

# Useful Fiction or Miracle Maker: The Competing Epistemological Foundations of Rational Choice Theory

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*Rational choice theorists have not clearly articulated their epistemological positions, and for this reason, their arguments in favor of rational choice theory are inconsistent, contradictory, and unpersuasive. To remedy this problem, I describe how two of the main positions in the philosophy of science, instrumentalist-empiricism and scientific-realism, act as competing epistemological foundations for rational choice theory. I illustrate how these philosophical perspectives help political scientists (1) understand what is at stake in the theoretical debates surrounding the rationality assumption, self-interest, and methodological individualism, (2) identify inconsistencies in the epistemological positions adopted by rational choice theorists, and (3) assess the feasibility and desirability of a universal theory based on the rationality assumption.*

Rational choice theory (RCT) is arguably the most popular and fastest-growing theoretical orientation in contemporary political science. RCT has substantially changed the way political scientists study issues as diverse as voting, intralegislative bargaining, political party organization, social movements, nuclear deterrence, the origins and effects of international institutions, and theories of justice. Many advocates of RCT see it as the most plausible candidate for a universal theory of political and social behavior, whose simple and intuitively plausible assumptions hold the promise of unifying the diverse subfields of political science. Critics, however, vigorously dispute the utility of RCT. They charge that the assumptions employed in RCT are unrealistic, the models empirically intractable, and the findings trivial. Although RC theorists acknowledge many of these problems, the cumulative impact of criticisms of RCT is uncertain because no clear standards exist for evaluating these arguments.[1] To add to the confusion, RC theorists themselves disagree about a number of crucial issues. RC theorists are divided as to the substance of their theoretical assumptions, such as whether the rationality assumption is sustainable, how to define self-interest, and the utility of methodological individualism. RC theorists also differ in their opinions about the scope of RCT in political science, specifically whether RCT should apply to all realms of social inquiry or be restricted to particular empirical domains. These debates are integral to the development of RCT as a viable research program in political science, yet RC theorists have not come to a clear consensus about the substance or stakes of these questions.

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[1] For these debates in political science, see the special issues of *Critical Review* (J. Friedman 1996) and *International Security* (Brown et al. 2000). For similar debates in sociology, see the discussions by Goldthrope (1996), Smelser (1992), and Somners (1998).

The issues involved in these debates are diverse and may seem unrelated, yet all share common concerns, specifically how RC theorists should conceive of the scientific enterprise and the way in which RCT should be designed, tested, and evaluated. In effect, the driving component in all of these debates is *epistemology*—what is the proper way in which to conduct scientific inquiry and how RCT can best facilitate the valid pursuit of scientific knowledge. RC theorists, however, have not clearly and consistently articulated a particular epistemological position. Whereas philosophers have extensively discussed the applicability of various epistemological positions to RCT, political scientists either make particular epistemological claims without placing them in a general philosophical context or avoid discussing epistemological questions altogether. Often, epistemology is dismissed as a confusing sideshow that has no bearing on empirical inquiry. When RC theorists do discuss the epistemological foundations of their theories, the philosophical arguments offered are typically incoherent, contradictory, and unpersuasive.

The issues at stake cannot be addressed simply by examining the empirical record of particular hypotheses or by asserting the merits of competing assumptions. Rather, I maintain that the only way to make progress in understanding the purpose and role of RCT in political science is to examine the competing epistemological foundations of RCT. Specifically, I contend that RCT can be supported by one of two general epistemological positions: instrumentalist-empiricism and scientific-realism. Because these positions take a different perspective on the most appropriate ways to create, test, and evaluate scientific theories, they each view the purpose, scope, and aspirations of RCT differently. For instrumentalist-empiricism, the rationality assumption is a "useful fiction" that aids in the creation of hypotheses about the observable world. Because instrumentalism-empiricism conceptualizes testable predictions about the observable world as the most important element of a theory, rationality is understood solely as a helpful assumption that facilitates the development of clear, parsimonious, deductively coherent, and generalizable hypotheses.

In contrast, for scientific-realism, the rationality assumption operates as a "miracle maker" that can facilitate the construction of models that uncover the unobservable processes animating human social and political behavior. Scientific-realism emphasizes theorizing the actual causal mechanisms that are operative in social and political life. Rationality is not merely an abstract assumption; it is also a template for the development of theories that, if validated, can reveal important aspects of the actual cognitive decision-making process of human beings.

Examining the differences between these epistemological positions advances debates about RCT in three different ways. First, understanding the different epistemological foundations of RCT clarifies the stakes in debates over the possible theoretical assumptions that can be utilized by RCT. Instrumentalist-empiricism and scientific-realism have fundamentally different understandings of how theories should be constructed in order to maximize valid scientific knowledge. Although seemingly unrelated, when viewed through the eyes of epistemology, debates about the status of the rationality assumption, self-interest, and methodological individualism in RCT are actually epistemological questions about the best way to construct scientific theories. For this reason, RC theorists will only resolve these debates if they develop a clear understanding of the philosophical standards against which their theoretical claims are evaluated.

Second, focusing on the different epistemological foundations for RCT ensures that defenses of RCT will avoid inconsistencies. An epistemological position defines the appropriate way for scientific theories to be designed and tested. Advocating from a well-specified epistemological perspective, therefore, guarantees that a theory will be internally consistent in its justifications for producing knowledge. Because RC theorists lack a clearly articulated epistemological perspective, they frequently employ discordant justifications for their theories. Not only do these inconsistencies render justifications on behalf of their theories impervious to criticism, but also they lead theorists to make fallacious assertions such as the claim the RCT should be the "baseline" theoretical approach in political science.

Finally, clarifying the epistemological foundations of RCT facilitates a more complete assessment of the feasibility and desirability of what I term the rational choice project—the use of the rationality assumption as the foundation for a universal, unified social theory. Epistemological stances reveal the extent to which theories can make valid claims about empirical phenomena in different domains. Thus, instrumentalist-empiricism encourages the use of assumptions that enhance the generalizability of RCT, but it does not recognize universal social theories as scientifically valid. Conversely, scientific-realism permits universal social theories, but the ontological assumptions favored by scientific-realism produce a RCT that is circumscribed in scope. For these reasons, I maintain that it will be impossible to create a universal theory of political and social behavior utilizing the rationality assumption.

## Defining Rational Choice Theory

Part of the reason why debates between RC theorists and their critics have proven so intractable is that the definitions of RCT vary so widely within the theoretical literature (for various definitions, see Elster 1986, 1–4; Farmer 1992, 414; Hogarth and Reder 1986, 2–4; and Simon 1982, 81). Before discussing the epistemological foundations of RCT, therefore, one must possess a clear definition of RCT and specify what makes RCT different from other theories of political and social phenomena.

To minimize confusion, I employ a sparse definition of RCT as a theory of social behavior whose distinctive theoretical assumption is that actors in the theory behave according to the rationality assumption. The rationality assumption consists of three components: purposive action, consistent preferences, and utility maximization. Purposive action posits that most social outcomes can be explained by goal-oriented action on the part of the actors in the theory, as opposed to being motivated by habit, tradition, or social appropriateness. Consistent preferences refers to preferences that are ranked, are transitive, and do not depend on the presence or absence of essentially independent alternatives.[2] Utility maximization posits that actors will select the behavior that provides them with the most subjective expected utility from a set of possible behaviors.

To clarify, it may help to specify what I do not consider RCT to be. First, RCT is not a single theory. All RC theories share the assumption that actors adhere to the rationality assumption, but they vary substantially with regards to other theoretical assumptions and specific hypotheses. Second, RCT is not equivalent to a particular type of action. For example, RCT is not the only theory of purposive action. Theories of purposive behavior that involve expressive behavior, such as symbolic interactionism, also presume that individuals act in order to achieve particular goals but do not assume that actors maximize utility.[3] Third, RCT is not simply a synonym for a particular intellectual field. RCT is not found only in economics, nor is it completely alien to sociology or history. Similarly, RCT is not equivalent to game theory or more broadly "theories with math," for many mathematical and game theoretic models, such as those found in evolutionary game theory or

[2] For formalization of these concepts, see Von Neumann and Morgenstern [1944] 1964. Although the rationality assumption depends on consistent preferences, it does not prohibit any particular preferences from being included in an actor's set of preferences. As discussed below, significant disagreements exist among RC scholars as to what should be considered a reasonable component of an actor's utility function.

[3] Similarly, RCT is not equivalent with strategic interaction. Theories that assume the rationality assumption need not assume actors in situations of strategic interaction. Classical economic theory, for example, discussed the way in which consumers act to maximize their utility without assuming that these consumers acted strategically vis-à-vis producers. Similarly, theories that do not assume rationality can assume strategic interaction. Symbolic interactionism and role theory, for example, assume that actors use expressive behavior in order to gain strategic advantages over others in particular interactions.

sociological network theory, do not assume that actors behave according to the strict dictates of the rationality assumption.

Finally, advocates of RCT need not adhere to the same view of the philosophy of science, for RCT is not an epistemological perspective in and of itself. Epistemologies are philosophical justifications for how and why theoretical assumptions can produce knowledge, and even though all RC theorists assume that the actors in their theories behave rationally, they can possess different understandings of how and why the rationality assumption can produce scientifically valid knowledge about empirical phenomena. In RCT, two epistemological perspectives dominate—instrumentalist-empiricism and scientific-realism. The substance of these philosophies and the ramifications for RCT is the topic to which we now turn.

## Epistemological Perspectives on Rational Choice Theory

Whenever social scientists present a theory that attempts to describe or explain a given social phenomenon, they are implicitly advocating an epistemological position—a justification for how and why a theory can produce valid, scientific knowledge. Although RC theorists rarely define their particular philosophical foundations, they generally utilize two broad philosophical perspectives—instrumentalist-empiricism and scientific-realism.[4] Advocates of each of these epistemological perspectives believe in the scientific study of human social interactions but differ about what theories can and should accomplish.[5] The differences in perspective between these two epistemological stances are not merely methodological. Each possesses a view about the scope, purpose, and content of the scientific enterprise.

An epistemological position, therefore, affects the entire theory building process. Different epistemological positions possess different conceptions of the appropriate ways in which to design and test individual theories as well as to adjudicate between competing theories. For this reason, whether RC theorists subscribe to instrumentalist-empiricism or scientific-realism will have profound effects on the type of RCT that they advocate.

## INSTRUMENTALIST-EMPIRICISM: RATIONALITY AS A "USEFUL FICTION"

Instrumentalist-empiricism is one of the dominant positions within the philosophy of science (Hempel 1965; Nagel 1961; von Mises 1960). For instrumentalist-empiricism, theoretical assumptions are tools that help generate predictions about the world that can subsequently be verified empirically. According to this epistemological argument, theories should be designed with two goals in mind—testability and generalizability. Testable predictions are those that are clearly specified, refer to readily measurable observable indicators, and can be falsified by gathering empirical evidence. Unobservable entities are generally not considered, because instrumentalist-empiricists believe that it is impossible to create empirical tests that can reliably measure or effectively evaluate relationships between such phenomena. Instead, generalizable predictions that can be evaluated in a number of widely different yet sufficiently similar observable, empirical domains of inquiry are preferred.

Instrumentalist-empiricism views prediction as the ultimate goal of science. According to instrumentalist-empiricism, theoretical assumptions are useful only insofar as they allow theorists to generate hypotheses about concrete social phenomena that can be observed and subsequently organized into data that can be used in theory testing. Theoretical claims are seen as deductive tools, "heuristic devices," or "useful fictions" that aid in the creation of hypotheses about the observable world (Bernstein 1976; Rosenberg 1988, 75).

Instrumentalist-empiricism sees theoretical statements solely as "technological computation rules" (Popper 1962, 111–12) that provide an apparatus whose aim is to "summarize and classify logically a group of experimental laws" (Duhem 1954, 7). Theoretical terms, therefore, are imbued with no independent ontological status. Because theoretical terms are not observable to the researcher, they cannot be granted any special status outside of their role as the "scaffolding" of a set of hypotheses (Hempel 1965, 178; Worrall 1982, 201–202). Theoretical concepts, while useful tools of the scientific enterprise, are not considered to be real things that exist outside of the boundaries of the theory.

This understanding of the purpose of theory has several implications for how instrumentalist-empiricism views the design, testing, and adjudication of theoretical claims. First, theoretical statements should be constructed in such a way as to allow for the creation of hypotheses that are generalizable to the largest number of empirical phenomena. Whether the theoretical statements themselves are considered to be realistic is beside the point; they should only be evaluated in terms of their portability to a wide variety of empirical domains. Second, in terms of testing, a theory itself can

[4] For the purposes of making a stark distinction between the competing epistemologies, I present radically simplified and streamlined versions of these philosophical approaches. For example, what I term instrumentalist-empiricism has a long intellectual pedigree that includes such varied approaches as Humean empiricism, Comtean positivism, logical positivism, and neopositivism and such diverse philosophers as Carl Hempel (1965), Ernest Nagel (1961), and Karl Popper (1959). Similarly, scientific-realism includes variants such as the "critical realism" of Roy Bhaskar (1989, 1997), the "pragmatic realism" of Hilary Putnam (1975, 1982), and the "relational realism" of Margaret Somers (1998). While substantial disagreements exist between the advocates of each of these epistemological positions, I present them as parsimonious positions in order to highlight the main unifying features of each position and in order to make the applicability of these positions to RCT as clear as possible.

[5] I ignore other epistemological perspectives that do not believe in the scientific study of human social interactions. Interpretivism, for example, contends that scientific inquiry is not suited for the study of social phenomena (Taylor 1983). These types of alternatives are ignored in this paper because they are generally incommensurable with any version of RCT.

never be validated or invalidated; only the empirical content of a theory can be evaluated. Hypotheses can be confirmed by examining the available empirical evidence, but particular theories can only be seen as "codification schemes" that can be "either empirically adequate or empirically inadequate, either simple and efficient or complex or inefficient; they are not, however, either true or false descriptions of the world" (Worrall 1982, 201). Finally, in terms of evaluating theories, theories are deemed to be useful if they generate hypotheses that are substantiated by the available evidence and that are portable to other domains of inquiry. Although one may compare the robustness of the findings of various theories, theories themselves *never directly compete* with one another. Evidence in favor of a hypothesis generated by a particular theory can never affect how a theorist evaluates the validity of the theory itself, for theories can never be subjected to such scrutiny. Researches should not attempt to adjudicate between competing theories.

This instrumentalist-empiricist view of theory development explains why the phrase "useful fiction," which appears to be contradictory, is so fundamental to instrumentalist-empiricists. In one sense, if a theoretical assumption is a fiction, it is unlikely to be empirically useful unless it generates hypothesis that are right for the wrong reasons. For instrumentalist-empiricists, however, the role of empirical inquiry is not to determine the validity of a given theory's causal mechanisms but rather to assess the accuracy of a given theory's empirical hypotheses. It may be, for example, that individual human beings do not actually act rationally but, when subjected to the competitive pressures of the market, appear to act rationally in the aggregate (see, e.g., Alchian 1950). For instrumentalist-empiricists, a model of the market based on the rationality assumption is still scientifically valid even if the assumption of rationality is "incorrect," for instrumentalist-empiricists do not believe that theories or their assumptions can be either proved or disproved. Rather, the value of the rationality assumption lies in its usefulness as an instrument for generating models that can be confirmed empirically in a wide range of domains, as many models of the market have been, not in its accuracy regarding the actual processes of human cognition, which are unobservable and therefore viewed by instrumentalist-empiricists as outside the realm of science and empirical verification.

Instrumentalist-empiricism has been applied to RCT by a number of researchers (Achen and Snidal 1989, 164–65; Bueno de Mesquita 1985; Moe 1979), most famously by Milton Friedman (1952). In instrumentalist-empiricist terms, the rationality assumption is useful because it facilitates the construction of hypotheses that are generalizable across a wide range of human behavior. The most important purpose of the rationality assumption is that it "allows the systematization and logical connection of hitherto unrelated empirical regularities" (Diermeier 1996, 65). To the extent that researchers should employ RCT, they should do so because of ability of RCT to generate hypotheses that are clear, testable, and deductively sound (Bueno de Mesquita and Morrow 1999, 56–57; Powell 1999).

In this formulation, the rationality assumption is not taken to be the mechanism through which the actors in a particular theory *actually* choose what behavior to engage in. It is not a description of how actors actually make decisions. Rather, the rationality assumption allows the theorist to construct a model whose elegance and simplicity allow it to generate widely applicable hypotheses (King, Keohane and Verba 1994, 49–53; Martin 1999, 75–76; Zagare 1999, 108–109). Advocates of instrumentalist-empiricist conceptions of RCT find evidence of nonrationality—individuals do not act purposively, possess inconsistent preferences, and fail to utility-maximize—to be generally irrelevant. For instrumentalist-empiricism, the most important requirement is that the rationality assumption generates widely applicable hypotheses that can easily be subjected to empirical testing. As Diermeier (1996, 65) argues, criticisms of the rationality assumption that point to nonrational human behavior "only make sense if individual theoretical statements . . . can be tested in any meaningful sense." Because theoretical terms do not have any existence outside of the theoretical process of hypothesis construction, criticisms of the rationality assumption may be interesting but are not relevant to the evaluation of particular theories. Thus, following Milton Friedman (1952, 8), "The only relevant test of the validity of a hypothesis is comparison of its predictions with experience."

## SCIENTIFIC-REALISM: RATIONALITY AS THE "MIRACLE MAKER"

Scientific-realism emerged in the early 1970s as a response to what was perceived to be the theoretically incoherent and empirically unsatisfying view of science presented by instrumentalist-empiricism (Bhaskar [1975] 1997, 1989; Keat and Urry 1975; Putnam 1975, 1982). The main difference between an instrumentalist-empiricist approach and scientific-realism is their respective views of the nature and purpose of scientific theories. Whereas instrumentalist-empiricism views theoretical assumptions as handmaidens to the larger goal of prediction, a scientific-realist approach contends that theories are statements about real entities and processes, even unobservable ones, which affect natural and social phenomena.

Scientific-realism emphasizes causal mechanisms because of the ontological importance that it assigns to "unobservables" or "theoretical entities" (Cartwright 1991; Weinberg 1993). Scientific-realism criticizes the instrumentalist-empiricist theory of unobservables for two reasons. First, scientific-realism contends that scientific progress is possible only if scientists utilize unobservables, treating causal mechanisms and assumptions as though they operate in the real world. Many of the phenomena that exert influence in the physical world are not observable. When this is the case, advocates of scientific-realism argue that "an appeal must

be made to something non-observable" and "consequently, the imperative to explain is sometimes an imperative to posit theoretical entities" (J. Brown 1982, 234). Second, scientific-realism points to the fact that the majority of successful scientific theories rely on phenomena that are not directly observable by scientists, such as atoms, quarks, or gravity (Archer 1998; Little 1998, 197–214).[6] Whereas instrumentalist-empiricists maintain that theoretical concepts are merely extremely useful instruments, scientific-realism counters that, "nothing is a good instrument by accident" (Rosenberg 1988, 78). If the theoretical terms that natural science relies on to create theories were really just useful fictions, then the success of the scientific enterprise would be nothing more than the product of a series of "miracles" or lucky choices. If instruments prove to be especially useful, therefore, scientific-realism allows them to attain an ontological status.

Scientific-realism believes that theories should be designed to uncover the universe that is constituted by both observable and nonobservable entities and processes. This places a premium on the design and construction of theories that attempt an accurate description of the processes that underlie the universe. Scientific-realism differs from instrumentalist-empiricism in that it considers theories as more than mere appendages that facilitate the creation of particularly predictive hypotheses. Theoretical concepts and variables are not merely part of a useful theoretical infrastructure. Causal mechanisms are not just more finely specified series of correlations (cf. King, Keohane, and Verba 1994, 85–87). Rather, theories reflect the unobservable, but very real, properties of the phenomenon under study. Whereas empirical verification and prediction lie at the heart of instrumentalism-empiricism, scientific-realism sees a central and important role for theory building alone. By clarifying assumptions, developing concepts, and specifying causal mechanisms, theory building can be as if not more important than empirical testing.

Scientific-realists are in agreement on the issue of unobservables, but they differ with regard to how theorists should adjudicate between different theories. Some borrow from philosophies that maintain that theories should be compared in terms of their ability to explain outstanding empirical anomalies (Lakatos 1970). Others draw on philosophies that believe that the process of adjudicating between theories is largely the result of the interactions among scientists rather than of the content of the theories themselves (Kuhn 1962). Although individual scientific-realists may disagree on how to specify the standards that separate good from bad theories, they agree that progress depends on adjudicating between theoretical programs, rather that simply treating theories as devices that generate hypotheses.

A number of RC theorists use scientific-realism to defend their approach (Farmer 1992, 416–17; Satz and Ferejohn 1994; Kiser and Hechter 1991). According to these authors, RCT is useful because it can provide an accurate account of the causal mechanisms that drive human behavior. Scientific-realists find RCT useful not simply because it generates testable hypotheses, but rather because it makes a seemingly realistic and convincing appeal to mechanisms that theorists believe are actually in operation when human beings act—namely, that people purposively maximize their subjective expected utility over a set of consistent preferences. Although RCT theory makes an appeal to unobservable phenomena, such as an actor's utility function, information set, or discount rate, these unobservable entities must actually exist or else RCT would not generate hypotheses that seem to explain social life convincingly across a wide variety of settings.

According to RC theorists who subscribe to scientific-realism, therefore, the primary standard for the development of theory is accuracy. Theories that clearly specify, describe, and explain the causal mechanisms that operate in a particular situation are superior to those that fail to provide any mechanisms at all. For scientific-realism, therefore, one of the main advantages of RCT is that it provides a clear description of the "microfoundations" of social behavior—in the sense that it accurately describes the mechanisms that account for why actors engage in particular types of behavior (Elster 1989, 3–10).

## Why Epistemology Matters

Despite the presence of these two philosophical foundations, RC theorists generally have avoided detailed discussions of the relation between epistemology and their theories. Most RC theorists seem to consider epistemology a distraction from the more important task of building and testing individual models. Contrary to this dismissive attitude towards epistemology, I maintain that a focus on epistemology is crucial for understanding the scope, purpose, and possibilities of RCT in political science. Specifically, there are three reasons why political scientists should explicitly and clearly articulate their understanding of the philosophical foundations of RCT theory. First, understanding the epistemological foundations of RCT helps clarify what is at stake in existing debates concerning different theoretical claims made by RC theorists about the nature of the rationality assumption, self-interest, and the relations between individuals and structures. Second, a clear grasp of epistemology illuminates inconsistencies in current defenses of RCT in political science. Finally, a focus on epistemological foundations facilitates debate about the desirability and feasibility of achieving the rational choice project, a universal theory of political behavior that is based on the rationality assumption.

[6] In addition, proponents of scientific-realism also point out a contradiction in instrumentalist reasoning. Although instrumentalists argue that science should not proceed by making claims about unobservable phenomenon, they subsequently argue that unobservable phenomenon do not exist, which is itself an ontological claim about the existence of unobservables (Putnam 1975).

**TABLE 1. Theoretical Assumptions of Rational Choice Theory**

| | Theoretical Assumption | | |
|---|---|---|---|
| Empirical Benefit | Rationality | Self-Interest | Methodological Individualism |
| Accuracy | Domain rationality | Thin-idealist preferences | Integrate structure as preferences or as "rules of the game" |
| Generalizability | As-if rationality | Thick-materialist preferences | "Pure" methodological individualism |

## CLARIFYING DEBATES OVER THEORETICAL ASSUMPTIONS

As argued above, RC theorists have long been engaged in debates about the content of their theoretical assumptions. Particularly controversial have been assumptions about the scope and implications of rationality, the content of actor's utility functions, and the extent to which social phenomena can be explained by the aggregate actions of individual actors rather than political structures. These debates are ultimately all disputes about epistemology. Which philosophical position RC theorists adopt, either instrumentalism-empiricism or scientific-realism, affects how they evaluate the merits of the various competing assumptions. Unfortunately, debates surrounding these theoretical assumptions have often occurred in isolation from one another and without input from philosophy of science. If progress is to be made in resolving disagreements about these assumptions, however, RC theorists must systematically address the philosophical positions that underlie RCT.

In particular, debates about rationality, self-interest, and methodological individualism require RC theorists to decide between *generalizability* and *accuracy* (Farmer 1992, 411–412; Munck 2001; Smelser 1992). It may seem that this trade-off has little to do with epistemology: Could not theorists simply examine the empirical track record of theories that vary in complexity (cf. Western 2001). But the debate over generalizability and accuracy cannot be evaluated in an epistemological void. Epistemological positions determine not only how and why theories should be constructed, but also what standards should be used to evaluate the empirical results. Whereas one epistemology may stress parsimony and testability as hallmarks of a good theory, another might use precision and accuracy as a benchmark.

Indeed, whether RTC should favor generalizability or accuracy depends on whether one adopts an instrumentalist-empiricist or a scientific-realist epistemology. Because of their emphasis on simple, elegant, and testable hypotheses, RC theorists who subscribe to instrumentalist-empiricism should push for theoretical assumptions that increase the potential generalizability of their hypotheses. Conversely, because of their focus on causal mechanisms, RC theorists who subscribe to scientific-realism should favor theories whose assumptions create realistic hypotheses, even at the expense of parsimony or testability. In this manner, explicitly articulating the philosophical foundations of RCT provides the basis for a resolution of these particular theoretical debates in a way in which merely examining the persuasiveness of a given assumption or the relative accuracy of available evidence cannot (see Table 1 for a summary).

***Rationality.*** A significant body of evidence demonstrates that human beings rarely behave purposively, consistently, and with the goal of maximizing their expected utility. Many sociologists, for example, question the notion of purposive choice, arguing instead that a large portion of human behavior is the result not of purposive calculation but rather of social roles that define appropriate behavior (Bourdieu 1990, 50–55; Nadel 1957). Similarly, many social psychologists challenge the notion of consistent preferences and utility maximization, pointing out that human beings rarely possess consistent preferences (Halpern and Stern 1998; Hogarth and Reder 1986; Sen 1979), engage in "satisficing" behavior rather than optimization (March 1978; Simon 1982), and routinely make cognitive errors in calculation (Tversky and Kahneman 1974, 1986; cf. Frank 1990).

How damaging are these critiques to RTC? Most RC theorists believe that the impact is minimal and offer two responses to the above criticisms—the *domain response* and the *as-if* response. The domain response argues that, in general, human beings in most social situations behave in a manner that approaches rational action (Satz and Ferejohn 1994; Thaler 1986, 96–98; Zeckhauser 1987, 252). Although advocates of this position acknowledge that humans are not always rational, such action is infrequent and unsystematic. Most social interactions take place in clearly delineated situations, with rules that are relatively well understood by those engaging in action. Moreover, interactions in social life are often repeated, so that individuals can become accustomed to their strategic environment and will be punished if they fail to act rationally (Frey and Eichenberger 1989; Scharpf 1990). For these reasons, evidence of the irrationality of actors in a particular situation can be overlooked in the construction of a general theory of human action.

The as-if response, on the other hand, does not concern itself with whether individuals actually act in a manner congruent with the rationality assumption. Instead, this response states that social theorists can construct illustrative theories of human agency by assuming that actors behave as if they were following the dictates of the rationality assumption, even if actual decision making proves otherwise (M. Friedman 1952; cf. Plott 1986, 139–41, Simon 1982, 400–403). All theories of human action, these authors argue, involve simplifying assumptions. Theories should be judged,

therefore, not by the criterion of the accuracy of their particular assumptions, which are bound to be at least partially incorrect, but rather by the accuracy of the hypotheses they generate. Thus, for those who advocate the as-if response, the question of whether humans behave rationally in most interactions is less relevant than whether the hypotheses that are generated using models that assume rational human actors are found to be empirically valid.

Although both domain and as-if arguments are used to defend RCT, these responses rely on vastly different epistemological understandings of what theories should accomplish and how they should be evaluated. On the other hand, the domain response most closely conforms to the scientific-realist understanding of science. For scientific-realists, the rationality assumption is intended to capture the actual cognitive processes that are involved in human decision-making. Criticisms of the rationality assumption, therefore, must be seriously addressed, and if they are proven to be substantial, the scope of RCT must be restricted to particular domains. Scientific-realists accept limitations in the generalizability of RCT in order to increase the ability of the theory to accurately tap into actual causal processes.

The as-if response, on the other hand, depends on an instrumentalist-empiricist conception of science. For instrumentalist-empiricists, if the assumption allows for the creation of theories that generate hypotheses that tend to be empirically validated, then rationality is a useful instrument and should be applied to many empirical domains, regardless of the assumptions empirical validity. Instrumentalist-empiricists focus more on the generalizability of hypotheses developed by RCT rather than the accuracy or validity of the actual processes assumed by their theories.

***Self-Interest.*** Epistemology plays a similar role in arguments about the self-interest assumption in RCT.[7] Whereas the rationality assumption specifies the particular means through which actors select particular strategies in order to fulfill particular interests, the debate over self-interest centers on what ends theorists can legitimately assume an actor possesses. Disagreements over conceptions of self-interest focus on two related issues: (1) whether RC theorists should posit that all of the actors in their model possess identical utility functions (Hahn and Hollis 1979, 11–12; Hechter 1994) and (2) whether RC theorists should assume that their actors value only things that are external to them or also things that are internal, such as emotional responses or nonmaterial values (Becker 1962, 1976; Margolis 1982).[8]

In general, two positions exist with regard to how to define preferences—the thick-objectivist and thin-subjectivist conceptions.[9] Advocates of thin-subjectivist preferences argue that RCT should not require individual actors to have exactly the same preference structure and, moreover, that actors should be allowed to possess preferences over almost anything—including things external to the agent, such as material goods, and things internal to the agent, such as emotional satisfaction and other nonmaterial values. In contrast, those who favor objective-thick preferences maintain that actors should be modeled with the assumption that they all maximize the same set of consistent preferences and that these individuals should be permitted to assign value only to elements that are "objective characteristics of the environment external to the choosing [agent]" (Simon 1982, 82).

Those in favor of thin-subjectivist preferences contend that their theory is the more realistic conception of self-interest because most individuals value wildly different things. In addition, by allowing actors to value emotional states, these theorists claim to explain a large portion of human behavior that may at first glance seem nonrational, such as altruism. In contrast, supporters of thick-objective preferences argue that by focusing on ends that are objective, material, and external to the actors and do not vary within the population, theorists can generate hypotheses that are clear, testable, and widely generalizable. By assuming "typical value" among all actors, a thick-objectivist account of self-interest reduces the need to assign preferences to actors in an *ad hoc* and undertheorized manner and, thus, increases the chance that TC theories can be easily subjected to empirical scrutiny in many domains.

As with the rationality assumption, epistemology is critical in determining how to define self-interest. Advocates of thin-subjectivist preferences rely on scientific-realist conceptions of epistemology to justify their theoretical stance on self-interest. Because scientific-realism emphasizes uncovering valid, real causal mechanisms, they favor an assumption that can address the multiplicity of values that human beings possess. Given the difficult in accurately measuring preferences, predicting an individual's interests in any particular situation may be difficult, perhaps impossible. Yet the payoff of accurately describing, defining, and measuring preferences is that it raises the likelihood that a theory will uncover the causal mechanisms in operation in a particular context.

In contrast, advocates of thick-objectivist preferences adhere to instrumentalist-empiricist standards of epistemology. Because testing theories empirically is so important to instrumentalist-empiricism, advocates of thick-objectivist preferences criticize thin-subjective conceptions of self-interest for using *post hoc ergo propter hoc* accounts of social behavior, in which preferences are merely assigned after the fact to explain outcomes. Rather, supporters of thick-objectivist preferences follow instrumentalist-empiricism in favoring

[7] These debates over self-interest primarily involve practitioners of RCT, although critics of RCT have pointed to many of the issues raised by these debates as a reason to reject RCT in general.

[8] This debate has many other names: substantive verses procedural rationality, materialist verses idealist preferences, intrinsic verses extrinsic preferences, and so forth. For overviews, see Root 1993, 100–123; Simon 1986; and Stigler and Becker 1977.

[9] These two positions can be broken down into two separate axes between advocates of thick verses thin preferences and subjective verses objective preferences. However, these multiple positions typically coalesce into these two camps.

assumptions that, though not necessarily accurate (that human beings all value money to the same degree, for example), are general enough that they can be tested and falsified. Moreover, because they attribute similar characteristics to their actors, theories that assume thick-objectivist preferences can be tested in a wide variety of domains in social life.

***Methodological Individualism.*** The final debate in which epistemology plays an important yet often overlooked role is the disagreement about the role of methodological individualism in RCT. As with any theory, RCT makes an ontological assumption about the relationship between its actors and aggregate social outcomes. RC theorists typically subscribe to a methodological individualist approach to this relationship (Coleman 1987; Elster 1979, 112–17; Riker 1990). Methodological individualism is not a statement about the ontological existence of agents or structures in a given theory but, rather, the perspective that aggregate social outcomes can be reduced to the action of individual actors.[10] Methodological individualists argue that it is the purposive, intentional, self-propelled behavior of individuals that aggregate into outcomes; structures neither constitute this behavior nor constitute the actors.

Because methodological individualism has many definitions, not all of which are consistent, let me clarify exactly what I mean.[11] First, a theory is not methodologically individualist merely because it assumes that individuals exist and "do things" in social life. In this trivial sense, all theories are methodologically individualist. Similarly, a theory is not methodologically "holistic" simply because things other than actors exist and "do things" in social life. Recognizing that actors face constraints or that actors cannot always get what they want does not mean that a theory is something other than methodologically individualist. This conception makes methodological individualism trivially false because almost every theory assumes that actors are at least partially limited in their ability to achieve their ends. Rather, methodological individualism is not a theory concerned with the existence of actors but one with a particular perspective on the way in which the behavior of actors aggregates. More precisely, methodological individualism contends that macrosocial outcomes are the sum of discrete, intentional acts by preconstituted actors. Variables that cannot be reduced to the individual actors—such as the arrangement of the actors in relation to one another or the environment of their interaction—are considered relatively unimportant in explaining social outcomes. Thus, a methodological individualist approach implies that (1) aggregate social outcomes are not affected by the positions that individual actors stand vis-à-vis one another and (2) aggregate social outcomes do not recursively change characteristics of the individual actors.

Many RC theorists accept methodological individualism and the limits it places on the ability of their theories to generate hypotheses about structure, but other RC theorists believe that RCT can incorporate structural position and the constitution of actors into its purview (Boudon 1998; Satz and Ferejohn 1994). Specifically, the latter argue two points: (1) that a focus on the "rules of the game" that constrain the range of action of the actors in RC models can be used to represent the structuring effects of patterns of relations in systems and (2) that one can "bracket" the way in which structure constitutes actors and focus instead on the interactions of preconstituted rational actors (Petracca 1991, 178–81; Wippler and Lindenberg 1987, 145–49). In these approaches, rules of the game are defined exogenously from the model; they are the result of the choice of the theorist to cut the sequence of the game at an arbitrary point. For example, in a legislative bargaining model, the theorist considers only the interaction of individuals who already recognize a particular rule of the game. The meta-game in which individuals decide what rule to accept as the proper one is completely ignored. By the fiat of the researcher, actors accept rule before interaction begins.

On its face, there is nothing wrong with this approach to integrating structure, defined as rules, into RC models. In fact, models of this type have proven fruitful. This approach, however, relies on rules of the game that are underspecified. Although the particular theory may still be able to generate predictions, the scope of the theory is limited because particular realms of social reality have been arbitrarily severed from consideration. RC models incorporate structural effects, but only at the price of being unable to generalize beyond prespecified situations.

The debate surrounding methodological individualism, therefore, forces RC theorists to make a decision: Either the rules of the game are introduced exogenously into their models or they are reduced to the interactions of individuals. If the theorist selects for the first option, RCT can discuss structural effects, but only in circumstances when the theorist arbitrarily assigns rules, which are necessarily undertheorized, to particular interactions. Such an approach places a premium on the accuracy of a particular theory at the expense of the ability to generalize, clearly adhering to a scientific-realist understanding of theoretical assumptions in social science. For scientific-realists, theoretical assumptions should be accurate in the particular domains in which they are applicable. In this case, bracketing social rules and the constitution of actors by structures might limit the scope of the theory, but it allows RC theorists to create more precise models of actors interacting in the context of structures.

[10] For overviews of this issue, which is often termed the macro–micro problem or (incorrectly in my view) the agent–structure debate, see Alexander 1987 and Giddens 1979. Note that RCT is not the only theory that is methodologically individualist. Symbolic interactionism makes a similar assumption—it assumes that discrete agential units (individual human actors) who are endowed with intentionality (expression, frame-setting, role-playing) exert primary causal power in social life.

[11] For different definitions of methodological individualism see Coleman 1986, 1321–22; Miller 1978, 389–90, 399–400; and Webster 1973, 259–61. While the relative advantages of these various conceptions of methodological individualism is a topic that merits further discussion in the social sciences, it is beyond the scope of this paper.

Conversely, the RC theorist can choose to reduce all rules to the interactions of individuals. If the theorist opts for this option, the theory can discuss rules but must provide persuasive accounts for why they are individually rational for each agent at each iteration in all social situations. Such an approach emphasizes generalizability, but does so at the expense of the realism of the theory, given that many effects observed in social life are likely to be the result of structural factors. This approach conforms to an instrumentalist-empiricist conception of theoretical assumptions. By not smuggling undertheorized and potentially *ad hoc* assumptions about structure into their models, advocates of methodological individualism emphasize the testability of their theories. Similarly, methodological individualism, by adopting the relatively simple and widely applicable notion that only the interactions of individuals determine outcomes in social and political life, can be applied to numerous domains of study without having to arbitrarily bracket particular areas of inquiry. Methodological individualism follows instrumentalism-empiricism by facilitating the creation of generalizable hypotheses that can be tested empirically in a wide variety of domains.

In sum, because RC theorists typically ignore or downplay the role of epistemology, these three theoretical debates have been conducted in isolation from one another and from broader issues concerning the role and purpose of RC theory. Debates about the appropriate role of different theoretical assumptions, however, cannot be resolved simply by citing the empirical results of particular models or by appealing to particular standards, such as the clarity, utility, or intuitive plausibility of individual assumptions. If these debates remain in an epistemological vacuum, they will not be resolved. The philosophy of science clarifies the standards by which theories and their assumptions should be judged. Although examining the competing epistemological foundations of RCT may not resolve these debates (both epistemological positions make convincing arguments in favor of particular standards), a focus on epistemology illuminates the stakes of these debates and clarifies the grounds on which they could be resolved.

In addition, epistemological choices set the stakes for the debates not only between RC theorists, but also between RC theorists and their critics. For example, consider the criticisms of the rationality assumption. Whether political scientists find these critiques to be generally irrelevant, partially effective, or absolutely devastating depends on what philosophy of science standard they accept to judge the validity of RCT. If political scientists adopt instrumentalist-empiricism, they will find these criticisms to be generally irrelevant as long as the rationality assumption generates theories with a large amount of empirical content. Conversely, those who accept scientific-realism must take these critiques very seriously, for they question the ability of the rationality assumption to appeal to the actual processes of human decision making. In this manner, carefully articulating their philosophical positions allows RC theorists to engage the critics of RCT more effectively.

## CLARIFYING INCONSISTENCIES WITHIN DEFENSES OF RATIONAL CHOICE THEORY

In addition to elucidating the issues at stake in various debates about the theoretical assumptions of RCT, a focus on epistemology exposes inconsistent claims that RC theorists make on behalf of their theories. Unfortunately, because RC theorists have not paid a great deal of attention to epistemology, they frequently make inconsistent assertions on behalf of their theories. These inconsistencies not only reduce the persuasiveness of RCT but also ensure that exchanges between RC theorists and their critics will be unproductive. By paying greater attention to epistemology, RC theorists can expose and remove the discrepancies between their philosophical positions and the specific arguments they advocate. I highlight two inconsistent yet common claims made by RC theorists—first, that theoretical assumptions can be justified by one epistemology while theoretical implications can be justified by another and, second, that RCT should act as a "baseline" theory in political science because of the simplicity, parsimony, and hence generalizability of the rationality assumption. Consider the following stylized examples.[12]

> *Inconsistent Claim 1a:* "I have developed a convincing account of why the actors in my study rationally selected the particular strategies they did given their preferences and constraints. Although you criticize the rationality assumption by arguing that it is unrealistic, I am only assuming that my actors behave as if they are rational."

> *Inconsistent Claim 1b:* "Using a number of admittedly unrealistic assumptions, I developed a rational actor model that can be applied to a number of empirical situations. When testing my hypotheses, I found large correlations between my dependent and independent variables. Given their robust nature, my results a clear evidence that human beings behave rationally."

The first category of inconsistencies involves arguments that combine scientific-realist understandings of the existence of causal mechanisms with instrumentalist-empiricist notions that assumptions are only tools but are not reflective of actual processes. Inconsistency 1a illustrates RC theorists who utilize scientific-realism to claim validity on behalf of particular findings while employing instrumentalist-empiricism to justify certain theoretical assumptions. Inconsistency 1b refers to RC theorists who adopt instrumentalist-empiricist standards when constructing their particular model but subsequently argue, along scientific-realist lines, that their empirical results prove that their theoretical assumptions describe the nature of real actors. The origins of these inconsistencies relate to the general tension within RCT with regard to whether generalizability or

[12] For examples of authors who make these inconsistencies, see the discussions by Trevor Barnes (1996), Green and Shapiro (1994, 30–31), and Margaret Somers (1998, 746–47). I have avoided listing examples of particular authors because I consider these inconsistencies to be the result of a systemic tension in the development and advocacy of RCT between the impulse to generalize and the desire to maintain realistic assumptions rather than the result of foolishness on the part of a particular author.

theoretical accuracy should be the goal of RCT. The conflicting impulse to make widely applicable and generalizable propositions while simultaneously retaining assumptions that seem both accurate and realistic frequently leads RC theorists to make inconsistent claims on behalf of their empirical findings by mixing and matching inconsistent epistemological justifications.

In general, however, a theory cannot rely on two incompatible epistemological positions. A theory that is justified by contrary philosophical positions is not only difficult to assess, given that the two different epistemologies possess different conceptions of what constitutes valid knowledge, but also impossible to criticize, given the ability of theorists to defend their theory by appealing to various potentially discordant epistemological justifications. In order for RC theorists to present coherent and genuinely defensible results, they must clearly and explicitly choose a particular epistemological position.

Theorists who posit that a particular set of empirical findings generated by a RC model reflects the actual causal mechanisms that are operative (scientific-realism) cannot then defend criticisms of these assumptions by arguing that they are only contending that actors behave "as-if" rational (instrumentalist-empiricism). Similarly, theorists who develop models with an as-if assumption in order to generate workable deductive hypotheses (instrumentalist-empiricism) cannot then claim that evidence in favor of the findings validates the theory that humans behave rationally (scientific-realism). Epistemology affects the stance RC theorists position on both the substance and the implications of their empirical claims.

> *Inconsistent Claim 2:* "RCT relies on relatively few theoretical assumptions. Moreover, the assumptions RCT does contain are simple, straightforward, and easily formalized to ensure deductive coherence. For these reasons, RCT is the only theory that is generalizable to many domains. Because it can generalize, RCT should be the baseline theory of political behavior."

A second inconsistent claim is that RCT should be the baseline theory in political science (Bueno de Mesquita and Morrow 1999, 58–60; Chong 1996, 38–39; Niou and Ordeshook 1999, 90–91). Using RCT as a baseline refers to the idea that any time theorists encounter empirical puzzles, they should assume that the bulk of the variance can be explained by RCT and that theories that rely on other mechanisms—culture, institutions, structure, and so forth—are important only after explanations derived from RCT have been ruled out.

Often, the standards used to justify RCT as a baseline are based on instrumentalist-empiricist reasoning. It is argued that the simplicity, deductive coherence, and efficacy of the rationality assumption ensure that RCT is an excellent baseline. These justifications for RCT as a baseline theory in political science, however, are epistemologically inconsistent. Indeed, instrumentalist-empiricism *never recognizes theoretical baselines as legitimate.*

Why is this the case? In order to have baseline theories, one would have to assume that theoretical statements themselves have validity and thus can directly compete. This position, however, contradicts instrumentalist-empiricist understandings of theoretical development. Instrumentalist-empiricism would never make a claim in favor of a theoretical baseline, because from its perspective different theories do not compete with one another: Theories are never given ontological status and, thus, they are not directly comparable. Instrumentalist-empiricism contends that the accuracy of different hypotheses in similar domains can be compared, yet this type of comparison indicates nothing about the validity of particular theoretical statements or assumptions. Instrumentalist-empiricism can be used philosophically to justify a comparison of various instruments in terms of their predictive capacity but it does not recognize a role for baselines to evaluate theories in the social sciences.

In order to be epistemologically consistent, therefore, baseline theories must be grounded in scientific-realist epistemology. In scientific-realism, baseline theories are crucial because they help scientists adjudicate between theories. Authors as diverse as Kuhn (1962), Lakatos (1970), Popper (1959) argue against the notion that facts can be objectively separated from theory, because all empirical facts are impregnated with nonfactual theoretical biases. Evaluating an individual theory by interrogating it with facts alone is impossible, and competition between theories is required.[13]

Rather than compare a new theory to every conceivable rival, new theories compete with a baseline theory, which is generally accepted to contain substantial empirical content. If new theories can explain more empirical content than a baseline theory, they are considered to be superior. Baseline theories help scientists develop iteratively more persuasive and powerful theoretical explanations. Scientific-realism emphasizes baseline theories, therefore, because they ensure that theoretical programs, rather than individual empirical predictions, are at the center of scientific development.

Baseline theories are consistent with scientific-realism, yet RC theorists often try to justify them on grounds that make sense only in terms of instrumentalist-empiricism. RC theorists frequently cite simplicity, clarity, susceptibility to formalization, and generalizability to validate RCT as a baseline approach. All of these standards make sense from an instrumentalist-empiricist perspective as a reason to believe that RCT will prove to be a particularly effective predictive instrument in the development of hypotheses, but they do not sit well with the standards emphasized by scientific-realism. This is not to say that

[13] Although Popper, Lakatos, and Kuhn have disagreements about how scientists do and should select iteratively better baseline theories, they are in agreement in their critique of the fact–theory distinction in instrumentalist-empiricism. This has resulted in some confusion in political science, especially among so-called "positivists," who adopt instrumentalist-empiricist standards for theory construction yet draw on these authors in order to discuss theory evaluation. Most notably, see King, Keohane, and Verba 1994, 100–102.

scientific-realists encourage incoherent or contradictory theories. Rather, for scientific-realism, a baseline theory should be the one that effectively reveals the causal mechanisms driving actual human behavior, not the one that has assumptions that meet some set of criteria deemed important (parsimony, simplicity, susceptibility to formalization, and so forth) because they facilitate generalizability. For scientific-realism, therefore, baseline theories are those that have a large degree of explanatory power in their given domain, not those that conform to arbitrary standards imposed by the theorist (Shaprio and Wendt 1992, 218–19).

In sum, those who advocate RCT as a baseline theory in political science should reduce the inconsistency of this claim by avoiding instrumentalist-empiricist justifications. Adherents of instrumentalist-empiricism may advocate particular theories because they possess characteristics that tend to be present in most effective instruments, such as clarity or generalizability (Chalmers 1994; Miller 1987). Recommending a particular assumption, however, is not the same thing as arguing that RCT should be a baseline theory that is assumed to be the best explanation against which all alternatives should be compared *a priori*. This is not to say that baseline theories are irrelevant or that RCT could not conceivably be a good baseline. Rather, if RCT is to be a baseline, its advocates must use the proper, consistent philosophical standards for making such a claim.

## CLARIFYING THE VIABILITY OF THE RATIONAL CHOICE PROJECT

In addition to minimizing inconsistencies within the advocacy of RCT, a focus on epistemology helps clarify issues about the scope of RCT in political science. Specifically, instrumental-empiricism and scientific-realism both articulate different views on the possibility of the RC project—a theory of human social behavior based upon the universality of the rationality assumption. Because RC theorists have not paid explicit attention to the various possible epistemological foundations of RCT, however, the feasibility and desirability of the RC project have not been clearly articulated. Indeed, while many RC theorists believe the rationality assumption would be a good foundation for a universal social theory, neither instrumentalist-empiricism nor scientific-realism proves to be an adequate epistemology for this task. An instrumentalist-empiricist account emphasizes the generalizability of ontological assumptions and therefore appears conducive to the creation of a unified social theory, yet this epistemology does not maintain that universal social theories are even possible or desirable. Conversely, although scientific-realism provides an appropriate foundation for the construction of a unified social theory, it places a premium on the accuracy of the theory's ontological assumptions, thereby creating an empirically circumscribed RCT. Because neither of the possible epistemological foundations can sustain the RC project, I contend that it is unattainable and should be abandoned in its universalistic form.

According to the RC project, there should be no scope and domain limitations to RCT (Hechter and Kanazawa 1997; Lalman, Oppenheimer, and Swistak 1993; Riker 1990). James Coleman, for example, calls RCT the "one paradigm in social science that offers the promise of bringing a greater theoretical unity among disciplines than has existed until now" (Coleman 1989, 5). Similarly, Gary Becker (1976, 14) argues that RCT "provides a valuable unified framework for understanding all human behavior." Because of the parsimony of its assumptions, RCT can produce hypotheses that are elegant, transparent, verifiable, and cumulative.

Of course, not all RC theorists possess such grand aspirations. Others argue for RCT as a partial social theory. According to this view, RCT is a "sometimes-true theory" that is restricted to the analysis of particular actors or particular settings in which the theorist has reason to consider the rationality assumption appropriate (Ferejohn and Satz 1996, 77–78; Tsebelis 1990; cf. Fiorina 1996). Alternatively, some advocates of the partial perspective argue that RCT should be supplemented by other ontological perspectives, such as those that emphasize culture or institutions, in order to present more accurate accounts of social processes (Bates, de Figueiredo, and Weingast 1998; Ferejohn 1991).

The underlying notion of a universal social theory is that it can effectively explain all human behavior in every domain. In this sense, a universal social theory is not simply a set of particularly expansive hypotheses but, rather, a collection of statements that can actually explain all of the processes and mechanisms that are causally and constitutively operative in social life. Given the need for a universal social theory to be generalizable to the totality of domains of human existence, instrumentalist-empiricism might seem like a particularly appropriate epistemological foundation. An instrumentalist-empiricist philosophy of science will likely be most attractive because of its emphasis on generating hypotheses that prove to be empirically tractable across a wide range of analytical areas of inquiry. In addition, because instrumentalist-empiricism can appeal to as-if assumptions, it can often generate theories that are resistant to criticism that the rationality assumption should be restricted to a particular domain.

The problem with applying instrumentalist-empiricism is that universal social theories are not recognized as valid within this epistemology. Using instrumental assumptions such as as-if rationality to create universal theories violates the status of theory in instrumental-empiricist epistemologies. As argued above, for instrumentalist-empiricists, theories have no independent status outside of the particular hypotheses. As such, the theoretical statements generated by those advocating instrumentalist-empiricism are *partial by definition*. Theorists who advocate universalism based on an as-if conception of the rationality assumption are committing inconsistency 1b—using instrumentalist-empiricist grounds in arguing for a goal that can only be recognized by scientific-realism.

Given the inability of instrumentalist-empiricism to act as a foundation for a universal social theory, scientific-realism might appear to be a suitable alternative. Because scientific-realism grants ontological validity to its theoretical statements, it allows for the possibility of constructing theories that could appeal to all of the phenomena in social life. Thus, only scientific-realism can act as a suitable epistemological foundation for a universal social theory. In addition, given its views on the ontological status of theoretical entities, a universal social theory designed in accordance with scientific-realist principles would be able to offer explanations not only for observable relations, but also for unobservable causal mechanisms. Because the process of human calculation is unobservable, a scientific-realist epistemology would facilitate the development of a universal social theory that could actually address the complex workings of human decision making, presumably one of the main insights of contemporary RCT.

Unfortunately, scientific-realism is unlikely to provide a particularly stable foundation for the development of a universal social theory based on the rationality assumption. The main reason is that scientific-realism places a premium on the accuracy of the ontological assumptions of a given theory. Because it emphasizes accuracy, the theoretical assumptions favored by scientific-realism can generate hypotheses that are either too difficult to test or too context-specific to be widely applied.

In addition, scientific-realism requires that theorists consider evidence that disconfirms the causal mechanisms they posit for their theory, because these causal mechanisms are assumed to exist in reality. Empirical anomalies cannot merely be explained away by assumption. A universal RCT underpinned by scientific-realism would have to prove that for all domains of human existence, the rationality assumption is an accurate portrayal of the process by which human beings make decisions. Although it is hypothetically possible that nonrationality is sufficiently random that it can be discounted as empirical noise, the extent of evidence from sociology and social psychology calls into serious question an absolute statement about the universality of the rationality assumption. It is beyond the scope of this paper to offer summary judgment on findings of nonrationality, but because scientific-realist accounts must consider all of the evidence of nonrational behavior, they will tend to produce more accurate but more circumscribed accounts of social behavior.

Therefore, selecting scientific-realism as the epistemological foundation for a universal social theory constructed with the rationality assumption is likely to be *partial by application*. Of course, the degree to which RC theory will be circumscribed depends on how one answers the empirical question regarding the degree to which nonrational behavior is prevalent in social and political life. Although scientific-realism can provide reasons why nonrational behaviors may be relatively infrequent—for example, if they are punished by market mechanisms—it cannot avoid the fact that the domain of their theory will be restricted in some way by the degree to which non-rational behavior is present. Thus, scientific-realism is the only epistemology that can aspire to universalism, but because it requires accuracy in its ontological assumptions, the theories it generates will tend to be circumscribed.

A universal social theory, which can explain the fundamental causal mechanisms animating human behavior in every domain, cannot be achieved by utilizing the rationality assumption. No epistemological stance can justify the ontological assumptions necessary to complete the project, and attempts to achieve universalism are likely to be riddled with epistemological inconsistencies. For instrumentalist-empiricism, this universalizing project is philosophically untenable and therefore not recognized as a legitimate aspect of scientific inquiry. For scientific-realism, the assumptions required by the theory necessarily imply a domain that can never be universal. Although neither philosophical position is consistent with a universal theory based on the rationality assumption, they both recognize a role for RCT. For instrumentalist-empiricism, RCT can continue to be used to generate empirical predictions between observable phenomenon that are both useful and widely generalizable. For scientific-realism, on the other hand, RCT can be self-consciously integrated with other theoretical perspectives in order to produce a pluralistic social theory with wide explanatory power. Although RC theorists should abandon universal aspirations, their theories need not be irrelevant to the development of social knowledge.

## CONCLUSION

The only way progress can be made in debates over the role and purpose of RCT in political science is for RC theorists and their critics to take epistemology seriously. Both the substance and the implications of empirical claims made by RC theorists are dependent on the philosophical vision that underpins their theories. The empirical program inspired by RCT, therefore, cannot be separated from questions regarding the philosophical justifications of the theory. To this end, I have argued that RCT can be philosophically justified by one of two possible epistemologies—instrumentalist-empiricism and scientific-realism. Both of these perspectives view the promise and purpose of RCT differently. They present two unique visions of RCT in political science—one in which the rationality assumption is used as a useful fiction to facilitate empirical testing and one in which the rationality assumption is a miracle maker that uncovers actual processes of human cognition.

The purpose of this essay is not to advocate a particular epistemological position, however. Deciding between competing epistemologies is not only beyond the scope of this paper, but also beyond the scope of epistemology itself. Once accepted, an epistemological position establishes precise standards for how scientific theories should be designed, tested, and evaluated: An epistemology determines what counts as "truth" in the pursuit of scientific knowledge. Yet there are no clear benchmarks for appraising competing epistemological

positions. Asking for objective standards to evaluate epistemologies is like arguing for theological standards to evaluate the existence of God. Just as theological texts assume the existence of God, evaluative standards presuppose the existence of an epistemology. There can be no preexisting standards for choosing an epistemology, in other words, because an epistemology is what sets standards for what constitutes valid scientific knowledge in the first place.

How, then, can one adjudicate between competing epistemologies? Given that there is no objective answer to this question, a scientific community's the decision to adopt a particular philosophy of science must be made in reference to standards that are more social than universal. The reasons scientific communities select particular epistemologies, although social in nature, are not random or arbitrary. Sometimes, for example, an epistemology is preferred because it is more logically coherent than its competitors. Other times, an epistemology is favored because its description of the scientific practice seems to conform more closely to the historical record of scientific development for a particular group of scholars. Similarly, an epistemology may be adopted because it is congruent with certain normative values or understandings about the proper relationship of science to the broader society. Thus, the collective preferences of the scientific community tend to be the deciding factor in determining whether a one epistemology is favored over another, yet the particular reasons scientific communities give for selecting a given epistemological foundation are predicated on the collective understandings and preferences of the community, rather than any foundational notion of an absolute *a priori* standard.

Furthermore, while I have focused on applying epistemology to RCT, the questions raised by the philosophy of science are equally applicable to political science as a whole. To be clear, not all questions in political science reduce to issues of epistemology. Within particular epistemological frameworks, there can be important debates about the utility of various methodological tools, the coherence of particular theoretical statements, the value of various concepts, and so forth. But epistemological discussions are not unnecessary distractions from empirical research. Every research program requires a clear, coherent epistemological foundation that establishes the standards for testing and evaluating particular theories and for judging between competing theoretical programs. Questions of epistemology, therefore, are as relevant for scholars who have cultural, psychological, or structural understandings of the social world as for those who accept notions of rationality.

Given the intensity of debates over RCT, however, a focus on the philosophy of science is urgently needed. To resolve particular theoretical disagreements, minimize internal inconsistencies, and accurately assess the role of RCT in political science, RC theorists need to clearly and explicitly advocate a particular epistemological foundation. An increased sensitivity to the competing epistemological foundations of RCT is the fundamental first step toward the development of a more nuanced advocacy of RCT in political science. The next step is for the community of RC theorists to advocate an epistemological position—to decide whether the rationality assumption should be a useful fiction or a miracle maker. All rational choice theorists have to do is make a choice.

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