Rational Choice and Security Studies:
Stephen Walt and His Critics

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AN *International Security* READER

Rational Choice and Security Studies

Stephen Walt and His Critics

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Preface

Sean M. Lynn-Jones

This volume consists of a debate about the role of rational choice approaches—particularly formal, mathematical models—in the field of international security studies. It gathers together articles that were originally published in *International Security* in 1999. Stephen Walt opened the debate with "Rigor or Rigor Mortis? Rational Choice and Security Studies" in the journal's Spring 1999 issue. Walt's article presented a wide-ranging critique of the use of formal models and rational choice methods in security studies. At the invitation of the journal's editors, Bruce Bueno de Mesquita and James Morrow, Lisa Martin, Emerson Niou and Peter Ordeshook, Robert Powell, and Frank Zagare replied to Walt in the Fall 1999 issue. Walt replied to his critics in the same issue. We have assembled these articles into a short book in hopes of making this debate more readily available to a wider audience.

The debate presented in this volume is one manifestation of a broader controversy that has raged in political science and other social sciences in recent decades.[1] An increasing number of scholars has employed rational choice methods, including game theory and sophisticated formal mathematical models, in economics, sociology, political science, and other disciplines. These scholars generally assume that actors (whether voters, legislators, leaders, or nation-states) have a set of goals that they attempt to achieve through rational action. These assumptions can be used to build a logical set of propositions that predict how the actors will behave in various circumstances. In political science, formal models have been most prominent in the field of American politics, but game theory—long applied to the study of deterrence, crisis bargaining, and international cooperation—and formal models more generally have become more prominent in international security studies in recent years. Scholars who use formal models generally argue that their approach to the study of politics is more scientific and more likely to yield cumulative progress than other methods, such as case studies of historical episodes, analyses of ideas, norms, and beliefs, and applications of insights from psychology.

As rational choice approaches and formal models have become more prominent, scholars who prefer to use other methods have criticized both the approach and the scholars who use it. Critics of rational choice argue that formal models do not capture the complex realities of political action. However logical

1. For a brief overview of the controversial rise of rational choice and formal models in political science, see Jonathan Cohn, "Irrational Exuberance," *The New Republic,* October 25, 1999, pp. 25–31.

and precise, sets of equations cannot substitute for a deep understanding of, for example, a country's history and culture. Other critics point out that formal rational choice models often rest on unrealistic assumptions about actors' motives. In their view, formal methods contribute little to the understanding and solution of real-world political problems. Further criticisms have been leveled against the scholars who adhere to the rational choice approach. Many see "choicers" as intolerant of rival approaches and determined to assert hegemony over individual departments and the discipline of political science as a whole.[2]

In "Rigor or Rigor Mortis? Rational Choice and Security Studies," Stephen M. Walt argues that recent applications of formal rational choice theory have generated few new hypotheses or insights about contemporary security issues. He finds that the latest wave of technically complex, and mathematical formal theorizing has not significantly advanced our understanding of international security. Walt notes that the debate over the merits of rational choice approaches has important implications not only for the careers of individual scholars, but for the future of political science as a discipline. If rational choice theorists are dominant, they will inevitably privilege some questions, approaches, and methods over others.

According to Walt, formal rational choice approaches have the following five characteristics. First, rational choice theory assumes that social and political outcomes are the product of choices by individual, unitary actors. Second, the theory assumes that each actor seeks to maximize subjective expected utility. Third, we must be able to rank order the preferences of each actor, and the preferences must be transitive (if the actor prefers A to B, and B to C, then it prefers A to C). Fourth, formal theory entails specifying the structure of the game—identifying the set of players, their preferences, their information, and how they believe their moves are connected to possible outcome. Fifth, rational choice theorists attempt to identify the equilibria in games—choices of strategies that create situations from which no actor has an incentive to deviate unilaterally. Although some formal rational choice theorists might not agree with all of this characterization, Walt contends it aptly describes most recent formal work in security studies and international relations.

How should we evaluate recent formal rational choice scholarship in international security studies? Walt argues that three criteria should be used to

2. See the suggestions for further reading at the back of this book for a representative list of criticisms and defenses of rational choice.

judge rational choice theories—and all social science theories: (1) logical consistency and precision; (2) originality; and (3) empirical validity. Of these three, the latter two are especially important, because logical, consistent, and precise theories may still be trivial or false. Walt places special emphasis on the need to develop theories that "produce accurate and relevant knowledge about the human condition." He then assesses how rational choice models satisfy these three criteria.

Walt argues that rational choice methods can help to make theories more logically consistent and precise, but this does not necessarily make them superior to other approaches. Stating theories in formal, mathematical terms can be valuable. It makes assumptions apparent and enables scholars to determine whether predicted consequences follow from the initial premises. Nevertheless, Walt points out, nonformal theories also can be precise and logically consistent. Moreover, theories can contribute to knowledge even if they lack these two characteristics. Important theories in international relations, such as Kenneth Waltz's neorealist theory, have inconsistencies but they have been influential and have stimulated much creative scholarship. Walt suggests that logically consistent and precise formal theories may still be flawed if they are built on unrealistic assumptions or have multiple equilibria and thus fail to make clear predictions. The consistency and precision of formal theories also has a price. Complex formal mathematized theories are also less accessible to scholars and others not trained in formal methods and therefore are more difficult to evaluate critically and to apply practically.

Walt argues that recent formal rational choice scholarship in security studies often has failed to satisfy the second criterion for evaluating theories: it has not been creative or original. Recent formal work in security studies has not generated many new theories or hypotheses. Citing numerous examples of recent rational choice scholarship to support his arguments, Walt contends that this body of scholarship has exhibited a lack of originality in two ways. First, rational choice approaches have displayed "methodological overkill." Elaborate models have yielded trivial theoretical results. For example, formal models have shown that states do not initiate crises when the other side has military superiority, that states that will benefit from war are more likely to start wars, and that states form alliances to enhance their security. All of these findings are hardly surprising to scholars who do not use formal models. Second, formal models often produce "old wine in new bottles" by offering familiar arguments in a slightly new guise. Claims that "commitment problems" and "private information" cause wars that rational states would otherwise avoid, for exam-

ple, reiterate long-standing arguments about the pernicious effects of anarchy and secrecy in international politics.

Walt acknowledges that formal approaches have yielded some new insights, including propositions about deterrence, arms races, alliances, and cooperation. But nonformal approaches have been at least as fruitful in generating new hypotheses and theories. Formal models actually may discourage creativity and originality by confining analyses to mathematically tractable two-party interactions and discouraging investigation of concrete empirical puzzles. Walt notes that deterrence theory traces its roots not to formal models, but to historical analysis and attempts to resolve U.S. policy dilemmas in the 1950s.

Turning to the third criterion for evaluating theories—empirical validity—Walt argues that most formal work in security studies fails to conduct any empirical tests and therefore lacks empirical support for its theoretical conclusions. In many cases, formal analyses rely on anecdotes or mathematical simulations. Some recent formal works have, however, offered extensive theoretical testing. Walt assesses two prominent examples: Bruce Bueno de Mesquita and David Lalman, *War and Reason: Domestic and International Imperatives;* and Emerson M.S. Niou, Peter C. Ordeshook, and Gregory F. Rose, *The Balance of Power: Stability in International Systems.*

Walt finds that the statistical analyses and case studies in *War and Reason* are not rigorous tests. Bueno de Mesquita and Lalman rely on crude indicators for concepts like "risk propensity," "utility," and "uncertainty." They do not offer precise measures for key variables. Their procedure of collapsing eight possible outcomes into a 2 X 2 table of observed and predicted outcomes lumps together cases in which the predicted outcome occurred and those in which it did not, thereby exaggerating the predictive performance of their model. The case studies in *War and Reason* do not provide more convincing evidence of the model's predictive capabilities. Walt contends that the evidence Bueno de Mesquita and Lalman offer from, for example, the Fashoda crisis, the Greco-Turkish confrontation over Cyprus, and the Sino-Indian War often contradicts the predictions of their model.

The Balance of Power, according to Walt, also fails to present empirical support for its theoretical predictions, despite its many virtues, which include clear presentation, candor about the limits of the model, and some counterintuitive predictions. Niou, Ordeshook, and Rose rely on ad hoc factors (e.g., the claim that the dispute over Alsace-Lorraine made a Franco-German alliance impossible between 1871 and 1914) to explain away alliance decisions that are inconsistent with their model. In addition, they do not show that states in the

real world actually make decisions for the reasons identified by the model. For example, the model predicts that states will voluntarily transfer resources to another state to make an international system more stable, but actual states rarely transfer resources voluntarily. Finally, Walt argues that *The Balance of Power* unconvincingly claims that World War I began because Russia launched a preventive war against Germany—an interpretation that may support the model but flies in the face of most of the historical evidence.

Walt concludes that formal rational choice approaches to security studies are not inherently more valuable or scientific than other approaches. Formal methods may increase theoretical precision and consistency, but they have not offered powerful or creative new theories. Most recent formal work also has not been tested empirically. When scholars have offered empirical tests of formal theories, the evidence often has contradicted a model's predictions.

Walt also suggests that the rise of formal approaches imperils the ability of security studies to address actual security problems. Because rational choice methods have "relatively little to say about important real-world security issues" their increasing prominence may contribute to a "cult of irrelevance" in security studies. Formal theorists know a lot about highly technical methods of analysis, but little about politics and history. A field dominated by formal methods would be one divorced from contemporary security issues.

Walt argues that security studies should continue to embrace methodological pluralism. Formal rational choice theory should not be allowed to dominate the field. Instead, scholars should continue to pursue a diverse set of methods, including formal theory, statistical analysis, historical case studies, and constructivist analysis. If the field of security studies retains its intellectual and methodological diversity, it will continue to address important real-word security problems.

The next five essays in this volume offer replies to Walt's critique of formal rational choice theories and methods. In "Sorting Through the Wealth of Notions" Bruce Bueno de Mesquita and James Morrow defend formal rational choice approaches against Walt's criticisms. They argue that logical consistency is the most important criterion for evaluating theories. When theories are not logically consistent, virtually any hypothesis can be deduced from the theory, making empirical testing impossible. Logically inconsistent theories also do not offer useful policy prescriptions, because they can be used to justify different policy recommendations. Formal models force scholars to confront and eliminate logical inconsistencies in their theories by (1) requiring that assumptions be made explicit; (2) eliminating apparent contradictions by identifying the

conditions for different conclusions; (3) integrating empirical regularities into a unified logical framework; and (4) identifying previously accepted results that do not follow from the theory. Bueno de Mesquita and Morrow offer examples of how articles that use formal models have achieved these four goals.

Bueno de Mesquita and Morrow also argue that formal models have generated many original insights and novel conclusions. They reconsider articles cited by Walt, pointing out that many of them offer new conclusions that Walt does not mention. Even when formal models reiterate conclusions reached through nonformal analysis they provide a logical basis for accepting some insights while rejecting others. In particular, they argue that the Bueno de Mesquita and Lalman, *War and Reason*, contains novel propositions and numerous empirical tests that have been replicated by other scholars.

Agreeing with Walt's view that social science should inform public policy, Bueno de Mesquita and Morrow argue that formal models can contribute to policy-relevant knowledge. They point to Bueno de Mesquita's "expected utility" model as an example of how basic research can generate a practical tool that offers policy advice. The Central Intelligence Agency and other U.S. government agencies have used this model.

In the subsequent essay, "The Contributions of Rational Choice: A Defense of Pluralism," Lisa Martin argues that as a consumer—not a producer—of formal theory she believes "the field of security studies would be severely impoverished if formal work were discouraged." Although Walt calls for diversity, Martin points out that his article is largely devoted to implicit calls for limiting the use of formal models in security studies. Martin offers three arguments in response to Walt. First, she contends that Walt overlooks how formal approaches have the great virtue of being able to generate integrated and logically coherent sets of propositions. In her view, Walt ignores this strength of formal models when he focuses on the originality—or lack thereof—of specific hypotheses derived from formal work. Building social-science theories entails creating complexes of related propositions, and formal modeling enables scholars to combine assumptions and hypotheses in a logical and coherent way.

Second, Martin argues that formalizing the insights of informal rational choice scholarship has important benefits. In response to what she calls the "Didn't Schelling already say that?" question, she answers that turning informal insights—even brilliant ones—into formal models often makes them more specific and enables scholars to identify the conditions under which they are true. Such formalization also contributes to logical consistency and coherence.

Third, Martin examines the contents of leading journals of international security studies in recent years to determine if formal work now dominates their pages. She finds that formal approaches are not overrepresented in security studies; only 13.1 percent of the 1994–98 articles that Martin surveys used formal models. Thus she concludes that formal models are hardly dominating the field and that formal work should be encouraged.

In "Return of the Luddites" Emerson Niou and Peter Ordeshook begin by agreeing that Walt is correct to note that much formal work in security studies ignores empirical reality and agree that some formal work is motivated by a desire for formalism for its own sake. After noting that Walt's critique is not aimed at rational choice approaches in general but at formalism in particular, they present five responses to Walt's arguments.

First, Niou and Ordeshook argue that Walt mistakenly places more value on theoretical originality and empirical validity than on logical consistency and precision. They contend that theories that are "incoherent, illogical, or imprecise" are difficult to evaluate and are unlikely to be empirically valid in any case—regardless of their originality. Formal models make it impossible to hide inconsistencies and flawed logic, even if they can be technically challenging to read and understand.

Second, Niou and Ordeshook take exception to Walt's claim that formal approaches have not generated creative or original theories. They point out that logical consistency in itself may be a creative theoretical contribution in a field where many leading theories are inconsistent and subject to numerous interpretations. Moreover, formal models represent theoretical progress when they contribute to specifying the conditions under which propositions derived informally are true. And the development of formal models is in itself a creative process.

Third, according to Niou and Ordeshook, Walt fails to show that alternatives to formal approaches have offered profound insights or systematic empirical testing. In other words, he does not present a "null hypothesis" against which to evaluate the contribution of formal scholarship.

Fourth, Niou and Ordeshook argue that Walt fails to understand how formal and empirical analyses are complementary. Many early informal applications of rational choice theories—including some that Walt praises—offer few, if any, empirical tests. Instead, scholars like Schelling, Olson, and Riker borrowed models and insights from formal theory and opened the way for further theorizing.

Finally, Niou and Ordeshook suggest that Walt misunderstands the process of scientific development. They contend that Walt mistakenly assumes that

science consists of conducting controlled experiments that offer definitive tests of hypotheses. Most science does not conform to this image, however. In the natural sciences, scientific knowledge often advances through an ad hoc process of trying to solve real-world problems. Researchers are, however, held accountable for faulty judgments—something that rarely happens in political science, where the literature is replete with ambiguous theories and concepts, failed predictions, and poor policy advice.

Robert Powell, in "The Modeling Enterprise and Security Studies," defends the use of formal models on the grounds that this approach provides an "accounting standard" that makes it easier to communicate and assess arguments. Much of the nonformal literature in security studies contains ambiguous and contradictory statements and few robust empirical regularities. Powell offers three responses to Walt.

First, many of the most prominent arguments in contemporary security studies are neither transparent nor reproducible. Nonformal analyses often conceal their assumptions, making it impossible to tell what a theory predicts. Formal analyses can, for example, sharpen the distinction between concepts such as "the cost of fighting" and the "offense-defense balance." Mathematical language is often clearer and more concise than ordinary English language. Powell points out that recent formal work has shown that international anarchy does not induce concern for relative gains, and that the argument that states balance against power or threat is suspect, among other things. These contributions are a direct result of the transparency and reproducibility of formal models.

Second, Powell criticizes Walt for failing to appreciate how formal modeling has offered original insights. He argues that formal work on costly signals has introduced an important distinction between ex ante and ex post indicators, a distinction that was not present in earlier nonformal analyses such as Robert Jervis's *The Logic of Images in International Relations.* Powell also suggests that Walt conflates the generation of new ideas and deep insights with original theoretical contributions. Formal approaches have no monopoly on the former, but they often produce the latter.

Third, Powell responds to Walt's claim that recent formal work includes few empirical tests. He argues that some books and articles should not and need not include empirical tests if they are intended to elucidate new models or theories. This is also true of the nonformal literature, which includes important books and articles that offer few empirical tests. Kenneth Waltz's *Theory of International Politics* is a prominent example. Powell also points out that a

considerable proportion of recent formal work in security studies does include empirical tests.

Powell concludes by noting that formal approaches have contributed to important post-Cold War debates on the democratic peace, ethnic conflict and international institutions. Formal models are not irrelevant to these important issues. He urges readers to read the recent literature so that they can judge the contribution of formal approaches for themselves.

Frank Zagare's "All Mortis, No Rigor" lauds Walt for recognizing that formal methods ensure logical consistency and enhance clarity, but faults him for abandoning these virtues in his article. He also argues that Walt is wrong to claim that formal models would be misleading if decisonmakers do not use the decisionmaking processes attributed to them by rational choice theory.

Zagare responds to Walt's critique of recent formal scholarship in security studies by defending his own work against Walt's charge that it exemplifies "methodological overkill." He argues that Walt examined only one of many articles that Zagare has co-authored with Marc Kilgour. Zagare claims that this body of work differs from classical deterrence theory, particularly in treating threat credibility as a variable, and reaches different conclusions.

Zagare also argues that formal models are valuable even when they do not advance novel propositions, because they give arguments logical structure and make it possible to assess how different assumptions lead to different conclusions.

Finally, Zagare replies to Walt's charge that formal theorists have not conducted systematic empirical tests of their theories. Noting that some critics say that Walt's own work lacks such tests, he argues that formal models can and should be empirically tested. The fact that some formal theorists have not offered empirical tests reflects the division of labor in political science, not the limitations of formal models.

In this volume's final essay, "A Model Disagreement," Walt replies to his critics. He groups his responses into five categories. First, Walt responds to critics who claim that he undervalues logical consistency and precision, which they regard as the sine qua non of any scientific theory. He argues that he believes that logical consistency is highly desirable, but reiterates that it is not the only criterion by which theories should be judged. In his view, logical consistency by itself does not make a theory good. Creative new theories are valuable even when they rest on unidentified assumptions or contain inconsistencies. These problems are easier to resolve when a theory offers an important argument, and wholly contradictory theories will not last long. Formalization

is not the only way to make precise, logically consistent arguments. Moreover, most formal work does not attempt to identify and resolve inconsistencies in nonformal theories, but instead identifies assumptions and conditions under which hypotheses operate. Walt points out that his critics identify only one example of how formal analysis has corrected a logically contradictory argument.

Second, Walt replies to arguments that he overlooks the creativity of formal models. He points out that he did not claim that building models requires no creative insight, but instead argued that formal modeling rarely leads to "new, empirically valid insights about international security." Walt examines each of the examples of apparently creative formal work that Bueno de Mesquita and Morrow and Powell present. He argues that these articles offer few new theoretical claims and some do not even include formal models.

Third, Walt argues that his critics do not seriously challenge his claim that formal modelers have not offered rigorous tests of their conclusions. He notes that the article cited by Bueno de Mesquita as empirical support for *The War Trap* actually offers little support. Walt suggests that Niou and Ordeshook seem to abandon the idea of empirical testing entirely. Walt also points out that he believes several otherwise praiseworthy nonformal works in international security studies could have been better if they had included more empirical tests. In response to claims that there should be a division of labor in which formal theorists build models and leave the testing to others, he points out that formal modelers do not seem to place a high value on testing and that there would be few scholars to do any testing if security studies is dominated by formal modelers.

Fourth, Walt reiterates that nonformal analyses have generated more useful policy-relevant knowledge than formal models. Replying to Bueno de Mesquita's claim that his model has been used and praised by government agencies, Walt argues that Bueno de Mesquita's published forecasts have not been very accurate and that former senior CIA officials report that Bueno de Mesquita's model has not had an impact on U.S. policy.

Fifth, Walt replies to Martin's argument that formal modelers do not dominate leading journals in security studies. He argues that the real issue were not the proportion of articles that use formal models, but the hegemonic aspirations of the formal modelers. In his view, the replies to his article confirm that formal modelers are intolerant of other approaches and do not embrace the goal of intellectual diversity. Walt points out that several of his critics deride nonformal approaches and claim that formal models are the wave of the future in security studies and political science more generally.

Walt concludes that the field of security studies should retain a healthy intellectual diversity. The field will suffer if any one approach dominates.

The essays collected here do not offer a complete picture of the debate between formal rational choice theorists and their critics. Similar arguments exist in fields other than international security studies, and in disciplines other than political science. A sampling of the relevant literature that criticizes and defends formal models appears in the "Suggestions for Further Reading" at the end of this volume.

These essays also do not represent the last word in the debate between proponents and opponents of formal models. This controversy will continue to rage in political science and other disciplines. The outcome of this debate will have much influence on which scholars, approaches, and topics become most prominent in international security studies. We hope that this volume contributes to this important debate.