity of processes for collective decision making. However, these approaches and results were marginal in their own fields, and they required disciplined and unifying development before they could be recognized as the canonical works of a new tradition. Between 1957 and 1962, Riker wrote three formal papers indicating tentative steps toward his eventual theoretical synthesis. Two of these papers drew on Shapley & Shubik's formulation of the power index (Riker & Schaps 1957), and the third set about determining whether Arrow's Impossibility Theorem, which predicted that *n*-person voting procedures for more than two outcomes should demonstrate an inherent instability, pertained to actual voting practices (Riker 1958, 1959a). Although these papers were mathematical and attempted to draw generalized conclusions by combining theoretical deduction with empirical tests, they did not yet put together the pieces that would later characterize positive political theory. Notably, even though Riker was engaging in experiments in coalition formation using a game-theoretic structure, neither game theory nor an explicit rational-action model was relevant to these early papers.

Riker also authored two papers published in philosophy journals before the close of the decade. These papers discuss the importance of carefully circumscribing the events defining a scientific study and the need to base science on "descriptive generalizations" (1957, 1959b). Although these articles were not earth-shattering to the philosophical community, they did reveal Riker's grasp of the philosophical and conceptual issues necessary to ground his developing positive approach to politics. In them, Riker challenged the standard view in political science that promoted the study of the idiosyncratic details of rare and influential events. This challenge to the case-study method and to so-called thick analysis remains at the core of methodological debates today.

The earliest indication that Riker's theoretical synthesis was complete is found in his application as a nominee to Stanford's Center for Advanced Study in the Behavioral Sciences, submitted in 1959 (CASBS file, William H Riker papers, University of Rochester[1]). In this application, Riker distanced himself from his earlier work on federalism and stated, "I describe the field in which I expect to be working at the Center as 'formal, positive, political theory.'" He elaborated, "By formal, I mean the expression of the theory in algebraic rather than verbal symbols. By positive, I mean the expression of descriptive rather than normative propositions." This document demonstrates Riker's own sense of intellectual development, as well as his reflective and unabashed program for political science.

> I visualize the growth in political science of a body of theory somewhat similar to...the neo-classical theory of value in economics. It seems to be that a number of propositions from the mathematical theory of games can perhaps be woven into a theory of politics. Hence, my main interest at present is attempting to use game theory for the construction of political theory.

Riker was a fellow at the Stanford Center in the 1960–1961 academic year. In this fertile year away from the responsibilities of teaching, Riker wrote *The Theory of Political Coalitions*, which served as the manifesto for his freshly articulated positive political theory.

The Theory of Political Coalitions (1963) is highly innovative and accompanies the aforementioned texts by von Neumann & Morgenstern, Black, Arrow, and Downs as part of the rational choice canon. This canon also includes Buchanan & Tullock's *The Calculus of Consent* (1962) and Olson's *The Logic of Collective Action* (1965). Riker's opening chapter, entitled "The Prospect of a Science of Politics," puts forth how a science should be built up of deductive structures derived from intuitively justified axioms that are subject to empirical tests. Riker proposed studying politics by analyzing its micro-foundations in the decision making of agents whose actions could be modeled like those of

[1]The William H Riker papers at the University of Rochester are hereafter cited as "WHR papers."

particles in motion. Just as a particle's trajectory could be traced by knowing its momentum and the force on it, so an agent's actions can be predicted by knowing her preferences and the environment structuring her choices. Then the political scientist could model the results of collective actions through analysis of the parameters of individual decision making.

Riker adopted Easton's definition of politics as the authoritative allocation of value and made the crucial point that distinguished his theory of politics from economic theory. Whereas collective outcomes that occur in the marketplace are made in "a quasi-mechanical way," collective outcomes that are the stuff of politics are made by conscious processes (Riker 1963:11). This is a crucial distinction because the rational actor in political arenas intentionally calculates how to achieve aims in a strategic environment with other strategically acting agents. Riker drew heavily on von Neumann & Morgenstern's (1944) formulation of human rationality, as well as their zero-sum, *n*-person game theory.

Besides introducing positive political theory to political science, the main point of Riker's book was to construct a positive theory of political coalitions. To this end he proposed the size principle, which held that

> In *n*-person, zero-sum games, where side-payments are permitted, where players are rational, and where they have perfect information, only minimum winning coalitions occur. (Riker 1963:32)

The size principle, which embodied the idea that political science could give rise to general laws, was a response to Downs's argument (1957) that political parties strive to maximize votes. In Downs's model, parties or political coalitions seek to attain a maximum number of votes without limit. Riker first deductively argued that rational agents, such as party leaders, create minimum winning coalitions so that a minimum of compromise is necessary, and the spoils of victory is divided among fewer coalition members. Then he strove to use his principle to explain the outcomes of political processes. His empirical tests included discursive discussions of the evolution of the American two-party system, which on occasion had briefly had three parties, and empirical evidence of coalition formation gathered from his experiments on undergraduates at Lawrence College.

When *The Theory of Political Coalitions* was published in the early 1960s, few in political science were in a position to appreciate it. Still, the book created a significant stir precisely because Riker not only exhorted the discipline to become more scientific but also showed how to do it. As one reviewer noted, "Although Riker's particular approach is not the answer to all of the discipline's woes, he has certainly succeeded in challenging us by example. Those who would accept the challenge had better come prepared with a well sharpened kit of tools. For, either to emulate or attack, nothing less will suffice"

(Fagen 1963:446–47). One of the remarkable achievements of the Rochester school has been that Riker's nudges and pushes have produced several generations of scholars with just such well-honed tool kits. Riker was the first non-RAND theoretician to recognize the potential of game theory to explain political interactions. It was Riker who bestowed on game theory the promise of a new life after RAND defense strategists concluded it had little merit for studying warfare, and before economists grasped its promise for grounding a new mathematics of the market.

PUBLIC CHOICE SOCIETY, EARLY 1960s

Although it is remarkable that Riker, working first as a lone scholar and then as a leader of a single school of thought, would exert so much impact on an entire field, it is also remarkable that the rational choice cradle was shared by fringe scholars in other disciplines. These scholars, working on the peripheries of their own fields, recognized their shared research interests and formed a community that fostered the rise of rational choice theory as a cross-disciplinary phenomenon. In the early 1960s, a meeting of minds occurred, resulting in the founding of the Public Choice Society (originally called the Committee on Nonmarket Decision Making). Researchers active in its early meetings included subsequent Nobelists Herbert Simon (economics and public administration), John Harsanyi (mathematics), and James Buchanan (public finance), as well as Gordon Tullock (public finance), John Rawls (philosophy), James S Coleman (sociology) and, of course, William Riker. The Public Choice Society is noteworthy for helping to generate the critical mass required to establish the rational choice approach as an academy-wide method of inquiry. In founding the society, members ensured that their newly wrought discipline would benefit from an active network of similarly minded intellects. To further this end, annual meetings were held. The society also initiated an enduring journal, *Public Choice*, which was one of the first signs that the formal approach to non-market collective decisions was maturing into a recognizable program of research.

BUILDING A DEPARTMENT, 1963–1973

It took imagination and vision to synthesize the leads provided by von Neumann, Morgenstern, Black, Arrow, and Downs into a coherent theory of politics based on the idea of methodological individualism encapsulated in a theory of rational, strategic action modeled by *n*-person game theory. However, brilliant vision does not inevitably lead to achievement. Riker's ambitious platform for reorienting political science may have gone little further than his personal bibliography had he not tirelessly and deftly built up a graduate

program specifically geared toward generating theorists ultimately capable of transforming the entire discipline of political science. A unique constellation of circumstances provided Riker with the resources and institutional infrastructure requisite to carry out his program for reform.

Shortly before setting forth to the Stanford Center in 1960, Riker caught the eye of administrators at the University of Rochester who sought to establish social science graduate programs with national standing. The University of Rochester, throughout most of the 1960s, was flush with capital provided by Joseph Wilson, head trustee of the Haloid-Xerox Corporation, who was committed to science as a means of bettering human lives. Thanks to this beneficence, the University of Rochester's endowment was the nation's third highest for much of the 1960s, surpassed only by Harvard's and Yale's. Support abounded on campus to build up the social science departments by emphasizing programs oriented toward rigorous quantitative analysis resembling the successful programs in the physical sciences. Riker, whose work admirably fit this bill, was hired to create a graduate program in political science. Also newly appointed were Lionel McKenzie, brought in to chair the Economics Department and build its graduate program, and W Allen Wallis, formerly Dean of the Chicago Business School, to head the University of Rochester as chancellor. Wallis and McKenzie, too, were committed to the development of analytic and formal social science and would become close colleagues and active supporters of Riker.

Riker rapidly outlined a strategy for building the Rochester political science department. His strategy emphasized both behavioral methods and positive theory. He sought to rival the then-nationally-significant programs at Yale, Chicago, Northwestern, MIT, and the Michigan Survey Research Center. The result was an entirely new curriculum of 14 courses and seminars: the scope of political science, theories of strategy, positive political theory, techniques of research in political science, theories of decision making, theories of organization, problems in measurement of political events, political parties, legislative behavior, political sociology, comparative politics, problems in constitutional interpretation, national security policy, and recent political philosophy. Riker, always highly self-conscious of his goals and methods, wrote to the graduate dean, "What is proposed here is the creation of another department to join the half-dozen just mentioned in seeking and creating a discipline." He stated that he was placing a "two-fold emphasis...on (1) objective methods of verifying hypothesis (i.e., 'political behavior') and (2) positivistic (i.e., non-normative) theories of politics" (Riker's proposal for the new graduate program in political science as submitted to SDS Spragg, WHR papers).The new PhD program's requirements stressed quantification and formal analysis. In an unprecedented move, Riker persuaded the graduate dean to accept the substitution of statistics for a modern language. Whereas other programs emphasized

the literature, Riker's focused on developing tools for rigorous research into the theoretical properties and empirical laws of politics.

Faculty recruitment was Riker's next priority. When he arrived at the University of Rochester, the political science department had three active faculty: Richard Fenno, Ted Bluhm, and Peter Regenstrief. Over the years, Riker added Jerry Kramer, Arthur Goldberg, John Mueller, Richard Niemi, Alvin Rabushka, Gordon Black, and G Bingham Powell. Along with faculty, Riker worked to recruit students. Whereas in 1959 the Rochester political science department did not graduate a single undergraduate major, by the early 1970s it was flourishing with over 100 undergraduates and between 25 and 30 graduate students. As of June 1973, the department had graduated 26 doctoral students and 49 master's students; it moved up in the American Council of Education ratings from being unrated in 1965 to holding fourteenth place in 1970. In student placement during the 1960–1972 period, Rochester's political science program was second only to Yale's; Yale placed 62% of its total placements in American Council of Education–rated departments, and Rochester placed 58%. The students trained in the first decade of Riker's leadership of the department would take up appointments in the next decade at numerous institutions with nationally recognized programs, including Cal Tech, Carnegie Mellon, Washington University, the University of Iowa, UC Davis, Dartmouth College, Trinity College, the University of Michigan, SUNY Buffalo, SUNY Albany, the University of Wisconsin, Ohio State University, McGill University, and Texas. These trailblazing students included Peter Ordeshook, Kenneth Shepsle, Barbara Sinclair, Richard McKelvey, John Aldrich, David Rhode, Morris Fiorina, and others. This first generation of Rochester PhD students, coming from a then unknown program, would be crucial in transforming the study of politics in the decades ahead.

Other political science departments were quick to notice the marshaling of a leading program. Recruitment raids to acquire Riker himself were advanced by the University of Illinois, Rice University, Northwestern University, UC Berkeley, Emory University, and even the University of Michigan, which wanted Riker as its "dean" of operations to build a new political science program in 1965. The recruitment raids also extended beyond Riker to his carefully assembled faculty. A key to the Rochester school's success was its virtually impenetrable esprit de corps. Despite these constant attempts, in its first decade the department lost only Jerry Kramer (to Yale) and Arthur Goldberg (internally, to the Dean's office). During the entire process of institution building, Riker remained uncannily self-reflexive. In a letter to the graduate dean, he observed, "One main reason for this departmental success is, in my opinion, the fact that the department has had a coherent graduate program, centering on the notion of rational choice in political decision-making" ("Department of Political Science 10-Year Report, Sept. 1973," WHR papers).

By 1973, Riker had built up the infrastructure necessary to train students who would set forth from Rochester to contribute to the positive political theory research program and to spread the vision of a positive science of politics to political scientists in other programs. However, Riker's efforts on behalf of positive political theory extended beyond the confines of his home department at the University of Rochester. He maintained an active publication record, contributing so many articles to the flagship journal of political science, *The American Political Science Review*, that its editor Austin Ranney wrote to him, "There is some danger of turning this journal into the 'William H. Riker Review'" (March 22, 1967, WHR papers). Another step in establishing his method as a part of the discipline-wide currency was his co-authorship, with Ordeshook, of a textbook that elucidated the parameters of positive political theory. This text, entitled *An Introduction to Positive Political Theory* (1972), was aimed at advanced undergraduates and beginning graduate students, and it was an important step in defining positive political theory for a widespread audience. It introduced the assumption of rationality and the formal account of preference orderings, and it demonstrated the positive approach to political science by applying it to political problems, such as political participation, voting and majority rule, public goods, public policy, and electoral competition. The text also discussed formal theory and deductive results from formal theory, including *n*-person and two-person game theory, the power index, and the size principle. It is not clear that the textbook was introduced into the curriculum of many political science programs, but it was a necessary step in paving the way for a rational choice approach to politics to be widely recognized and well defined. It provided a resource for those outside Rochester who sought to participate in the research program launched by the Rochester school.

SECURING A LEGACY

If the 1962–1972 period was one of building up Riker's home institution, the next two decades were devoted to spreading the rational choice approach to departments across the nation and to steadily achieving institutional milestones indicating not only that the Rochester school had matured as a subfield of political science but that it had secured its legacy within the entire discipline of political science. Rochester's first generation of graduates built successful careers. They first introduced positive political theory to other departments and then made their skills indispensable to these departments. In addition to the array of appointments mentioned above, the Rochester school established strongholds and established new outposts through the appointment of its graduates to the relevant departments at Cal Tech, Carnegie Mellon, and Washington University. These programs, like Rochester's, became important centers of positive political theory. By 1985, Fiorina and Shepsle had attained

appointments at Harvard, which Riker considered one of the greatest signs that positive political theory had arrived. His alma mater, which had long insisted on perpetuating what he took to be dated and nonscientific approaches to politics, had at last come around to acknowledge the leading role that his positive political science rightfully played. Meanwhile, back at Rochester, a second generation of students was prepared to reinforce those already practicing in the field, while another wave of students absorbed the steady pedagogy of Rochester's first progeny. The second generation of Rochester students, like their predecessors, have become leaders in many subfields of political science. Keith Poole, Keith Krehbiel, James Enelow, and others emerged as leading scholars of American politics in the positivist tradition. Michael Altfeld, James Morrow, David Lalman, and Woosang Kim made important early contributions to the development of a positive political theory of international relations. Subrata Mitra established a beachhead for rational choice models in the study of South Asian politics as Daryl Dobbs did in political theory. The consistent, thorough preparation of students who recognized themselves to be part of a distinct movement to alter political science, the camaraderie and tight-knit sense of community among those students, and their impressive scholarly productivity ensured that Riker's pioneering vision would become one of the field's standards. These scholars were steadfast in their commitment to positive political theory and unyielding in their efforts to research and advance the theoretical paradigm of rational choice. Their advances and branches of study are the subject of a following section.

Riker was nominated to the National Academy of Sciences (NAS) in 1974, and thus was among the first political scientists to be inducted into the elite society. He was later joined by other Rochesterians, including Fenno, Shepsle, McKelvey, and Fiorina, as well as such "fellow travelers" as John Ferejohn. Admittance into the NAS signaled the acceptance of political scientists into the community of natural scientists for having met the dictates of rigorous scientific inquiry. Furthermore, it emphasized that this acceptance was partly because of the facility with formal models so clearly displayed by Rochester school members. Thus, when political science made the grade of inclusion into the NAS, this was in no small part due to Riker's steadfast promotion of a quantitative and deductively rigorous approach to politics. Of the 14 political scientists who have been elected to the NAS over the past two and a half decades, one third were either faculty at or PhD graduates from the University of Rochester. This is all the more remarkable considering that the Rochester program was always very small, often enrolling fewer than 10 students per year. The induction of Rochester-trained political scientists into the NAS had the further effect of elevating the status of the political science departments and universities that could count them among their faculty for purposes of accreditation and national ranking.

Riker met with additional career successes that established his legacy and served as community recognition of his significant role in making over political science. His nomination to the American Academy of Arts and Sciences in 1975 was a significant accomplishment, even if overshadowed by the NAS triumph. In 1983, when Riker was chosen to serve as President of the American Political Science Association, all political scientists, whether sympathetic or not to the Rochester credo, had to acknowledge that positive political theory had changed the terrain of political science. In the next decade, all major departments would have faculty who worked within the rational choice/positive political theory research tradition.

ROCHESTER SCHOOL CONTRIBUTIONS

The Rochester school's contributions, ranging from Riker and his colleagues' work to that of his first- and second-generation students, fall into several categories: spatial models of preference aggregation, agenda control and heresthetics, game theory, democratic theory, and epistemological advances.

The insights and puzzles raised by spatial models of politics formed a core area of inquiry for the early contributors to the Rochester school. Black (1948) had shown that the Condorcet problem could be escaped by assuming single-peaked preferences. Kramer, Ordeshook, McKelvey, and Shepsle, as well as Hinich, Schwartz, Schofield, and Weingast, among others, began the systematic exploration of the spatial model. Excellent reviews of this work can be found in Ordeshook (1986), Hinich & Munger (1997), and Enelow & Hinich (1984). It quickly became apparent that Black's solution and his median-voter theorem could not be extended to multidimensional problems. In such problems, voters select from a possibility set of more than two linked outcomes. For example, voters must decide how to allocate resources over two or more program areas. If issues are linked, or are best represented in a space that is not unidimensional, then single-peakedness is insufficient to escape the problem of cyclical aggregated preferences. The observation is of profound importance because, if cyclical preferences are common (Niemi & Weisberg 1968), then positive political theorists face the challenge of explaining policy stability and constancy in politics. Thus, spatial model results provided an intellectual challenge to democratic theory. In addition, they prompted research with a game-theoretic orientation, with an emphasis on equilibria.

McKelvey and Schofield, working at first independently and then together, resolved a fundamental feature of the spatial puzzle and tied it to equilibrium concepts (McKelvey 1976, 1979; Schofield 1978; McKelvey & Schofield 1986). They proved that in a policy space of any dimensionality above one, if there is at least one more decision maker than there are dimensions, if majority rule applies, and if "voters" chose sincerely (that is, in accordance with their

true preferences), then there is a rational basis for any possible combination of policy choices. If the aggregation of preferences to produce policy choices leads to stable outcomes in real politics, then it must be that one or more of the assumed conditions are violated in practice.

The resulting, aptly named chaos theorem suggests several explanations for stability and change in politics. It draws attention to agenda setting. By manipulating political agendas, politicians can shape and restrict the domain of political choices, limit the time within which logrolls could be pursued, and create opportunities for strategic voting to influence outcomes. The formation of political agendas became a central concern of the Rochester school and of Riker himself. His book *Agenda Formation* (1993) was published only days before he died. The collection of essays includes contributions from many members of the Rochester school, some within the spatial models framework (e.g. Poole & Rosenthal, Laver & Shepsle) and others within the framework of noncooperative game theory (e.g. Bueno de Mesquita & Lalman).

Agenda control was not the only means by which policy chaos could be averted. In conjunction with the literature on agenda formation, theorists examined how political institutions or political structure induce equilibria. Structure-induced equilibria (SIE) became a centerpiece of research by the first and second generations of Rochester students and faculty. Shepsle (1979) and later Shepsle & Weingast (1984, 1987) helped launch what today is called the new institutionalism in political science. Riker (1980) also was among the first to signal the importance of political institutions, such as congressional committees and voting rules, within a positive theory context. This research led to an intense intellectual debate. Shepsle & Weingast (1981, 1987, 1994) argued that preference outliers or extremists were institutionally advantaged and so came to dominate and steer congressional committees. A counterargument within the positivist model was launched by Gilligan & Krehbiel (1989) and Krehbiel (1991), who argued that the institutional power of committees comes from their expertise or specialized knowledge and that experts, rather than preference outliers, are granted the power through committees to shape congressional debate and outcomes.

Riker saw in the SIE debate a need for a theory of dimensionality. That is, he came to believe that whether issues were unidimensional (as in Gilligan-Krehbiel models) or multidimensional (as in Shepsle-Weingast models) was itself an endogenous, strategic decision. "Heresthetics," discussed below, was his label for this strategic effort to influence whether issues were linked or not. In *The Art of Political Manipulation* (1986) and in the posthumously published book, *The Strategy of Rhetoric* (1996), Riker brought together his concern for heresthetic maneuvering with his interest in political persuasion. Just as the Rochester school had been instrumental in returning political science to its early focus on institutions and constitutions, Riker helped return the discipline

to an examination of the science behind persuasion and campaigning by reinvigorating the study of rhetoric as a strategic device. Most rational choice scholarship accepts the institutional structure in which preferences are aggregated to be given in the model, and Riker drew attention to the significance of structuring the environment in which preferences are coordinated into a collective outcome. Thus, Riker contrasted heresthetics with rhetoric. Whereas rhetoric involves persuasion, heresthetics involves strategic manipulation of the setting in which political outcomes are reached. Riker listed a number of examples of heresthetic actions, including strategic voting (expressing preference for a less favored outcome in order to avoid an even worse outcome); agenda manipulation; avoiding wasted votes on a guaranteed winner in order to achieve a secondary objective; creating a voting cycle to undermine a current winner; vote trading; altering the sequence of decisions; and interdicting new alternatives.

The spatial model of voting also led early Rochester pioneers, especially Fiorina, to reexamine voter decision making. By the beginning of the 1970s, the Michigan view of voting as attitudinal and psychological, driven by family-transmitted party identification, had gained intellectual ascendancy. By the next decade, as a result of the research especially by Fiorina (1976, 1981), Aldrich (1980), and Ferejohn (1986) and others, the notion that voters make policy decisions had proven the major rival to the Michigan party-identification perspective. Fiorina and others elaborated a theory of retrospective voting, in which voters evaluate the past performance of incumbents and base their votes on expectations about policy performance and shared preferences. Aldrich built on the growing body of theoretical literature on rational voting decisions to launch the first theoretical and empirical analysis of the presidential-primary process. Bueno de Mesquita (1984) and his colleagues (Bueno de Mesquita et al 1985, Bueno de Mesquita & Stokman 1994) built on the theoretical developments in the spatial model of voting to construct a practical, applied model that found broad use in the US government and in business to predict policy decisions in voting and nonvoting settings. Riker pointed to this work as further evidence that his vision of a predictive, positive political science was being realized. He observed of the median-voter theorem that

> a forecasting model based on the theorem has attracted repeat customers in the worlds of business and government (Bueno de Mesquita, Newman, and Rabushka 1985). While commercial success says nothing about scientific explanation, it does at least indicate that the model using the median-voter theorem is better for prediction than alternatives (which are mostly nontheoretical and intuitive). Unplanned reality testing of this sort gives me, at least, some confidence that rational choice theory is on the right track. [quoted in Alt & Shepsle (1990:180)]

As noted above, game theory was an important instrument in the Rochester school's tool box. By the early 1980s, advances in noncooperative game theory made it possible to analyze complex problems involving uncertainty about the payoffs of players or about the past history of play. Again, the Rochester school was at the forefront. With the additions of David Austen-Smith, Jeffrey Banks, and Randall Calvert to the faculty, Rochester began producing a new generation of students equipped to use noncooperative games to examine problems for which cooperative game theory proved inadequate. Austen-Smith & Banks (1988, 1990) investigated the complexity of voter choices in parliamentary systems, puzzling over the difficulty voters face in choosing their most preferred candidate or in choosing to enhance the prospects that their most preferred party will get to form a government. They also returned to the Condorcet jury theorem to evaluate its implications within an equilibrium framework (1996). Morrow (1989), Bueno de Mesquita & Lalman (1992), and Smith (1995), as well as fellow travelers Brams (1985, 1990), Powell (1990), Fearon (1994), Downs & Rocke (1990, 1995), and Zagare (1987), introduced noncooperative game theory to the study of international relations, casting doubt on many of the most widely accepted beliefs about international affairs in the process. Diermeier & Feddersen (1998) and Smith (1996), among others, are doing the same in comparative politics.

Riker's joint theoretical and empirical exploration of the nature of democracy, based on the social choice work of Arrow, indicates the power of positive political theory to influence our hopes and aspirations for democratic government. In his book *Liberalism Against Populism* (1982), Riker uses social choice theory to argue that the populism of Jean Jacques Rousseau is untenable, whereas the more limited liberalism of James Madison is realistic. Riker makes his case by recounting the lesson of Arrow's Impossibility Theorem, which proves that no means of democratically aggregating votes for more than two outcomes can be devised that has the desired properties of citizen sovereignty, Pareto optimality, non-dictatorship, independence of irrelevant alternatives, and universal domain. In effect, Arrow demonstrated the limits of democratic processes for reaching collective outcomes. Riker, who was often frustrated by political scientists' failure to recognize the implications of Arrow's work, used Arrow's result to question the efficacy of democratic government in producing outcomes that are somehow publicly beneficial. He put democratic theory to the test, asking what normative goal it postulated and what practical goals were attainable. He concluded that social choice theory undermined populism, but he supported the less ambitious Madisonian liberalism.

Comparative politics was slowest among substantive fields of study to utilize, if not embrace, the theoretical advances that positive political theory had brought to the study of American politics and international relations. In some

ways, this is the most surprising and disappointing aspect of the efforts to spread the Rochester school's focus on rational action. It is surprising because Riker's focus on coalition formation had natural applications in comparative politics. Many picked up on the ideas in investigating coalitions (Groennings et al 1970, de Swaan 1973), but the area-studies focus of comparativists proved difficult to overcome. Coalition politics was not the only aspect of comparative politics that was examined using the new positive political theory. Rabushka & Shepsle (1972) showed how to utilize rational choice modeling to think about the sources of political instability in plural societies. Mitra (1978) developed theoretical insights and showed strong empirical support for them in his investigation of cabinet instability in India. Only relatively recently, however, has positivism begun to take hold in the study of comparative politics. Strom (1990), Laver & Shepsle (1994), and Laver & Schofield (1990) returned to the investigation of coalitions and cabinet formation. Fearon & Laitin (1996) have begun the systematic investigation of ethnic conflict, returning to the theme of research by Rabushka & Shepsle a quarter of a century earlier. And many others, both inside and outside the Rochester school, have undertaken rational choice studies of parliamentary voting, banking policy, political party politics, federalism, economic growth, and so on.

The Rochester school has done more than just contribute to a better understanding of specific questions about politics, although these contributions are not to be underestimated. The epistemology of positive political theory itself has drawn attention to basic problems in the previous conduct of political research. These advances include the following four general areas of insight: endogenous choices and their implications for path dependence; selection effects in theory and in data and how they can distort inferences from historical or statistical analysis; keeping arguments independent from the evidence used to evaluate their merits in order to distinguish between description, explanation, and prediction; and prediction as a means of evaluating the potential of scientific inquiry. These four items—endogeneity, selection effects, independence between argument and evidence, and prediction—represent areas where scientific inquiry into politics has proven to be helpful in clarifying problems that frequently arise in other modes of analysis. Table 1 summarizes these claims.

Each of the points summarized in the table represents an important difference between the epistemology characteristic of positive political theory and that of rival methods. The emphasis on endogenous choice draws attention to how strategic decisions influence the flow of events. We briefly offer two examples.

Students of American politics have observed that the presidential veto is rarely used. This traditionally was explained by claiming that the president was weak compared with the Congress. By focusing on endogenous choice,

Table 1 Some general insights into positive political theory

	Historical and Some Statistical Inductive Approaches	Positive Political Theory, Especially Noncooperative Game Theory
Flow of Events	Taken as given or as the product of "exogenous" developments	Endogeneity is analyzed. Events are linked to strategic decision making
Selection of Cases	Sampling on the dependent variable. Cases are chosen in which similar outcomes seem to be caused by similar factors. Cases with the same factors but without similar outcomes may be overlooked	Sampling on the independent variables. Cases are chosen to evaluate whether similar factors occur with similar outcomes when variation in factors and outcomes are both represented in the cases analyzed
Evidence	Often drawn from the same events that provided the basis for the hypotheses	Evidence should be independent of the information used to derive hypotheses
Objective of Study	To describe and explain specific events and actions in terms of contextual factors or in terms of patterns observed in the data	To make and test claims about causation as indicated by the proposed relations among variables so that those proposed relations can be evaluated repeatedly through empirical testing to assess predictability

rational choice models have drawn attention to a rival explanation that seems to fit the empirical record better. The president needs to invoke the veto only rarely because the threat that he will use it is sufficient to pursuade the Congress to pass legislation that the president will sign or that has enough support that a presidential veto can be overridden.

Students of international affairs observe that when a state with allies is attacked, the allies fail to come to the aid of their partner about 75% of the time. When decisions to attack are taken as exogenous, the implication is that alliances are unreliable. When decisions to attack are taken as endogenous, it becomes apparent that reliable alliance commitments are unlikely to be tested by adversaries. In fact, Smith (1995) has shown that the latter account fits the record of history, both with regard to attacks and successful deterrence, better than the alternative explanation.

An emphasis on selection effects is closely related to this focus on endogenous choice. The alliance example highlights selection effects based on observed and unobserved actions that make up an equilibrium strategy. Game-theoretic perspectives attend to counterfactual reasoning about what is expected to happen if actors follow different strategies. Actions are endogenous to the model precisely because actors select them with an eye to avoiding worse expected outcomes. This influences both the derivation of hypotheses

and sampling decisions when hypotheses are tested. One important consequence is that rational choice models provide a natural and logical basis for thinking about counterfactual events and for structuring hypotheses that are contingent rather than monolithic explanations (Fearon et al 1996).

The Rochester school has emphasized deriving hypotheses from axioms. Doing so reduces the risk that hypotheses are restatements of already observed patterns in the data. Even when models are constructed specifically to account for known empirical regularities, they are likely to produce new propositions that have not previously been tested. These new propositions, of course, create demanding tests of the theory. Historical and statistical analyses tend not to hold the relations among variables constant from study to study and so are less likely to test inductively derived hypotheses against independent sources of evidence.

One of Riker's primary goals was the construction of a predictive science of politics. We referred above to a body of positive theory research that has an audited track record in making predictions about events that had not occurred when the research was published. Though in its infancy, this record seems to provide significant evidence that positivist methods are leading to a predictive science. A detailed accounting can be found elsewhere (Ray & Russett 1996, Feder 1995).

REVISITING THE "ECONOMICS IMPERIALISM THESIS"

Often, in presenting the accomplishments and history of rational choice theory in political science and the Rochester school, scholars put forth the "economics imperialism thesis" (see e.g. Miller 1997, Solow 1997). This thesis holds that the methods of economics, and the assumption that self-interested rational action characterizes human behavior, spread from economics and took over such disciplines as political science. Some evidence for this thesis exists in the early curriculum established by Riker at Rochester. The Chicago school of economics, and especially Stigler's (1966) price theory text, was a staple of graduate training at Rochester for many years. The problems with the economic imperialism thesis, however, are threefold. First, this thesis holds that rational choice theory was fully articulated within economics and then colonized, as it were, other fields, including political science. Second, this theory displaces the credit for innovation from political scientists to economists. Third, the economics imperialism scenario ignores that both economists and political scientists have had to reconsider their subject areas as market phenomena are increasingly seen to be interlaced with nonmarket "externalities," and "political economy" is taken to be a single unit of study which entails recognizing the unification of politics within economics.

The most glaring inaccuracy of the economics imperialism account is the idea that political scientists took the theory of rational action as articulated by economists and applied it to political events. This narrative ignores what Riker made obvious in *The Theory of Political Coalitions*—that traditionally the rationality of economic agents was thought of as mechanical rather than deliberate and conscious, was modeled using multivariate techniques of maximization, and copied the principle of least action from physics rather than the new mathematics of game theory. "Rational choice," denoting conscious decision making in a strategic environment with rational competitors, as originally articulated by von Neumann & Morgenstern (1944), became the status quo within political science before economists fully grasped its merits for their field. Certainly a number of the original contributions to the rational choice canon came out of the economics tradition, but they were marginal within their own discipline until the 1970s. It was not until the 1980s that game theory made its way into the heart of microeconomic theory, and the use of spatial models in economics is quite different from their use in studying politics.

Furthermore, as is evident from the fact that the Rochester school transformed political science and was comprised of political scientists and not economists, rational choice theory was articulated outside of economics. The Rochester political scientists were not pirates on economic waters, stealing concepts at their fancy. More accurately, Riker and his colleagues developed a rational choice approach to politics that was anchored in individual decisions and depended on a conception of rational agency entailing a strategic, thinking environment. This environment was foreign to most economists, to whom rational action resembled automatic, unthinking maximization (Knight 1963 [1956], Samuelson 1948). Riker could not have made headway without his predecessors von Neumann, Morgenstern, Black, Arrow, and Downs, and some of the important innovators in political economy within economics at Chicago, but a rational choice theory of politics existed only in an incomplete and inchoate form in the promise of these earlier theories. It took Riker's rigorous, analytic mind to develop a unified approach to politics that drew on the varied approaches of his predecessors. As he wrote in the preface to *Liberalism Against Populism*,

> One central question of political description—a question much disputed but little understood—is the problem of explaining why some issues are politically salient and others not. This problem has usually been investigated by reducing politics to something else—to economics, for example, as in Marxism, or to psychology, as in psychoanalytic visualizations—thereby producing an economic (or psychological) interpretation of politics. However,...I offer a political interpretation of politics, a theory about the rise and decline of the salience of issues that derives directly from social choice theory and is entirely political in form. (Riker 1982:ix)

Riker rescued and made mainstream a coherent method from a mixed bag of techniques that otherwise would probably not have been coalesced into positive political theory or a rational choice approach to politics.

DEBATES SURROUNDING RATIONAL CHOICE SCHOLARSHIP

Institutional victories and the high-profile status of Rochester-trained scholars, as well as consistent determination on the part of Rochester school members to displace other forms of political science, have positioned the Rochesterians and positive political theory at the center of much heated debate. As Riker was the first to opine, "the rational choice paradigm is the oldest, the most well established, and now,...the one that by its success is driving out all others" (unpublished manuscript "A Paradigm for Politics," 1983, WHR papers). Green & Shapiro (1994) both underscored the arrival of the rational choice method as an accepted and mainstream practice within political science and articulated reservations about its explanatory powers. Green & Shapiro raised concerns that the Rochesterians' commitment to universalizing formal models has taken on a life of its own, and they questioned to what extent their highly abstract formal theories are amenable to empirical testing. Green & Shapiro concluded that within the rational choice tradition, "very little has been learned...about politics" (1994:x). As cases in point, the authors discuss several anomalies the rational choice approach seems unable to explain. These include (*a*) the paradox of voting (the fact that voters apparently receive no tangible payoff from voting in a general election seems to undermine the idea that actors are motivated by rational expectations); (*b*) the tragedy of the commons and the free-rider problem that rational choice theory predicts from self-oriented behavior (Green & Shapiro argue that the narrowly construed concept of the rational actor does not leave room for communicative sociability, which actually drives interactive behavior and can forestall collective action calamities); (*c*) the predicted abundance of instability in democratic institutions (for which Green & Shapiro question the empirical support). Green & Shapiro also question the adequacy of the empirical evidence supporting the positivist political theorists' theory derived from spatial models supporting the median-voter theorem.

In defense of rational choice theory and the Rochester school, political theorist James Johnson has little patience with Green & Shapiro's "hostile" assessment of the rational choice research program (Johnson 1996). He is dissatisfied with their grasp of social science (1996:81) and defends the Rochesterians by arguing that layers of abstract theoretical research eventually result in breakthroughs with proved empirical relevance, many of which we have discussed here, and he notes that Green & Shapiro fail to discuss bodies of ra-

tional choice scholarship that make solid contributions to the knowledge of political events.

Debate over the efficacy of a rational choice theory of politics continued in a forum provided by the journal *Critical Review*, which devoted an entire issue to the swirling controversies (Friedman 1995). Here it is evident that the debate over the merits and efficacy of a rational choice theory of politics are contested on three levels. As described above, scholars disagree as to whether positive political theory's theoretical findings and empirical evidence provide meaningful insight into political phenomena. At a secondary level, scholars disagree over the definition and legitimate practice of social science, generally, and political science, particularly. At an even more inclusive level, the heated nature of the exchanges results from a fundamental disagreement as to whether the "rational actor" model of human behavior is sufficient. Whereas the debate of theoretical adequacy and empirical verification concentrates on specific models and theories, the latter discussion has interdisciplinary relevance as scholars in economics, sociology, philosophy, and jurisprudence take up the rational choice mantle. Whereas the Rochesterians often remain focused on the issues of theoretical validity, the debate over rational choice theory has become, in other corners, a debate over the fundamental character of human nature, human psychology, and human agency. The Rochester positive political theorists have focused on building predictive models that can be applied to such tasks as designing political institutions or structuring electoral processes. However, some of their colleagues in other fields have used the rational-actor account of human action to promulgate a vision of society governed by the proselytizing assumption that all social institutions and interactive collective events must be accounted for according to the assumption of self-interested reason: What can I get out of it? What are my payoffs? Thus, it is necessary to contrast the work of scholars who have constructed a set of normative prescriptions from the starting assumptions of rational choice (e.g. Buchanan 1975, Brennan & Buchanan 1985) with the work of the Rochesterian positivists, who strive to stay focused on using their theoretical constructs to draw predictive conclusions that are subject to empirical test.

CONCLUDING STATEMENT

Although a confluence of factors bolstered Riker's success in building a school of political science and transforming the discipline of political science, the story of the Rochester school demonstrates the impact that a single person can have on an entire field. Furthermore, although it is continually stated that rational choice theory worked its way from economists' workbooks to political scientists' heads, it must be remembered that rational choice theory, as a theory of deliberate, strategically calculating action originated by von Neumann

& Morgenstern's *Theory of Games and Economic Behavior*, was initially rejected by mainstream economists as external to their subject matter. While economists continued to work until the 1980s in the tradition of maximizing models couched in terms of differential calculus and a quasi-mechanical conception of reason, William H Riker both had the vision to construct a comprehensive science of politics grounded in the idea of strategic competition and grasped the potential of game theory to model these interactions. In the final analysis, the Rochester school's far-reaching institutional success, which resulted from both an ambitious research program and astute political maneuvering, is the most telling indication of the validity of its creed.

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