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**Rational Choice Theory in U.S. Economic, Political, and Policy Science, 1944-1985:  
Social Scientists Transform the Language of Democracy**

by

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**B.A. (University of Oregon) 1988  
M.A. (University of California, Berkeley) 1991**

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**S.M. Amadae**

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## INTRODUCTION

Rational choice theory assumes that human beings are self-interested, strategic actors, and asks "How can a society of selfish citizens produce collective welfare without authoritarian government?" This dissertation seeks to understand the origins, development, and significance of rational choice theory in American economic, political, and policy science from 1944 to 1985. Most often, this story is told as one of "economics imperialism," suggesting that rational actor formalism was articulated by Adam Smith, developed by the marginalist economists, and subsequently adopted by other social sciences, especially political science. I challenge this thesis that the twentieth-century rational actor has a direct lineage extending back to Smith's political economy, and that rational choice theory emerged fully-formed from economics to influence other disciplines. I propose instead that rational choice theory represents a clear rupture with earlier economic thought; and that it originated in game theory and the strategic imperatives of the Cold War national security state. From the outset, rational choice theory and rational policy analysis were linked by a common set of researchers, institutions, funding patterns, and core ideas. My analysis of the writings and careers of Kenneth J. Arrow, James M. Buchanan, Gordon Tullock, and William H. Riker shows how rational choice theory emerged as an interlocking set of parallel intellectual movements, each reformulating the normative foundations of democracy. I argue that rational choice theory crosses the normative/descriptive divide, and that it represents a new language of political theory and practice. Rational choice theory has consistencies with a model of social science inquiry pioneered by Smith, but these consistencies are of a different nature than suggested by the simplistic economics imperialism thesis. I argue that like Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*, rational choice scholarship uses social science methodology to draw prescriptive conclusions. Rational choice theory, as a new means of understanding the social coordination of

individual action, must be acknowledged as an important contribution to the political philosophy of liberalism.

In recent years, "rational choice theory" increasingly has become a preeminent research method in the fields of economics, political science, and policy science, and has had a forceful impact on sociology, psychology and even jurisprudence. According to rational choice theory, human beings act purposefully to optimize their subjective utilities with respect to a well-ordered set of transitive preferences. Rational choice theory is based on the broad claim that "regardless of what sort of ends people pursue, they do so through strategic, instrumentally rational behavior," and in most cases assumes that agents' ends are consistent with the pursuit of self-interest.<sup>1</sup>

The rational actor formalism, drawing from microeconomic models and from game theory, offers a minimalist and mathematical means to make predictions about how strategically self-interested actions interact to produce collective outcomes. Rational choice theorists seek to explain and predict agents' individual and collective actions in political environments such as elections, legislative committees, political party platform formation, and constitutional design. They have also developed tools and concepts for studying collective action problems, thereby bringing the phrases "tragedy of the commons," the "free-rider," and the "prisoners' dilemma" into common parlance. Rational choice theory has been used to analyze the normative foundations of democratic institutions and public policy, and has offered a fresh approach to what is considered to be a long-standing problem of political action: how are individuals' actions coordinated to result in effective and legitimate government? Articulating theorists' concern with normative issues and their sense of a theoretical continuity dating back to early modern political thought, Jeffrey Friedman explains,

By systematically examining whether political actors are primarily motivated by selfish ends,...[rational choice] theory has raised crucial questions about the

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<sup>1</sup>Jeffrey Friedman, "Economic Approaches to Politics," *Critical Review*, 9:1-2, Wint./Spr. 1995, 2.

advisability of previously accepted policies, institutions, and political systems. Not only does...[rational choice] theory forcefully remind empirical scholars of Machiavelli's and Hobbes's suggestion that self-interest may animate putatively public-spirited policies, but it impels normative scholars to ask if any given substitution of political for market processes depends unrealistically on selfless voters, legislators, or bureaucrats.<sup>2</sup>

As Friedman suggests, rational choice theory uses deductive models built on the premise of self-interested strategic action to make empirical predictions about the outcomes of political events, and to study the normative foundations of political institutions.

Indications and examples of the ascendancy of the rational choice approach abound. It has become a well-established and well-defined research tradition exemplified by the social choice, public choice and positive political theory schools, and codified in a set of widely-agreed upon canonical texts.<sup>3</sup> Two of its progenitors have received the Nobel prize of economics for their research, Kenneth J. Arrow in 1972, and James M. Buchanan in 1986. Since the mid 1960s, the Public Choice Society has served as a central professional organ for scholars of various disciplines contributing to the rational choice approach, and shortly after its establishment initiated the journal, *Public Choice*. Social choice submissions flooded editors of the mainstream economics journals *Econometrica*, *Journal of Economic Theory*, and *Review of Economic Studies* in the 1970s, leading to the establishment of the specialized serial *Social Choice and Welfare*.<sup>4</sup> Similarly, positive political theory articles have received an increasing presence in the *American*

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<sup>2</sup>Ibid., Friedman uses the term "public choice" to refer to rational choice research entailing a narrow definition of self-interest, which, as he indicates, characterizes most rational choice research.

<sup>3</sup>John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (Princeton: Princeton University Press, 1944); Duncan Black, "On the Rationale of Group Decision Making," *The Journal of Political Economy*, 56, 1948, 23-34; Kenneth J. Arrow, *Social Choice and Individual Values*, 2nd ed. (New Haven: Yale University Press, 1963); Anthony Downs, *An Economic Theory of Democracy* (New York: Harper, 1957); William H. Riker, *The Theory of Political Coalitions* (New York: Yale University Press, 1963); James M. Buchanan and Gordon Tullock, *The Calculus of Consent* (Ann Arbor: University of Michigan Press, 1962); Mancur Olson, Jr., *The Logic of Collective Action* (Cambridge: Harvard University Press, 1965).

<sup>4</sup>Amartya Sen, "Social Choice and Justice: A Review Article," *Journal of Economic Literature*, 23, Dec. 1985, 17.

*Political Science Review*, rising from none in 1957 to 35% of its articles in 1987.<sup>5</sup> The first rational choice text book was published in 1973 by William Riker and Peter Ordeshook.<sup>6</sup> This phenomenal disciplinary coalescence prompted the political scientist Gabriel Almond to refer to its status in American political science as a Kuhnian style research paradigm.<sup>7</sup> Most recently, the rational choice approach has received wide-spread attention with the devotion of an entire issue of *Critical Review* to the methodological debates sparked by Donald Green and Ian Shapiro's *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science*.<sup>8</sup>

Both advocates and opponents of the rational choice research method rely on a pervasive and entrenched "story" of the origins of this multi-disciplinary field. On various sides of the disputed terrain there is the commonly held idea that rational choice theory developed through a process of "economics imperialism."<sup>9</sup> This thesis holds that research methodology, and a basic assumption that self-interested rational action characterizes human behavior, spread from economics and colonized other disciplines. The economics imperialism thesis implies that rational choice theory is a branch of economic theory, and links rational choice scholarship to a long tradition of research reaching back through the work of the marginalist economists to Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*, at times extending its ancestry to include other well known political theorists. Recounting the legendary origins of one of the schools of rational choice research, Dennis Mueller observes, "Public

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<sup>5</sup>Donald P. Green and Ian Shapiro, *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science* (New Haven: Yale University Press, 1994), 3.

<sup>6</sup>William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory* (Englewood Cliffs, N.J.: Prentice Hall, 1973).

<sup>7</sup>Gabriel A. Almond, "Rational Choice Theory and the Social Sciences," in his *A Discipline Divided: Schools and Sects in Political Science* (London: Sage Publications, 1990), 117-137.

<sup>8</sup>*Critical Review*, 9:1-2, Wint.-Spr. 1995; Green and Shapiro, *Pathologies of Rational Choice Theory* (1994).

<sup>9</sup>Term is used, for e.g., in Gary J. Miller, "The Impact of Economics on Contemporary Political Science," *Journal of Economic Literature*, 35, Sept. 1997, 1181.



choice can be defined as the economic study of nonmarket decision-making, or, simply the application of economics to political science." Mueller explains in more detail,

The basic behavioral postulate of public choice, as for economics, is that man is an egoistic, rational, utility maximizer. This places public choice within the stream of political philosophy extending at least from Thomas Hobbes and Benedict Spinoza, and within political science from James Madison and Alexis de Toqueville. It is separated from much of this earlier work on politics, however, by its use of analytic tools of economics.<sup>10</sup>

The economics imperialism thesis, although loosely constructed, relies on two assumptions. It suggests a continuity of thought extending back to Smith, and it proposes that rational choice theory was fully developed within economics. This understanding of rational choice theory as an extension of economists' methods and assumptions to other areas of human action, most notably politics, gives rational choice scholarship a readily demarcated identity, a pedigree, and mythical origins.

Although I, too, was taken in by the economics imperialism thesis upon embarking on the project of understanding the origins, emergence, and growing ascendancy of rational choice theory, at each step this thesis became less tenable. The thesis is least plausible for implying an uninterrupted continuity of thought linking contemporary, post-World War II rational choice theory with the nineteenth-century work of the marginalist economists, and with Adam Smith's Enlightenment writings, hinging on the concept of "rationality." Such a linkage implies that the contemporary theory of "rational action" exists as a category with unproblematic, ahistorical relevance. Although the economics imperialism thesis fails on numerous counts, one prominent shortcoming is its failure to acknowledge how the concept of human rationality itself has undergone a profound shift over the past centuries.

In challenging the continuity implied in C.B. Macpherson's "possessive individualism" argument finding a continuous development of political liberalism based on individualism and property ownership going back to Thomas Hobbes, G.J.A. Pocock

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<sup>10</sup>Dennis C. Mueller, "Public Choice: A Survey," *Journal of Economic Literature*, 14:2, June 1976, 395-433.

vividly depicts the textured nuances of political idioms conveying meaning to such fundamental terms as "rationality." Pocock finds the paradigmatic expression of possessive individualism, which may well double as the prototype of "self-interested rational action," in the seventeenth-century writings Matthew Wren. According to Wren, men drew their self-identity from property in the form of movable goods and wealth, and were driven by the over-riding motivation to gain the upper hand in bargains. Wren ardently opposed the political philosophy of James Harrington, who associated an individual's political identity with landed wealth which "set men free to be the rational political creatures which they were by nature."<sup>11</sup>

In contrasting the political philosophies of Wren and Harrington, Pocock underscores how, within the context of the seventeenth-century, the term "rationality" denoted the inverse concept presumed by contemporary rational choice adherents.

Pocock explains,

Harrington...affirmed that two girls left to share a cake would construct the choice rationally, by having one girl cut the cake and the other choose her piece. It was Wren who replied that the stronger girl would offer the other a small piece of cake to fetch her some water to drink with her larger share.<sup>12</sup>

Notably, for Harrington "rational choice" referred to Solomon-like wisdom in ensuring an equitable distribution of shares, whereas the position most reminiscent of either possessive individualism or contemporary "rational choice theory" was, at least in Harrington's view, the work of "mathematicians'...who would reduce political society to a calculus of interested forces in order to deprive it of its rational soul."<sup>13</sup> It is simply not possible to suppose that contemporary "rational action" connotes either the same sense of reason familiar to either the Scientific Revolution or the Enlightenment; nor is it possible to conflate the twentieth-century rational actor with Adam Smith's multi-faceted industrious agent.

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<sup>11</sup>J.G.A. Pocock, "Authority and Property: The Question of Liberal Origins," in his *Virtue Commerce and History* (Cambridge: Cambridge University Press, 1985), 61.

<sup>12</sup>*Ibid.*, 61-62.

<sup>13</sup>*Ibid.*, 62.

Once I discovered that the economics imperialism thesis implies a misleading sense of continuity, one overarching goal of my project became to reconstitute "rational choice theory" as a historical object. This project of understanding the emergence and development of rational choice scholarship uses three strategies. One strategy entails reexamining the roots of rational choice theory in both the writings of the marginalist economists and Adam Smith. A second strategy explores the roots of rational choice theory in the Cold War national security state in which "rational choice" referred to making rational policy choices in a bi-polar nuclear stand-off. A third strategy concentrates on the three disciplinary rational choice movements: Arrow's social choice, Buchanan and Tullock's public choice, and Riker's positive political theory. The results of this research contradicts both of the assumptions upon which the economics imperialism thesis rests: that there is a continuity of thought linking Smith, the marginalists, and rational choice theorists based on a straightforward geneology of the rational actor, and that rational choice theory emerged fully-formed within economics and subsequently colonized other fields.

Instead I propose a more nuanced thesis recognizing both continuities and ruptures leading to the development of rational choice scholarship. From the outset, rational choice theory represented an important rupture even within economics because it was developed by researchers outside of academic economics; it was based on the new mathematics of game theory; it proposed an unprecedented theory of human behavior characterized as deliberate and strategic "rational action"; it was used to study nuclear strategy and political events before it was applied to problems of economic analysis; and it initiated the reunification of "political economy" which reversed the marginalists' distillation of pure economic science from Smith's classical political-economy. Drawing on its interconnections with policy science, I argue that rational choice theory must be recognized as a new language for understanding political institutions and democratic theory which has entailed reformulating public decision-

making practices and rethinking the normative foundations of democracy. There are continuities with the earlier thought of Smith and the marginalists, but these do not depend on either the direct ancestry of "rational action", or on the continuous development of economic thought. Instead I argue that rational choice theory is consistent with a model of social science inquiry partially initiated by Smith. Reminiscent of Smith's proto-political liberalism, rational choice theory crosses over the normative/descriptive and the theory/practice divides, and must be acknowledged as an important contribution to late twentieth-century political liberalism.

#### **A. Adam Smith's Political Economy and Marginal Economics as Theoretical Antecedents to Rational Choice Theory**

In Part One, I set out to determine how the rational actor formalism relates to the classical political economy of Adam Smith, and to the *Homo Economicus* of late nineteenth-century marginalist economics. Both of these conceptual constructs are commonly proposed as antecedents to the contemporary rational actor formalism because, supposedly, all three are founded on the common notion of self-interested rational action. I do not claim to have achieved a familiarity with early modern political discourse approaching that of Pocock, but my research amply demonstrates that Smith's prudent and industrious man is not the *Homo Economicus* of the marginalist economics; nor is the nineteenth-century *Homo Economicus* equivalent to the post-World War II rational actor. The rational actor anchoring the rational choice theory of deliberate decision-making functions strategically and his actions are described by the new mathematics of game theory, which is quite distinct from the calculus-based mathematics of constrained maximization characterizing the modus operandi of *Homo Economicus*.

Even though the continuity thesis hanging on the thread of "rational action" is not sustainable, I propose a more nuanced approach acknowledging both continuities and ruptures. Whereas there is no straightforward genealogy connecting the twentieth-

century rational actor to Smith's industrious agent, rational choice theory manifests a particular set of tensions characteristic of the social science tradition initiated in part by Smith's *Wealth of Nations*. Both Smith and contemporary rational choice theorists exhibit the paradox of discovering the intrinsic "natural" laws governing humans' individual and collective actions, and using their analyses to draw normative and prescriptive policy initiatives. Smith, of course, used his scientific investigation to agitate for a laissez faire policy regarding legislation aimed at structuring market relations. Rational choice research, although not primarily designed to reach or support policy proposals, has from its inception been entangled with the world of hands-on policy analysis. As a matter of course, rational choice analysis produces normative conclusions pertaining to questions of institutional design, and to the legitimating principles of democratic government. Like Smith, rational choice theorists study how agents' self-interested actions are automatically coordinated to reach mutually beneficial results as a function of the structure of social institutions. In turn their analyses can be used to guide legislation and institutional design.

### **B. Rational Policy Analysis and the National Security State**

Any attempt to understand what rational choice theory is and how it has come to have so much power must explore its relationship to the rise of policy science and decision technologies characterizing the Cold War American national security state. This investigation is called for because key figures who establishing the rational choice approach, John von Neumann, Kenneth Arrow, Anthony Downs, James Buchanan, and Mançur Olson, spent time under the employ of the quintessential Cold War institution, the Santa Monica-based RAND Corporation. In addition, John von Neumann and Oskar Morgenstern's game theory, upon which the rational actor formalism is predicated, was primarily developed at RAND to harness its potential for problems of nuclear strategy while economists ignored it. Finally, many leading figures within the rational choice academic community, Kenneth Arrow, Thomas Schelling, Mançur Olson,

Alain Enthoven, Henry Rowen, Charles Hitch, Howard Raiffa, William Niskanen, and Richard Zeckhauser, were also members of the newly established policy science community brought into prominence when RAND's policy tools became the accepted methods of policy-making first throughout the sprawling defense complex, and then in Lyndon B. Johnson's Great Society Program.

The story of the development and establishment of policy science as an institutionalized and disciplinary norm had all the drama of a Hollywood screen play involving the missile gap, Sputnik, John F. Kennedy's presidential election, the overhaul of decision-making procedures within Robert S. McNamara's Pentagon, and the introduction of these same policy tools into domestic politics with the Great Society Program. As was evident in early 1970s U.S. Senate hearings, rational policy analysis of a technocratic elite had altered decision-procedures fundamental to American democracy. This rootedness in development of cold war technocracy again demonstrates the dialectic between social science as "value-free" methodology and its involvement in actual policy making and legislation. Rational choice theory has a double identity as a method for producing knowledge of political phenomenon *and* as a decision technology, which itself informs action as a form of knowledge. An entire knowledge production regime was established in the 1960s and 1970s, first in the U.S. Department of Defense, then throughout the federal government in Johnson's Great Society Program, and finally in leading public policy programs such that rational policy analysis has become basic to the intellectual and institutional endowment of the United States. Rational choice theory in the academic social sciences draws power and prestige from interrelationships with the active policy-making environment which are manifested in a shared complex of researchers, institutions, funding patterns, and core ideas.

### **C. The Emergence, Coalescence, and Significance of Rational Choice Theory as a Distinct Research Method**

My third research strategy focuses on the development of three of the most central rational choice schools: Kenneth J. Arrow's 1951 publication of *Social Choice and Individual Values* which engendered the subfield of social choice theory; James M. Buchanan and Gordon Tullock's 1960s initiation of the field and school of public choice theory with their "Virginia School," and their Public Choice Society; and William H. Riker's transformation of political science in the 1970s and 1980s with his program in positive political theory at the University of Rochester. In three chapters I argue that rational choice theory must be recognized as a unique theoretical form with distinctive assumptions which cannot be simply understood as arising out of a process of "economics imperialism." While it is certainly the case that rational choice theory has some of its antecedents within economics, the economics imperialism thesis fails to acknowledge that rational choice scholarship represents a rupture within preceding economic thought, and that rational choice theory has had as much impact on the formerly heteronomous discipline of economics as it had on other fields such as political science and public policy analysis. Rational choice theory is best viewed as a set of simultaneously unfolding and interlocking disciplinary movements taking shape as social choice theory, public choice theory, positive political theory, as well as the neo-classical synthesis in economics and public policy analysis. Again the interconnections of theory and practice are evident in the numerous roles which Arrow and other leading theorists have played, and is explicitly obvious, for example, in Riker's establishment of a public policy program housed within his political science department at the University of Rochester.

Finally, drawing upon the writings of Pocock, Quentin Skinner, and Ludwig Wittgenstein's philosophy of language games, I argue that rational choice theory represents a new language which has transformed our understanding of collective

decision-making processes and of the normative foundations of democratic theory.<sup>14</sup> Arrow's social choice theory literally overwrote the former tradition of social welfare economics by providing a new conceptual framework and rationale underlying social welfare discussions, and also precipitated upheavals in democratic theory and in the foundations of policy analysis; Tullock and Buchanan used the rational choice approach to rethink the logical foundations of constitutional design; Riker concluded that rational choice theory supports the political liberalism of James Madison and undermines the populism of Jean Jacques Rousseau. As significant as these conclusions are, however, I argue that it is the promulgation of this new language, more so than its specific theoretical results, which is of chief importance. As the traditional and central concepts of citizenship, sovereignty, the public, and the principle of legitimation underlying democratic government, are translated into the rational choice language, they acquire new meanings: "citizens' sovereignty" becomes subject to formal definition; the "public" is found to be a null concept; and the principle of legitimate democratic rule is presented as a mathematical aggregation of individuals' self-oriented preferences.<sup>15</sup> Translated into the language of rational choice theory, the problem of government becomes that of designing an institutional or legislative framework which automatically coordinates self-interested actions.

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<sup>14</sup>J.G.A. Pocock, *Virtue, Commerce and History* (1985); James Tully, ed., *Meaning and Context: Quentin Skinner and his Critics* (Princeton: Princeton University Press, 1988); Ludwig Wittgenstein, in G.E.M. Anscombe and G.H. von Wright, eds., *On Certainty* (New York: Harper & Row, 1969); and Ludwig Wittgenstein, *Philosophical Investigations*, 2nd ed., trans. G.E.M. Anscombe (Oxford: Blackwell Publishers, 1953).

<sup>15</sup>Arrow expresses "condition of citizens' sovereignty" in opposition to the following definition: "A social welfare function will be said to be *imposed* if, for some pair of distinct alternatives  $x$  and  $y$ ,  $x R y$  for any set of individual orderings  $R_1, \dots, R_n$  where  $R$  is the social ordering corresponding to  $R_1, \dots, R_n$ ." Arrow, *Social Choice and Individual Values* (1963), 28; Tullock and Buchanan invalidate the concept of the public in *The Calculus of Consent* (1965); Arrow relies on the principle of aggregation throughout his *Social Choice and Individual Values*.



## PART I:

### THEORETICAL ANTECEDENTS TO RATIONAL CHOICE THEORY

Rational actor theory originated in the classical microeconomics of Adam Smith. In its purest form, it refers to behavior by an individual, be it a person, a firm, or a political entity, designed to further the actor's perceived self-interest, subject to information and opportunity costs. As originally conceived by Smith, the theory provided a powerful and creative mechanism whereby the pursuit of individual self-interest would lead to collective welfare. The genius of Smith's invention—the market mechanism, regulated by an invisible hand—solved the problem which had troubled philosophers since Hobbes made his famous argument that there was one basic human nature and this nature was self-centered: How can a society of selfish citizens produce collective welfare without authoritarian government?<sup>1</sup>

Part One of this dissertation explores the antecedents of rational choice theory in the works of Adam Smith, and the marginalist economists William Stanley Jevons, León Walras and Vilfredo Pareto. Although this undertaking was originally motivated by rational choice scholars' claim that "[r]ational actor theory originated in the classical microeconomics of Adam Smith," and that rational choice theory was "originally conceived by Smith," research soon provided a much richer and more textured view. This study of Smith and the marginalists reveals the difficulties in tracing a tidy lineage of the "rational actor" back to Smith. On the other hand, by concentrating on our protagonists' overarching commitment to scientific research methodology, it demonstrates important continuities as well.

Chapter One performs an analysis of Adam Smith's political economy by eliciting the methodological concerns of contemporary relevance to Smith. It draws on the historiographically sophisticated scholarship of G.J.A. Pocock and Quentin Skinner to gain a better understanding of Smith's writings within the context of the Scottish Enlightenment and the debates over the two traditions of natural jurisprudence and civic humanism. Any attempt to understanding Smith's social science is inseparable from his

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<sup>1</sup>Kristen Renwick Monroe, introduction to Kristen Renwick Monroe, ed., *The Economic Approach to Politics: A Critical Reassessment of the Theory of Rational Action* (New York: Harper Collins), 1991, 1.

analyses of justice and jurisprudence. I use this in depth study of Smith's *The Theory of Moral Sentiments* and *An Inquiry into the Nature and Causes of the Wealth of Nations* to challenge the blithe assumption that the twentieth-century rational actor has direct roots in Smith's treatises.

I find that instead of focusing on the principle of rational action, it is more fruitful to concentrate on Smith's methodology as providing a fundamental source of theoretical continuity. Smith's political economy is structured by his commitment to a methodology of efficient causes. In setting out to build his model of the *Nature and Causes of the Wealth of Nations*, Smith was inspired by the Newtonian world system. In both cases, Smith's political economy, and Newton's world system, harmony and stability are the product of efficient causes. Neither the material bodies in Newton's cosmos, nor the human beings in Smith's system, intentionally coordinate their actions to achieve systemic harmony. The consequence of this "efficient causes" methodology when applied to problems of government and social coordination is to relieve agents of the responsibility for deliberately coordinating their actions. I argue that in striving to explain social evolution, stability and prosperity, Smith's adherence to Newtonian methodology results in the eclipse of the traditional concept of sovereignty. Instead of people deliberately governing their society, social stability is an unintended side-effect of self-oriented actions.

Similarly with marginalist economics, it is not possible to find an easy relationship between the rational actor and *Homo Economicus*. Their principles of action are different: The twentieth-century rational actor is deliberately strategic, and his actions are explained by the mathematics of game theory; the *Homo Economicus* of the marginalists acts mechanically, and his actions are described by variational calculus. However, it is fruitful to observe that, like Smith, the marginalists' view of human society is bounded by their firm commitment to scientific methodology. Whereas Smith was captivated by the Newtonian world system, the marginalists were fascinated with

rational mechanics. They built their models of economic systems on the calculus of constrained maximization taken directly from physics. Thus, for the marginalists, "rational action" resembled the principle of least action from classical mechanics. Significantly, this rational action is neither deliberate nor strategic. Unlike rational choice scholars, the marginalist economists were not concerned with agents' intentions, their reasoning capacities, nor their competitive interactions.

The marginalists' principle of spontaneous coordination is static while Smith's is dynamic. Nonetheless, in both cases, a scientific methodology based on physical systems gave theorists the confidence in efficient causes as an effective mode of explanation; and it gave them confidence that like mechanical systems, human society automatically achieves self-regulating harmony. Both Smith and the marginalists used their analyses to show that a policy of unregulated trade best ensures overall, even optimal, social prosperity. In both analyses, any intentional design to regulate society is superseded by inherent laws guaranteeing the automatic coordination of individuals' pursuit of pleasure.

In assessing the manner in which Smith and the marginalist economists anticipate rational choice theory, their methodologically driven models of society are the most central. While the direct lineage of the principle of rational action cannot be sustained, their keen commitment to explanatory and predictive social science methodology provides a crucial link. Smith's study of political economy, the marginalists study of markets, and rational choice theorists study of political equilibria, are all based on the premise of treating problems of societal coordination as explanatory and predictive problems. In each case, intentional self-regulation, or deliberate government, is secondary to inborn laws of human action structuring individual behavior and collective outcomes. In all three cases social science methodology of treats human agents as efficient causes, and treats social coordination as a problem of unintended self-

**regulation. Furthermore, in all three cases, supposed value-free analyses are used to prescribe specific social policies such as laissez faire, or to design constitutions.**

## Chapter 1

### The Eclipse of Sovereignty in Adam Smith's System of Political Economy

Smith's contribution to economics...has the character of a description and advocacy of the system now called liberal capitalism; and the ligaments between the economic order and the political system, close under any circumstances, are exceptionally broad and strong in the world as seen and moulded by Adam Smith. The close conjunction of economics and of political philosophy, even or perhaps especially if tending toward the eclipse of the latter, is a powerful fact of political philosophy; the men, like Smith, who were responsible for it would have a place in the chronicle of political philosophy on that ground alone.<sup>1</sup>

Smith is widely recognized as the forefather of laissez-faire economics, but is not typically regarded as a leading political theorist for the reason that his system of political economy is inherently self-regulating. Contrary to this conventional wisdom, I argue that Smith's counter-Enlightenment eclipse of sovereignty represents a crucial moment in the history of political thought. I further argue that the displacement of sovereignty characterizing Smith's political economy necessarily follows from Smith's development of an early form of social science modeled on Isaac Newton's natural philosophy and world system. Smith, like Newton, restricted his attention to "efficient causes"; crucially for both Newton and Smith, systemic harmony arises independently from an inherent *telos*, or deliberate attempt to coordinate, on the part of constituent bodies or persons. Like Newton, Smith set out to identify the natural laws which automatically coordinate individuals' actions. Smith's application of natural philosophy to the realm of human agency necessarily relieves his "agents" of the responsibility for social harmony and set an important precedent for modern liberalism. Late-twentieth century liberal theorists from across the political spectrum including John Rawls, Kenneth J. Arrow, William H. Riker, James M. Buchanan and Gordon Tullock, follow Smith in seeking to identify a framework in which individuals' self-serving actions are automatically coordinated. Furthermore, rational choice scholarship, which increasingly

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<sup>1</sup>Joseph Cropsey, "Adam Smith and Political Philosophy," in A.S. Skinner and Wilson, eds., *The Market and the State* (Oxford: Oxford University Press, 1976), 132.

sets the terms of the discussion of economic and political liberalism, explicitly shares with Smith the concept that "equilibria" must spontaneously arise from self-interest.

Followers of G.J.A. Pocock claim that Adam Smith played a crucial role in establishing the political discourse of modernity. They argue that Smith furthered the natural jurisprudence tradition, which emphasizes property and rights, in distinction to the civic humanist tradition, which upholds citizenship, virtue, and civic responsibility. Whereas these scholars rightly emphasize Smith's continuity with the natural jurisprudence tradition, they fail to recognize that he introduced a profound rupture into modern political discourse. In marked opposition to both the civic humanist and natural jurisprudence traditions which constituted the political vocabulary of pre-Enlightenment Europe, and also opposing his Enlightenment contemporaries Jean Jacques Rousseau and Immanuel Kant, Adam Smith undermined the concept of sovereignty. For Smith, social order spontaneously arises as a joint product of individuals' sympathy and self-regarding actions. Social harmony is automatic and guaranteed; the rational and deliberate governance of society is neither feasible nor desirable. Smith replaced sovereignty as a principle of self-determination, achieved through legitimate law derived from divine right or a citizen body, with an automatically self-regulating political economy whose vestigial sovereign should obey simply the law of nature.

This essay first discusses the work of scholars writing about Smith's contributions to the natural jurisprudence tradition in order to bring attention to the significance of Smith's Newtonianism for political theory. The next section details the inspiration Smith drew from Newton's natural philosophy, including his confidence in automatic coordination, commitment to a methodology of efficient causes, and adoption of an epistemological position which suggests that understanding the principles of political economy rates as a discovery instead of an invention. The two subsequent sections spell out the significance of Smith's Newtonianism for his natural jurisprudence, and for his system of political economy. The fifth section discusses the implications

which Smith's natural philosophical approach have for the concept of sovereignty. Section six introduces Smith's "political mechanics" which is distinct from traditional concepts of sovereignty. The concluding section explores the contemporary relevance of Smith's political philosophy by proposing that Smith initiated a particular form of political discourse which continues to have currency among some contemporary political theorists including the rational choice scholars.

#### **A. Smith's Articulation of Natural Jurisprudence**

Since the late 1970s, the most active and fertile area in Smith historiography has been the inclusion of Scottish Enlightenment studies within the more general discussion, sparked by G.J.A. Pocock's *The Machiavellian Moment* (1975), of the competing theoretical paradigms of civic humanism and natural jurisprudence.<sup>2</sup> Pocock revisits early modern Florence, arguing that the Florentine political discourse of civic humanism thrived and would later be infused into the seventeenth- and eighteenth-century Anglo-American political arena, where it existed alongside the natural jurisprudential language of rights and commerce. Pocock elicits the significance of the classical republican vision of virtue and active civic participation, notwithstanding the concurrent ascendancy in British and American government of rights-based natural jurisprudence associated with commercial political economy. Contributing to Pocock's *Varieties of British Political Thought*, Gordon Schochet juxtaposes the rise in stature of natural jurisprudence with the consequent demise of the civic humanist tradition:

For the most part, the principle terms of twentieth-century English-language politics were in place by 1800....This vocabulary came from the newer and increasingly hegemonic juridical discourse and comprised the more-or-less coherent body of doctrine that would come to be known as "liberalism." The so-called "triumph" of that liberal ideology was facilitated by the dominance in British philosophy after Hume of "empiricism", an outlook that is sympathetic to

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<sup>2</sup>Research in the 1950s, 1960s and 1970s concentrated on the relationship between politics and economics in Smith's work, see William Grampp's *Economic Liberalism*, Vol. 2 (New York: Random House, 1965); Joseph Cropsey's *Polity and Economy: An Interpretation of the Principles of Adam Smith* (The Hague: Martinus Nijhoff, 1957); and Donald Winch's *Adam Smith's Politics: An Essay in Historiographic Revision* (Cambridge: Cambridge University Press, 1978).

a skeptical individualism in morals and politics. The legal construct "state" eventually replaced the more humanistic "commonwealth", and its members were "citizens" in a modern sense whose "rights", "interest", "properties", and "liberties" were the reasons for political action as well as limitations on public "authority." The point of politics was to protect and enhance rights and liberties—which were now conceived as *entitlements* that preceded organized politics and government rather than as *privileges* which were their creations—and not to pursue civic virtue.....The substitution of interest for personal virtue as the ultimate end of *politics* was accompanied by a transformation in the meaning of *justice*.<sup>3</sup>

The rise of political economy and the ascendancy of juridical language were mutually interconnected: as the structure of political economy developed, it depended on the natural jurisprudence of rights. Hence, Adam Smith's writings have received particular attention from analysts concerned with either or both of these two traditions woven into his thought.

The civic humanism/natural jurisprudence scholarship has singled out Scotland as a special case of Anglo-American political discourse. Scotland jealously guarded its separate identity from England. The Scots closely followed intellectual developments on the Continent, especially Holland, and were immersed in the natural jurisprudential tradition associated with Hugo Grotius and Samuel Pufendorf. Smith's friend David Hume, Smith's teacher Frances Hutcheson, and Smith all worked within the juridical paradigm. Many scholars believe it is helpful to understand Smith's political economy as a transposition of the Continental law language of rights into the language of commerce and markets.<sup>4</sup>

Istvan Hont and Michael Ignatieff argue that Smith not only worked within the language of natural jurisprudence, but inherited and reconciled the central paradox plaguing natural jurisprudence since the time of Thomas Aquinas: how to balance the

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<sup>3</sup>Gordon Schochet, "Why should history matter? Political theory and the history of discourse," in J.G.A. Pocock, ed., *The Varieties of British Political Thought, 1500-1800* (Cambridge: Cambridge University Press, 1993), 333.

<sup>4</sup>See especially contributions to Istvan Hont and Michael Ignatieff, eds., *Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment* (Cambridge: Cambridge University Press, 1983); and Knud Haakonssen *The Science of a Legislator: The Natural Jurisprudence of David Hume and Adam Smith* (Cambridge: Cambridge University Press, 1981).



rights of individuals to property with the "just" claim of those without, especially during times of urgent need.<sup>5</sup> For Grotius and Pufendorf, the question boiled down to that of establishing a "just" price for sustenance commodities such as grain which would guarantee the poor inclusion at the level of subsistence. Grotius argued that the just price for subsistence goods differed from the market price during times of scarcity, and hence upheld interventive regulation as a means to secure a just price in hard times. Pufendorf, by contrast, offered a firmer defense of property rights, denying that the poor had a right to others' riches. Monetary economies, by enabling the collection of wealth, allowed societies to achieve a higher standard of living through the more effective allocation of surpluses. Inequality was a necessary by-product of monied economies, but so long as the poor were at least guaranteed sustenance, inequality was not inherently unjust. For Pufendorf the "fair price" was equal to the price the market would clear, and he argued that high grain prices in the long run would lead to higher grain supplies since there would be a greater incentive to produce grain. Locke, who also worked within the natural law tradition, associated the market price with the fair price as well. For Grotius, Pufendorf, and Locke, property rights were essential for providing incentives for individuals to be industrious and to augment their stock and material well-being.

Adam Smith was a conscious heir of this intellectual legacy. His novel contribution was to shift the terms of the discussion, from just compensation among competing rights over property versus subsistence, to the inherent justice of market transactions. Smith argued that market forces guaranteed the sustenance of the working poor, and therefore automatically met with the dictates of justice. Property rights and inequalities were justified because the poor's needs were met, and the system of political economy structured in this way actually attended to the poor in a superior fashion since

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<sup>5</sup>"Needs and justice in the *Wealth of Nations: An introductory essay*," in Hont and Ignatieff (*ibid.*), 1-44.

the poor of civilized society were better off than the rich in "savage" societies (WN I.i.11).<sup>6</sup>

In situating Smith within the natural jurisprudence tradition of rights, Hont and Ignatieff also contextualize Smith within the hotly contested grain debates of the 1760s. The most notable of these were the "French debates over the liberalization of the internal trade" which occurred in 1764-6, years when Smith was in France (15). Debates over natural law, just price, and property rights were not merely academic; they had direct bearing on contemporary public policy. The leaders for liberalization of trade, known as the Physiocrats, tended to uphold the absolute property rights of grain growers, arguing that free trade would increase the price of grain, and would in the long run make France agriculturally self-sufficient. Theory met harsh reality repeatedly during the 1760s when harvests were poor, grain prices high, and social dissatisfaction rampant. The high price of grain in 1768-69 divided the liberal "Party of Humanity" into those who insisted on sticking to what they deemed a long-term solution to high prices, and those who balked when confronted with the short term reality of starvation (17). In 1769 the national grain police were reinvested with the authority to enforce "fair" prices. In 1774 Turgot attempted to reinstate free trade, only to be thwarted by the *guerre des farines* in 1775 which resulted in the dissolution of the Physiocratic school. Hont and Ignatieff conclude that by 1776, "Smith remained the only standard-bearer for 'natural liberty' in grain" (18). Eighteenth-century debates over property rights were grounded in the political opposition between the interest of grain growers in free disposal of "their" goods at the highest price and the need of day laborers for affordable food. In his day, Smith's position was radical to the extreme; he went so far as to argue that just as high grain prices would in the long run secure greater grain production, low wages for

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<sup>6</sup>WN refers to Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations*, Vols. I and II, in R.H. Campbell and A.S. Skinner, eds. (Indianapolis: Liberty Fund, [1776] 1976).

manufacturing jobs in the long run would secure a increase in the "real" wages of the poor (21).

Again, the burden of proof for Smith, which he accepted in the language of natural jurisprudence, was to demonstrate that the system of political economy organized in accordance with absolute property rights and natural liberty, despite the burden this system placed upon the poor, guaranteed the poor the highest standard of living any possible system. Property rights were justified by a system of political economy which naturally and automatically provided for the needs of all the echelons of society, including the lowest. In its translation to market terms, the language of natural jurisprudence set up the framework of the discussion, and then melded into the background as political economy met the dictates of justice without external regulation or intervention.

Scholars working in the Pocockian vein establish a continuity of political vocabulary across a vast time span of time and theory, from political theorists preceding Smith to contemporary interpretations of political and economic liberalism. As illuminating as their work is for Smith studies, however, one significant theme receives scant attention, as it falls outside the scope of their preoccupations. This theme, which marks a rupture with the tradition of natural jurisprudence, is the inspiration Smith received from the natural philosophy of Isaac Newton. Smith constructed his system of political economy using the template of Newton's world system. Smith put forth a conception of "just law" which transplanted a contemporary fascination with natural philosophy from the natural realm to the social realm. For Smith, political economy is governed by natural law much as is the Newtonian world system. Human actors are no more capable of legislating their own society than are celestial bodies capable of governing the universe. Therefore, "just law" must conform to this natural order intrinsic to human society, instead of contravening it through inappropriate attempts to actively legislate human affairs. The role of legislation and

sovereignty necessarily becomes derivative in a system of political economy manifesting its own law-like relationships.

Of course, numerous scholars refer to the significance of Newton's natural philosophy for the method adopted by Smith in both *Theory of Moral Sentiments* and *Wealth of Nations*.<sup>7</sup> Roger Emerson in particular argues that addressing the significance of Newtonian science for Smith may be a more insightful way into Smith's texts than the well-worn path of juridical versus civic humanist discourse.<sup>8</sup> The role of Newtonianism in Smith's thought is also a leading theme for Athol Fitzgibbons.<sup>9</sup> However, Fitzgibbons devotes his efforts to arguing that whereas both David Hume and Adam Smith promoted a new natural philosophy to replace Aristotelean philosophy, Smith's conceptual foundation is largely distinct from Hume's. None of these studies highlighting the importance of Newton for Smith directly address how Smith's Newtonianism served to structure his political theory.

#### **B. Smith's Captivation by the Newtonian World System and Natural Philosophy**

The language of an early form of "social science," or the application of natural philosophy to human society characteristic of Adam Smith's inquiries, was a new language as important to the history of political discourse and political theory as the traditional languages of civic humanism and natural jurisprudence. This new language, which is articulated in Smith's principles of political economy, had the consequence of

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<sup>7</sup>TMS refers to *Theory of Moral Sentiments*, in D.D. Raphael and A.L. Macfie, eds. (Indianapolis: Liberty Fund, [1759] 1982); J. Spengler, "Adam Smith and Society's Decision-makers," in Andrew S. Skinner and Thomas Wilson, eds., *Essays on Adam Smith* (Oxford: Clarendon Press, 1975), 390-414, esp. 394-395; Herbert F. Thomson, "Adam Smith's philosophy of science," *Quarterly Journal of Economics*, 79, 1965, 212-233, esp. 226, 232; Andrew S. Skinner, "Adam Smith: philosophy and science," *Scottish Journal of Political Economy*, 19, 1972, 397-319, esp. 315; T.D. Campbell, "Scientific Explanation and Ethical Justification in the *Moral Sentiments*," in Skinner and Wilson, eds. (ibid.), 68-82, esp. 69.

<sup>8</sup>Roger L. Emerson, "Science and moral philosophy in the Scottish enlightenment," in M.A. Steward, ed., *Studies in the Philosophy of the Scottish Enlightenment* (Oxford: Clarendon Press, 1990), esp. 33-34.

<sup>9</sup>Athol Fitzgibbons, *Adam Smith's System of Liberty, Wealth, and Virtue: The Moral and Political Foundations of The Wealth of Nations* (Oxford: Clarendon Press, 1995).

altering, or even even eclipsing, the traditional notion of sovereignty. This traditional view of sovereignty, which was further developed in the work of Rousseau and Kant, held that a form of governance or leadership could direct a society toward specific ends. Contending views of the operation of sovereignty which ranged from defact authority, divine right, and republican citizenship, all recognized the principle of self-determination.<sup>10</sup> To these traditional, active theories of government Smith added a new understanding of social organization which rejects the possibility of autonomous self-rule. In effect, Smith's application of Newtonian methodology to the study of society resulted in a "political mechanics," or a social engineering model of society in which rulership perogative is secondary to the principles or laws which naturally govern the social order. For Smith the deliberate design of society, through cunning or reason, is ruled out from the onset because human society is assumed to be providentially harmonious, and because the methodological dictates of natural philosophy require that aggregate social outcomes be studied as the unintentioned consequences of individuals' actions.

In eliciting Smith's appropriation of a natural philosophical approach consistent with Newton's world system, I am making three claims. My first claim is that Smith drew upon the concept of spontaneous, or automatic, harmony which characterized the Newtonian cosmos. This permitted him to assume that like the solar system, human society is naturally harmonious and stable. Second, I argue that Smith worked within the ethos of natural philosophy by steadfastly refusing to countenance final causes or teleological principles as appropriate means to explain aggregate social outcomes. Instead Smith consistently looked to efficient causes which prohibited identifying individuals as a site of agency intentionally directed toward the collective achievement of ends. This methodology predicated on efficient causes, combined with the

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<sup>10</sup>For a synopsis of the history of "sovereignty" see Robert E. Goodin, et. al., "Simian Sovereignty," *Political Theory*, Dec. 1997, 821-830.

assumption of automatic harmony, necessarily changed the long-standing view of sovereignty as intentional governance to a view of sovereignty secondary to the principles of political economy. My third claim is epistemological and pertains to the status of theoretical constructs with respect to the human imagination on the one hand, and with respect to the actual order of human society on the other. Smith's texts contain the implicit suggestion that like Newton's world system, Smith's principles of jurisprudence and political economy might rate as more of a discovery than an invention. This suggestion anchors a prescriptive component in Smith's theory: a society ordered in accordance with true principles will function more smoothly than one out of synch with the natural order.

Smith's great esteem for Sir Isaac Newton's world system is most evident in his essay "The History of Astronomy," which was published posthumously in the collection entitled, *The Principles which Lead and Direct Philosophical Enquiries; Illustrated by the History of Astronomy*.<sup>11</sup> In this highly regarded and frequently cited essay,<sup>12</sup> Smith takes a sophisticated position on scientific methodology, commenting on the psychological habits which lead the natural philosopher to ease his wonderment and achieve satisfaction through explanatory power of knowledge. Scientific inquiry is motivated out of the fulfillment it affords. More significantly, in recounting the history of natural philosophy from Aristotle, through Copernicus, Kepler, and Galileo, to Newton, Smith proposes that "systems" are human inventions designed to explain complex phenomena by recourse to a few simple principles. Systems are imaginary

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<sup>11</sup>W.P.D. Wightman and J.C. Bryce, eds., *Essays on Philosophical Subjects* (Indianapolis: Liberty Classics, [1795] 1982).

<sup>12</sup>Schumpeter, for example, observes, "Nobody, I venture to say, can have an adequate idea of Smith's intellectual stature who does not know these essays...[of which]...The pearl of the the collection is the first essay on the 'Principles which lead and direct Philosophical Enquiries; illustrated by the History of Astronomy.'" (Joseph A. Schumpeter, in Elizabeth Boody Schumpeter, ed., *History of Economic Analysis* (New York: Oxford University Press, 1954), 182.

devices which resemble machines and are designed to explain motions or outcomes by relying on the least possible principles, gears, or mechanisms:

**Systems in many respects resemble machines. A machine is a little system, created to perform, as well as to connect together, in reality, those different movements and effects which the artist has occasion for. A system is an imaginary machine invented to connect together in the fancy those different movements and effects which are already in reality performed.....The first systems, in the same manner, are always the most complex, and a particular connecting chain, or principle, is generally thought necessary to unite every two seemingly disjointed appearances: but it often happens that one great connecting principle is afterwards found to be sufficient to bind together all the discordant phaenomena that occur in a whole species of things. (History of Astronomy, IV.19)**

Systems are creations of the human mind invented to explain natural phenomena with the least artifice or complexity. Smith suggests that systems are improved as they increasingly approximate "those different movements and effects which are already in reality performed." Newton not only received Smith's highest accolades, but even his approbation that whereas all the other world systems were human inventions falling short of total explanatory fulfillment, Newton's so closely resembled the workings of Nature that it best be regarded as a discovery. According to Smith, Sir Isaac Newton's system

**now prevails over all opposition, and had advanced to the acquisition of the most universal empire that was ever established in philosophy. His principles, it must be acknowledged, have a degree of firmness and solidity that we should in vain look for in any other system.....And even we, while we have been endeavouring to represent all philosophical systems as mere inventions of the imagination, to connect together the otherwise disjointed and discordant phaenomena of nature, have insensibly been drawn in, to make use of language expressing the connecting principles of this one, as if they were the real chains which Nature makes use of to bind together her several operations. (History of Astronomy, IV.76)**

There can be no doubt that in establishing the principles of political economy and in rigorously studying the "system of natural liberty" comprising political economy, Smith considered the epitome of achievement to lie in developing a "system" which, like Newton's, so closely approximates the actual workings of phenomena that it could win the universal approbation of mankind. Throughout his life, Smith kept informed of

developments in natural philosophy to determine whether Newton's system of the world required amendments. Corrections, it turned out, were not required during Smith's lifetime.<sup>13</sup>

In highlighting the significance of Newtonianism and natural philosophy to Smith's method in *Theory of Moral Sentiments* and *Wealth of Nations*, I temper my argument by acknowledging two caveats: First, given the vast array of contributors to seventeenth-century natural philosophy, including Descartes, Bacon, d'Alembert as well as Newton, I do not wish to collapse the richness of the category of "natural philosophy" into the one hypothetical-deductive method typically associated with Newton's *Principia*.<sup>14</sup> Furthermore, I am keen to avoid ambiguous discussions such as the following: W.P.D. Wightman is dissatisfied with T.D. Campbell's claim that *TMS* and *WN* represent Smith's attempts "to apply his understanding of Newtonian scientific methods to the study of society."<sup>15</sup> According to Wightman, it would "be a more acceptable judgement to refer to [these attempts] as his (Smith's) *misunderstanding*, or at least *misdescription*" of his attempt to apply the Newtonian method to the study of human society.<sup>16</sup> In other words, I leave aside discussions which attempt to drive a wedge between Smith's interpretation of his writings and the texts themselves and remain satisfied with the latter.

Thus I qualify my claim about Smith's "appropriation" of the "Newtonian method" in the following ways. First, I stand behind the consensus of scholars maintaining that the establishment of Newtonian philosophy and natural-law theory at

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<sup>13</sup>W.P.D. Wightman and J.C. Bryce, eds., introduction to Adam Smith's essay on "The Principles which Lead and Direct Philosophical Enquiries; illustrated by the The History of Astronomy." *Essays on Philosophical Subjects* (Indianapolis: Liberty Classics, [1795] 1976), 22.

<sup>14</sup>For discussion of Newtonian vs. Cartesian tendencies in Smith see Fitzgibbons, 129-132.

<sup>15</sup>T.D. Campbell, *Smith's Science of Morals* (London: Allen & Unwin, 1971), 21.

<sup>16</sup>W.P.D. Wightman, "Adam Smith and the History of Ideas," in Skinner and Wilson, eds., *Essays on Adam Smith* (Oxford: Clarendon Press, 1975), 62; Wightman quotes Campbell.



Scottish universities had occurred by 1720.<sup>17</sup> Secondly, I seek to establish a confluence between Smith's studies in *TMS* and *WN* and Newtonian philosophy (loosely construed) characteristic of *Principia*. I identify three theoretical commitments in Smith's works which are substantive, methodological and epistemological in character. These commitments, while perhaps not directly inspired by Newton's *Principia*, are consistent with it.

Smith, by his own account, was taken with the Newtonian world system and its close approximation to the actual workings of nature.<sup>18</sup> In keeping with the Newtonian universe, the notion of "system" connoted an automatically harmonious or self-regulating system. Thus the use of the term "system" could refer to the method of establishing a system as an explanatory device, but it also referred to the conceptualization of the system to be explained as inherently harmonious or stable. For Smith the physical universe and human society could both be conceptualized as machines, or "immense and connected system[s]" (*TMS* 289) harmoniously coordinated as a final end outside the purview of individual atoms or actors. Smith blurs the distinction between the material universe and the world of human society, applying the same metaphor of system in an encompassing way such that "Human society, when we contemplate it in a certain abstract and philosophical light, appears like a great, an immense machine, whose regular and harmonious movements produce a thousand agreeable effects" (*TMS*, VII.iii.1.2). In a passage discussing the foibles of human existence, including disease and death, Smith speaks of the system encompassing human life, reflecting that:

...[E]ven the smallest of the co-existent parts of the universe are fitted to one another, and all contribute to compose one immense and connected system; so all, even apparently the most insignificant of the successive events which follow one another, make parts, and necessary parts, of that great chain of causes and

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<sup>17</sup>Emerson, "Science and moral philosophy" (1900), 25; Christine M. Shepherd, "Newtonianism in Scottish universities in the seventeenth century," in Campbell and Skinner, eds., *The Origins and Nature of the Scottish Enlightenment* (Edinburgh: John Donald Publishers, Ltd., 1982), esp. 75-76 referring specifically to Glasgow.

<sup>18</sup>J.C. Bryce, ed., *Lectures on Rhetoric and Belles Lettres* (Oxford: Oxford University Press, 1983), 145-146.

effects which had no beginning, and which have no end; and which, as they necessarily result from the original arrangement and contrivance of the whole; so they are all essentially necessary, not only to its prosperity, but to its continuance and preservation. (TMS VII.ii.1.37)

Aspects of existence are linked in a chain of causes and effects which cohere as a stable order independently from any intentions or designs with respect to the individual parts; order arises and is preserved by efficient causes or principles not dependent upon aims toward harmony on part of individual agents or corpuscles.

The notion of "system," and the kinship between the physical and human systems, has as its key element the property of governance; that is, a stability inheres in both systems as a function of regulation, which guarantees the overall harmony of each system. Newton proposed three laws of motion and the law of gravity. Likewise, Smith proposed sympathy as the founding principle of justice, and the pursuit of individual self-interest as the basis of collective betterment; each person, in pursuing his own gain, is led by an invisible hand to make everyone better off.<sup>19</sup> "Gravity" provides the principle of inter-planetary harmony for Newton; individual efforts toward self-betterment results in overall material improvement for Smith. The key point of this duality is that in modelling the social realm in like fashion to the physical universe, both "systems" have in common a notion of non-reflexive regulation. Social order is a result of the *unintended* consequences of the individual pursuit of self-gain, just like cosmological harmony is independent of individual particles' motive force.<sup>20</sup>

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<sup>19</sup>See Herbert Thomson on the parallel between Newton's gravity and Smith's equilibria forged between individuals and society predicated on sympathy and self-interest in *TMS* and *WN*, respectively, "Adam Smith's Philosophy of Science," *Quarterly Journal of Economics*, 79, 1965, 226. See Andrew S. Skinner on "The debt to Newton...obvious particularly in the role fulfilled by the 'constant principles of human nature' in the explanation of the social, [which] is essentially similar to that taken by the force of gravity with respect to the solar system," "Adam Smith: Philosophy and Science," *Scottish Journal of Political Economy*, 19, 1972, 308.

<sup>20</sup>See Skinner on the striking resemblance between Newton's world system as automatically self-regulating, and Smith's self-regulating moral and economic systems, *Ibid.*, 315.

According to Smith, in conceptualizing human society as a grand system, or machine, akin to the physical universe, and finding "in every part of the universe...means adjusted with the nicest artifice to the ends which they are intended to produce," it would be tempting to resort to "final causes," or the resulting beauty and harmony, as an explanatory tactic by locating in individual parts a telos toward a final end. However, natural philosophy dictated that the only valid explanatory approach is that of identifying efficient causes. Thus, for Smith, in studying digestion, or blood circulation, explanations resorting to the final end of "the great purposes of animal life" are inappropriate. Similarly, in accounting for the operation of a mechanical watch, explanations could not look to any desire or intention of the component parts for the achievement of smooth operation and accurate time telling. Of course, it is the watchmaker's intent to produce such a mechanism, but "in accounting for the operations of bodies, we never fail to distinguish in this manner the efficient from the final cause" (*TMS*, II.ii.3.5). Still, God's final causes are achieved through efficient causes, and "we never ascribe any such desire or intention to...[the wheels of a watch], but to the watchmaker, and we know that they are put into motion by a spring, which intends the effect it produces as little as they do" (*TMS*, II.ii.3.5). Thus the principal lesson of natural philosophy, which Smith steadfastly applied to the study of human society, is that harmonious aggregate outcomes, or final causes, must be explained as the unintended outcome of composite parts. The necessary consequence of this methodology is that cosmological or social harmony must be explained as the result of smoothly functioning mechanism which operates independently from any intentions on the part of the corpuscles or agents comprising it.

Two conceptions, then, conjointly form Smith's explanatory framework. First is the idea that human society can be regarded as a harmonious system in like fashion to the material universe. Frequently Smith's descriptions of these two systems overlap to the point that the human system and the physical universe are depicted in the same

phraseology.<sup>21</sup> Second is the idea that valid explanations of the constitution of these systems must look to efficient causes which bar recourse to intentions on the part of composite parts with respect to the aggregate systemic harmony. In understanding the influences behind these notions in Smith, scholars frequently cite the Newtonian philosophy, and Stoicism.<sup>22</sup> Smith's thinking is also coincident with the sentiments of natural theology which he lectured on at the University of Glasgow.<sup>23</sup> It is not my intention to disentangle and categorize the various "influences" on Smith's intellectual mien; it is sufficient that Smith represents the various elements of his system in language consistent with Newton's world system. For example, Smith refers to the Stoic as a particle in a vast universe which is governed to ends beyond his comprehension, but to which his actions contributed, nonetheless: the Stoic "considers himself an atom, a particle, of an immense and infinite system, which must, and ought to be disposed of, according to the conveniency of the whole" (*TMS*, digression between I.iii.2.9 and I.iii.2.10). Furthermore, natural theology was not inconsistent with Newtonianism. Newton was fascinated by theological questions, and in the second edition General Scholium to *Principia*, he identifies final causes as the means by which humans come to know God. Smith is confident that human society can be considered as a finely tuned machine, as it were, with stability guaranteed—by "the wisdom of God" (*TMS*, II.ii.3.5). This overall confidence or optimism that human society is formed to be a harmonious

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<sup>21</sup>See also Knud Haakonssen, *The Science of a Legislator* (1981), 80-81.

<sup>22</sup>For the influence of Stoic philosophy evident in Smith's work, see D.D. Raphael and A. L. Macfie's introduction to Smith's *TMS* [1759] (1982), 5-10; Athol Fitzgibbons, *Adam Smith's System of Liberty, Wealth, and Virtue: The Moral and Political Foundations of The Wealth of Nations* (Oxford: Clarendon Press, 1995), 25-34.

<sup>23</sup>On natural theology as an influence on Smith's thought see Henry W. Spiegel, "Adam Smith's heavenly city," *Adam Smith and Modern Political Economy: Bicentennial Essays on The Wealth of Nations* (Ames, Iowa: The Iowa State University Press, 1979): "Those who are familiar with the history of economic ideas will be aware that Smith's invisible hand and the related concept of the self-regulating market and of nonpurposive social formations in general (which are not the result of design but of the interplay of the actions of individuals who pursue purposes of their own) are secularizations of thoughts that originally and earlier appeared in theological contexts, in which the unintended consequences of individual actions were attributed to divine providence," 110.

system as a final cause is assumed, and is not itself subject to rigorous proof. It enables Smith consistently to maintain that, as with the physical universe, the unintended consequences of human behavior lead to a perfect and well-balanced system.

### **C. Smith's Newtonian Account of Justice**

Given the conceptualization of human society as comprising a stable system, combined with his commitment to efficient causes which can be investigated by empirical study, my next goal is to explore how these theoretical commitments structure Smith's analyses of justice and political economy. Smith's objective in *Theory of Moral Sentiments* and *Wealth of Nations* is to account for how social order arises and is sustained independently of agents' intentions. In *TMS* Smith's intent is to explain how justice, which serves as "the main pillar that upholds the whole edifice" of human society, came about. This question has urgency since the laws of justice are a prerequisite for social order; if these laws are removed "the immense fabric of human society...must in a moment crumble into atoms" (*TMS* II.ii.3.4). Justice, for Smith, is a particular sort of virtue: a "negative virtue," distinct from other "positive" virtues in so far as its principles are precise and exact. Justice grows out of the sympathy we, as spectators, feel toward an injured party, and the disapprobation such injury arouses in us toward the injurer. Unlike the sentiment of approbation triggered by observing others' actions of benevolence and charity, the negative virtue of justice draws its precision from the black and white character of injury combined with the heightened sense of sympathy evoked by pain and suffering (*TMS*, II.ii.2.2). The principles of justice attain additional precision because of the transcendental and universalizing assumption Smith makes that individuals can aspire to an "impartiality," whereby we judge an other's actions "neither with our own eyes nor yet with his, but from the place and the eyes of a third person, who has no particular connection with either, and who judges with impartiality between us" (*TMS*, III.3.3).

Whereas we may want to impute to mankind a "refined and enlightened reason" as the efficient cause of "the sentiments and actions" by which justice is achieved, in Smith's mind the actions contributing to justice do not arise from intentional agency predicating the utility or end of justice as the goal. Rather, justice, and the social order it makes possible, might be thought of as a final cause, with the sympathy spectators naturally feel toward others' injuries and attendant disapproval of the injurer as the efficient cause. Whereas "Nature, indeed, seems to have so happily adjusted our sentiments of approbation and disapprobation to the conveniency both of the individual and of the society...it is not the view of this utility or hurtfulness which is either the first or principle source of our approbation and disapprobation" (*TMS* IV.2.3). It is not the useful end of justice that motivates the sentiments of approval and disapproval which underlie justice. Instead it is an individual's innate ability to both sympathize and partake in a third person stance when evaluating and approving or disapproving of another's actions. Public utility is served by justice, but the sentiments grounding justice do not have that end in mind. Still, with hindsight, public utility which is served by justice grants justice legitimacy since social order constitutes an end with which people can acquiesce (*TMS*, III.5.7-8, VII.ii.2.13, VII.iii.1.2, VII.iii.3.16<sup>24</sup>).

However, Smith was not satisfied with accounting for the origins of justice. His lifelong goal, partially accomplished in *WN*, was to "give an account of the general principles of law and government." Smith's contribution to the theory of jurisprudence remained uncomplete when he died, and since he ordered the destruction of his unfinished manuscript, all that remains of his principles of jurisprudence are student

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<sup>24</sup>"When we approve of any character or action, the sentiments which we feel, are, according to the foregoing system, derived from four sources, which are in some respects different from one another. First, we sympathize with the motives of the agent; secondly, we enter into the gratitude of those who receive the benefit of his actions; thirdly, we observe that his conduct has been agreeable to the general rules by which those two sympathies generally act; and, last of all, when we consider such actions as making a part of a system of behaviour which tends to promote the happiness either of the individual or of the society, they appear to derive a beauty from this utility, not unlike that which we ascribe to any well-contrived machine" (*TMS*, VII.iii.3.16).

notes taken from his lectures of 1762-63 and 1766 subsequently published as *Lectures on Jurisprudence*.<sup>25</sup> Smith was not content to establish the naturalistic origins of justice; he also sought to provide a critical and normative theory of jurisprudence.<sup>26</sup> The theory of jurisprudence holding that actual (positive) laws represent attempts to approximate ideal (natural) laws is referred to as "natural law theory" or, equivalently, "natural jurisprudence." Knud Haakonssen convincingly argues that Smith's project was, in fact, to provide a theory of natural law. The tradition of natural jurisprudence held that human law is natural and right when it corresponds to an actual order of things—as opposed to reflecting arbitrary social convention. Smith himself states:

Every system of positive law may be regarded as a more or less imperfect attempt towards a system of natural jurisprudence.....In no countries do the decisions of positive law coincide exactly, in every case, with the rules which the natural sense of justice would dictate. Systems of positive law, therefore, though they deserve the greatest authority, as the records of the sentiments of mankind in different ages and nations, yet can never be regarded as accurate systems of the rules of natural justice. (*TMS*, VII.iv.36)

Smith has the burden of demonstrating how it is possible to arrive at normative and critical standards from an empirically based "science of jurisprudence." Specifically, he must derive universally valid principles of jurisprudence from historically and culturally specific, empirically accessible, incidents. The challenge is to derive "the principles upon which [the] rules [constituting civil and criminal law] either are or ought to be founded" which are the subject of the "particular science...of natural jurisprudence" (*TMS*, VI,ii,intro.2). Smith must demonstrate how it is possible to obtain an "ought" from an empirical investigation yielding knowledge of how society "is." My guess, notwithstanding Haakonssen's steady and valiant defense of Smith's natural law project, is that the difficulties of achieving universally valid principles of jurisprudence from

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<sup>25</sup>R.L. Meek, D.D. Raphael and P.G. Stein, eds, *Lectures on Jurisprudence* (Indianapolis: Liberty Classics, 1978).

<sup>26</sup>For the precise articulation of this argument see Haakonssen, *The Science of a Legislator* (1981), 96 and "What might properly be called natural jurisprudence," in R.H. Campbell and Andrew S. Skinner, eds., *The Origins and Nature* (1982), 216.

historically grounded instances proved too great of a challenge, and hence Smith's failure to deliver on his promise to provide a theory of jurisprudence.

Taking a step beyond Haakonssen, yet building onto the basic elements of his argument, the most consistent way to reconstruct Smith's attempt to develop a science of jurisprudence is to make explicit a parallel existing between natural jurisprudence grounded on "natural law" and Newtonian natural philosophy, also grounded on "natural law." As per the inductive ideal in natural philosophy, stated explicitly by Newton as his Fourth Rule of Reasoning in *Principia*, careful empirical research relying on objective and impartial observations can lead to universally valid laws. Relying on the context-bound, though impartial, spectator, Smith constructs a parallel means to access universally applicable principles. The impartial observer of natural or social occurrences can derive universal law from careful study of particular events. In fact, according to Smith, systems of moral philosophy are more accessible to humans than systems of natural philosophy because people have first-hand experience of moral sentiments.<sup>27</sup> Smith upholds an ideal standard of jurisprudence, which functions similarly to the idea that natural philosophical systems could be approximations of the actual workings of nature. The natural philosophical system/nature distinction resembles the positive/natural law distinction insofar as both sets of laws, pertaining to the physical and social worlds respectively, have the potential to reflect true insight into the natural order. Smith himself draws the parallel between laws of bodies in motion and laws governing human behavior:

Since these [moral faculties], therefore, were plainly intended to be the governing principles of human nature, the rules which they prescribe are to be regarded as the commands and laws of the Deity, promulgated by those vicegerents [sp?] which he has thus set up within us. All general rules are commonly denominated laws: thus the general rules which bodies observe in the communication of motion, are called the laws of motion. But those general rules which our moral

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<sup>27</sup>TMS, VII.iii.4.14. In this passage Smith compares first-hand experience of moral sentiments with the more dubious access to Descartes' system of vortices, which, Smith points out, although accepted for some time, have subsequently been found to "not actually exist."



faculties observe in approving or condemning whatever sentiment or action is subjected to their examination, may much more justly be denominated as such. They have a much greater resemblance to what are properly called laws, those general rules which the sovereign lays down to direct the conduct of his subjects. (TMS, III.5.6)

A crucial parallel between moral philosophy and natural philosophy is that both systems aspire to achieve the closest "resemblance to the truth" possible; "Every system of positive law may be regarded as a more or less imperfect attempt towards a system of natural jurisprudence" (TMS, VII.Iv.36).

Still, even given the parallel construction of natural and moral philosophy as products of the human mind which strive to reflect the workings of actual natural processes and moral faculties, Smith must derive a normative "ought" from a descriptive "is" in order to grant his principles of jurisprudence normative validity. To ground his theory of jurisprudence, Smith must not only account for the origins and workings of the moral sentiments, he must also stipulate why this actual state of affairs can prescribe "[t]he principles upon which...rules [of civil and criminal law] either are or ought to be founded" (TMS, VI.ii.intro.2). Smith requires two assumptions to bridge the gap between "is" and "ought." First he must posit that through empirical investigation, by aspiring to the universally valid perspective of the impartial spectator, the universally valid principles of jurisprudence may become evident. But, even granted access to a set of "true" principles upon which the science of jurisprudence can be founded, it remains necessary that a separate standard of legitimacy must uphold these principles as valid. Smith's only recourse here is to reflect upon the beauty, harmony, social order and public utility served as a final end of a system of justice, which, with hindsight, individuals can acquiesce to. Public utility does not motivate the sentiments and actions consistent with justice, but it is the final end of justice, and lends it a legitimacy which all participants can agree on. The origins of justice are explained thoroughly through efficient causes, but the overall legitimacy of the system of justice and the normative principles which

regulate it is ultimately derived from the public utility it serves (*TMS*, II.ii.3.1-12).<sup>28</sup>

"Nature" as a final cause which "seems...to have intended the happiness and perfection of the species," (II.iii.3.2) guarantees that man's moral faculties, as constituted, lead to a system of justice and social order. Justice has normative validity because individuals, as third-person impartial spectators, disapprove of injury, and a system of jurisprudence that limits and punishes injury is legitimate because it serves public utility.

Smith's approach to justice in *TMS* has two striking features. First, justice, which is arguably the most significant institution of human society, is explained as originating from and maintained by the unintended consequences of individual's sentiments and actions. Second, Smith's science of jurisprudence exploits the potentially analogous relationship between natural law and the natural order characterizing natural philosophy, suggesting that the laws of justice can attain a similar status of exactitude. This feature of Smith's jurisprudence essentially attempts to derive normative validity from empirical investigations by suggesting that universality and impartiality reveal the precise and exact laws of justice. These two elements of Smith's approach to justice are also evident in his study of political economy.

#### **D. Smith's Newtonian System of Political Economy**

In *Wealth of Nations* Smith sets out to investigate "the nature and causes of the wealth of nations," or alternatively, the principles of political economy as "a branch of the science of a statesman or legislator" (*WN*, IV, intro, I). Again, the efficient cause regulating this human system based on material prosperity is studied as the unintended consequence of individuals' aims and actions. Also, Smith assumes the optimistic outlook that human society naturally coheres as a harmonious system. That is, if left to

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<sup>28</sup>Haakonssen's overriding thesis in *The Science of a Legislator* (1981), 96 is that Smith "is emphatic that the discipline of jurisprudence which he presents is normative in character." However, Haakonssen is consistently vague when it comes to how Smith grounds the legitimacy of theoretical jurisprudence as prescriptive, generally, like Smith, falling back on reasoning relating to "public utility," 72-73, 128, 132, 143. Furthermore, Haakonssen provides the least number of and least sufficient index references to the normative aspect of jurisprudence.

its own devices, without the intervention of human laws working to contradict the natural state of perfect liberty and perfect justice, wealth and prosperity arise of their own accord. In parallel with the principle of sympathy serving as the linchpin of justice, in *WN* individuals' universal and continual inclination to better their conditions serves as the unifying principle, or motive force, grounding progressive material prosperity:

The natural effort of every individual to better his own condition, when suffered to exert itself with freedom and security, is so powerful a principle, that it is alone, and without any assistance, not only capable of carrying on the society to wealth and prosperity, but of surmounting a hundred impertinent obstructions with which the folly of human laws too often incumbers its operations; though the effect of these obstructions is always more or less either to encroach upon its freedom, or to diminish its security. (*WN* IV.v.b.43)

Like gravity, this principle of "bettering our condition" is "uniform, constant, and uninterrupted"; it is a principle which "comes with us from the womb, and never leaves us till we go to the grave" (*WN*, II,iii, 28 and 31).

Similar to the principles of jurisprudence, the principles of political economy exist as a human invention which have the potential of accurately reflecting the natural order of society. Political economy exists as a system of human creation, much like prior to Newton, various systems of astronomy were human inventions. Regarding the economic system of his rival, the French Physiocrat M. Quesnay, Smith states, "this system, however, with all its imperfection is, perhaps, the nearest approximation to the truth that has yet been published upon the subject of political œconomy" (*WN* IV.ix.38), suggesting that like the astronomical systems preceding Newton's, Quesnay's design falls short of capturing the actual principles structuring nature. Smith refers to his own system as "the natural system of perfect liberal and justice" (*WN*, IV.vii.c.44), hinting that his appraisal of the principles of human society are so exacting, that, like Newton's, they may qualify as more of a discovery than an invention. Whereas Newton's precursors' "philosophical systems" can be represented as "mere inventions of the imagination," it is not surprising that the system of Sir Issac Newton "should now be considered, not as an attempt to connect in the imagination the phaenomena of the

Heavens, but the greatest discovery that ever was made by man, the discovery of an immense chain of the most important and sublime truths, all closely connected together, by one capital fact, of the reality of which we have daily experience" (History of Astronomy, IV.76).

Thus, one of the qualities which Smith's system of natural liberty conveys, much like his unfinished science of jurisprudence, is that it represents the actual regulating principles of human society, in contradistinction to other systems of political economy which, as human contrivances, if implemented would interfere with the true and natural system. "System" has dual connotations, pertaining simultaneously to its conceptual status as a human product, and the possibility of uncovering "sublime truths" pertaining to the actual order of phenomena. Smith's system, with its invocation of "natural," aspires to the latter. Smith provides the example of injudicious corn laws, regulating the price of corn, in opposition to a "reasonable system" consistent with the principles of political economy:

The laws concerning corn may every where be compared to the laws concerning religion. The people feel themselves so much interested in what relates either to their subsistence in this life, or to their happiness in a life to come, that government must yield to their prejudices, and, in order to preserve the public tranquillity, establish which they approve of. It is upon this account, perhaps, that we so seldom find a reasonable system established with regard to either of those capital objects. (WN IV.v.b.40)

Systems are human contrivances imposed to regulate economic or religious affairs, but not all systems are equal. Smith deemed his system of political economy to be superior because it reveals the hidden workings of society rather than fruitlessly promoting an artificial order out of synch with the actual processes governing human affairs. Smith's system is uncorrupted by the false hope of contravening the natural order. Smith presents "the obvious and simple system of natural liberty" which "establishes itself of its own accord," and coincides with "the establishment of perfect justice, of perfect liberty, and of perfect equality, [which] is the very simple secret which most effectually secures the highest degree of prosperity" for a society (WN, IV.ix.51; WN IV.ix.17).

Smith's system has a three-fold status. It exists as a product of the theoretician's imagination; it has the potential of exactly resembling the inner workings of nature; it also exists as knowledge which can be used to regulate human affairs in conjunction with the natural order to obtain a more smoothly functioning society.

To recapitulate, Smith's *TMS* and *WN* each investigate a system of human society in accordance with the "scientific method" of explanation via efficient causes. In each case, with respect to justice and political economy, human society is assumed to have the property of coherence and harmony. Smith's objective is to account for this systemic coherence without recourse to intentions on the part of individual actors, for such a strategy is ruled out by strict adherence to the principles of natural philosophy. In *WN*, Smith refers to political economy as "the obvious and simple system of natural liberty which establishes itself of its own accord," and incorporates his previously worked out system of justice as requisite for the maintenance of political economy. Smith parallels the Newtonian natural philosophy in three interrelated ways. Like Newton, he locates in his system innate perfection and harmony. Furthermore, his explanatory method is to adhere to efficient causes. The result of these two factors is that for Smith, human society is non-reflexively regulative, which is to say that the overall achievement of harmony is guaranteed independently from agents' intentions. Consistently, then, Smith does not attribute to human agents a role in the overall deliberate design or construction of social order. Finally, Smith utilizes the implicit parallel of the correspondence between systems of natural philosophy and nature to anchor a normative or prescriptive dimension in his system. Normative validity is engendered by the universal applicability of principles accessible to the impartial spectator or objective observer. Ultimately, however, political economy and the principles of jurisprudence tender their legitimacy insofar as they serve the final ends of material prosperity and social order.

### **E. Efficient Causes, Spontaneous Harmony, and Sovereignty**

Smith's template for economic liberalism articulated in *Wealth of Nations* signaled a transformation of political discourse away from conceptions of autonomous self-rule and deliberate governance to a conception of society cohering as an automatically self-regulating system. For Smith, government as intentional rule is secondary to the natural laws regulating human affairs. I argue that Smith's method of studying aggregate outcomes as the by-product of individual's self-interested actions necessarily led him to develop an account of government and sovereignty as derivative. Although it would be requisite to traverse through the development of microeconomic theory before fully grasping the lineage of ideas linking Smith's political economy to twentieth-century rational choice scholars' approaches to politics and economics, one crucial point of continuity is already evident: methodological dictates unite Smith and rational choice scholars in their commitment to studying collective outcomes as the unintended result of self-interested actions. In both cases, the coordination of human interests into a coherent system must be demonstrated to be the consequence of unintentional actions. Once the problem of social coordination is cast in these terms, political theorists face the challenge of presenting an institutional framework in which individuals' self-interested pursuits are automatically coordinated into a harmonious system. It is precisely this challenge which Smith frontally tackles in his system of natural liberty, and which some contemporary rational choice theorists take on as well. In both cases a method of efficient causes, which treats human agency as superfluous for intentionally achieving collective outcomes, dictates that self-determination through legislative rule is not feasible.

Smith's "system of natural liberty" constitutes a marriage of political economy and justice; more accurately, political economy requires the institution of justice as the framework which permits the automatic coordination of self-interested pursuits. The system of natural liberty which "establishes itself of its own accord," only requires that

"[every] man...not violate the laws of justice" (*WN*, IV.ix.51). Since justice, too, arises unintentionally, the dependence of political economy on the laws of justice poses no contradiction for Smith. Essentially, Smith's system is comprised of the hypothesis that individuals' inclinations to better their conditions, constrained only by the enforcement of justice, automatically lead to general material prosperity. Protecting individual rights to self-betterment through the imposition of justice guarantees "the highest degree of prosperity" for a society:

That security which the laws in Great Britain give to every man that he shall enjoy the fruits of his own labour, is alone sufficient to make any country flourish, notwithstanding these and twenty other absurd regulations of commerce...The natural effort of every individual to better his own condition, when suffered to exert itself with freedom and security, is so powerful a principle, that it is alone, and without assistance, not only capable of carrying on the society to wealth and prosperity, but of surmounting a hundred impertinent obstructions with which the folly of human laws too often incumbers its operations... (*WN* IV.v.b. 43)

Smith's system forms a seamless, architectonic whole, comprised of a sphere of freedom for individual industry limited only by just laws, which, like the system of political economy, arise of their own accord. Legitimate laws protect individuals' rights but do not encroach upon individual freedoms in the attempt to legislate social outcomes. Legitimate laws construct a non-interventionist framework which sets up the conditions for the automatic achievement of material prosperity, given the universal principle of individual industriousness. Using contemporary language, the system of natural liberty can be described as a "non-interventionist" framework which guarantees the automatic coordination of interests into a socially beneficial outcome; "the function...of the laws of justice is to maximise the compatibility of individual persons' pursuit of their own aims."<sup>29</sup> This latter quote wrongly ascribes the concept of "maximization" to Smith. Nonetheless, its familiar language which otherwise aptly applies across two centuries of political discourse, elicits Smith's path-breaking contribution to political theory. Smith set the precedent for making the task of the political theorist that of identifying an

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<sup>29</sup>See Haakonssen, "What might properly be called natural jurisprudence," (*ibid.*), 212.

institutional structure which upholds negative liberties and which simultaneously coordinates individuals' self-interested actions in a mutually beneficial way.

*Wealth of Nations* is a detailed study of what economist Paul Samuelson refers to as "the invisible hand principle" (Samuelson, 1995, 40), or a rigorous empirically-informed analysis of the means by which individuals' efforts to promote their own interests result in overall betterment. These means include more efficient production through the division of labor which arises "in a society where things were left to follow their natural course, where there was perfect liberty, and where every man was perfectly free both to chuse what occupation he thought proper, and to change it as often as he thought proper" (WN, I.x.a.1). Unregulated trade, or "perfect liberty," permits a commodity's market price rise to its natural price (WN, I.vii.30). Individuals would employ their stock most effectively, and since a society's total annual revenue is "always precisely equal to the exchangeable value of the whole annual produce of its industry," again individuals' efforts on their own behalves add up to overall benefit. Thus, for example, when an individual prefers "the support of deomestick to that of foreign industry, he intends ownly his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in may other cases, led by an invisible hand to promote an end which was no part of his intention...By pursuing his own interest he frequently promotes that of the society more effectively than when he really intends to promote it" (WN, IV.ii.9).

Crucially, for Smith, the "obvious and simple system of natural liberty" requires that freedom be secured through the imposition of justice. Individuals must be secure in their possessions; "Commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in their possession of their property, in which the faith of contracts is not supported by law, and in which the authority of the state is not supposed to be regularly employed in enforcing the payment of debts from all those who are able to



pay" (WN, V.iii.7)." Unlike the "folly of human laws" which "incumbers...[the] operations of the principle according to which every individual works to benefit his condition" (WN IV.v.b. 43), "the rules of justice are accurate in the highest degree, and admit of no exceptions or modifications, but such as may be ascertained as accurately as the rules themselves, and which generally, indeed, flow from the very same principles of them" (TMS, III.6.10). Justice constitutes a virtue which is unique insofar as its rules are "precise, accurate, and indispensable" (TMS III.6.11), and therefore its administration can be exact.

Smith's system strikes a precise balance between the principle of individual betterment and just laws which ensure that individuals can enjoy the fruits of their labors. Individuals are free to pursue their own interests, only restricted in their actions by the exact administration of justice. Similar to the Newtonian system, individuals follow their private inclinations without concern for the harmony and stability of the whole which arises of its own accord independently from individuals' aims and intentions. The institution of justice provides the framework in which individuals' interests are automatically coordinated.

The role of government is clearly demarcated by the system of natural liberty: the sovereign must not contravene the natural liberty which permits individuals' industriousness to lead to overall material prosperity, and he must administer the system of justice which guarantees the smooth functioning of the political economy; Smith's sovereign must also prepare for society's defense against foreign invaders and maintain public works, such as transportation and education:

**The sovereign is completely discharged from a duty, in the attempting to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it toward employments most suitable to the interest of society. According to the system of natural liberty, the sovereign has only three duties to attend to; three duties of great importance, indeed, but plain and intelligible to common understandings: first, the duty of protecting the society from the violence and invasion of other independent societies; secondly, the duty of protecting, as far**

as possible, every member of society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice; and, thirdly, the duty of erecting and maintaining certain publick works and certain publick institutions, which it can never be for the interest of any individual, or small number of individuals, to erect and maintain; because the profit could never repay the expense to any individual or small number of individuals, though it may frequently do much more than repay it to a great society. (*WN*, IV.ix, 51)

The system of natural liberty unambiguously reveals the sovereign's role. The sovereign must not contravene self-interested pursuits apart from in the exact administration of justice which secures for individuals their lives, property and contracts. In addition, of course, he must supply defense and necessary public works, but all told, these do not require great resources compared with the overall annual revenue of a society, and are secondary to considerations of justice.

Government plays a role in Smith's system; its institutions are those tending to promote public welfare. Government plays such roles as "[T]he perfection of police, the extension of trade and manufactures," which are "noble and magnificent objects." These various means of promoting the public welfare "make part of the great system of government, and the wheels of the political machine seem to move with more harmony and ease by means of them" (*TMS*, IV.I.11). Smith goes on to argue that even though these ends are noble and grand, actually the public-mindedness behind them is motivated more out of a love of system than out of an immediate sense of alleviating the suffering of fellow humans or promoting public welfare. Thus, again, Smith's argument proceeds by what he considers to be efficient causes rather than final causes. A final causes analysis would regard government as functioning with the direct intent of promoting public welfare.

Smith is most skeptical of intentional governance on two counts. To start with he has serious doubts that human wisdom is equal to the task of administering society. A man assuming such wisdom would be likely to try to foist his own "ideal plan of

government" upon the other members of society, heedless of the internal springs of motion already guiding those members:

He seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board. He does not consider that the pieces upon the chess-board have no other principle of motion beside that which the hand impresses upon them; but that, in the great chess-board of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might chuse to impress upon it. (TMS, VI.ii.2.17)

Continuing to pose his doubts that human wisdom and knowledge is equal to the task of governing society, Smith refers to "the immense machine of the universe," "contrived and conducted" by that divine Being "so as at all times to produce the greatest possible quantity of happiness," and concludes that in "the administration of the great system of the universe...the care of the universal happiness of all rational and sensible beings, is the business of God and not of man" (TMS.ii.3.5). Besides, Smith goes on to claim, most politicians are of questionable character, posing to serve the public interest while actually out to serve their own (WN, IV.ii.39).

For Smith, the intentional governance of human affairs, which would imply a *telos* on the part of individual actors toward intentional social outcomes, is ruled out by the methodological assumption of efficient causes, and the thorough demonstration that social order and material prosperity arise as the *unintended* outcome of sympathy and individual industriousness. Any role left for government is necessarily derivative and secondary to the principles of political economy. Government is piecemeal and ad hoc, and is best when it attempts the least. In his writings, Smith conveyed no particular preference for any of the various forms of government including monarchical, republican, or democratic. Similarly, he was ambiguous in his own political affiliation, being taken for both a Whig and a Tory by his associates.<sup>30</sup>

In conclusion, then, Smith did not entertain the possibility that humans could intentionally govern their own affairs. Social stability and harmony are the business of

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<sup>30</sup>Shannon C. Stimson, "Economic Liberalism" (unpublished manuscript, 1996), 2.4-2.5.

God, and arise as an unintentional byproduct of humans' self-interested actions only constrained by justice. Of course, this unintended result could be understood by efficient causes, as the outcome of sympathy, an aesthetic sense (love of system), and the industriousness on the part of individuals to better their conditions. The human universe, like the physical universe, coheres as an immense machine whose smooth functioning is not the deliberate result of human action, much as cosmological harmony is not the result of the intentions of individual corporeal bodies. Institutions of government are necessary to aid in promoting public interest, but such institutions arise in a historically specific piecemeal fashion, and did not consist of a deliberate system constructed to regulate human affairs. In marked contrast to the civic humanist and natural jurisprudence traditions, the constitution of and exercise of sovereignty is derivative for Smith: sovereignty is delimited by the dictates of the political economic system. The role of government is constrained by and secondary to the configuration of political economy. An attempt at the rational or deliberate design of society is neither feasible nor desirable. Again, this conclusion is implicit in the conceptualization of political economy as an automatically self-regulating system ordered independently of the intentions of individual agents. Furthermore, the methodology of explanation in accordance with efficient causes necessarily restricts individuals from having agency oriented toward the conscious achievement of collective ends. Just law, according to Smith, does not result from applying enlightened reason in order to regulate human affairs. Instead, law should be limited to the negative virtues, and arises from the piecemeal, empirical process of applying the third person spectator to historical cases. Attempts to intentionally regulate human affairs can only frustrate the natural order which of its own accord yields stability and harmony.

Notably, within a system of political economy, although government or the sovereign continues to play a role in the system's smooth operation, this role is diminished from that played by the sovereign in the natural jurisprudential or civic

humanist traditions. Whereas discussion regarding the constitution of sovereignty is conspicuously absent in Smith, this category is forefront for the natural law theorist Samuel Pufendorf. Furthermore, in contrast to Smith, sovereignty for Pufendorf signifies intentional rule to achieve ends.<sup>31</sup> Pufendorf's sovereign has "the same liberty, or faculty to decide by its own judgement about the means that look to the welfare of the state. And this liberty is attended with absolute sovereignty, or the right to prescribe such means for citizens, and to force them to obedience."<sup>32</sup> Thus, even though Smith worked within the language of natural jurisprudence, his thought represents a significant break from his predecessors with respect to the conceptions of sovereignty and intentional governance.

Similarly, Smith's lack of interest in the constitution of sovereignty sharply contrasts with the keen attention to sovereignty in the classic republican tradition for which legitimate sovereignty is constituted by the active participation of citizens. Smith's radical break with the republican tradition of political theory is most starkly evident in the contrasting position advanced by Kant.<sup>33</sup> Although Kant shares some important conceptions with Smith, such as the distinction between positive and negative virtues, and a reliance on a system of justice upholding the negative virtues, Kant staunchly rejects the method of efficient causes promoted by Smith.<sup>34</sup> Kant adamantly contends that the distinction between the universal law characterizing the physical and

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<sup>31</sup>For discussion of Pufendorf's concept of sovereignty see Craig L. Carr and Michael J. Seidler, "Pufendorf, Sociality and the Modern State," *History of Political Thought*, 17:3, 1996, 354-378.

<sup>32</sup>Pufendorf is quoted in Alfred Dufour, "Natural law and utility: Pufendorf," in J.H. Burns, ed., *The History of Political Thought 1450-1700* (Cambridge: Cambridge University Press, 1991), 568.

<sup>33</sup>For discussion of Kant's republicanism see Heiner Bielefeldt, "Autonomy and Republicanism: Immanuel Kant's Philosophy of Freedom," *Political Theory*, 25:4, Aug. 1997, 524-558.

<sup>34</sup>For similarities between Smith's political economy and Kant's *Rechtstaat*, see Peter Kolowski, *Staat und Gesellschaft bei Kant* (Tübingen: J.C.B. Mohr, 1985); and Samuel Fleischacker, "Values behind the market: Kant's response to the *Wealth of Nations*," *History of Political Thought*, 17:3, Aut. 1996, 379-407.

social realms is precisely that humans have the potential to actively create universally binding social law through a rational process which consciously considers collective outcomes. For Kant the social and natural worlds differ precisely because humans shoulder the responsibility for consciously coordinating their ends through the reflexive process of legislating universal laws, whereas the natural world is endowed with automatic harmony as a function of intrinsic universal law.<sup>35</sup>

#### **F. Sovereignty, political mechanics, and the social engineer**

The advent of political economy was a significant moment in the history of political theory due to the constraints on sovereignty implied by a system manifesting its own rules which the statesman has little choice but to observe. Adam Smith was not alone in standing at the dawn of the history of political economy, challenging the efficacy of a government which ignored basic economic laws. Smith's Scottish contemporary Sir James Steuart, in his 1767 *Inquiry into the Principles of Political Oeconomy*, observed,

When once a state begins to subsist by the consequence of industry, there is less danger to be apprehended from the power of the sovereign. The mechanism of his administration becomes more complex, and...he finds himself so bound up by the laws of his political economy, that every transgression of them runs him into new difficulties. (Vol. I. 215-217)<sup>36</sup>

Like Smith, Steuart used scientific metaphors to describe the functioning of political economy. This conceptual strategy was consistent with a methodology relying on efficient causes, but also resulted in the puzzle of accounting for government which was traditionally deemed to have the telos of deliberate rule. For Steuart, deliberate rule must obey and is limited by the laws inherent in political economy:

The power of a modern prince, let it be, by the constitution of his kingdom, ever so absolute, immediately becomes limited so soon as he establishes the plan of oeconomy which we are endeavoring to explain. If his authority formerly

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<sup>35</sup>Immanuel Kant, *Groundwork of the Metaphysics of Morals*, trans. H.J. Paton (New York: Harper and Row, 1964); and Immanuel Kant, *The Metaphysical Elements of Justice*, trans. John Ladd (Indianapolis: Bobbs-Merrill Educational Publishing, 1965).

<sup>36</sup>Andrew S. Skinner, ed, *An Inquiry into the Principles of Political Oeconomy*, 1 (Edinburgh: Oliver & Boyd, [1767] 1966).

resembled the solidity and force of the wedge (which may indifferently be made use of, for splitting of timber, stones and other hard bodies, and which may be thrown aside and taken up at pleasure), it will at length come to resemble the delicacy of the watch, which is good for no other purpose than to mark the progression of time, and which is immediately destroyed, if put to any other use, or touched with any but the gentlest hand." (Vol. 1, 278-279)

Political economy was a new phenomenon which limited the rulership prerogative of the statesman by manifesting an inherent set of laws which it was incumbent upon the statesman to observe. But whereas for Stuart, obeying the laws of political economy left the statesman some latitude for "fine tuning" guided by a public mindedness (Vol I, 143), Smith's "system of natural liberty" called into question that any rational direction of human affairs was possible or desirable. Smith ruled out sovereignty as the intentional regulation of human affairs, as in "superintending the industry of private people...toward employments most suitable to the interest of society" for being impracticable and unwarranted.

Smith presented a "system," a system with regularities and patterns which, in his words, could be "considered as a branch of science of a statesman and legislator." (Vol. 1, 428) A model already existed for harvesting at the interface of knowledge and the world. This was the Baconian ideal of harnessing the knowledge of nature in the attempt to achieve a particular set of ends. As long as those ends could be objectively agreed upon with respect to social order, then a "social engineering" model might be workable. That Smith, himself, anticipated a social engineering model of policy is evident in his reference to "political mechanics," wherein the role of the statesman is prescribed by the natural order, and humans are the media which if left virtually to their own devices, naturally produce a prosperous social order.

Man is generally considered by statesmen and projectors as the materials of a sort of *political mechanics*. Projectors disturb nature in the course of her operations in human affairs; and it requires no more than to let her alone, and give fair play in the pursuit of her ends, that she may establish her own designs...Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes and a tolerable administration of justice; all the rest being brought about by the natural course of things. All governments which thwart this natural course, which force things into another

channel, or which endeavour to arrest the progress of society at a particular point, are unnatural, and to support themselves are obliged to be oppressive and tyrannical.<sup>37</sup>

For Smith, the political mechanics of human society is the science of laying bare the true principles of political economy such that government could fall in line with the dictates of the true system and thereby help promote social well-being. The study of "political economy" could be a branch of science specifically because "the wealth of nations" provided an objective benchmark according to which a society's well-being could be measured. Since Smith had established to his own satisfaction that as a nation's wealth increased, all its inhabitants' wealth necessarily also increased, it was the objective goal of the statesman to increase the wealth of his nation, "or more properly to enable them to provide such a revenue or subsistence for themselves" (WN, IV, Intro.1). With an objective social agenda, then, the laws of society could be studied, and then much as an engineer might design or prime a machine for the objective achievement of "efficiency," so the political economist or statesman could interact with his social subject in order to achieve the greatest social well-being.

By proposing a political mechanics, and by suggesting that his "system of natural liberty" is that system which best reflects human society, Smith manages to avoid the pitfall of becoming a "man of system." Government for Smith functions best when it observes the principles of political economy, and does not attempt to impose grand designs of its own. Just as a physical mechanic complies with the natural law of motion and gravity, the statesman must comply with the principles of political economy. The political machine of government may require some tinkering for smooth functioning, but this tinkering is by way of ad hoc priming of a self-regulating system with innate harmony and stability. Stewart, too, essentially proposed a social engineering model,

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<sup>37</sup>This quotation is from a paper originally unpublished by Smith, but later printed in Dugald Stewart, "Account of the Life and Writings of Adam Smith," quoted in Donald Winch, *Riches and Poverty: An Intellectual History of Political Economy in Britain, 1750-1834* (Cambridge: Cambridge University Press, 1996).



with the distinction being that his principles of political economy gives the statesman a role with greater leeway for intervention. Stuart's emphasis on intervention is similar to Jeremy Bentham's reliance on legislation as a means to create incentive structures conducive to attaining the greatest happiness for the greatest number. Essentially, the social engineering model of society could be taken in either an interventionist or a non-interventionist direction, since in either case conformity with the principles of political economy combined with the objective criteria of public utility provides the rationale for government.

The social engineering model does not purport to arrange for the overall design for society; rather it accepts an empirical analysis of the way society actually is and, using public interest as an objective bench mark, aids in the selection of policy best suited for collective benefit. Governance is piecemeal, and does not involve overarching structuring of the social world. Rather, it works best when it acknowledges the natural system inherent to social order, and facilitates its smooth functioning by obeying the rules by which society automatically functions. Government plays a role for Smith, in administering justice, preparing for defense, in education, and public works. But this role is secondary to the principles of political economy which spell out the role of government. Smith avers that prosperity as a function of each bettering his own condition is virtually guaranteed, regardless of all but the most oppressive governments. Policy, or legislative intervention, ceases to be "political" in the sense that public interest is above factionalism. However, the price to be paid for the adoption of Smith's assumption of automatic self-regulation and efficient causes methodology is to lock humans into an objectified position whereby they lose their status as agents invested with the responsibility or capacity to rationally achieve collective ends. Smith's empirical, efficient causes project sheds individual agents from the responsibility of having an orientation toward the social whole. It also necessarily construes government itself as functioning as an ad hoc assemblage which may approximate the smooth

functioning of a machine—but not by design on the part of individual actors.

Sovereignty as self-determination and political autonomy connote active participation of citizens within a body politic to intentionally organize its affairs. Political economy, due to its efficient causes methodology, and to Smith's confidence in innate stability, rejects this possibility.

### **G. Conclusion: Contemporary Relevance**

It is easy to recognize a commitment to a prerogative of deliberate government in Plato, Machiavelli, Pufendorf, Hobbes, and Locke. Allowing for differences of nuance, theorists preceding Smith held that sovereign authority, whether de facto or legitimately constituted in accordance with divine right or an active citizenry, carried the premise of intentional self-determination. In advancing his self-regulating political economy, Smith introduced a dramatically new understanding of society driven by efficient causes which negate the very possibility of self-determination. Smith's displacement of sovereignty abruptly broke with the traditions of civic humanism and natural jurisprudence. Likewise, Smith's substitution of automatic coordination for deliberate government stood apart from the Enlightenment political theorists Rousseau and Kant, as well as from the vision of democracy underlying the French and American revolutions.

Smith's rupture with his predecessors and contemporaries set an important conceptual precedent for modern political theory. At first, ideas of self-regulation and laissez-faire were limited to the marketplace. Economic liberalism, emphasizing property rights, self-interest, and automatic coordination, existed alongside political liberalism which emphasized freedom of expression, equality, and rational discussion as a means to achieve legitimate law. Democratization, marked by a broadened franchise, and capitalism seemed to advance hand-in-hand with overlapping though distinct rationales.<sup>38</sup> For the two centuries following Smith's *Wealth of Nations*, advocates of

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<sup>38</sup>For discussion of the development of democratic practice and theory in nineteenth-century Europe see Jürgen Habermas, *The Structural Transformation of the Public Sphere*, trans. Thomas Burger (Cambridge, Mass.: MIT Press, 1989).

political and economic liberalism have largely worked in separate theoretical traditions. However, in the wake of World War II, a new trend has emerged to apply Smith's logic of automatic coordination and inherent self-regulation to democratic government. Scholars adopting the rational choice approach follow Smith in applying a scientific, efficient-causes methodology to human actors, effectively stripping them of agency for the deliberate achievement of collective ends. For rational choice theorists, economic and political stability must be the result of equilibria automatically arising from a combination of institutionalized incentive structures and individuals' preferences.

In many ways, rational choice theory is the direct descendant of the economic liberalism articulated by Adam Smith and the nineteenth-century marginalist economists. Scholars in this tradition have had a keen interest in appropriating Adam Smith as a founding father of their discipline. Some of their efforts have been responsible for a revival of Smith studies evident, for example, in the Liberty Fund's new subsidized editions of Smith's texts. Public choice theorists such as James M. Buchanan are forefront among those who have revisited Smith's treatment of politics and policy.<sup>39</sup> Donald Winch refers to these contributions as "attempts to translate Smith's 'science of the statesman or legislator' into the language of the Friedmanite 'second invisible hand,' 'minimum vote requirements,' contractarianism, and 'the search for Pareto optimal moves.'"<sup>40</sup>

Certainly it is inaccurate to find self-interested rational actors in Smith's political economy as have some contemporary rational choice theorists.<sup>41</sup> Smith's economic agent

<sup>39</sup>For an internal discussion of this literature see Edwin G. West, *Adam Smith and Modern Economics: From Market Behaviour to Public Choice* (Brookfield, Vermont: Edward Elgar, 1990).

<sup>40</sup>Donald Winch, "Developments in the literature on Adam Smith: An evaluative survey: Comment," in W.O. Thweatt, ed., *Classical Political Economy: A Survey of Recent Literature* (Norwell, Mass: Kluwer Academic Press, 1988), 48; for contemporary economists' reading of Smith see the collection of papers, in Michael Fry, ed., *Adam Smith's Legacy: His Place in the Development of Modern Economics* (London: Routledge, 1992).

<sup>41</sup>For example, see the opening statement of Kristin Renwick Monroe, *The Economic Approach to Politics: A Critical Reassessment* (New York: Harper Collins, 1991), 1.

is not a rational actor who maximizes expected utility. He is, more accurately, a prudent and industrious individual who seeks after opportunities for self-gain, but who is also motivated by vanity, pride, the desire to be respected, as well as a variety of emotional sentiments affecting human behavior of which sympathy was one. Clearly, Smith's *Economus prudente*, if such a term may be used, is not *Homo economicus*, and does not maximize utility, or anything else for that matter.<sup>42</sup>

Notwithstanding rational choice theorists' misplaced sense of continuity with Smith's political economy, there are important confluences which highlight Smith's pivotal significance in ushering in a new era of political theory. While rational action and formal models cannot be attributed to Smith, twentieth-century scholars do participate in a form of political discourse initiated by Smith. Smith set the precedent for a brand new form of political discourse holding that humans act as efficient causes which automatically bring about social stability as an unintended product of self-oriented behavior. The idea that human agents could rationally and deliberately regulate their affairs is denied as a possibility by a method of natural philosophy which prohibits recognizing humans as a site of agency with the potential to deliberately fashion social order. Similarly, for rational choice theorists, methodological dictates prevent a conception of collective action which differs from the aggregate sum of self-interested actions. Coordination, if it occurs, can only be understood as "equilibria" which signify that, given individuals' preferences and institutional mechanisms for aggregating preferences, no individual could have benefited from selecting an alternate action. Individuals cannot escape from the solipsism inherent in "methodological individualism" to reflect on achieving joint ends; any coordination which arises must be explained as the direct result of a self-interest which cannot gain purchase beyond its personally felt desires. Just as market equilibria are thought to result from self-serving

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<sup>42</sup>Joseph Persky dates the term "*Homo Economicus*" back to Vilfredo Pareto's 1906 usage, and comments on the 1629 usage of the term "*Economus prudente*," in "The Ethology of *Homo Economicus*," *Journal of Economic Perspectives*, 9:2, Spring 1995, 221-231.

trade, so political coordination is studied as the unintended consequence of self-serving maneuvering. Also, as for Smith, market and political stability are the indirect product of individuals' self-interested actions. Individuals no more directly bring about economic or political coordination than do asteroids plan their trajectories.

Crucially, for both Smith and rational choice theorists, "sovereignty" is derivative. For Smith the eclipse of sovereignty follows from the method of efficient causes combined with confidence in providential harmony; for rational choice theorists the displacement of sovereignty results from a commitment to methodological individualism. The fate of sovereignty is a hallmark feature of the political discourse engendered by Smith. This fate is nowhere more evident than in one of the founding rational choice texts, Kenneth J. Arrow's *Social Choice and Individual Values*.<sup>43</sup> In this text, Arrow unabashedly claims that a laissez-faire economics and political democracy have the same justificatory basis (23). Arrow provides a formal definition of "citizens' sovereignty," which is modeled on consumers' sovereignty.<sup>44</sup> This definition requires that regardless of the structure of individuals' preference profiles, collective outcomes must positively (at least not-negatively) reflect individuals' self-oriented desires. Arrow's method, which is grounded on methodological individualism and the premise of self-interested rational choice, leads him to conclude that democratic procedures based on minimal conditions cannot guarantee non-arbitrary, rationally coherent collective choices. Arrow further acknowledges that in order for democracy to provide meaningful direction for society, it may require the type of consciously formed consensus on ends more characteristic of Rousseau and Kant's political theories.<sup>45</sup> Regardless of Arrow's conclusions, many theorists who work with the conceptual apparatus which Smith

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<sup>43</sup>Kenneth J. Arrow, *Social Choice and Individual Values*, 2nd ed. (New Haven: Yale University Press, 1963).

<sup>44</sup>Arrow, "Condition of Citizens' Sovereignty": "A social welfare function will be said to be imposed if, for some pair of distinct alternatives  $x$  and  $y$ ,  $X R Y$  for any set of individual orderings  $R_1, \dots, R_n$ , where  $R$  is the social ordering corresponding to  $R_1, \dots, R_n$ ." Ibid., 28.

<sup>45</sup>Ibid., 81-86.

initially, and Arrow more recently, helped to establish, have continued searching for means by which individuals' self-oriented drives can automatically be coordinated.<sup>46</sup>

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<sup>46</sup>See for example, John Rawls, *A Theory of Justice* (Cambridge: The Belknap Press of Harvard University Press, 1971). According to Rawls, "The conduct of individuals guided by their rational plans should be coordinated as far as possible to achieve results which although not intended or perhaps even foreseen by them are nevertheless the best ones from the standpoint of social justice...Adam Smith [thinks of this coordination] as the work of the invisible hand," p. 57. Willim H. Riker uses rational choice theory to argue for the limited sovereignty typical of Madisonian liberalism in contrast to Rousseau-style populism in *Liberalism against Populism: A Confrontation Between the Theory of Democracy and Social Choice* (San Francisco: W.H. Freeman, 1982). James M. Buchanan and Gordon Tullock search for constitutional principles which can gain adherents strictly on the principle of rational self-interest in *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (Ann Arbor: University of Michigan Press, 1965); for other writings in this vein see James H. Nichols, Jr., and Colin Wright, eds., *From Political Economy to Economics and Back?* (San Francisco: ICS Press, 1990).

## Chapter 2

## Rational Mechanics and Marginalist Economics

For more than 200 years much of the history of economic thought has centered on the explication of the workability and the desirable properties of the market mechanism. This has continued to be one of the most controversial issues and a considerable source of tensions. Basically, however...the notion that economic actors, left to themselves (acting in their own interest and within a given framework that is variously interpreted by different writers), will in some sense promote general welfare or that perfect competition will in some sense achieve a maximum of individual satisfactions...—this notion runs through most of classical and neoclassical literature.<sup>1</sup>

The 1870s trans-national "marginalist revolution" in economic thought represents a theoretical and chronological mid-point between Adam Smith's automatically self-regulating system of natural liberty and rational choice scholars' analysis of political economy as consisting of a rational coordination of interests. Whereas Smith assumed that society was generally harmonious, and then provided analytic argumentation for specific cases in which interventive regulation thwarted the tendency of natural incentives to lead to overall prosperity, the neoclassical economists sought to prove rigorously that in competitive market conditions, individuals' self-interested purchases resulted in an equilibrium, and that this equilibrium represented optimal social welfare: "[P]erfect freedom of exchange...tends to the maximizing of utility"; "[f]ree competition determines the coefficients of production in a way that assures maximum ophelimity".<sup>2</sup>

For Smith and the early neo-classical economists, physics provided a methodological point of departure: physics represented *the* exemplary science to be emulated in order to put economics on a respectable footing. The early neo-classical

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<sup>1</sup>George R. Feiwel, "The Potentials and Limits of Economic Analysis: The Contributions of Kenneth J. Arrow," in George R. Feiwel, ed., *Arrow and the Ascent of Modern Economic Theory* (Washington Square, NY: New York University Press), 11.

<sup>2</sup>First quote is from William Stanley Jevons, cited in E.K. Hunt, *History of Economic Thought* (Belmont, CA: Wadsworth Pub. Co., Inc., 1979), 242; second quote from Vilfredo Pareto, *Manual of Political Economy*, trans. Ann S. Schwier, ed Ann S. Schwier and Alfred N. Page (New York: Augustus M. Kelley Publishers, [1927] 1971, 266.

theorists modelled economic agency on the variational principles of least action which described particles' motion through force fields. Notably, while twentieth-century rational choice theory emphasizes the rationality of agents, for the nineteenth-century neo-classical economists, "rational" referred to their discipline of economics having scientific legitimacy as did rational mechanics; "economics, like astronomy and mechanics, is both an empirical and a rational science"; "[r]ational mechanics, when it reduces bodies to simple physical points, and pure economics, when it reduces real men to the *homo oeconomicus*, make use of completely similar abstractions, imposed by similar necessities."<sup>3</sup> Through the appropriation of the mathematical techniques of energy physics, "economics" emerged as a discipline distinct from classical political economy. Whereas the latter was marred with irregular and unquantifiable elements of political behavior, economics as a more specialized field of study could meet the dictates of scientific inquiry. Francis Galton's 1877 motion to abolish the Statistics and Political Economy section from the British Association for the Advancement of Science, on the grounds that it failed to uphold scientific standards, was proof that professional stature and recognition demanded scientific credibility.<sup>4</sup> The formation of "economics" as a discipline corresponded to the professionalization of economics evidenced by the establishment of professional associations (e.g. the American Economic Association, 1885), and journals (e.g. the *Quarterly Journal of Economics*, 1886), and the fact that increasingly economic theorists held academic posts.<sup>5</sup>

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<sup>3</sup>Léon Walras, *Elements of Pure Economics or The Theory of Social Wealth*, trans. William Jaffé (London: George Allen and Unwin Ltd, [1926] 1954), 47; Pareto, *Manual of Political Economy* ([1927] 1971); 12; Joseph Persky cites this reference of Pareto to *homo oeconomicus* (originally Pareto 1906) as most likely the original coinage of the Latin phrase denoting abstract economic man, "The Ethology of *Homo Oeconomicus*," *Journal of Economic Perspectives*, 9:2, Spr. 1995), 222.

<sup>4</sup>Philip Mirowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics* (Cambridge: Cambridge University Press, 1989), 265.

<sup>5</sup>Jürg Niehans, *A History of Economic Theory: Classic Contributions, 1720-1980* (Baltimore: The Johns Hopkins University Press, 1990), 162.



The marginalist revolution is associated with the transformation of "value theory" from a substance theory characterizing the classical political economy of Adam Smith, David Ricardo, James Mill, Thomas Malthus and Karl Marx to a subjective theory of utility promulgated by William Stanley Jevons (1835-1921), Léon Walras (1837-1910), Karl Menger (1840-1921), and the second-generation marginalist, Vilfredo Pareto (1848-1923). The marginalists' principles of diminishing marginal utility and equimarginal utility, combined with the formulation of "equilibria," comprise the central core of ideas which shaped neoclassical economic thought and continues to structure contemporary orthodox microeconomic theory.<sup>6</sup> The marginalist revolution impinges upon the history of rational choice theory in three ways: First, microeconomic theory provides crucial theoretical components for rational choice theory, including the premise that individuals maximize utility. Second, the marginalists transformed Smith's analysis of the "invisible hand principle" into the mathematically technical language of equilibria so that the harmony of interests under free trade conditions could be demonstrated rigorously. Third, the marginalists' appropriation of the differential optimization techniques characteristic of nineteenth-century rational mechanics provided the seeds from which rational actor theory would later grow.

My exposition will proceed by presenting the key ideas of marginalist thought by discussing Jevons', Walras' and Pareto's theoretical innovations regarding diminishing and equimarginal utility, general equilibrium, and social welfare, respectively. These marginal theorists will be introduced in order to elucidate the content of their crucial insights, and not to provide a narrative of the manner in which their insights slowly and painfully became cannonized.<sup>7</sup> The discussion of Jevons'

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<sup>6</sup>Mirowski, *More Heat Than Light* (1989), 222-231; Hunt, *History of Economic Thought* (1979), 358.

<sup>7</sup>See Mark Blaug, for whom the historical problem is "to explain, not the point in time at which the marginal concept was applied to utility, but rather the delayed victory of marginal utility economics," *Economic Theory in Retrospect*, 4th ed. (Cambridge:

mechanistically inspired formulation of the principles of diminishing and equimarginal utility serves to show how what would subsequently become known as "rational action" had its roots in a model of exchange seeded by the principle of least action developed in rational mechanics. Walras' general equilibrium theory, which utilized the principles of diminishing and equimarginal utility, signified the transformation of Smith's "invisible hand principle" into the concept of a mechanical and precise coordination of interests. According to Walras, his equations proving the mathematical feasibility of a general economic equilibrium balancing consumption, production, and prices, demonstrated that free exchange theoretically resulted in the achievement of maximum social welfare. Pareto, who succeeded Walras at the University of Lausanne, was dissatisfied with Walras' definition of social welfare because it depended on a measurable and intrapersonally comparable concept of "utility." Instead, he devised the concept of "ophelimity" as a measure of social welfare which required a minimal commitment to a well-defined concept of utility and could still be used as a criterion by which to assess whether free exchange resulted in optimal social well-being. This section concludes by introducing Kenneth Arrow's *Social Choice and Individual Values* (1951) as a logical extension of the marginalists' investigations of how individuals' self-oriented preferences result in a mutually beneficial coordination of ends. In short, a common theme addressed by Smith, the marginalist economists, and Arrow, is that of assessing the manner in which, given the starting point of self-interested action, individuals' interests can be said to be coordinated into a collectively beneficial end state.

The marginalist revolution raises two sets of historiographical issues which must be addressed before proceeding. Scholars question how revolutionary marginalist thought was, that is, how much of a disjuncture from classical economic thought it represented. Scholars also question the impetus behind marginalist thought,

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Cambridge University Press, 1985), 307; see also Niehans, *A History of Economic Thought* (1990), 162.

and how marginalism came to take over and structure economics as a discipline in the early twentieth century. The main historiographical concerns are easily distilled by contrasting two leading scholars' positions. Economic historian Marc Blaug concludes, "to try to explain the origins of the Marginal Revolution in the 1870s is doomed to failure: it was not a marginal *utility* revolution; it was not an abrupt change but only a gradual transformation of old ideas; and it did not happen in the 1870s"; in effect, the marginal revolution was reconstructed in the twentieth century when the neo-classical orthodox position matured and sought to celebrate its antecedent roots in the early marginalist principles.<sup>8</sup> In his revisionist history put forth in *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*, the economist-cum-historian Philip Mirowski responds directly to Blaug. He reminds us that the original marginalists spoke of their own work as revolutionary, and that these theorists were conscious of their efforts to construct economics as a rational discipline. Mirowski argues that "neoclassical economic theory is best understood as a sharp and severe break with the doctrines characteristic of the classical theory of value, which subsequently implied extensive revisions in most other areas of economic theory".<sup>9</sup> Most significantly, the sharp break Mirowski detects entails "the successful penetration of mathematical discourse into economic theory," and the subsequent separation of the discipline of economics from the more loosely construed field of political economy.<sup>10</sup>

Notwithstanding these historiographical debates, points of consensus exist. First, the marginalist revolution represents an identifiable body of theoretical discourse. It draws scholarly attention specifically because it stands prominently on the direct path leading from classical political economy to "Paretian welfare economics

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<sup>8</sup>Blaug, *Ibid.*, 307; see also Niehans, *Ibid.*, 159-163. For the standard neo-classical reconstruction of the marginal revolution see Paul Anthony Samuelson, *Foundations of Economic Analysis* (Cambridge: Harvard University Press, 1948), 90-96.

<sup>9</sup>Mirowski, *More Heat Than Light* (1989), 195.

<sup>10</sup>*Ibid.*, 195-197.

to cost-benefit analysis and dynamic programming."<sup>11</sup> These fields are at the heart of twentieth-century economic theory and social welfare policy, and are germane to the development of rational choice theory. Second, the marginalists receive coverage in all textbooks on the history of economic thought for transforming the theory of value, and for consequently transforming the central concern of economic thought, from the political economists' concentration on increased productivity as the objective source of wealth, to the marginalists' conceptualization of utility as a subjective entity and emphasis on the efficient distribution of resources to maximize consumer utility. Finally, the single potentially controversial historiographical perspective I will adopt is Mirowski's thesis that with the marginalist revolution, "economics finally attained its objective to become a science through a wholesale appropriation the mid-nineteenth-century physics of energy."<sup>12</sup> However, even here, many scholars concur with Mirowski's masterfully constructed argument. The most common criticism is that of his total commitment to the unfolding theoretical narrative to the exclusion of socially contingent factors and interests.<sup>13</sup>

The early neo-classical economists' development of the principles of diminishing marginal utility and equimarginal utility drew on predecessors' utilization of optimization techniques from calculus, but was mostly developed independently with retrospective recognition of precursory theoretical advances. These predecessors include the French civil engineer Jules Dupuit, the German agronomist-farmer Johann Heinrich von Thünen, the Prussian civil servant Hermann Heinrich Gossen, and the

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<sup>11</sup>Blaug, *Ibid*, 106. For a nuanced historiographical review of the junction between classical and neoclassical economics repeating the standard emphasis on the distinction reflected in marginalist theory see William O Thweatt's introduction to William O Thweatt, ed. *Classical Political Economy: A Survey of Recent Literature* (Boston: Kluwer Academic Publishers, 1988), 1-12.

<sup>12</sup>Mirowski, *More Heat Than Light* (1989), 196.

<sup>13</sup>See the collection of papers given at a conference on Mirowski's *More Heat than Light* held at Duke University in 1991 in Neil de Marchi, ed., *Non-Natural Social Science: Reflecting on the Enterprise of More Heat than Light, Annual Supplement, History of Political Economy*, 25, 1993; see especially Robert J. Leonard's "Chalk and Cheese: Mirowski Meets Douglas and Bloor," 249-270.

French Professor of analysis and mechanics Augustin Cournot. Some correspondence transpired between the celebrated protagonists Jevons, Walras, and Menger<sup>14</sup>, but this interchange of ideas appears to have been incidental to one another's theoretical achievements. Notwithstanding the seemingly spontaneous emergence of marginalist thought in three separate locales, there is one prominent factor linking the contributors to marginal utility theory, including the pre-marginalist theorists: all were trained in the physics and mathematics requisite for basic level engineering; all were fascinated with incorporating the techniques of the mathematical analysis of force fields and energy conservation into their economic explorations.

William Stanley Jevons studied chemistry and metallurgy, and struggled with mathematics at the University College of London. After a hiatus in Australia where he worked at the Sydney mint, he completed his studies and eventually was able to attain a professorship in political economy at Owen's college in 1866, and then later accepted a professorship at University College London in 1876. His major theoretical contribution, which earned him stature as one of the triumvirate who established the principles of marginal utility, was *The Theory of Political Economy* (1871).<sup>15</sup> Jevons also wrote on logic and scientific methodology, as well as on the coal situation in Britain, and on the impact of sun spots on the business cycle.

For Jevons, the Theory of Economy, as he renamed Political Economy in his second edition preface to *The Theory of Political Economy*, "is purely mathematical in character," "consists in applying the differential calculus to the familiar notions of wealth, utility, value, demand, supply," and can be described as "*the mechanics of utility and self-interest*."<sup>16</sup> Jevons' commitment to the mathematical treatment of economic variables structured his analysis of "marginal utility," and led him to redefine

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<sup>14</sup>Menger represents the one exception to marginalist fascination with physics; he is discussed later.

<sup>15</sup>W. Stanley Jevons, *The Theory of Political Economy* (London: MacMillan and Co, Ltd., [1911] 1931), hereafter referred to as *TPE*.

<sup>16</sup>*TPE*, 3, 21 (Jevons italics).

"value" as a ratio of exchange as opposed to as an objective property inherent to goods (TPE, 76-81). For the classical economists, "value" had denoted a property which inhered in goods and which related to the quantity of labor required to produce a good. However, throughout classical economic theory a tension had existed between a good's theoretical value and its actual exchange value dictated by market clearance. Jevons, and the other neoclassical economists, resolved this irreconcilable tension by locating a good's value in the eye of the purchaser: a good's worth was determined by the "utility" it gave a prospective owner, which, in turn, dictated the price the buyer was willing to pay. Jevons states as a "general law" what is known as the principle of diminishing marginal utility, that "*the degree of utility varies with the quantity of commodity, and ultimately decreases as that quantity increases*" (TPE, 53); one glass of water quenching a desperate thirst represents more utility incrementally than that provided by a third, fourth, or fifth glass, with the result that the first glass potentially represents more value in exchange. Jevons combined the principle of diminishing marginal utility with the idea of effective resource allocation to derive the idea that in allocating units of a single resource for various uses, the final unit of consumption for each usage must provide an equivalent increment of utility, or  $du_1/dx=du_2/dy$ , where  $u_1$  and  $u_2$  represent the utility of the first and second allocations respectively, and  $x$  and  $y$  represent the amounts of resource used in the two allocations. The most sensible resource allocation requires that the increment of satisfaction derived from the final unit provided for each usage be equal, otherwise increased allocation to one of the uses would be more beneficial. Thus, "*the final degrees of utility in the two uses [must be] equal*" (TPE, 60). Jevon's concludes, anticipating what twentieth-century scholars would refer to as "rational action," that "[t]he general result is that commodity, if consumed by a perfectly wise being, must be consumed with a maximum production of utility" (TPE, 60).

The revolution in thinking characterizing neoclassical economics pivoted around the equimarginal principle which holds that any given individual operating under a budget constraint purchases the final increment of various goods such that these final increments afford the individual the same quantity of "marginal utility" per dollar spent. Jevons essentially states this equimarginal principle as his theory of exchange: "*The ratio of exchange of any two commodities will be the reciprocal of the ratio of the final degrees of utility of the quantities of commodity available for consumption after the exchange is completed*" (TPE, 95).<sup>17</sup> He goes on to provide equations representing a single individual's equilibrium exchange allocation between two commodities, and the equilibrium exchange ratio resulting from two individuals trading two commodities. Jevons responds to "objections made to the general character of the equations employed" he employs to model exchange by appeal to the treatment of "virtual velocities" in mechanics. According to Jevons, "*The Theory of Economy...presents a close analogy to the science of Statical Mechanics, and the Laws of Exchange are found to resemble the Laws of Equilibrium of a lever as determined by the principle of virtual velocities*" (TPE, vii). He reproduces his equations of exchange by quoting Mr. Magnus's derivation of the equation for a lever in equilibrium from the law of energy conservation presented in *Lessons in Elementary Mechanics* (TPE, 102-106). Just as a lever is in equilibrium when the ratios of the downward forces are inversely equivalent to the ratio of the length of the lever's respective arms, so an individual attains a stable resource allocation when the ratio of the final degree of marginal utility for two commodities is inversely proportional to the ratio of the total amounts of the commodities traded.

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<sup>17</sup>For the relationship between Jevons' equation of exchange and the equimarginal principle see Blaug, *Economic Theory in Retrospect* (1985), 310 and 338-339; see also Margaret Schabas' discussion of Jevons' statement of his "equimarginal principle," in her *A World Ruled by Number: William Stanley Jevons and the Rise of Mathematical Economics* (Princeton: Princeton University Press, 1990), 39-43.

Jevons' construction of his equation for exchange anticipated the label of "rational action" applied retroactively by economic historians to early marginalist theory in reference to the automatic "rational" balancing among trade offs through which the ideal consumer achieves an optimal resource allocation: "[t]he marginalists saw people as rational balancers (at the margin) of pleasure and pain in a world of perfect competition"; "[m]arginalism permitted the utilitarian vision of human nature, which was considered to consist exclusively of the rational, calculating maximization of utility, to be formulated in terms of differential calculus."<sup>18</sup> In essence, the concept of "rational" economic behavior was derived from the least action principle of rational mechanics expressed in the calculus of variations: the rational economic man tends to allocate resources "among alternate modes of use in such a way that they will be equally remunerative in all and so will yield the maximum total return"<sup>19</sup> just as according to the principle of least action, a particle selects a path which minimizes its action integral. The trick with applying variational calculus to physics problems was to isolate a variable characteristic of the system in question which would be maximized or minimized, such as with Maupertuis' principle of least action, Hamilton's stationary action, or Gauss's principle of least constraint. Economic theorists similarly sought to identify variables, namely various formulations of the utility concept, which could be maximized. In *Mathematical Psychics* the marginalist theorist Francis Ysidro Edgeworth relates how "social mechanics" may aspire to the heights attained by celestial mechanics as a consequence of their shared basis in the maximization of measureable variables:

"Mécanique Sociale" may one day take her place along with "Mécanique Celeste," throned each upon the double-sided height of one maximum principle, the supreme pinnacle of moral as of physical science. As the movements of each particle, constrained or loose, in a material cosmos are continually

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<sup>18</sup>Ray E. Canterbury, *The Making of Economics*, 3rd ed (Belmont, CA: Wadsworth Pub. Co, 1987) 100; Hunt, *History of Economic Thought* (1979), 238.

<sup>19</sup>Frank H. Knight, *On the History and Method of Economics* (Chicago: The University of Chicago Press, 1956), 25.



subordinated to one maximum sub-total of accumulated energy, so the movements of each soul whether selfishly isolated or linked sympathetically, may continually be realising the maximum pleasure...<sup>20</sup>

Writing in 1947, economist Paul Samuelson was keenly aware of the parallel construction of the "constrained maximum problem" characteristic of economic theory and the equations describing particles' trajectories constrained by the conservation of energy in physics:

In some cases...it is possible to formulate our conditions of equilibrium as those of an extremum problem, even though it is admittedly not a case of any individual's behaving in a maximizing manner, just as it is often possible in classical dynamics to express the path of a particle as one which maximizes (minimizes) some quantity despite the fact that the particle is obviously not acting consciously or purposively.<sup>21</sup>

Mathematical solutions required that the variable of interest be maximized (or minimized); as Samuelson recognized in his *Foundations of Economic Analysis*, economists can proceed as long as equilibrium in question can be associated with "a stable maximum position." The equations demand that some variable be maximized, the economist can later apply meaning to this mathematical term, "[t]hus, we really argue backwards from maximizing economic behavior to the underlying physical data consistent with it."<sup>22</sup> As with the farmer who is thought to farm in accordance with "the validity of the law of diminishing marginal physical productivity," it can later be determined what aspect of field usage is maximized, i.e. production per square inch, or average yield over the total acreage.<sup>23</sup>

Although Samuelson remained equivocal over whether individuals deliberately maximize the variable of economic interest, other economists of the same era were not reticent to associate deliberate maximization with rational behavior such that over time human rationality came to be explicitly modelled on the maximization (or

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<sup>20</sup>F.Y. Edgeworth, *Mathematical Psychics; an Essay on the Application of Mathematics* (London: C.K. Paul and Co., 1881), 12.

<sup>21</sup>Samuelson, *Foundations of Economic Analysis* (1948), 23.

<sup>22</sup>*Ibid.*, 23.

<sup>23</sup>*Ibid.*

minimization) characteristic of rational mechanics. Thus, in the course of the first half of the twentieth century, the term "rational" ceased to refer to economic science as a rational discipline, and took on the connotation of rational deliberation on the part of economic actors. Chicago school economist Frank Knight, for example, while retaining the idealized abstraction of "economic man" as "a concept methodologically analogous to the frictionless machine of theoretical mechanics," added that the twentieth-century economic agent is also "individualistically and rationally purposive."<sup>24</sup> The agent is not assumed to automatically behave in a rationally optimizing fashion, but is also thought to apply means-end reason to deliberately select optimal actions. It is unclear when the first usage of "rational" in reference to economic behavior, as opposed to economics as a discipline, occurred. Certainly, by 1944, in *The Theory of Games and Economic Behavior*, Morgenstern and von Neumann theorized about "rational behavior," for which the principle of maximization was central; "[t]he individual who attempts to obtain...maxima is also said to act 'rationally.'"<sup>25</sup> In 1951 Arrow could matter of factly refer to "the traditional identification of rationality with maximization of some sort."<sup>26</sup>

Whereas Jevons had inadvertant success in providing a template for rational action, his mathematical formulation of the exchange problem remained incomplete. Specifically, he did not provide the mathematics requisite for moving from a single individuals' optimal resource allocation to what could be considered optimal for numerous trading parties since this required the simultaneous solution for prices and quantities traded, both as dependent mathematical variables. Jevons was only able to discuss trade of commodities given prices which were already established. Thus,

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<sup>24</sup>Knight, *On the History and Method of Economics* (1956), 26; see also Frank Knight, "Economics and Human Action," in Daniel M. Hausman, ed., *The Philosophy of Economics* (Cambridge: Cambridge University Press, 1984), 114.

<sup>25</sup>John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior*, 3rd ed., (Princeton: Princeton University Press, 1953), 8-33

<sup>26</sup>Kenneth J. Arrow, *Social Choice and Individual Values*, 2nd ed. (New Haven: Yale University Press, 1963), 3.

instead of price being a dependent variable dictated by supply and demand, Jevons resorted to his "law of one price" wherein quantities exchanged were determined in light of a preestablished price. It would be Walras' contribution to devise the concept of "general equilibrium" which demonstrated that in perfect competition, consumers' marginal utility schedules combined with producers' cost of production schedules resulted in prices which maximized aggregate utility.

Léon Walras' commitment to developing mathematical economic theory was instilled in him by his father's efforts to understand value in terms of the then in vogue mathematics of motion. Auguste Walras also infused in his son the zeal to develop a unified social science of economics. Léon's undistinguished and incomplete undergraduate career started with two failed attempts to enter the Ecole Polytechnique, and ended after a short term of studying engineering at the Ecole des Mines; Walras was distracted from calculus problem sets by a more fervent desire to study the history of calculus. Eventually his desultory career, which included an abandoned attempt at creating a model of market relations based on Newton's inverse square law of gravity and an ineffectual effort to establish his own journal, resulted in his appointment to a chair of political economy in the law faculty at the University of Laussane (1870), and his major theoretical achievement, *Éléments d'économie politique pure; ou, théorie de la richesse sociale* (published in two parts, 1874 and 1877).

Like Jevons, Walras proposed a mathematical theory of economics modelled on physics, however in addition he had a keen interest in the policy implications which logically followed from his economic theory:

[The] pure theory of economics is a science which resembles the physico-mathematical sciences in every respect....[T]he theory of social wealth considered by itself is a physico-mathematical science like mechanics or hydrodynamics....We shall see...that the truths of pure economics yield solutions of very important problems of applied economics and social economics...<sup>27</sup>

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<sup>27</sup>Walras, *Elements of Pure Economics* ([1926] 1954, 71-72.

One of Walras' overriding concerns was to demonstrate, through his proof for the possibility of the existence of a general equilibrium, that free trade conditions were the best guarantee for the maximum attainment of utility among all the participants in an exchange economy.<sup>28</sup> William Jaffé, who translated *Elements of Pure Economics*, and devoted a lifetime of study to Walras' writings, went so far as to conclude that Walras was intent to explore the ideal institutional arrangement which would maximize social welfare in accordance with the tenets of both commutative and distributive justice.<sup>29</sup> Although he does not squarely address the legitimacy of property rights in *Elements*, Walras writes that "the object of the problem of property...consists essentially in establishing human relations arising from the appropriation of social wealth so as to achieve a mutual co-ordination of human destinies in conformity with reason and justice."<sup>30</sup> Walras devoted considerable energies to spreading the general equilibrium gospel.<sup>31</sup> Walras' legacy in the history of economic thought is secure because Walrasian general equilibrium analysis, in Schumpeter's terms, is the Magna Carta of modern economics, setting up the terms of analysis for both micro- and macro-economic theory, as well as for what would come to be called "the 'new' welfare economics."<sup>32</sup>

*Elements of Pure Economics* is not the sort of book a person curls up with for a pleasant afternoon read; the text is replete with equations and graphs and is, many agree, generally intractable and unwieldy. It was not the particulars of Walras' argument which set the trend toward future general equilibrium analyses, it was rather his overall approach to presenting the mutually interdependent set of relations

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<sup>28</sup>Ibid., 255-256.

<sup>29</sup>See William Jaffé, as reported in Blaug, *Economic Theory in Retrospect* (1985), 584.

<sup>30</sup>Walras, *Elements of Pure Economics* ([1926] 1954, 78-79.

<sup>31</sup>See Blaug, *Economic Theory in Retrospective* (1985), 609; see Jaffé's compilation of Walras' correspondence, Leon Walras, *Correspondence of Leon Walras and Related Papers*, William Jaffé, ed. (Amsterdam: North-Holland Pub. Co., 1965); Robert B. Ekelund, Jr. and Robert F. Hébert, *A History of Economic Theory and Method*, 3rd ed. (New York: McGraw-Hill Pub. Co., 1990), 441-442.

<sup>32</sup>Blaug, *Ibid.*, 585.

characterizing trade among all participants in an economy. The problem Walras set for himself was to investigate whether the institutional arrangement of free trade would "achieve a mutual co-ordination of human destinies in conformity with reason and justice."<sup>33</sup> In his mathematical treatment of an exchange economy Walras ends up siphoning off questions of justice which pertain to property and distribution, and focusses instead on determining whether maximally satisfying exchanges take place, given free trade conditions, and given the status quo distribution of property.<sup>34</sup>

Walras effectively demonstrates that given individuals' marginal utility schedules for  $m$  goods demanded, and producers' cost of production schedules for  $n$  quantities of productive services supplied, these interdependent supply and demand schedules can be represented in a set of simultaneous equations with  $2n + 2m$  independent equations, and  $2n + 2m - 1$  unknowns. The simple mathematical fact of simultaneous equations guarantees, in principle, that this set of equations has a solution (although Walras neglected to consider whether these equations were linearly independent, or whether the solution set contained either a negative or multiple solutions, which would call into doubt the mathematical meaningfulness of the solution). Walras' proof led him to conclude that "*Production in a market ruled by free competition is an operation by which services can be combined and converted into products of such a nature and in such quantities as will give the greatest possible satisfactions of wants,*" (with the stipulation that each good and service have one market price, and products are sold at the price equal to the cost of production).<sup>35</sup> Walras referred to solution of this set of equations as the "general equilibrium" because it reflected the achievement of a balance of supply and demand in all markets simultaneously, and hence once this solution was realized, none of the participants in the economy could improve their condition through any additional exchange. Walras went on to observe that "free competition becomes a

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<sup>33</sup>Walras, *Elements of Pure Economics* ([1926] 1954), 79.

<sup>34</sup>*Ibid.*, 255-257.

<sup>35</sup>*Ibid.*, 255.

principle or rule of practical significance," since this condition permits the attainment of "maximum utility."<sup>36</sup>

Walras did not actually provide a solution to the set of equations presented in his mathematically prolix volume; this would have required access to the data of individuals' demand schedules and producers' production costs which were clearly beyond the reach of a theoretical economist, not to mention number crunching skills that would have to await the computer age. He also did not prove that the set of equations necessarily had a meaningful solution. Still, he did help to refashion the tool set of theoretical economists into the formal language of mathematical proofs and existence theorems. Walrasian equilibrium theory became a worthy field of study for many an economist. Still the proof that a mathematically meaningful solution to the set of interrelationships of supply and demand in a market economy existed remained elusive until Kenneth Arrow and Gerard Debreu presented their general equilibrium model in 1954.

Walras won his fame in the history of economic thought through an abstract argument which demonstrated that given individuals' propensity to maximize marginal utility, and producers' tendency to minimize costs of production, free exchange conditions permitted the coordination of individual ends such that each individual, operating under a budget constraint, was able to maximally satisfy his desires in conjunction with all other individuals.<sup>37</sup> Walras' general equilibrium theory, which incorporated the new conceptions of marginal utility and optimization under a budget constraint, shifted the terms of economic discussion away from increased productivity as a source of wealth to efficient resource allocation as the means by which subjective utility was maximized. For Adam Smith, *laissez faire* allowed natural incentives to reign which encouraged individual industriousness and hence resulted in increased total

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<sup>36</sup>Ibid.

<sup>37</sup>For deeper discussion see Blaug, *Economic Theory in Retrospective* (1985), 577.

wealth. By contrast, Walras' equations forced him to assume constant rates of productivity, and that the increase of social wealth is a function of the effective coordination of consumers' marginal utility schedules: value is substantiated when a good passes hands from one individual to another who desires it more. Smith's argument for free trade is dynamic and growth-oriented; his invisible hand is operative through naturally existent incentive structures which guarantee that individuals' efforts to promote their own interests results in material prosperity because the gains to be made from fulfilling others' needs insure that supplies will increase to meet demands. Actions are not "coordinated" so much as harmonized on the basis that each, in pursuing his own well-being, inadvertantly contributes to overall social welfare by objectively augmenting measureable social wealth. Quite to the contrary, the marginalist general equilibrium theory was predicated on static assumptions of constancy of consumer preferences and rates of productivity. Market equilibria signalled the mutual and precise coordination of individuals' desires through the efficient allocation of goods and services.

Smith's case by case argument for non-intervention was far more accessible to commonsense understandings of self-interested trade than was Walras' mathematically recondite argument for general equilibrium. The greatest deficit of Walras' theory is its poor fit with the actual conditions by which market exchanges took place. Specifically, the question was frequently raised of how the general equilibrium, which existed as a theoretical possibility, could actually be realized in real life. Walras himself worked through various versions of how this process represented in theory might be replicated in the marketplace. Given the attempt to elicit policy import from general equilibrium theory, this fit between social reality and mathematical theory was quite important. The greatest difficulty derived from the fact that Walras' general equilibrium was a static model, which required that exchanges automatically and immediately result in equilibrium. If not, goods would have changed hands,

resources would be redistributed, and a new state of affairs would arise which necessitated a different equilibria solution. Thus, it was possible that without the omniscience required to solve the lengthy set of simultaneous equations, exchanges prior to those representing equilibria would increasingly move toward disequilibria.<sup>38</sup> This theoretical difficulty raised the question of whether actual market forces would automatically tend toward equilibria prices, or whether disequilibria would be perpetuated. Notwithstanding Walras' consistent promotion of free trade as the means to maximize the satisfaction of wants, the ambiguity over whether equilibrium would be attained in practice left open the door for arguments that only through economic planning would such an equilibria be guaranteed.<sup>39</sup>

Carl Menger, the third famous economist of the marginal revolution, only obliquely contributed to marginalist theory. Mirowski argues that Menger, despite his steadfast promotion of subjectivity utility theory and methodological individualism for which Austrian economics is renowned, did not associate himself with the marginal utility school, and only was later acknowledged to be a key marginalist theorist because his student Friedrich von Weiser successfully billed him as such.<sup>40</sup> However, as Oskar Morgenstern's teacher, Menger impinges upon my historical narrative since Morgenstern imported Austrian subjectivism, as well as Menger's concern with predicting aggregate outcomes as the result of individual actions, into *The Theory of Games and Economic Behavior*. Game theory, of course, although not a direct offspring of marginalist principles of diminishing and equimarginal utility, would in time be a pillar of rational choice theory.

Of all the contributors to marginal utility theory, Vilfredo Pareto had the most eclectic career and the most varied claim to fame since he is remembered for his contributions to sociology as well as to economic theory. Pareto's multifaceted pre-

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<sup>38</sup>Ibid., 577-580.

<sup>39</sup>Hunt, *History of Economic Thought* (1979), 262.

<sup>40</sup>Mirowski, *More Heat Than Light* (1989), 260-261.



economics professional repertoire included a dissertation on the elastic equilibrium of solid bodies, work as a railroad engineer in Rome, appointments as deputy director and director general of the Italian Ironworks in Florence, an unsuccessful bid for parliament, and solitary study of sociology and political economy. In 1890, in his fortieth decade, Pareto interacted with the preeminent Italian economic theorist Maffeo Pantaleoni who inspired him to reassess Walras' general equilibrium theory. After Walras retired from his chair at the University of Lausanne in 1892, Pantaleoni was eager to have Pareto appointed as his successor since Pareto showed the promise of being friendly to the new mathematical economics. After six years at Lausanne, a substantial inheritance left Pareto independently wealthy and able to retire from his academic post and withdraw into a life of seclusion. Pareto's occupational wanderings were capped when Mussolini nominated him to the Senate on the basis of his sociological writings. For this reason Pareto's name is sometimes associated with Italian fascism. In fact, Pareto's life-long political leanings reflect a radical libertarianism moderated only by a smoldering misanthropism equally disdainful of social elites and mass democracy.<sup>41</sup>

Leaving aside his sociological contributions and infamous law of income distribution, Pareto's place in the history of economic thought was established by his two economic treatises *Cours d'Economie Politique* (1896-97) and *Manuale di Economia Politica* (1906; French edition with mathematical appendix, 1909). Both of these texts were consistent with the framework set by Walras' general equilibrium analyses with the primary distinction between the two texts residing in Pareto's overhaul of Walras' marginal utility theory of value in the latter publication. Even at the time of writing *Cours* Pareto was dissatisfied with the concept of marginal utility because it seemed to

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<sup>41</sup>This sketch of Pareto is drawn from Niehans, *A History of Economic Thought* (1990), 259-261, and Joseph A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), 859-861; for Pareto's passive membership of Mussolini's Senate, see Placido Bucolo, ed., *The Other Pareto* (London: Scholar Press, 1980).

exist as subjective data not necessarily accessible to objective measure. A further difficulty with the concept of marginal utility as it had been used by Walras to establish the parameters upon which the simultaneous equations representing economic exchange depended was that it assumed the possibility of numerically comparing various individuals' experiences of satisfaction. By the time he wrote his *Manuale*, Pareto adopted the ordinalist approach to utility developed in Irving Fisher's *Mathematical Investigations into the Theory of Value and Prices* (1892) and F.Y. Edgeworth's *Mathematical Psychics* (1881). This adoption was partially provoked by the searching interrogation of the French mathematician Hermann Laurent who was skeptical that marginal utility represented a conservative vector field<sup>42</sup>. Pareto's theoretical innovation was to base his analysis of general equilibrium conditions on Edgeworth's "indifference curve" approach to graphically representing individuals' preferences for various packages of goods. A hypothetical individual offered selections between varying ratios of two goods, say wine and bread, would be able to choose various ratios of bottles of wine and loaves of bread which would leave her indifferent in relation to the initial allocation. Thus, given an original allocation of five bottles of wine and five loaves of bread, an individual might derive equal satisfaction from other allocations such as three bottles of wine and eight loaves of bread, or six bottles of wine and four loaves of bread. "Indifference curves" are graphically depicted by plotting quantities of one commodity on one axis, and quantities of the second commodity on the second axis, much like topographical maps are characterized by lines which depict constant elevation. Thus the lines on an indifference map of an individuals' preferences between varying amounts of two goods resemble lines of constant elevation on a topographical map; the lines can be said to trace out "hills of pleasure." Because the indifference curve approach does not assume that a numerical

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<sup>42</sup>See Mirowski, *More Heat Than Light* (1989), 245-249; and John Chipman, "An Episode in the Early Development of Ordinal Utility Theory: Pareto's Letters to Hermann Laurent," *Cahiers Vilfredo Pareto*, 14:37, 1976, 39-64.

ordering can be associated with the varying degrees of satisfaction graphically represented by two different indifference curves, it is referred to in mathematical language as "ordinal" as opposed to "cardinal." Unlike on a topographical chart mapping lines of constant elevation on a mountain, an ordinal indifference map gives the reader no indication of how rapidly an individual's satisfaction ascends as one progresses from one indifference curve to the next. Furthermore, the ordinalist approach makes no attempt to compare two individuals' degrees of satisfaction afforded by an equal resource allocation.

The question next arises of how Pareto's ordinalist approach to utility, which interrelated individuals' indifference curves over commodity bundles instead of interrelating individuals' marginal utility schedules for tradeoffs among various goods, affected his general equilibrium analysis. Despite his commitment to ordinal utility, Pareto's approach to the existence of a general equilibrium relating supply and demand with a unique set of prices remained essentially Walrasian in character. Pareto, like Walras, relies on adding up the number of equations and unknowns in order to construct a set of simultaneous equations which under the right conditions would yield a unique solution.<sup>43</sup> Pareto proceeds by formalizing an equilibrium for a single individual given fixed prices and a budget constraint by solving for the intersection of the line representing both price and budget constraint with the highest attainable indifference curve. This treatment is extended by first considering trade among numerous individuals given fixed prices, and then by adding up the equations and unknowns, and solving for an equilibrium set of prices which is general in the sense of relating consumption and production for all individuals in all markets.

Like Walras, Pareto was keen to associate free trade conditions with the achievement of maximum social welfare. However, Pareto's shift to ordinal preference orderings required that he define social welfare in a manner independent from

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<sup>43</sup>Pareto, *Manual of Political Economy* ([1927] 1954), 446-451.

assumptions that utility is measureable or intrapersonally comparable. To distinguish his notion of social welfare from that of Walras and others who depended on cardinal utility, Pareto coined the term *ophelimity* to refer to individual or collective well-being.<sup>44</sup> *Ophelimity* refers to respective degrees of welfare attainable by an individual or group. In the case of an individual (with fixed prices and a budget constraint), maximum *ophelimity* is obtained in the equilibrium state of spending money or exchanging goods such that the individual's resource allocation is deployed to achieve the maximal possible ascent on the "hill of pleasure" mapped by the topographical indifference curves (for Pareto this is equivalent to finding the point on an indifference curve at which one's "marginal rates of substitution" for various goods is equal to the ratio of exchange among various goods determined by price, hence the usefulness of variational calculus). Without being able to compare and sum utilities among the individuals comprising the collectivity, it is more difficult to unambiguously define maximum social *ophelimity*. According to Pareto, collective *ophelimity* is achieved when it is impossible to increase a single individual's *ophelimity* without adversely affecting one or more other's *ophelimity*.<sup>45</sup> Unlike the statement of individual *ophelimity* which picked out one resource allocation as optimal, collective *ophelimity* could only isolate a set of resource allocations as optimal which each had varying distributional consequences. Collective *ophelimity* did not refer to a unique economic arrangement of production and consumption.

It might not be worth belaboring Pareto *ophelimity*, or optimality, if it were not for the case that this concept has become the standard means of distinguishing between issues of distributive justice and allocative efficiency in discussions ranging from ethics and justice,<sup>46</sup> welfare economics, general equilibrium theory, and policy

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<sup>44</sup>Ibid., 405.

<sup>45</sup>Ibid., 451-452.

<sup>46</sup>John Rawls, *A Theory of Justice* (Cambridge: Belknap Press, 1971); Daniel M. Hausman and Michael S. McPherson, "Economics, Rationality, and Ethics," in Daniel M. Hausman, ed., *The Philosophy of Economics* (Cambridge: Cambridge University Press, 1994).

science.<sup>47</sup> Pareto optimality is also used in these various discussions to provide objective policy criteria. Pareto optimality, referring to social decisions for which "there is no alternate decision which could have made everybody at least as well off and at least one person better off,"<sup>48</sup> has several noteworthy features. Most significantly, as already stated, it only relies on utility as an ordinal concept; as welfare economics developed in the U.S. between 1930 and 1950, economists increasingly sought to define measures of social welfare which were ordinal, and thus increasingly turned to Pareto optimality as a measure of societal well-being. Secondly, because Pareto optimality does not rely on interpersonal comparisons of utility, it provides a minimalist standard by which to judge between the social welfare afforded by various social states. It often cannot adjudicate between varying resource allocations with quite different consequences for the individuals comprising the collectivity. Furthermore, some social states are classified as Pareto optimal which represent distributional allotments which could only be considered "just" in a counter-intuitive sense. For example, in comparing the social welfare of two possible outcomes in a society, the first state resulting in mass starvation, and the second state alleviating the starvation at some monetary cost to the affluent members of society, there is no way to pass judgement on the respective levels of social well-being unless all members of society unanimously agree that one state represents an improvement over the other. Third, Pareto optimality provides the decisive means by which to distinguish issues of efficiency from concerns of distributive justice by associating efficiency with free exchange conditions in which individuals only participate if they stand to gain from trade. Again, however, Pareto optimality does not guarantee that a specific set of exchanges will occur in free trade; instead Pareto optimality recognizes that a number

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<sup>47</sup>Edith Stokey and Richard Zeckhauser, *A Primer for Policy Analysis* (New York: W.W. Norton and Co., 1978).

<sup>48</sup>Kenneth J. Arrow, "Formal Theories of Social Welfare," in Kenneth J. Arrow, *Social Choice and Justice* (Oxford: Basil Blackwell, 1983), 122.

of trades could occur which benefit all the parties involved. In Pareto's discussion of free trade between two individuals over two goods without fixed prices, an entire set of points representing varying final distributions of goods are recognized to be Pareto efficient. Thus as long as all participants benefit from exchange, notwithstanding the fact that different sets of prices could arise which result in different final resource allocations results, all the sets of prices which rule out that any one more more individuals could be better off without leaving anyone else worse off are considered Pareto optimal.<sup>49</sup>

Even though in welfare economics and policy discussions Pareto optimality has developed a life of its own independent from considerations relating to the achievement of a general equilibrium, Pareto devised the concept to assess whether a fully competitive market for consumption and production, a general equilibrium results which is necessarily Pareto optimal.<sup>50</sup> Although Pareto's mathematical analysis was insufficient to guarantee the existence of a unique general equilibrium set of prices balancing supply and demand, when the tools of mathematical and set theoretic analysis were up to the challenge in the hands of Kenneth Arrow and Gerard Debreu, it was proved as the first of two Fundamental Theorems of Welfare Economics that "If a competitive equilibrium exists at all...and under appropriate assumptions, every competitive equilibrium is Pareto efficient."<sup>51</sup>

In conclusion I will recapitulate the major points of this chapter, specifically with respect to the reformulation of Adam Smith's invisible hand mechanism for harmonizing individual ends into the marginalists' notion of exchange equilibria which maximize social welfare. The marginalists developed the vocabulary and mathematical techniques which would set the trend toward formally proving that individuals' self-interested actions automatically result in maximal social well-being.

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<sup>49</sup>Pareto, *Manual of Political Economy* ([1927] 1954), 451-452.

<sup>50</sup>*Ibid.*, 467-475.

<sup>51</sup>Feiwel, "The Potentials and Limits of Economic Analysis" (1987), 18.

Recall that for Smith aggregate outcomes had to be studied as the unintended consequences of individual self-interested action due to the procedural dictates of natural philosophy. Furthermore, Smith structured his work according to the optimistic assumption that the system comprising human society had innate stability. Thus, the question for Smith was not to prove that the unintended consequences of individual actions resulted in some sort of social optima, but rather to study how natural incentive structures function to guarantee the harmonization of individual ends according to the principle that individual industriousness leads to augmented social wealth which is collectively beneficial. Supply and demand considerations enter into Smith's thought as incentives leading to increased productivity, but not as an automatic balancing feat which guarantees efficient resource allocation. Thus, for example, the corn laws inhibited long term grain productivity by rendering grain production less lucrative. Smith's market analysis was dynamic insofar as higher grain prices would in the future lead to greater grain production. Smith was silent about whether high grain prices in a given instant resulted in an equilibrium or a socially optimal state. Smith's system of justice which upheld strict property rights and market prices over "just prices" gained its legitimacy from the long run consideration that eventually everyone would be better off.

The marginalists, who relied on mathematical equilibria derived from rational mechanics, shifted the terms of the discussion from dynamic growth to static equilibria; from natural incentive structures promoting individual production and increased social wealth, to the efficient allocation of resources given homogeneous production functions. Smith's invisible hand which relied on increased productivity as the source of increased social wealth was converted into a mechanism which guaranteed the coordination of individual desires, given budget constraints, into an equilibrium state whereby the equilibrium was, in some sense, taken to be indicative of the achievement of some sort of social optima: given budget constraints, individuals'

marginal utility schedules were jointly maximized into an interlocking conjunction of prices which guaranteed maximum social welfare. Thus, through efficient resource allocation, everyone could be shown to be better off. Pareto optimality provided a minimalist criterion by which to make assessments of social welfare independently from assuming that utility was numerically measurable, interpersonally comparable, or additive. In short, although his equilibria of exchange points were not necessarily unique, Pareto provided a means to speak of social well-being according to exchange conditions which left at least one person better off and no one worse off, given an original resource allocation. Pareto's assessment of social well-being according to the minimalist criteria that, provided a starting point of an initial resource endowment, at least one person's state be improved and no one's be harmed, is consistent with the free trade norm of voluntary exchange: no one is forced into a lesser state of well-being.

Pareto optimality became the hallmark of "the new welfare economics" which grew up in 1930s and 1940s in the U.S. in the work of Lionel Robbins (1938), Nicholas Kaldor (1939), John R. Hicks (1939, 1946), Abram Bergson (1938), Hotelling (1938), Oskar Lange (1942), M. Allais (1943), A.P. Lerner (1944), Paul Samuelson (1947), all of whom were committed to ordinal utility as opposed to a convenient and lingering attachment to cardinal utility which was typical of Pigouvian welfare economics.<sup>52</sup> Similar to Walras' and Pareto's interest in the relationship between free trade conditions and the attainment of maximum social welfare, the new welfare economists frequently sought to demonstrate a positive correlation between free trade and social welfare.<sup>53</sup> However, as with the difference of opinion between Adam Smith and James Steuart regarding *laissez faire* versus policy intervention on the behalf of "public

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<sup>52</sup>The term "welfare economics" was coined by A.C. Pigou who wrote *The Economics of Welfare* (1920) which remained a standard text through four editions, and five reprintings of the final edition (1932, 1938, 1946, 1948, 1950, 1952).

<sup>53</sup>J. P. Roos, *Welfare Theory and Social Policy. A Study in Policy Science* (Helsinki: Societas Scientiarum Fennica, 1973); Feiwel, "The Potentials and Limits of Economic Analysis" (1987), 8-28.



interest," identification of the social state in which maximum social welfare was achieved was a distinct question from what the best means of realizing that state would be. Even granted that an end state, such as a general equilibrium, would maximize welfare, it was possible to argue that some sort of social planning might be the superior means of bringing this state about;<sup>54</sup> Thus, working within the theoretical structure which identified the state or states resulting in "maximize social welfare" did not require an ideological commitment to either laissez faire or social planning.<sup>55</sup> Even though economists working within the new welfare economics were by and large sympathetic to the free market, the theoretical starting point for either the free trade or interventionist position was the identification of the state or set of states in which collective welfare was maximized. The identification of such a state or states then could be used to inform policy initiatives (for or against laissez faire).<sup>56</sup>

The goal, then, of the new welfare economics which was a direct descendent of the attempt to prove that perfect competition is the best means of attaining maximum collective welfare,<sup>57</sup> was to provide objective criteria by which to assess whether collective welfare was maximized. Four theoretical commitments structured the new welfare economists' approach to this problem. First, consistent with the view that utility is fundamentally subjective, the individual is deemed to be the best arbiter or her well-being. Second, any statement of collective well-being must be formulated as an aggregate function of individual well-being. Third, non-economic factors are irrelevant for assessing an individual's welfare. Fourth, Pareto optimality is used to assess which social states are optimal.<sup>58</sup> The goal, again, of the new welfare

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<sup>54</sup>E.g. Oskar Lange, "The Foundations of Welfare Economics," *Econometrica*, 10, July 1942, 215-228; A.P. Lerner, *Economics of Control* (New York: The Macmillan Co., 1944).

<sup>55</sup> Feiwel, "The Potentials and Limits of Economic Analysis" (1987), 44.

<sup>56</sup>E.g., policy position regarding taxation growing out of Public Finance economics, mentioned by Paul Anthony Samuelson in his chapter on "Welfare Economics," in *Foundations of Economic Analysis* (1948), 226.

<sup>57</sup>*Ibid.*, 203.

<sup>58</sup>For a statement of these assumptions see Roos, *Welfare Theory and Social Policy* (1973), 97.

economics was to derive a value-free means by which to analyze in what sense collective outcomes are collectively beneficial. This line of scholarship resulted in the formulation of a "social welfare function" which demonstrates how collective welfare varies as a function of individuals' consumption and productivity, as well as of resource and technological constraints. Once this function is mathematically formulated, it could be maximized to show the conditions under which maximum social welfare is attained.<sup>59</sup>

Kenneth Arrow's *Social Choice and Individual Values* culminated the discussion of the new welfare economics; in Arrow's words, "what...deserve[s] stressing is the sense in which social choice theory was a child, if unwanted, of the Bergson, Samuelson social welfare function."<sup>60</sup> The point of the social welfare function, again, is to design a mathematical function which would represent the relationship between collective welfare and individual welfare such that maximization of the function would indicate the best means by which to attain collective welfare:

Professor Bergson's formulation of the problem of making welfare judgements...[refers to] the process of assigning a numerical social utility to each social state, the aim of society then being described by saying that it seeks to maximize the social utility or social welfare subject to whatever technological or resource constraints are relevant or, put otherwise, that it chooses the social state yielding the highest possible social welfare within the environment.<sup>61</sup>

The formulation of a social welfare function is consistent with positions ranging the spectrum from laissez faire to social planning; the purpose of the function is simply to ascertain which social state best achieves social welfare. As Adam Smith was well aware, even laissez faire represented a policy decision which must be left to the "wisdom of the statesman." The legitimacy of laissez faire depended on its being an

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<sup>59</sup>See Abram Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics*, 52, Feb. 1938, 310-334. 1938; Samuelson 1947, 219-249; Roos, *Ibid.*, 116-120.

<sup>60</sup>Kenneth J. Arrow, "Contributions to Welfare Economics," in E.C. Brown and R. M. Solow, eds., *Paul Samuelson and Modern Economic Theory* (New York: McGraw Hill, 1983), 26.

<sup>61</sup>Arrow, *Social Choice and Individual Values* (1963), 22.

optimal manner for organizing society, meaning that it was collectively advantageous. Similarly, arguments for social planning and policy initiatives relied on claims that social welfare be maximized for their legitimacy. In *Social Choice and Individual Values*, Arrow asked in what sense the market mechanism could be regarded as a method for amalgamating individuals' preferences into a collective result which was collectively rational. More generally, Arrow investigated the requirements for concluding that institutionalized processes for reaching collective outcomes resulted in end states which were collectively preferred.

Arrow worked within the liberal theoretical legacy as it was articulated by Jeremy Bentham in his hedonist approach which held that an individual's good was equivalent to his subjective desires, and that "social good was in some sense to be a composite of the desires of individuals."<sup>62</sup> Methodological individualism, which asserts the primacy of the individual in judging his own needs and desires, is a common theme running through the liberal tradition from Smith's emphasis on individuals' self-interested actions as the efficient causes of social harmony, to the marginalists' construction of exchange equations based on individuals' subjective utility functions, to the welfare economists' reliance on individuals' subjective preference orderings to evaluate aggregate social welfare, to Arrow's formulation of the social choice problem. Arrow's concern for evaluating the effectiveness of institutionalized processes for collective decision making is also consistent with the liberal project of identifying a framework which functions to automatically coordinate self-interested action into a mutually advantageous general outcome. The liberal project requires that the framework for coordinating individuals' self-interested ends, whether naturally existent (Smith) or artificially imposed (Steuart Bentham, Rawls), must be collectively beneficial in order to be legitimate.<sup>63</sup> Therefore, logic dictates that

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<sup>62</sup>Ibid., 22-23.

<sup>63</sup>For discussion of Smith, Steuart and Bentham, see Chapt One; Rawls, *A Theory of Justice* (1971).

an objective means for evaluating that collective ends are indeed served is a necessary requirement for recognizing the legitimacy of the framework in question. Smith argued for the legitimacy of perfect competition on the basis that it contributed to the wealth of a nation which is collectively beneficial; the marginalists' argued that free trade materially enhances well-being through the efficient allocation of resources; the contributors to the new welfare economics sought to devise a mathematical function for evaluating collective welfare based on ordinal utility to argue for or against the free market or various taxation policies.

Arrow's *Social Choice and Individual Values* trumped the discussion of how a free market system can be said to be collectively beneficial. Applying set theoretic analysis to the problem of constructing a social welfare function, Arrow poses a question which is foundational for liberal thought: in what sense can institutionalized mechanisms for coordinating individuals' ends be said to achieve a collectively desirable outcome? In *Social Choice and Individual Values* Arrow addresses various means of achieving collective outcomes, including the free market, voting, constitutional design, and the social welfare function as a guide for social policy. Arrow takes up the liberal challenge of demonstrating in what sense it is meaningful to propose that individuals' self-oriented preferences and choices result in overall social well-being. Whereas the welfare economists preceding Arrow concentrated on evaluating whether perfect competition was socially optimal, Arrow's study was more encompassing so as to include various other means of achieving collective social outcomes.

In effect, Arrow's social choice theory represents a generalization of a line of thinking which was originally developed exclusively for assessing the efficacy of free trade so that it became relevant to evaluating the efficacy of political processes for reaching collective outcomes. Both the market-place and democratic practices are legitimate institutions insofar as they provide the means to achieve collective outcomes

which are in some sense a socially optimal composite of individual desires. Sovereignty, or political direction, is thought to function like the market mechanism. Market efficiency and political direction are considered as the unintentional consequences of self-interested, rational action. The move to extend market logic to encompass political decision-making processes necessarily entails modelling political sovereignty on the notion of "consumer sovereignty" typically associated with the market place. Specifically, the premise of consumer sovereignty holds that consumers have free license to determine their own preferences (constrained only by the dictates of "reason"), and that consumers' preferences be positively associated with market outcomes insofar as a collective preference ordering must positively reflect any change in an individual's preference profile. Political sovereignty, then, refers to individuals' autonomy in establishing their own preference profiles combined with an institutional mechanism which aggregates individuals' preferences into a collective outcome which is not dictatorially imposed, or negatively responsive to changes in individuals' preferences.<sup>64</sup> Consumer and citizen sovereignty similarly refer to the combination of methodological individualism, and the legitimacy of institutionalized processes for achieving collective ends.

Arrow, in bridging the gap between thinking about the market mechanism for coordinating individual ends, collective decision-making in electoral processes, and policy design in welfare economics, provides the culmination of the liberal discussion which sought to identify the appropriate framework for automatically coordinating self-interested ends through the achievement of maximum social welfare. Starting with the premise of individual rationality as defined by having a transitive preference

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<sup>64</sup>A non-negative response to change in an individual's preference profile requires that if the collective social outcome originally preferred outcome X to outcome Y, that if a single individual changes her preference profile to also prefer outcome X to outcome Y, the collective social preference ordering should continue to prefer X to Y. For discussion of the correlations between consumer and citizen sovereignty see Arrow, *Social Choice and Individual Values* (1963), 28-30, 60.

ordering combined with the assumption that individuals strive to maximize their welfare, Arrow defines "collective reason" as the aggregation of individual preference orderings into a group preference ordering which maximizes collective welfare and preserves the condition of transitivity. Arrow simultaneously formalized the discussion of how to ascertain whether individual ends are rationally coordinated, and undermined the premise that the institutionalized processes for achieving collective outcomes characterized by the market and democracy necessary meaningfully represent the needs and desires of consumers or citizens. Arrow proves that electoral and market aggregates of individual preferences do not necessarily add up to an overall optimal state, given weak assumptions about the democratic polity or market place, and the expression of preferences.

Notwithstanding the fact that Arrow's theorem was essentially a negative result, it gave birth to the entire field of social choice theory, and changed the format of discussions in ethics, economic policy and welfare economics. As Clifford Hildreth, a member of the Cowles Commission, reported, Arrow's papers "were received with much excitement and with some surprise that essentially scientific reasoning could be effectively applied to a basic question of social ethics."<sup>65</sup> William Mitchell, one of the earliest political scientists to grasp the significance of the budding rational choice paradigm, observed that Arrow's Impossibility Theorem which concluded that "it is impossible to produce public policies which are consistent with the expressed preferences of voters," "must be regarded as one of the greatest contributions ever made to political theory."<sup>66</sup> Most significantly, Arrow extends the idea of economic self-regulation to the political domain: institutional procedures for collective decisions are legitimate insofar as they automatically coordinate agents' self-interested ends.

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<sup>65</sup>Clifford Hildreth, *The Cowles Commission in Chicago, 1939-1955* (New York: Springer Verlag, 1986), 92.

<sup>66</sup>William C. Mitchell, "The Shape of Political Theory to Come: From Political Sociology to Political Economy," in Seymour Martin Lipset, ed., *Politics and the Social Sciences* (New York: Oxford University Press, 1969), 127.

Arrow's Impossibility Theorem, of course, shows how difficult it is to define and achieve an automatic coordination of interests. However, Arrow's proof may ultimately have its chief significance in demonstrating that the initial premise of methodological individualism leaves no other way to define sovereignty than as in residing in individuals' subjective preference profiles which must somehow be aggregated to form a collective outcome.

## PART II:

### RATIONAL POLICY ANALYSIS AND THE NATIONAL SECURITY STATE

[I]n the last few years war and defense have immensely stimulated the search for social as well as technological devices of social control, as is illustrated by the work of the RAND Corporation.

Robert Dahl and Charles Lindblom, 1953

About six or seven years ago there was a 'technological breakthrough' at The RAND Corporation in the art of doing Systems Analysis.

Herman Kahn, RAND, 1960

A particular problem for modern democracies...is the predominant response they give to their electoral constituencies ...The classical liberal model of the democratic state, therefore, is not particularly reassuring at present technology levels.

Paul Hammond, RAND, 1965

Part II of this dissertation makes a transition from studying the theoretical antecedents of rational choice theory to investigating the critical role of the archetypal Cold War institution, the RAND Corporation, in the post-World War II emergence of rational choice. The economics imperialism thesis, holding that rational choice theory emerged from within the economics discipline, is insufficient to account for the development and eventual preeminence of the rational actor formalism. As a hypothesis, it overlooks many crucial factors. It ignores the policy roles played by some of the most prominent rational choice scholars; it ignores the overlapping venue of discoveries joining descriptive social scientific inquiry and active policy analysis; and it ignores the prestige garnered from the high-profile policy environment.

Understanding the forces leading to the development of rational choice theory requires contextualizing its interrelationships with the imperatives of the Cold War national security state. It is not possible to draw a clean separation between rational policy analysis and rational choice theory. Game theory was rescued from academic oblivion by its active development at RAND for its relevance to problems of nuclear strategy. Kenneth Arrow's *Social Choice and Individual Values* was inspired by a research question pertaining to predicting collective social outcomes for the Soviet Union.



William Riker's ambitious program of positive political theory was partially inspired by two RAND theorists' research into a "power index."

Part II departs from intellectual history. It tells the story of how RAND-style systems analysis and rational policy analysis became an accepted standard of public decision-making, first at the U.S. Department of Defense, then throughout government via Lyndon Johnson's Great Society programs. The incursion of RAND's decision technologies into the halls of power occurred against the backdrop of the missile gap, Sputnik, and John F. Kennedy's presidential election. The extraordinary impact of RAND's decision technologies on actual government practice is clear in Senator Henry Jackson's 1968-69 congressional hearings into the change in public decision-making procedures effected by RAND's policy analysts. A decade later, the influence and institutionalization of these tools spread even further as the professional schools of leading university's, such as Harvard's Kennedy School of Government, reorganized their structures and curricula around RAND-style policy analysis.

I claim that RAND's decision technologies constitute a 'regime of knowledge production.' By this, I mean that the formation of these tools and concepts led to a far-reaching and comprehensive system for defining appropriate beliefs and actions. Participating in this system was controlled by a 'new policy elite.' These leading figures, including Thomas Schelling, Charles Hitch, Howard Raiffa, Henry Rowen, and Alain Enthoven, went from their humble origins as contractors to the U.S. Air Force, to controlling enormous budgets, influential departments of government and universities, and key federal initiatives affecting all Americans. It was their ability to redefine 'democratic decision-making' to suit their agenda, using these powerful tools, which made this breathtaking rise possible. Once this comprehensive regime came into place, it gained 'de-facto legitimation' through ubiquity rather than proven merit.

Rational choice theory as a social science method, and rational policy analysis as a decision technology, share key theorists, core ideas, institutional venues, and sources

**of funding. Any attempt to understand the phenomenal success of rational choice theory within the social sciences must acknowledge the interconnections between "rational choice" as a decision tool for governmental policy initiatives and as an explanatory device for predicting the outcomes of human action.**

### Chapter 3

#### **Managing the National Security State: Decision Technologies and Policy Science in Cold War America**

Soon after taking office, Defense Secretary Robert S. McNamara held his first press conference. It was to be one of the shortest on record, consisting of only one question. A reporter asked, "Mr. Secretary, you've been here three or four weeks. The missile gap obviously was an important element in the campaign and a major security issue. What are you doing about it?" McNamara replied, "Well, you're quite right, it was important [and] it is important. I focused on that, and I've determined there wasn't a missile gap, or if there is, it's in our favor." In McNamara's own words, reporters "broke the doors down" running to call their editors. The next day, headlines screamed, "McNamara Denies Missile Gap," and the Republican Senate Majority Leader called for the Defense Secretary's resignation.<sup>1</sup> Despite this complete reversal and the resulting public outcry, *every* policy idea based upon belief in the nonexistent Soviet missile advantage was implemented over the next seven years. This article explores the processes of knowledge production and political interaction which manufactured "the gap" in the public mind and public record, initiated a sea change in American national security policy whose rationale originated in the missile gap, and empowered a new policy elite whose authority was grounded in the supposed objectivity of rational policy analysis.

The traditional story of RAND, the cold war, the missile gap, and McNamara's wholesale reorganization of the Pentagon has been told as one of decisive response to overwhelming imperative. In the late 1950s, RAND scientists in their Santa Monica ivory tower discover a critical vulnerability in the defensive posture of America. Their

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<sup>1</sup>Interview of Robert S. McNamara by Brian Lamb, "In Retrospect: The Tragedy and Lessons of Vietnam," Apr. 23, 1995, Booknotes Transcript, C-SPAN.

findings result in a top secret government report, detailing an unsuspected strength in the Soviet adversary—a missile gap. The unresponsive Eisenhower administration tries to ignore the gap, but the dramatic launch of a satellite, Sputnik, forces them into action. They reluctantly begin to improve the U.S. defense in response to this challenge, but they are too hidebound, too traditional to fully bear the necessary burden. A presidential election brings a dramatic victory for the young, charismatic leader who will take America through these troubled times. He decisively changes the entire structure of the Pentagon and the armed services to respond to the new Soviet threats, bringing in Robert McNamara to lead a transformed military in the procurement and deployment of the greatest military power the world has ever known. Every effort is justified, and the methodologies and systems which had been designed for the great cold war struggle are perpetuated throughout other areas of government, nonprofit organizations, and leading academic institutions.

Even when subsequent intelligence suggested that the substantial military advantage was always on the side of the U.S., a fall-back explanation was created. This position similarly maintains the utter necessity of overwhelming imperative by holding that even if subsequent knowledge proved the U.S. was not vulnerable to Soviet attack, contemporary intelligence could not *definitively* disprove that the Soviets had a significant military advantage. Thus, again, steps to reform the Pentagon and marshal U.S. power were logically dictated by the necessity of circumstances. From the time when these actions were current news to the present, writers and researchers have been invested in maintaining the reality of the cold war threat as a tacit strategy to preserve the rationale behind a militaristic defense posture<sup>2</sup>. Actions on the part of ardent cold warriors were justified by the nature of the palpable threat.

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<sup>2</sup>Examples of this position include Joseph Kraft, "RAND: Arsenal for Ideas," *Harper's Magazine*, Jul. 1960, 69-76; Stewart Alsop, "Our New Strategy: The Alternatives to Total War," *The Saturday Evening Post*, 236:43, Dec. 1, 1962, 13-18; Fred M. Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983); Peter J. Roman, *Eisenhower and the Missile Gap* (Ithaca: Cornell University Press, 1995).

In contrast, in the account put forth here, the cold war struggle was not so much one of enemy pitted against enemy in a ferocious to-the-death struggle as it was a fight over whose *interpretation* of cold war events would prevail and would serve as the foundation from which to guide action. Here the drama is relocated from the U.S. as a unified actor on a bi-polar world stage to an internal U.S. struggle among interested parties vying to gain control over defining the cold war. Those whose interpretation of events became accepted had the power to direct policy. Thus, ironically, the actual cold war drama lay in the manufacture of the "cold war" itself, as actors sought to convince the American nation of its peril and to orchestrate policy reforms in order to stave off the perceived threat.

Close attention to the historical record discloses a concatenation of actions which demands an alternate narrative. This story, though acted out in the Pentagon, executive branch, and the halls of Congress, was scripted and themed within the walls of the RAND Corporation, America's first think tank. In Section I of this paper, RAND develops its unique product, "systems analysis," which McNamara later would use to gain control over the Pentagon. Section I also sketches out the alliances behind RAND and Henry Ford II's Foundation, both of which were built on a steadfast commitment to a rationally-managed technocratic society. In such a society, "objective" experts made difficult policy decisions outside the fray of partisan politics characteristic of legislative democracy. In Section II, President Eisenhower invites H. Rowan Gaither, Jr., Chairman of the board for both the RAND Corporation and The Ford Foundation, to head a committee to study the American civil defense program. Gaither's efforts resulted in the top secret "Gaither Report," which was the source behind the fallacious missile gap. The Gaither Report also outlined a plan for a tremendous defense build-up and a wholesale reform of the Department of Defense using the tools of rational management. In Section III, McNamara successfully establishes control over the U.S. armed forces by using the epistemological leverage afforded by RAND's systems analysis. In Section IV, the

implementation of RAND's decision theoretic tools in first the Department of Defense, and the throughout the Federal government through Johnson's Great Society Program, results in the establishment of a knowledge production regime which revolutionized government policy-making in the United States. This regime of knowledge production, with McNamara as its chauffeur, shifted governmental decision-making from a legislative-democratic platform to a policy sciences model which depended upon claims of objectivity and scientific rigor for its authority and legitimacy. A closing epilogue argues that rational policy analysis and rational choice theory in the social sciences both share origins in the toolbox of decision theoretic methods developed at RAND in the 1950s.

The history which emerges is relevant to broader discussions of the tension between the ideal of liberal democracy and the tendency of elites to develop means to control societal decision-making processes. Since its inception as a social form predating the French and American Revolutions, and going back to at least the British Civil Wars, the drama of democratization has in part been about conveying the appearance of inclusion while designing means to retain actual control over decision-making in the hands of a social elite. This impetus for elite control has had various guises, from aristocratic resistance, to the retrenchment of liberalism on the part of a newly successful bourgeoisie in late-nineteenth-century Britain. But increasingly, as democracy became recognized as the legitimate form of government among Western nation-states and the universal franchise of adult citizens became widespread following World War I, a new form of struggle emerged, evident in the U.S., to retake the reins of authority in order to neutralize the unruly potential of mass democratic politics. Guy Alchon makes this argument for the early decades of the twentieth-century when American philanthropies and government insiders formed an alliance with "objective," and "impartial" social scientists who were empowered to have control over social

decisions outside the auspices of democratic politics.<sup>3</sup> This paper similarly argues that following World War II an alliance was forged between philanthropies—in this case The Ford Foundation—the business community and scientific policy analysts. This alliance resulted in the development of rational policy analysis which functioned as a means to relocate the authority for policy decisions from elected officials to a supposedly "objective" technocratic elite.

### **A. Systematic Knowledge Production**

#### **H. Rowan Gaither, the RAND Corporation and The Ford Foundation**

The story begins at the Santa Monica-based RAND Corporation which, in the 1950s, became the think tank icon of Cold War America. In its halls, nuclear strategists thought the unthinkable as they came to terms with thermonuclear war. RAND physicist Herman Kahn would be memorialized in American folklore as Stanley Kubrick's *Dr. Strangelove*, a film with the subtitle, "Or How I Learned to Love the Bomb." To the Russians, RAND represented "An American Academy of Death and Destruction."<sup>4</sup>

#### **Project RAND (1946-1948)**

In the wake of World War II, RAND grew out of the efforts of a visionary synthesis between General Henry "Hap" Arnold of the U.S. Army Air Force and Douglas Aircraft Company leadership. General Arnold anticipated that with the conclusion of the war, scientists and technical experts would flock back to universities and industry; he was eager to maintain and perpetuate the symbiosis of scientific talent and defense needs organized to fight the war. Since it seemed doubtful that researchers would give up civilian status, this bold vision required the creation of a new institutional format conducive to harnessing technical expertise to Air Force ends. Frank Collbohm, assistant to the Vice President of engineering at Douglas, whose wartime experience

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<sup>3</sup>Guy Alchon, *The Invisible Hand of Planning: Capitalism, Social Science, and the State in the 1920s* (Princeton: Princeton University Press, 1985).

<sup>4</sup>Kraft, "RAND: Arsenal for Ideas" (1960), 69.

included tasks at MIT's Radiation Laboratory and in the Manhattan Project, similarly worried that the exodus of technical competence from the military arena would prove crippling. In his mind, America might have "won the military campaign, [but] we've lost the war."<sup>5</sup> In early 1946 'Project RAND' was hatched: the idea was to fund a autonomous division within Douglas Aircraft which would function quasi-independently from both Douglas and the Air Force, but would be devoted to researching Air Force concerns.

Arnold made available \$10 million of Army Air Force funds, Donald Douglas acquiesced to housing the effort, and Collbohm accepted the mantle of leadership. As a pet project of General Arnold's, RAND was structured from the start to have access high in the Air Force chain of command. Collbohm initially reported directly to General Curtis LeMay, future head of the U.S. Strategic Air Command (SAC). The original RAND research team numbered four, and functioned as a distinct Douglas Aircraft division. By 1948, project RAND would grow to have 255 employees and an annual operating budget of \$3.5 million. The organization was still funded from Arnold's original allocation, and occupied offices in an old Santa Monica newspaper building. All RAND researchers required security clearances, but in the early days following the war, researchers brought pre-existing clearances from previous positions.

According to RAND's charter, "Project RAND is a continuing program of scientific study and research on the broad subject of air warfare with the object of recommending to the Air Force preferred methods, techniques, and instrumentalities for this purpose."<sup>6</sup> Collbohm, an electrical engineer by training, had a solid hardware track record including contributions to aircraft design and radar development. His roving and

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<sup>5</sup>Frank Collbohm, oral history interview, Jul. 28, 1987, RAND History Project, National Air and Space Museum, 17.

<sup>6</sup>From RAND's charter, set forth by General Curtis E. LeMay, Deputy Chief of Staff for Research and Development, often quoted in early days. Cit. in James Digby, "Strategic Thought at RAND, 1948-1963: The Ideas, Their Origins, Their Fates," RAND NOTE, N-3096-RC, June 1990, 4.



eclectic assignments during WWII led him to have an expansive vision for RAND. It was from the start envisioned as broadly interdisciplinary, and designed to address sweeping questions of military strategy through the lens of a hardware orientation. It was also crucial to the RAND mythos that the institution jealously guarded its intellectual independence from its patron. Hence RAND was based three thousand miles away from the demanding Washington environment, and RAND researchers took on 'voluntary projects' rather than assignments. RAND strove to meet Air Force needs, but did so on its own terms, developing its own strategies for setting up research agendas. From the Air Force's perspective, the arrangement and the objectives underlying it looked different. General LeMay recollected that "We didn't have any of the tools...necessary to conduct a program leading to intercontinental missiles and supersonic airplanes....[s]o, the gimmick was to contract with a nonprofit organization to accomplish the task, and pay their bills, and let them go out in the open market and hire the talent they needed at the going rate."<sup>7</sup>

RAND's first large-scale study, taken on at the request of General LeMay, then Deputy Chief of Air Staff for Research and Development, is telling of the client-patron nature of the RAND-Air Force relationship. In early 1946, it came to LeMay's attention that the U.S. Navy was drawing up a proposal to the Joint Research and Development Board advocating the potential role of the Navy in space satellite development. Motivated by inter-service rivalry, LeMay presented RAND with the task of investigating the technical feasibility of various space satellite systems. When the competing Navy and Air Force proposals were presented to the Board in 1947, it

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<sup>7</sup>Curtis E. LeMay, interview by John T. Bolen, 9 Mar 1971, March AFB, CA, Air Force Historical Research Center, Maxwell, AL, K239.0512-736, 6, cit. in David Raymond Jardini, "Out of the Blue Yonder: The RAND Corporation's Diversification into Social Welfare Research, 1946-1968" (Ph.D. Diss., Carnegie Mellon University, May 1996), 119.

avored the Air Force proposal, finding its analysis to be more comprehensive than the Navy's, and subsequently terminated the Navy's foray into satellite development.<sup>8</sup>

RAND had served its patron well: the outcome of the satellite study demonstrated that RAND could provide authoritative clout to Air Force initiatives, enabling them to prevail in policy venues. Attentive to this role, one RAND researcher recounted how Winston Churchill had similarly used "Operational Research" in order to exert his will over military bureaucracies during WWII, using such analysis as an authoritative edge over entrenched leaders.<sup>9</sup> Repeatedly over time, RAND studies would be deemed a success or failure by the simple metric of whether or not they furthered Air Force weapons procurement and strategic agendas.

Ultimately, and ironically, RAND would outgrow its patron relationship with the Air Force and take on studies for the Office of the Secretary of Defense in the early 1960s. Then, the tables reversed, General LeMay would become one of RAND's staunchest critics, since RAND's findings were no longer aligned with Air Force interests. In a second, and more penetrating irony, the original 1946 RAND study which established that satellite technologies were possible within the then-current state of missile and rocketry technologies serves as an anticipatory reminder that the Soviet Sputnik launching of 1957 was not surprising.<sup>10</sup>

In its early days under Douglas parentage, project RAND was oriented toward hardware studies, and the RAND team took on a variety of tasks such as the refinement of ductile titanium and the calculation of the trajectories of intercontinental ballistic missiles. RAND's orientation was primarily technical, and its professional staff was mostly comprised of engineers, mathematicians and physicists. Even though Collbohm

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<sup>8</sup>Jardini (ibid.), 120-121.

<sup>9</sup>J.A. Stockfish, "The Intellectual Foundations of Systems Analysis" (Santa Monica: RAND, 1987), P-7401.

<sup>10</sup>*Preliminary Design of an Experimental World-Circling Spaceship*. Douglas Report No. SM-11827, 1946.

already harbored the vision of an interdisciplinary and complete science of warfare, this development would only come later, when RAND severed its ties to Douglas.

### **RAND, H. Rowan Gaither Jr., and The Ford Foundation**

In early 1948, Douglas leadership grew concerned over the possible conflict of interest inherent in Douglas personnel contracting directly for the Air Force as 'independent and objective' consultants. It seemed probable that the Air Force would exert extra caution in awarding Douglas contracts for fear of evoking the appearance of impropriety. RAND President Collbohm initiated steps to achieve independent corporate status and contacted a war-time acquaintance to aid him in this process. The man he chose was H. Rowan Gaither Jr., who had served as assistant director of MIT's Radiation Laboratory from 1942-1944, and was then at the San Francisco law firm Cooley, Crowley and Supple. Gaither was absolutely discreet, politically sophisticated, had an impressive list of contacts including MIT's former president Karl Compton, and was experienced in serving as an intermediary between scientists, administration, and funding.

Together, Gaither and Collbohm concluded that non-profit status best suited RAND's aims. Independence required capital and a board of trustees. Gaither took on the responsibilities of drawing up the papers and overseeing the reorganization. He also agreed to serve as the chair of the board of trustees, a role he continued to play until his untimely death in 1961. Gaither took on yet another personal stake in RAND's institutional viability when he made available an unsecured loan, and later a mortgage for new buildings, through the bank owned by his family, Pacific National Bank.

Despite Gaither's generosity, more money was required, and a lead was provided by Karl Compton. He and Gaither had built up a friendship while at MIT, and he agreed to serve as a member of RAND's board. Compton was on good terms with Henry Ford II, son of Henry Ford and chief stockholder of the Ford Motor Company. Gaither took on the task of approaching Henry Jr. to request emergency funding for

RAND. At a critical meeting, aboard an East Coast train, Ford and Gaither met. The two enjoyed instant rapport; rapport so great that Ford immediately pledged an initial \$300,000 to RAND from The Ford Foundation, at a time when the Foundation was \$31 million dollars in debt. This initial loan to RAND was increased to one million dollars, and then commuted into a grant over the course of the next four years.

In the 1940s, The Ford Foundation had been used primarily to reduce Ford family taxes, and was controlled by Henry Ford II. The Foundation went into debt because it was used as a lien against the tax due on Henry and Edsel's shares of The Ford Motor Company. Thus, although Ford's Foundation was set up to assume the position of the best-endowed American philanthropy, in the late 1940s the Foundation was only theoretically and potentially well-endowed. When at last the U.S. Treasury and the Ford Foundation trustees reached a legal settlement on the valuation of Ford Motor Company stock in the Foundation's holding in 1951, it totaled \$417 million. This easily established Ford's Foundation as the richest American philanthropy, compared to the Rockefeller Foundation's \$122 million and the Carnegie Corporation's \$170 million. The relative wealth of these foundations was staggering: Harvard University's 1950 endowment was \$191 million, and Yale University's \$125 million.<sup>11</sup> This initial \$417 million endowment was further enhanced by bountiful stock dividends earned in the 1950s. It was not until 1976 that The Foundation would become fully independent from the Ford family and The Ford Motor Company.<sup>12</sup>

Gaither had so impressed Ford that the auto manufacturer asked him also to produce a policy statement for The Ford Foundation. Thus, while Gaither oversaw the reorganization of RAND, he was additionally responsible for creating The Ford Foundation's mission statement. This statement is telling of Gaither's vision of society as a technocracy governed by an objective elite, and was personally acknowledged by

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<sup>11</sup>Francis X. Sutton, "The Ford Foundation: The Early Years," *Dædalus*, Winter 1987, 52.

<sup>12</sup>Henry Ford II resigned from the Board of Trustees in 1976, formally ending Ford family involvement in Foundation affairs.

Henry Ford II to have been "the most important step in formulating the policies of the Foundation."<sup>13</sup> Gaither assembled a committee of prominent academicians to draw up the report. Ford and the trustees, who hoped to determine from the report how the Foundation's efforts could best be admired in the public eye, gave the committee so much leeway that after six months members were unable to come to a set of conclusions. Gaither finally wrote the report himself with a small staff.<sup>14</sup> The report, serious, idealistic, and somewhat self-aggrandizing in tone, was regarded by Ford insiders with a mixture of reverence and mirth, but in any case, "became a kind of sacred text, scrutinized for many years by those charged with planning or justifying the Foundation's programs."<sup>15</sup> Most crucially, the report articulates as a plan for philanthropic support specifically what RAND managed to achieve in the 1950s: the development of a professional corps who, due to their superior expertise, could guide the nation through challenging policy decisions. The report describes a society managed by an educated elite outside the public arena and suggests that it is the duty of philanthropies to support this elite.

A quintessential cold war document, the *Report for the Study of The Ford Foundation on Policy and Program* draws attention to the current "world crisis," and to the seemingly black and white choice between democracy and totalitarianism.<sup>16</sup> According to the Foundation report, a primary goal of philanthropy should be advising "those responsible for the formulation or execution of policy."<sup>17</sup> Policy advice should come in the form of objective analysis or expert consultation. In bestowing charity, the goal is "to replace partisan controversy with objective fact."<sup>18</sup> Unsurprisingly, according

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<sup>13</sup>Henry Ford II to Kart T. Compton Oct. 23, 1951, Gaither Series VI, Box 11, folder 134, Ford Foundation Archive, Ford Foundation (hereafter FFA).

<sup>14</sup>Sutton, "The Ford Foundation" (1987), 48.

<sup>15</sup>Ibid.

<sup>16</sup>*Report for the Study of The Ford Foundation on Policy and Program* (Detroit: The Ford Foundation, 1949), 28.

<sup>17</sup>Ibid., 54.

<sup>18</sup>Ibid., 114.

to the mission statement, none other than a philanthropy is most qualified to support non-partisan research, because a philanthropy such as The Ford Foundation, which "has no stockholders and no constituents...[and] represents no private, political, or religious interests" is the height of neutral objectivity.<sup>19</sup> The report is unequivocal in suggesting that philanthropies and their beneficiaries manifest an objectivity which best entitles them to provide leadership in a democratic society.

This freedom from entanglements, pressures, restrictive legislation, and private interest endows a foundation with an inherent freedom of action possessed by few other organizations. Further, a great foundation possesses an extraordinary stature in the public mind. By law, as well as by its charter, it is dedicated to human welfare. Its responsibility is to the public as a whole. In political and social issues it cannot be partisan. This very nonpartisanship and objectivity gives to the foundation a great positive force, and enables it to play a unique and effective role in the difficult and sometimes controversial task of helping to realize democracy's goals.<sup>20</sup>

It is striking that in the view of knowledge and politics which Gaither promulgated, knowledge and expertise exist on a independent axis from politics and partisanship. Furthermore, it is clear that Gaither's rendering of democratic society is at odds with a model predicated on a communicative and dialogic public sphere. The leadership behind The Ford Foundation and RAND was committed to a view in which difficult and controversial public policy debates could be adjudicated by knowledgeable experts.

In taking on responsibility for The Ford Foundation's mission statement, Gaither's lawyerly instinct had accepted on the condition that neither he, nor any of the report's other authors, ever in the future accept any role in the administration of The Ford Foundation.<sup>21</sup> This gesture of nonpartisanship and disinterestedness was reversed when Gaither became part-time associate director of the Foundation's program Area V, the behavioral sciences, in 1951. These duties were facilitated by the Foundation's temporary location in Pasadena, California, a stone's throw from RAND's Santa Monica

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<sup>19</sup>Ibid., 22.

<sup>20</sup>Ibid., 23.

<sup>21</sup>Gaither, "Comments on Bill Greenleaf's Manuscript" Jan. 23, 1959, 1-2, Gaither Series VI, box 11, folder 134, FFA.

location. Paul Hoffman, appointed in 1950 as the first non-family president of the Foundation, had accepted the position on the condition that the Foundation be located in the health-promoting Southern California region.<sup>22</sup>

Henry Ford II had selected Paul Hoffman for the Foundation's Presidency because Hoffman's professional preeminence seemed to guarantee that he could do only good for the Foundation. Hoffman, a former president of the Studebaker Corporation, had just successfully completed a term as administrator of the Marshall Plan. However, he soon proved to be a poor choice when his sympathies, operational emphasis, assessment of how the Foundation funds might be the most useful, and even his choice of staff, clashed with the views of Henry Ford II, as well as those of the other board members including Karl Compton and Donald David. Hoffman down-played the cold war, worked in the spirit of international cosmopolitanism, advocated cultural exchange and communication, and looked to the United Nations as providing hope for defusing international tensions. David and Compton grew increasingly concerned that Hoffman was not following the guidelines set down in Gaither's *Report for the Ford Foundation Study for Program and Policy*. Tensions continued to increase following Hoffman's appointment of the controversial Robert Maynard Hutchins to the position of associate director.<sup>23</sup> At the October 4, 1951 board meeting, Compton resigned his trusteeship in protest.<sup>24</sup> Unsettling exchanges occurred at meetings between Ford and Hoffman, with Hoffman allegedly stating that he "was not going to devote his life to educating this young ignoramus [Henry Ford]."<sup>25</sup> In late 1951, Hoffman proudly advertised his allegiance to Dwight D. Eisenhower, and became increasingly involved in the presidential campaign. During this same period, Hoffman and Hutchins chartered The Ford Foundations Fund for the Republic which they set up to defend civil liberties and

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<sup>22</sup>Sutton, "The Ford Foundation" (1987), 52.

<sup>23</sup>For Hutchins and The Ford Foundation see Harry S. Ashmore, *Unseasonable Truths: The Life of Robert Maynard Hutchins* (Boston: Little Brown and Co., 1989), 311-353.

<sup>24</sup>Gaither, "Comment's on Bill Greenleaf's Manuscript" (1959).

<sup>25</sup>Sutton, "The Ford Foundation" (1987), 73.

to "attack...[the] loyalty investigations...[and] the House Un-American Activities Committee."<sup>26</sup> In February of 1953 the antagonism between Hoffman and Ford became too strong, and Ford forced Hoffman to resign. At the trustees' meeting in which Hoffman was ousted, Gaither was elected to the position of president, director, and member-trustee.

The realignment of Foundation leadership and philanthropic policies to the tune of Gaither, Ford and David's conservative politics signaled an alliance of Old Guard Republican sentiment which opposed the moderate Republicanism espoused by Eisenhower.<sup>27</sup> Under Gaither's direction, The Ford Foundation, which by weight of its huge endowment played a crucial role in shaping America's intellectual arena, swung far to the right. A clear and significant shift in Foundation leadership had occurred, and was evident in changes in Foundation policy. This dramatic shift in philanthropic politics was also evident in the contrast between Gaither's and Hoffman's internal Foundation directives. Hoffman, for example, was unequivocally opposed to using Foundation resources in efforts to destabilize foreign political regimes.<sup>28</sup> Gaither and his close associates Donald G. Marquis and Hans Speier, on the other hand, supported foundation efforts to further political and psychological warfare.<sup>29</sup> Similarly, Gaither's support of the social and behavioral sciences as a tool for an expertly managed society contrasted with Hoffman's inter-dialogic, democratic cosmopolitanism.<sup>30</sup> Under

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<sup>26</sup>Memorandum drafted by Hutchins quoted in Ashmore, *Unreasonable Truths* (1989), 330.

<sup>27</sup>Ashmore, (ibid.), 324-325.

<sup>28</sup>"Notes on Conference with Beadle Smith, Allen Dulles and others," Apr. 3, 1951, "Hoffman: we cannot contribute to subversive activities." Gaither's response to a CIA request to channel funds through The Ford Foundation makes it clear that Gaither objected not as a matter of principle, but to avoid legal difficulties.

<sup>29</sup>Documents on "Political Warfare," and Program Area I, Gaither Series I, box 1, folder 4, dated May 3, 1951, May 23, 1951, FFA.

<sup>30</sup>See Robert E. Gleeson and Steven Schlossman, "George Leland Bach and the Rebirth of Graduate Management Education in the United States, 1945-1975," *The Magazine of the Graduate Management Admission Council*, Spring 1995, 8-46, esp. 20, 25.



Gaither's tutelage, Foundation efforts would be directed toward research oriented toward national security.<sup>31</sup>

The Ford Foundation's swing to the right coincided with the anti-communist sentiment sweeping the nation in the McCarthy era. From an internal Ford Foundation point of view, handing over the Foundation's leadership to Gaither was an astute and expertly timed decision considering the Foundation's pending encounter with the McCarthy investigations. Henry Ford II's investigations into Congressional opinion regarding his Foundation revealed serious misgivings about Robert M. Hutchins on the part of influential Congressman. Representative E. E. Cox described Hutchins' attitudes as "collectivist," "internationalist," "socialist," and "one-worlder." Representative Cox further stated that in his opinion, "Dr. Hutchins [and not Paul Hoffman] really runs the [Foundation]."<sup>32</sup> Senator Joseph McCarthy formally initiated an investigation of the Ford Foundation in a letter dated March 19, 1953, addressed to President Hoffman.<sup>33</sup> It would be Gaither who replied to McCarthy, and who successfully fought charges of communist leanings and the foundation's infiltration by communists in the ensuing years. During these years, fighting the charge of communism, replying to the Reece and Cox committees' requests and subpoenas, and jealously guarding the Ford Foundation's public image by hiring the law firm Earl Newsom and Company to handle public relations, would absorb the Gaither administration's chief outflow of energies. However, an internal memorandum documenting a conversation between Gaither and former President Herbert Hoover at the elite secret society Bohemian Grove signifies that while

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<sup>31</sup>Memo and document regarding "A Research Program in the Field of National Security, from Franklin A. Lindsay to H. Rowan Gaither, June 10, 1955, Gaither Series VII, box 13, folder 155, FFA; Gaither's rapport and agreement with Allen Dulles regarding national security objectives is also reflected in Gaither's memo discussing a "Conference with Allen Dulles," Oct. 22, 1956, Gaither Series VI, Box 12, Folder 141, FFA.

<sup>32</sup>Gerald J. Lynch of Ford Motor Company to Henry Ford II, May 1, 1952, Gaither Series VI, Box 11, Folder 129, FFA, 2.

<sup>33</sup>Gaither Series VI, Box 12, folder 140, FFA, Mar. 19, 1953.

the McCarthy tempest lashed out on the public stage, in elite circles The Foundation's standing was secure.<sup>34</sup>

Gaither's professional responsibilities bridged between the RAND Corporation and The Ford Foundation; his views meshed seamlessly with those of Henry Ford II, and matched the hawkish sentiment of RAND researchers.<sup>35</sup> Given his key role in defining both, it comes as no surprise that the RAND Corporation fit Gaither's bill as the ideal beneficiary of Ford Foundation funds: it was supposedly a neutral and objective body which produced expert policy advice, and claimed to obviate the need for political factions in the policy-making process. RAND would eventually achieve what a concluding section of Gaither's Ford Foundation mission statement cited as the ultimate goal, that "[the] foundation's general policy must be to support (a) work that will influence the policies or operations of other institutions on the widest possible scale, or (b) work that will build up a new professional corps or a new system of techniques and operation standards."<sup>36</sup> Indeed, political influence, policies and operations, a new professional corps, and a new system of techniques and operation standards all flowed like water from RAND in the 1950s. Gaither's commitment to a rationally managed society resulted in the development of decision theoretic tools which defined rational policy formation as quantitative, calculating and predicated on the authority of scientific expertise, as opposed to inter-dialogic, egalitarian, and democratic.

#### **RAND 1948-1957: Systems Analysis**

In the late 40s and early 50s, RAND grew into one of the keenest sites of intellectual ferment in the U.S., with abundant funding, a prestigious board of trustees to lure talent from universities and industry, a flexible work environment catering to idiosyncrasies and eccentricity, and a campus-style site without the burden of students

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<sup>34</sup>Memo from Gaither to W.A. Nielsen, Aug. 10, 1953, Gaither Series VI, Box 12, folder 145, FFA.

<sup>35</sup>Kraft, "RAND: Arsenal for Ideas" (1960), 75. At least half of RAND's physicists took Teller's side over Oppenheimer's.

<sup>36</sup>*Report of the Study for The Ford Foundation on Policy and Program* (1949), 113.

or teaching responsibilities. RAND also profited from the network of wartime connections which continued to provide strong ties. Much of RAND's talent had formerly belonged to scientific bodies organized to aid the wartime effort. This included the newly-hired division heads, Charles Hitch, John Williams, Edward Barlow, and Hans Speier.<sup>37</sup>

In 1948, RAND's orientation toward hardware problems and development was evident in its departmental makeup. Before RAND's reorganization, in March, 1948, home office sections included evaluation of military worth, rocket vehicles, airborne vehicles, communications, and nuclear physics.<sup>38</sup> In 1949, technical staff including engineers, mathematicians, physicists, and computer scientists comprised 78% of the research staff, while political scientists and economists totalled just 5%.<sup>39</sup> In 1950, even though economics and social science had been consolidated under the leadership of Hitch and Speier, departments of nuclear energy, electronics, missiles and aircraft continued to evidence RAND's original commitment to hardware analysis. However, by the end of the 1950s, economists became the dominant professional group at RAND, outnumbering physicists and mathematicians, and "systems analysis" became RAND's unique product.

The phasing out of hardware studies may have been a function of the free-wheeling, voluntary intellectual environment at RAND which, as Edward Barlow surmised, was not conducive to the disciplined team formation and problem solving

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<sup>37</sup>Charles Hitch, who was brought in to head the economics division in 1948, had served on the War Production Board, as a staff economist with the Mission for Economic Affairs (1941-1942), and then with the OSS in Britain. John Williams, who was appointed in 1948 to head the mathematics division, had run the Strategic Bombing Section of the Princeton Statistics Research Group during the war. Edward Barlow, who would become head of engineering in 1953, had worked on radar at Sperry Gyroscope which contracted with MIT during the war. Hans Speier, who was appointed in 1948 to head up RAND's nascent social sciences division had worked at the Federal Communications Commission analyzing Nazi propaganda. Speier would remain at RAND in the 1950s and would also work closely with Gaither during his presidency of The Ford Foundation.

<sup>38</sup>Jardini, "Out of the Blue Yonder" (1996), 35.

<sup>39</sup>Ibid., 37.

requisite to build actual mechanical artifacts such as aircraft.<sup>40</sup> Over time it became quite clear that RAND's research forte was certainly not in hardware development. Two problematic hardware studies indicate RAND's lack of aplomb with technical design. In a 1949 study of a nuclear-powered aircraft design, RAND researchers developed a nuclear powered bomber with two serious design drawbacks. The reactor of the plane produced sufficient radioactivity to kill the pilot and crew before reaching distant Soviet targets, and when radiation shielding was added, the aircraft became too heavy to fly.<sup>41</sup> In an early 1950s radar study, engineer Edward Barlow and his team were investigating the requirements and characteristics of an interlocking radar aircraft detection grid useful for tracking low-altitude planes flying underneath the event horizon of conventional radar tracking stations. Barlow and his group performed the analysis and were gearing up to brief the Air Force staff on their findings. In the twilight days before the scheduled briefing, the Barlow group labored in the California desert to set up their abstractly-invented system with no actual success. Saved from the briefing deadline by an attendee's last-minute cancellation, Barlow vowed, "Never again does RAND get into hardware!"<sup>42</sup> Barlow was promoted to head of engineering in 1953.

The idea that "RAND," originally signifying "Research And Development," instead stood for "Research And No Development" became a virtual corporate mantra, evoking the image that hands-on technical design was somehow beneath the dignity of the high-powered brain trust collected at RAND whose duties, responsibilities, and intellectual commitments lay rather in the realm of speculation about the boldest, most unthinkable thoughts about nuclear war. And thus it was that RAND's efforts increasingly took on the flavor of abstract studies of strategy, logistics and warfare, all of which would fall under the rubric "systems analysis."

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<sup>40</sup>Edward Barlow, oral history interview, Feb. 10, 1988, 23, RAND History Project, National Air and Space Museum.

<sup>41</sup>For a more detailed discussion see Jardini, "Out of the Blue Yonder" (1996), 77-80.

<sup>42</sup>Edward Barlow, oral history interview, Feb. 10, 1988, 33.

The concept of "systems analysis" naturally worked its way into RAND's idea coffer in the earliest days, when project RAND existed as an autonomous division of Douglas Aircraft. "Systems analysis" studies originated as tools which the aircraft trade used in preparing contract bids for the Air Force. Such studies provided quantitative assessments of the superiority and cost of one aircraft design versus other models. "Systems analysis" appeared in a central and prominent location on the 1948 RAND organizational chart, providing the sense that systems analysis assessments were interdisciplinary efforts utilizing the skills and knowledge bases of researchers throughout the RAND departments.<sup>43</sup> From the early days, and in keeping with Frank Collbohm's vision, systems analysis was regarded as an interdisciplinary, quantitative study of a complex problem of weapons design. The original Douglas concept of systems analysis served as a template for a more ambitious scheme of developing a total science of warfare in which any logistical and strategic problem, no matter how complex, could be solved with rigorous, quantitative analysis.

The first ambitious systems analysis study was the Offensive Bomber Study undertaken by RAND's systems analyst Edwin Paxson from 1947-1950.<sup>44</sup> The goal of the RAND study was to select the configuration of America's next strategic bomber. This study neglected no aspect of the problem. It considered U.S. bomber base location, vulnerability to attack, and target selection as the background information from which to decide which bomber design and bomb combination would grant the U.S. optimal strategic advantage. The study incorporated an elaborate modeling procedure to estimate attrition in battle, weapons accuracy, and failure rates. Paxson, an early enthusiast of the promise of game theory to problems of warfare, also included game-

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<sup>43</sup>Printed in Jardini, "Out of the Blue Yonder" (1996), 35.

<sup>44</sup>*Comparison of Airplane Systems for Strategic Bombing*, RAND Report R-208, Sep. 1950. Paxson served as the scientific advisor of the U.S. Army Air Forces Proving Ground Command in 1942, technical aide to the Applied Mathematics Panel of the Office for Scientific Research and Development from 1943-45, and a consultant to the U.S. Strategic Bombing Survey in 1945-46.

theoretic calculations of aerial combat routines to estimate battle successes. The study was then augmented to consider projected evolution of U.S. and Soviet technologies and strategies over the following seven year period. Paxson's assistant estimated that one-half to one-third of RAND's research staff contributed to the study.<sup>45</sup> The analysis had sufficient component functions and variables to make even the most accomplished equation-crunching mind swirl. One hope in RAND's taking on this challenging analysis was to demonstrate that complex problems of war-planning were amenable to scientific solution.

For numerous reasons, when the conclusions were presented to the Air Force's Strategic Air Command in 1950, the study was considered a failure. From RAND's perspective, the study was a disappointment for three reasons. The sheer grandeur and complexity of the study meant that guesswork anchored some numbers relied on in the calculation.<sup>46</sup> Numbers pulled out of thin air, even if few and far between, cast doubt on the overall result. Secondly, and this problem would repeatedly arise and would be dubbed "the criteria problem," the study's outcome was inherently a function of the criteria used in setting up the problem. In this case, solutions were ranked by considering the ratio of system cost to damage inflicted, instead of the ratio of the number of air crews lost per damage inflicted. Understandably, Air Force officials did not take kindly to such cavalier treatment of personnel loss when they and their compatriots were the personnel in question.<sup>47</sup> Finally, the study was deemed a failure by RAND because the Air Force, while acknowledging the elegance of the mathematical design, vehemently rejected the RAND finding that the future of the Strategic Air Command lay in slow, low-flying turbo-prop bombers instead of fast, high flying jets. The Air Force's quick and ready repudiation of the Paxson conclusion is telling of the

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<sup>45</sup>Edward Quade, oral history interview, Feb. 18, 1988, 15, RAND History Project, National Air and Space Museum; Jardini, "Out of the Blue Yonder" (1996), 42-62.

<sup>46</sup>Ibid., 13.

<sup>47</sup>Jardini, "Out of the Blue Yonder" (1996), 61.

dance played between RAND's research initiatives, systems analysis and their client's interested sponsorship. The Air Force remained committed to their development of the swift B-52 Stratofortress bomber, and responded to RAND with harsh critiques of Paxson's study.<sup>48</sup>

RAND President Frank Collbohm was incensed by the lack of respect the Air Force demonstrated in receiving Paxson's results. The Air Force had not simply disregarded the RAND study, but had even challenged RAND's cost estimates for building the B-52 versus RAND's preferred turboprop model. In order to buttress future RAND findings, Collbohm initiated RAND's Cost Analysis section under the direction of economist David Novick.<sup>49</sup> Novick's section became a formidable and necessary component in all future RAND systems analysis studies, because all comparisons of weapons systems based on performance per cost utterly depended on reliable assessments of costs. In determining the cost of a weapons system, Novick's group would estimate the cost of production, including both research and development, and subsequent manning, basing, and maintenance of the system. As Novick's work progressed throughout the 1950s, Novick increasingly found that estimation of costs required evaluating the Air Force budgeting process. Costs were determined somewhere between contractors' bids and defense budgeteers counter-estimates, and in Novick's view, Air Force analysts had no standardized procedure for establishing independent cost evaluations. As the decade wore on, Novick began drawing up a new budgeting system for the Air Force which emphasized budgeting as a strategic planning tool. By late 1958, he thought far ahead toward implementing the budgeting system in the entire Department of Defense if the incoming administration were favorable.<sup>50</sup>

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<sup>48</sup>For fuller discussion see Jardini, "Out of the Blue Yonder" (1996), 44-64.

<sup>49</sup>Novick's wartime employment was as a staff member of the War Production Board from 1940-1947, and as a program officer for the National Resources Board from 1947-1949.

<sup>50</sup>David Novick, oral history interview, Feb. 24, 1988, 15, RAND History Project, National Air and Space Museum.

The second and third ambitious systems analysis studies undertaken by RAND were no less complex, and fared no better, than Paxson's unappreciated bomber analysis. The studies' goals were to determine what radars, fighters, and communications networks were desirable in view of the new Soviet atomic and hydrogen bomb threat. The first phase of the systems analysis had fifty-four component projects, ranging through all RAND departments. However, with the demoralization caused by the negative reception of Paxson's work, the ambitious scope of systems analysis as a total science of warfare was reigned in. In a preliminary sketch of his air defense study, project leader Edward Barlow reevaluated the systems analysis approach, arguing that, "In one sentence this new attitude is that our dominating motive should be to get a correct and convincing set of recommendations on Air Defense for the USAF and that the completion of a quantitative systems analysis be secondary. Our work in the defense field should be recommendation-oriented, not methodology oriented."<sup>51</sup>

Barlow's studies were central to the fading RAND vision of a comprehensive and rigorous science of war. They absorbed significant personnel resources in the early 1950s, but received scant attention.<sup>52</sup> The scant attention was due to the lack of impact the reports had on Air Force policy; the first report presented no recommendations but only comparative analyses, and the second report offended Air Force sensibilities yet again when preliminary conclusions suggested that the future of U.S. air offense lay in missiles rather than manned bombers, contradicting the Air Force's predilection for manned flight.

The outpouring of energy into completing the unheeded studies, contrasted with their seeming irrelevance to RAND's history, draws attention to two conflicting impulses characterizing the development of systems analysis methodology at RAND. On the one

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<sup>51</sup>Edward Barlow, "Preliminary Proposal for Air Defense Study," RAND Limited Document D(L)-816, Oct. 2, 1950, RAND Classified Library, cit. in Jardini, "Out of the Blue Yonder" (1996), 68.

<sup>52</sup>Relegated to a footnote in Smith, *The RAND Corporation* (Cambridge: Harvard University Press, 1966), 105.



hand, systems analysis as an ambitious science of strategy proved unfeasible, while on the other hand, RAND researchers strove to preserve the label of "systems analysis" to designate a unique product brand name in order to maintain RAND's edge in the competitive marketplace of ideas.<sup>53</sup> These conflicting impulses are apparent in Edward Quade's early 1950s development of a set of lectures to teach systems analysis to staff in the Air Force, Army, Navy and Department of Defense.<sup>54</sup> This short course served the two-fold goal of initiating military personnel into the rites of systems analysis while simultaneously pointing out the pitfalls of the method.<sup>55</sup> "Systems analysis" was an umbrella term, calculated to carry authority, for a collection of methods for problem-solving ranging from complex quantitative analysis to commonsense logic.<sup>56</sup>

Counter-intuitively, just as "systems analysis" as a total science of warfare was receding into a dream-like past, a simplified version of Paxson's strategic bomber study was re-formulated under the lead of RAND's Albert Wohlstetter. This reformulation, lacking in its complexity and quantification, would gain a reputation of being *the* prototypical RAND systems analysis study. Wohlstetter took on a strategic bases study at the behest of Charles Hitch in 1951. The task of this study was to determine the best bomber base configuration from three possibilities including, utilizing overseas bases as a main staging area during war, using overseas bases only to refuel during war, and operating U.S. based bombers inter-continently with mid-air refueling. The criterion for selection Wohlstetter adopted was cost-effectiveness. By taking the Soviet Union into consideration as a thinking, rational adversary, Wohlstetter began pondering bomber base vulnerability in time of war, or more frighteningly, in the case of a Soviet pre-emptive strike. Imagining a Pearl Harbor scenario of vastly greater proportions, Wohlstetter conjured up a scenario in which all overseas bomber bases were attacked

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<sup>53</sup>I am grateful to Martin Collins who helped me draw this conclusion.

<sup>54</sup>These lectures resulted in the publication, *Analysis for Military Decisions* (Chicago: Rand McNally and Co., 1964).

<sup>55</sup>Quade, oral history interview, Feb. 18, 1988, 21-24.

<sup>56</sup>*Ibid.*, 31, 37.

simultaneously, leaving the U.S. with significantly lessened counterattack capability. It seemed to Wohlstetter that no one in SAC command had taken this possibility into consideration.

Trained in mathematical logic, Wohlstetter did not share his colleagues' predilection for, or facility with, quantitative models. He relied on Paxon's assistant Edward Quade to design his model, which could be calculated with a slide-rule or on the back of an envelope. Whereas RANDites were dumb-struck with Wohlstetter's findings at the initial RAND briefing, believing that Wohlstetter had identified the Achilles' heel of American defenses open to imminent Soviet exploitation, Air Force and SAC officers were less than impressed.<sup>57</sup> Wohlstetter's analysis depended on the assumption that the Russians could mount a total surprise attack on *all* bases, with no prior warning, and it implied that such a preemptive, unprovoked strike was imminent. SAC officers, including General LeMay, dismissed the study for the reason that, if anything, the U.S. was poised to strike the first blow on the Soviets. Even though a preemptive strike was forbidden by the President, SAC battle tactics called for a preemptive strike at the slightest sign of a Soviet attempt to marshal a surprise attack.<sup>58</sup> In any case, no one at RAND was privy to these war plans.

Discontent with what he deemed to be a cavalier response on the part of the Air Force to pending havoc, the force of Wohlstetter's personality took over. Even though in later years Wohlstetter, and his commitment to SAC vulnerability, would be celebrated as clinching RAND's historic import, at the time Wohlstetter was held in low repute by many RAND associates. Wohlstetter was taken as being pompous and self-aggrandizing—as though his manner was governed more by rhetorical device than by solid content. He was barred from briefing the RAND trustees who were routinely kept

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<sup>57</sup> Wohlstetter's study was written with Fred S. Hoffman, R.J. Lutz, and Henry S. Rowen, *Selection and Use of Strategic Air Bases*. The RAND Corporation, R-266, Apr. 1954.

<sup>58</sup> Gregg Herken, *The Counsels of War*, expanded ed. (New York: 1987), 94-98, 81.

abreast of RAND's findings. He was considered to be a lone wolf and worked only with a few trusted colleagues who included Henry Rowen and Alain Enthoven. He also had a good working relationship with Charles Hitch, who rescued him from professional oblivion when others in RAND leadership had fired him for negligence in handling data.<sup>59</sup> Wohlstetter and his small band were determined to shake Air Force leaders out of their complacency, and in the summer of 1953 set up camp in Washington and presented their strategic bomber study over 90 times throughout the chain of Air Force command.

There is a lack of consensus on whether the warnings of peril were heeded, or that Air Force command duly responded.<sup>60</sup> However, vulnerability became Wohlstetter's obsession. Wohlstetter next applied the Pearl-Harbor principle to U.S.-based bombers, and the Achilles' heel became doubly worrisome. He and Henry Rowen penned the study *Protecting U.S. Power to Strike Back in the 1950s and 1960s* (R-290), which sketched out the ominous scenario of a simultaneous, preemptive Soviet attack on all 42 SAC bases in the United States. In the event of this bold act, which RAND did not deem unlikely, Wohlstetter's estimated that American forces would be hard-pressed to mount any counter-offensive at all. Such inability was an open invitation to the Russians to take what they could get while it was available for the taking, and suggested a major breach in U.S. security. Hence came the RAND prescription that in order to maintain an effective defensive posture, America must have a sufficient nuclear arsenal to withstand the most devastating attack imaginable and still maintain a counterforce to act, if not as a deterrent, than to ensure equivalent devastation of Soviet military and industrial facilities. This strategy became known as second-strike counter force, and contrasted with a minimum deterrent policy which postulated that the Soviets would be

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<sup>59</sup>David Novick, oral history interview, June 20, 1988, 31-33, RAND History Project, National Air and Space Museum.

<sup>60</sup>Kaplan suggests not, *The Wizards of Armageddon* (1983), 93, 104-106, and Herken suggests that the Air Force opted for less reliance on overseas bases, *The Counsels of War* (1987), 93.

crazy to mount an offensive as long as they were in reasonable danger of sustaining nuclear retaliation.<sup>61</sup>

Wohlstetter and the two strategic base studies formed the nucleus around which RAND's strategic agenda, RAND's strategy cadre, and RAND's mythic history would grow. Wohlstetter's network of associates, which would outgrow the RAND cocoon and outlast the decade, matured to include Henry Rowen, Fred Hoffman, Alain Enthoven, Steven Enke, and Lawrence Henderson. This group represented a cell of independent action within RAND whose ambitions outstripped the confines of RAND's peripheral think tank status. It would be this cadre's thought which would increasingly define RAND's position on nuclear strategy. By the end of the 1950s, RAND's strategic agenda emphasized SAC vulnerability and second-strike counter force, which translated into the policy of marshaling an effective counteroffensive despite assuming the inability to protect SAC bases from destruction. RAND's Herman Kahn added to this basic stance some interest in building passive defenses in the form of nuclear fallout shelters. RAND also advocated building up conventional forces so that Soviet aggression would reap repercussions short of all-out nuclear exchange in the event of smaller-scale incidents.

According to the legends of RAND's importance, which all to some extent resemble the original put forth in *The RAND Corporation*<sup>62</sup>, Wohlstetter and his troupe put forth a devastating critique of America's national security posture, and only by persistent effort throughout the latter half of the 1950s woke the nation out of its complacency in the face of the Soviet threat.<sup>63</sup> Shapley, in her biography of Robert

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<sup>61</sup>For U.S. Air Force attitude toward counterforce strategy see Herken (*ibid.*), 82.

<sup>62</sup>Smith, *The RAND Corporation* (1966). An even earlier version of this account is given by Kraft, "RAND: Arsenal for Ideas" (1960), 69-76.

<sup>63</sup>Kaplan, *The Wizards of Armageddon* (1983); Robert J. Leonard, "Creating a Context for Game Theory," in E. Roy Weintraub, ed., *Toward a History of Game Theory* (Durham: Duke University Press, 1992); to some extent Jardini, "Out of the Blue Yonder" (1996); because other writers only have this account to refer to, it is perpetuated at all other levels of the discussion, see e.g., Deborah Shapley, *Promise and Power: The Life and Times of Robert McNamara* (Boston: Little, Brown and Company, 1993).

McNamara, for example, speaks of "the definitive RAND findings."<sup>64</sup> The difficulty with these glorious tales is that they assume what needs to be explained: that, contrary to all intelligence reports available contemporaneously or retrospectively, the RAND team discovered a fundamental, and heretofore unacknowledged, fact of American vulnerability. The real question is how, despite mounting evidence to the contrary, the RAND defense rationalists managed to convince the nation of its vulnerability and to justify a mind-boggling peace-time arms build up which outstripped the Soviet's armament manufacture pace by a factor of at least 15 to 1. The answer lies in careful political maneuvering, persistence, and through the claims to superior knowledge and objectivity.

By 1957 it seemed clear to RAND researchers and to Air Force officials that RAND's studies were not of much use to the development of Air Force weapons or strategic policy. The mid-1950s were a time of decreased international tension, and military projects were faced with the prospect of funding cutbacks. RAND was no different, and the largest topic of discussion at the spring 1957 board meeting was the impending budget cuts and prospect of staff reduction. RAND's board of trustees, while never entering into the administrative details of RAND, was concerned with the institution's overall well-being. H. Rowan Gaither, Jr., with his consuming interest in RAND, did not sit idly by as RAND awaited stagnation, even decay, and as RAND's bold national security initiatives faded into obscurity.<sup>65</sup>

#### **B. The Plan—The Radical Reorganization of DOD through Rational Defense Management**

On October 4, 1957, the Soviets launched the first earth-orbiting satellite, named Sputnik. Thirty one days later, H. Rowan Gaither Jr. submitted a top secret, fear-mongering report entitled, "Deterrence and Survival in the Nuclear Age," to President

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<sup>64</sup>Ibid., 104.

<sup>65</sup>Charles J. Hitch, *Decision-Making for Defense* (Berkeley: University of California Press, 1966).

Dwight D. Eisenhower. Two decades later Senator William Proxmire, Vice Chairman of the Joint Committee on Defense Production which first released the top secret report in 1976, acknowledged the report's legacy, stating "few documents have had such a great an influence on American strategic thinking."<sup>66</sup> This report precipitated widespread belief in the fallacious "missile gap" which played a crucial role in the 1960 presidential campaign, and led the charge for civilian control of the Pentagon along the lines of rational defense management. Based on extremely hawkish conjectures of Soviet military capabilities and intentions, this report provided a pivotal issue to John F. Kennedy's victorious campaign, and launched RAND's strategy cadre into national prominence. The "Gaither Report" continues to be woven into the fabric of American history as an unquestioned source from which to assess President Eisenhower's and President Kennedy's national security policies.<sup>67</sup>

On April 4, 1957, President Eisenhower commissioned several studies of the nation's civil defense and nuclear fallout shelter program.<sup>68</sup> Among these was a study

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<sup>66</sup>Letter of transmittal, Apr. 9, 1976, "Deterrence and Survival in the Nuclear Age," Printed for the use of the Joint Committee on Defense Production, Congress of the United States, 94th, USGPO, 1976. The other documents of similar caliber listed by Proxmire include George Kennan's article on containment, "Mr. X" (*Foreign Affairs*, 1947), NSC 68 (penned by Paul Nitze, 1950), and Albert Wohlstetter, "The Delicate Balance of Terror" (*Foreign Affairs*, 1959).

<sup>67</sup>See e.g., Roman, *Eisenhower and the Missile Gap* (1995). Roman uses "The Gaither Report," reprinted by Joint Committee on Defense Production, 92nd US Congress, *Deterrence and Survival in the Nuclear Age* (US GPO, [1957] 1976), 20 and its vulnerability thesis as the backbone of his argument countering Eisenhower revisionists. These revisionists hold that Eisenhower was friendly to arms control and judiciously interpreted intelligence gathered from the U2 spy flight program to maintain a measured approach to U.S. national security policy. In making his case, Roman presents the Gaither committee's findings as reasonable in view of then-available intelligence estimates. In putting his seal of approval on the Gaither Report's alarmist conclusions, he neither submits them to the scrutiny of historical judgment, nor questions their basis. Thus, the Gaither Report sets up Roman's framework without itself being contextualized and recognized as a historically motivated document; instead it provides the "factual" backdrop to which Eisenhower responds, and its authors are given a blanket status of strategic experts. In introducing his thesis, Roman inaccurately states that the Gaither panel was organized "to investigate the contributions of active and passive defense" (p. 2), while it is clear that Eisenhower organized the panel to study passive defense in the form of fallout shelters, and strictly admonished the panel to stay focused on passive defense.

<sup>68</sup>S. Everett Gleason, Document # 114, *Foreign Relations*, 19, 1955-1957, 462-464.

to be undertaken by the Security Resources Panel, nominally under the jurisdiction of the Office for Defense Mobilization. The panel, comprised of civilian experts, was modeled on the 1955 Killian Technical Capabilities panel which had benefited from the advice of RAND researchers. H. Rowan Gaither, Jr., then chairman of the boards of both RAND and The Ford Foundation, was selected to be the committee chair, and the committee and its report were subsequently named after him. Although Gaither was hospitalized with cancer the following September,<sup>69</sup> prefiguring his premature death in 1961, and the committee's leadership was passed on to industrialists Robert Sprague and William C. Foster, Gaither personally oversaw the formation of the committee and presented its findings at the highly classified November 4 meeting of the National Security Council with President Eisenhower attending.

The Gaither Committee's roster included 67 project members. Edward P. Oliver of RAND was hired in the fall as a special technical advisor to the steering committee, along with Paul H. Nitze, former Assistant Secretary of Defense. Eisenhower appointed an advisory panel which included retired military officers; Frank Stanton, President of CBS; two prominent Republican financiers, Robert A. Lovett and John J. McCloy; physicists I. I. Rabi and Ernest O. Lawrence; and James R. Killian. Herbert Kahn, who was working on fallout shelters at RAND, consulted with the panel.<sup>70</sup> Albert Wohlstetter also worked with the committee, convincing it of his SAC vulnerability analysis, which ended up being crucial to the committee's findings on U.S. defensive preparedness.<sup>71</sup> Nitze, author of the important 1950 national security directive "NSC 68," drafted the report.

President Eisenhower had admonished the panel to stay focused on the issue of civil defense. Regardless, the committee seized upon the opportunity to provide a comprehensive review and critique of the Eisenhower administration's national security

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<sup>69</sup>Interview with Gaither, *New York Times*, Dec. 25, 1957, 12:7.

<sup>70</sup>Kaplan, *The Wizards of Armageddon* (1983), 129.

<sup>71</sup>*Ibid.*, 128; Herken, *The Counsels of War* (1987), 113-114.

policies, both foreign and domestic. The committee members used the fallout shelter program as a springboard to make major policy recommendations. The final report warned of extreme SAC vulnerability, inspired fear of potential Soviet technological superiority, and advocated the expenditure of an additional 19 billion dollars to counter the perceived Soviet ICBM threat, at a time when the Department of Defense (DOD) annual budget totalled 38 billion dollars. To meet the wildly speculative estimates of existing Soviet weapons capabilities, the report advocated building 600 ICBMs, as opposed to the planned 130, in the next several years. Anticipating reasonable concern about footing such a bill, the report went on to express confidence in America's economic capacity to pay for the defensive posture.<sup>72</sup> As monumental as was the military buildup advocated by the Gaither Report, the even more extraordinary aspect of the report was its authors' explicitly stated intent wholly to restructure decision-making in the Pentagon. The Gaither Report called for a "radical reorganization of the Department of Defense" to achieve "more effective control and management of our defense resources," regardless of the fact that initially this reordering "might cause such confusion...as to weaken our defense."<sup>73</sup> Such a total reorganization of the Pentagon would clearly lead to the opportunity to direct even more extensive appropriations and expenditures. The fallout shelter program also received attention, but was deemed a "lower value" priority, and presented as a losing proposition.

With the leadership of H. Rowan Gaither, Jr., who had chaired the RAND board of trustees for a decade, it comes as no surprise that the Gaither report reflected RAND's strategic agenda: SAC vulnerability was center stage, with the attendant logic of preparedness for nuclear second-strike counter-force capabilities. The Gaither Report's advocacy of rational defense management also resonated with RAND's

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<sup>72</sup>This aspect of the report prompted Eisenhower to remark that its authors seemed to have in mind a planned economy. S. Everett Gleason, "Memorandum of Discussion at the 343d Meeting of the National Security Council, Washington, Nov. 7, 1957," *Foreign Relations, 1955-1957*, 19, 632.

<sup>73</sup>"The Gaither Report" (1976), 20.



steadfast emphasis on cost-effectiveness analysis, as well as their 'planning-programming' method of budgeting then under development by David Novick.

RANDites and the Gaither report were united in advocating that military strategy and defense planning be based on rational choices.<sup>74</sup> Unsurprisingly as well, the Gaither report reflected the Air Force's strategic agenda which emphasized second-strike, counter-force capabilities in opposition to the Navy and Army which adhered to a doctrine of minimum deterrence.<sup>75</sup>

By providing seemingly authoritative documentation, the Gaither Report triggered the 1957 missile gap debate, and gave rise to the fear that the U.S. was falling behind the USSR in technological war-fighting capabilities. The report grounded speculation that unless drastic measures were taken, rapid Soviet missile production would lead to an 8:1 Soviet advantage by 1962.<sup>76</sup> The looming threat of a purported missile gap repeatedly grew and receded in public attention during 1958 and 1959, eventually becoming a pivotal issue in the 1960 campaign. The strategic logic upon which the reality and significance of the missile gap was premised linked the supposed Soviet ICBM advantage, the concept of SAC vulnerability, and the strategic doctrine of second-strike counter force in a single, mutually dependent logical chain. Any potential Soviet missile advantage was only alarming provided that the Soviets intended to attempt to knock out all U.S. bomber bases simultaneously in a preemptive strike; this eventuality assumed that a minimum deterrent threat of retaliation was insufficient to check potential Soviet aggression. A successful attack would require simultaneously knocking out all 42 SAC bases. Phantasms of such an all-out, Pearl Harbor-style strike fueled the

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<sup>74</sup>See account of James Digby, "Strategic Thought at RAND, 1948-1963: The Ideas, Their Origins, Their Fates, *A RAND Note*, N-3096-RC, June 1990.

<sup>75</sup>The unique flavor of the Gaither Report's strategic counsel is readily apparent when contrasted with other conservative strategic proposals, such as that published by the Rockefeller Brothers Fund, *International Security: The Military Aspect*, Jan. 6, 1958.

<sup>76</sup>For an exhaustive listing of missile estimates printed in the public record see Edgar M. Bottome, *The Missile Gap: A Study of the Formulation of Military and Political Policy*, (Madison: Farleigh Dickinson University Press, 1971), 221-234. Regarding the Gaither report's relationship to establishing the credibility of the missile gap, see 44-46, and 181.

commitment to second strike capabilities which could survive such an onslaught and subsequently muster punitive damage on the order of a preemptive first strike to in turn act as a deterrent. It would subsequently become evident that the Air Force's repeated doubts about RAND's SAC vulnerability scenario was a function of its offensive plan to strike a preemptive blow at the earliest sign of Soviet aggression, and therefore never to be placed in the position of needing a counterforce.<sup>77</sup>

As the story is often told, the Soviets' launch of the first Sputnik on October 4, 1957 galvanized public recognition of the importance of science in the cold war effort, and focused public energy in support of cold war activities. However, the immediate press and popular response was one of mixed wonder and enthusiasm for the Russians' technological accomplishment, outweighing alarmist, gloomy views that if the Soviets could launch a 184 lb. metallic object into orbit, they would be similarly capable of launching intercontinental ballistic missiles toward the U.S.<sup>78</sup> Eisenhower had advanced warning of the launch, and expert opinion was balanced, suggesting that the Russians' launch of Sputnik was no real indication of their ability to launch missiles, and that in fact, their missile capability had not changed much from that posited in the 1956 issue of *Missiles and Rockets*.<sup>79</sup> On November 4, the Soviets launched Sputnik II, weighing 1118 pounds and carrying a live dog. Still, it was recognized that the satellite launch did not demonstrate the technological facility with re-entry and guidance required for missiles. Before Sputnik could assume ominous proportions, it had to be interpreted, and a sense of foreboding was just one possible interpretation, one driven by the

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<sup>77</sup>Herken, *The Counsels of War* (1987), 81, 94-98.

<sup>78</sup>See e.g., *New York Times*, Oct. 6, 1957.

<sup>79</sup>The Soviet Union issued a statement to this effect on Aug. 27, 1957, mentioned in John Prados, *The Soviet Estimate: U.S. Intelligence Analysis and Russian Military Strength*, (New York: The Dial Press, 1982), 56-57; see Harlow Shapley, "Satellite Hysteria," *The Nation*, Oct. 26, 1957; David Lawrence, "Coming Down to Earth," *U.S. News and World Report*, Oct. 18, 1957, 160; Albert Parry, "Why Should We Have Been Surprised?", *The Reporter*, Oct. 31, 1957, 13-15.

promise of political dividends.<sup>80</sup> Sputnik provided Senator Lyndon B. Johnson, Chairman of the Preparedness Investigating Subcommittee of the Senate Armed Services Committee, with the opportunity to criticize the Eisenhower administration's national security posture in his "Inquiry into Satellite and Missile Programs," initiated on November 25, 1957. "Sputnik" had to become a processed media event before it could become a symbol of lagging American technological achievement and then a rallying point for efforts toward a ferocious arms buildup. Much to the disappointment of military hard-liners, in the immediate wake of the launch, the public's calm response was to trust the assessment of President Eisenhower, the retired general and WWII hero, that the satellite signified no real advantage on the part of the Russian war-fighting capabilities.<sup>81</sup> As would become evident, Sputnik alone was not sufficient to mobilize public opinion in favor of increased defense spending.<sup>82</sup>

The Sputniks did provide an auspicious moment for the Gaither committee to present its alarmist conclusions.<sup>83</sup> The report was hastily completed a week after the Sputnik launch. The report had been circulated prior to the scheduled NSC meetings so that attendees would be primed to respond. At the well-attended November 7 meeting briefed by Robert Sprague, none of the department heads advocated the Gaither proposal; Secretary of State John Foster Dulles spoke out against it.<sup>84</sup> Republican financiers John J. McCloy and Robert A. Lovett, on the Gaither Committee's advisory panel, advocated the proposal, arguing that the American economy could pay the bill,

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<sup>80</sup>See pro-defense article by Max Ascoli, "Thank you, Sputnik!", Editorial, *The Reporter*, Oct. 31, 1957, 10-12; letter from Lyndon B. Johnson in *ibid*.

<sup>81</sup>Samuel Lubell, "Sputnik and American Public Opinion," *Columbia University Forum*, I, Winter 1957.

<sup>82</sup>Evening meeting of Gaither Committee members, mid-Dec., Nitze and Nixon in attendance, wrangling over getting document published, Foster's remarks. Morton H. Halperin, "The Gaither Committee and the Policy Process," *World Politics*, April 1961, 374.

<sup>83</sup>For Eisenhower's awareness of the explosive media potential of Sputnik see his comments in Gleason, "Memorandum of Discussion" (1955-1957), 632.

<sup>84</sup>Gleason (*ibid.*), 630-635.

and that "the people as a whole and the business community in particular would support the President if he urged increased spending for defense."<sup>85</sup>

President Eisenhower, a career military officer, was singularly unimpressed with the report. Not only did he know it to be based on incomplete Air Force intelligence, but he also was not about to concede any national defense weakness. A memorandum of a conversation between Secretary of State John Foster Dulles and the President sums up the administration view on the Gaither report. Dulles wrote,

On the basis of Mr. Sprague's confidential briefing as to the SAC reaction possibilities under certain extreme circumstances, I expressed to the President the view that I felt that these possibilities were so remote in practice that I doubted whether we would be justified in going to the extremes in the way of cost that alertness would require. The possibility considered was that in a time of relative tranquillity and a reduction of international tension there would be mounted a massive surprise attack against the United States and simultaneously against all our important bases.<sup>86</sup>

The Gaither report's dire view of the U.S. strategic situation depended upon a scenario in which the Soviet's launched a successful, preemptive, surprise attack on all 42 U.S. SAC bases simultaneously—a scenario which Dulles reasonably regarded as fantastically improbable. Dulles' other reservations included the Gaither committee's lack of consideration for broader issues, such as their inattentiveness to the effects of their proposal upon European allies. The record of an evening meeting of the President with the Chiefs and Secretaries of the Military Departments on November 4, 1957, makes it clear that although missile development was a topic of discussion, the Joint Chiefs of Staff were not worried about any looming Soviet military superiority. The

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<sup>85</sup>Halperin, "The Gaither Committee and the Policy Process" (1961), 368; see also Chalmers M. Roberts reprinted in the *Congressional Quarterly Weekly Report*, 15 (Dec. 20, 1957), 1238. For information regarding Lovett and McCloy's careers, and leading roles in formulating a pro-active defense policy countering isolationism, see Walter Isaacson and Evan Thomas, *The Wise Men: Six Friends and the World They Made; Acheson, Bohlen, Harriman, Kennan, Lovett, McCloy*, (New York: Simon and Schuster, 1986), esp. 182-209, and 482-504. I am grateful to Kurt Beyer for pointing out to me the new pro-active defense stance evolving out of the pre-WWII isolationist vs. internationalist axes.

<sup>86</sup>J.F.D., "Memorandum of a Conversation Between the President and the Secretary of State White House, Washington D.C., November 7, 1957," document #157, *Foreign Relations, 1955-1957*, 19, 638.

President's major concern was that interservice rivalry detracted from the overall defense preparedness, and this seems to be why he set up the meeting.<sup>87</sup> Normal procedure dictated that the Gaither report be buried and forgotten soon after the November 7th NSC meeting; Eisenhower and his staff's response in the NSC documents makes clear that they treated it as just one more report.<sup>88</sup> However, the Gaither committee members refused to let this happen and began actively campaigning for their proposal.<sup>89</sup>

In some accounts of the Gaither Committee's role in the strategic policy-making arena, license is given to their aggressive tone and unsubstantiated assumptions on the basis that committee members were not privy to highly secret data from the U-2 intelligence gathering flights over the U.S.S.R., initiated in June 1956.<sup>90</sup> These missions, of which few in the administration had knowledge, over time allowed him to be reasonably confident that the Soviet ICBM program was not far advanced.<sup>91</sup> However, the Gaither Committee's lack of data does not provide sufficient cause to ground their conjecture of a missile gap. Furthermore, the CIA's Richard M. Bissell, who oversaw the

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<sup>87</sup>G., "Memorandum for the Record of a Meeting Held at the White House, Washington, November 4, 1957," document # 154, *Foreign Relations, 1955-1957*, 19, 624-628. For documents pertaining to the organization and reorganizations of DOD see Alice C. Cole, et. al., eds., *The Department of Defense: Documents on Establishment and Organization 1944-1978* (Office of the Secretary of Defense Historical Office, Washington D.C., 1978).

<sup>88</sup>Halperin, "The Gaither Committee" (1961), too, says that in the normal procedure this would have been the end of the line for the report, 369.

<sup>89</sup>Halperin, "The Gaither Committee" (1961), 369. Not all committee members took an active role in this, including Gaither.

<sup>90</sup>See e.g., Jardini, "Out of the Blue Yonder" (1996), 159-160.

<sup>91</sup>Eisenhower's consistently expressed doubt about the Soviet's missile capabilities are in keeping with his experience with the short-lived "bomber gap" (see Prados, *The Soviet Estimate* (1982), 41-50), and are found sporadically throughout the document record, e.g., "The President said that, shooting from the hip, he would be inclined to think the Soviets were having some missile trouble," Marion W. Boggs, "Memorandum of Discussion at the 351st Meeting of the National Security Council," Jan. 16, 1958, *Foreign Relations, 1958-1960*, 3, 25; on the U2 flights and the Gaither committee see Herken, *The Counsels of War* (1987), 128-129.

U-2 project, was on the Gaither Committee, and thus well-positioned to temper any excess of speculation had he so desired or had committee members heeded.<sup>92</sup>

President Eisenhower addressed the nation on the evening of November 7, speaking about science and national security. On this occasion he announced that he was creating the office of Special Assistant to the President for Science and Technology, to be headed by Dr. James R. Killian, President of MIT. This announcement anticipated Eisenhower's November 22 transfer of the Science Advisory Committee of the Office of Defense Mobilization to the White House, formally creating the President's Science Advisory Committee.<sup>93</sup> Of all the Presidential speeches in the wake of Sputnik, Eisenhower's second radio address, discussing science and national security, on Nov. 14, seems most to echo the findings of Gaither Report. Eisenhower stated that SAC vulnerability required additional funds, that deterrent capabilities were needed against a Soviet preemptive attack, and America needed to improve its ability to fight limited war.<sup>94</sup>

The Gaither committee members, who had invested heavily in the urgency of their conclusions, knew that Eisenhower's public speech hardly signified that there would be any quick move to alter SAC alert status, or to accelerate ICBM development. William Foster led the committee's three-pronged strategy was designed to further their proposal. The committee sought to convince Eisenhower directly, to convince members of relevant

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<sup>92</sup>On November 26 and 27, CIA director Allen Dulles was asked to testify to the Senate Preparedness Subcommittee (the records of which were not declassified even at the time of the compilation of *Foreign Relations, 1955-1957*), to report on Soviet capabilities. Dulles then sent a memo to the Executive Secretary of the National Security Council (Lay) to catalogue the discrepancies between his assessment and the assessment put forth in "The Gaither Report" (1976). The substance of these discrepancies in estimation remain classified; I currently have freedom of information requests which are outstanding; I await access to this material, as well as to the still-classified documents from the file NSC5724 (NSC business pertaining to the Gaither Report), NND959008, box 111.

<sup>93</sup>"Editorial Note," document # 159, *Foreign Relations, 1955-1957*, 19, 661; see *Public Papers of the Presidents of the United States: Dwight D. Eisenhower, 1957*, 789-799 for radio address, and page 799 for the text of the White House's summary of this organizational change.

<sup>94</sup>Halperin, "The Gaither Committee" (1961), 370.

executive agencies, and to gain the support of the public and elite groups. The committee members struck out on their first two initiatives; neither the President nor one single executive agency was brought over to their position.<sup>95</sup> One reason that various agencies may not have been enthusiastic about the Gaither program was that all of the Gaither recommendations were predicated on there being no budget ceilings; the committee had put forth a plan radically to increase military spending in all of their policy proposals. According to Morton Halperin, hesitancy on the part of agencies may have been due to their thinking that increased defense spending had to imply cuts from other agencies. Halperin, who is the only author to have written an in-depth essay on the role of the Gaither Committee in the policy-making process, holds that the committee members acted entirely rationally, and that President's advisors and Cabinet heads were dragging their feet for their own private reasons. However, Halperin consulted with Paul Nitze and RANDites Thomas Schelling, Henry Rowen, and Paul Hammond in writing the article, and himself was under RAND employment in 1960.<sup>96</sup> Halperin's more speculative conclusions are presented without documentation, and the documents that do exist support the fact that whereas the Gaither group was extreme pro-defense stance, actors in other executive agencies did not exhibit such fearfulness or extreme paranoia.

As Halperin describes the politics of the Gaither Report, alliances were broken into two groups. On one side were the President, members of his Cabinet, and some Congressional leaders, who at most advocated limited increases in defense spending. On the other side stood the Gaither Committee, Congressional Democrats, some dissatisfied Republicans, and media moguls, for whom Sputnik provided the

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<sup>95</sup>Mentioned in Halperin (*ibid.*), 371; also evident in National Security Policy document record for relevant time period, *Foreign Relations, 1955-17, 19*, and *Foreign Relations, 1968-60, 3*.

<sup>96</sup>Note Halperin's observation that the thrust of the Gaither Committee was its proposed "new, more 'rational' method of splitting up the defense pie," Halperin (*ibid.*), 373.

opportunity to claim that America's very survival was at stake in the face of Soviet evil intent and superior military preparedness. The latter alliance sought to awaken a complacent nation to the reality of looming peril. Members of the hawkish element, Halperin acknowledges, had been long-standing proponents of substantially increased defense appropriations.<sup>97</sup> Just how militant the Gaither committee's views were is evident in a conversation personally initiated by Robert Sprague, co-chair of the committee, with the Secretary of State and undersecretary Gerard C. Smith. The printed record of this conversation outlines Sprague's assessment of the four policy options available to the U.S.:

1. Continue the present policy. Only if the Soviet Union engages in aggression will we attack it.
2. Preventative war. The Soviet long-range striking force is on 27 bases. We could destroy this Soviet striking power, and if 'clean' weapons were used we could do this without killing a great many Soviet non-combatants. Since US planes are continually flying around the world, it should be technically easier for us to mount a surprise attack than the Soviets to do the same. After striking out the Russian strategic bombardment capability, we could then dictate disarmament terms.
3. Conduct a 'hot' negotiation. This, in effect, would be to threaten the Soviet Union that if it did not settle on US disarmament terms we would change our present policy against preventative war.
4. Place reliance in God to find a solution. Mr. Sprague pointed out that during the course of his work with the Gaither panel his resort to prayer had substantially increased. He wonders what device the Lord could resort to in view of past evil actions of Soviet rulers.

The memorandum of the conversation continues, "Given these alternatives, Mr. Sprague feels that the better opportunities for the survival of freedom lie in alternatives 2 and 3."<sup>98</sup>

Having struck out with the President and the agencies, the Gaither committee members attempted to launch their campaign in forum of public opinion. This required leaking the results of their top secret document to the press, and pushing for its outright

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<sup>97</sup>Ibid., 381.

<sup>98</sup>"Memorandum of Conversation" (no author cited), Washington, Jan. 3, 1958, document #1, *Foreign Relations, 1958-1960*, 3, 1-3.



publication. The contents of the report were leaked to the press in late November and December of 1957.<sup>99</sup> Between press leaks and the colorful language of pro-defense journalists, the public imagination was fired. Stuart Alsop authoritatively reported,

There is no doubt at all that strategic missiles will surely replace the manned bombers, as the longbow replaced the knights' swords. The prospect which immediately confronts us is that the Soviets will achieve this replacement before we do. There will then be a gap—in the Pentagon it is known simply and ominously as The Gap—during which we will be in somewhat the position of the mounted French knights at Crécy, sword in hand, facing the skilled British bowmen killing them at will.<sup>100</sup>

"The Gap" had taken on a reality and life of its own.

The battle over retaining the top secret status of the Gaither Report was motivated by the politics entailed in making it public. Eisenhower realized that if the report were published, it would gain an aura of legitimacy that eluded it as long as it remained classified and unavailable. Senator Lyndon B. Johnson, then Chairman of the Preparedness Investigating Subcommittee of the Committee on Armed Services, took up the cause of publishing the Gaither Report. Johnson pressed the matter with Secretary of State Dulles. When Dulles spoke of it to the President several days later, their conversation concentrated on how out of hand the Gaither situation had become, with Eisenhower lamenting that "this experience had proved...definitively, the unwisdom of calling in outside groups." Dulles concurred, agreeing that, "they seldom took a rounded view of the total situation."<sup>101</sup> The Eisenhower administration had nothing to gain by releasing the report, save giving credibility to the report's authors and other critics of their defense policy. Eisenhower was especially concerned to make sure that the Gaither Report's timetable for defense build-ups not be entered into the public record as a

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<sup>99</sup>Halperin, "The Gaither Committee" (1961), 376; *New York Herald Tribune*, Nov. 23, 1957, 1:8; Chalmers M. Roberts, *Washington Post and Times Herald*, Dec. 20, 1957.

<sup>100</sup>Stewart Alsop, "How can we catch up?", *Saturday Evening Post*, 230:24, Dec. 14, 1957, 27.

<sup>101</sup>"Memorandum of a Conversation Between the President and the Secretary of State, Washington, December 26, 1957," with footnote containing "A memorandum of Dulles' telephone conversation with Senator Johnson on December 23," Document #174, *Foreign Relations, 1955-1957*, 19, 712.

credible template for guiding U.S. policy.<sup>102</sup> At the January 3, 1958 meeting of the National Security Council, an exasperated Eisenhower sighed that "before we got done with this Gaither thing we would find ourselves obliged to do things which we normally would never think of doing"—such as releasing a classified, independently commissioned, expert report.<sup>103</sup>

On November 25, 1957, Senator Johnson began hearings entitled, "Inquiry into Satellite and Missile Programs," wherein over 60 prominent men inside and outside of government were brought in to testify on the state of US defense preparedness and the implications of the Soviets' recent launchings of the sputniks vis-a-vis the US military preparedness. Edward Teller and Vannevar Bush led off the testimony, which went on into the next year and filled more than one thousand pages of transcript. Prominent military leaders, including General Maxwell D. Taylor, Army Chief, Admiral Arleigh A. Burke, U.S. Navy Chief of Naval Operations, and General Thomas D. White, U.S. Air Force Chief of Staff, were called before the committee. Johnson used these hearings to mount pressure on the Republican administration, implying weakness in the face of the Soviet threat symbolized by the Russians' successful satellite program. Johnson's capable leadership kept his senatorial adversary, Republican Stuart Symington, in check and avoided personal attacks on the President, while building doubt in the administration's ability to carry out effective national security policy. Throughout the questioning, references were made to the elusive Gaither report which, Johnson insisted, he was constantly putting pressure on the Eisenhower administration to release.<sup>104</sup>

In making their case, the network of individuals supporting the Gaither Committee's conclusions did not limit themselves to direct and secret means. Donald K. David, chairman of the executive committee of The Ford Foundation, headed an

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<sup>102</sup>S. Everett Gleason, "Memorandum of the discussion of the 350th Meeting of the NSC," Jan. 6, 1958, Document #2, *Foreign Relations, 1958-1960*, 3, 8.

<sup>103</sup>*Ibid.*, 7.

<sup>104</sup>See, e.g., Admiral Chester W. Nimitz, USN (retired), former chief of Naval Operations testimony, 2:1, 1339. (Date of testimony unclear).

organization which represented a consortium of business interests: the aptly named Committee for Economic Development, or CED. This Committee, which had been founded by The Ford Foundation's Paul Hoffman and Theodore O. Yntma of Ford Motor Company during WWII, claimed to provide objective, expert advice in the form of national policy statements.<sup>105</sup> In 1957 the CED was significant both for its overlap of membership with the Gaither Committee, and its inclusion of representatives from the top management of over one hundred of America's leading industrial corporations. The Gaither Committee's co-director, William C. Foster, served on the CED's Subcommittee on Economic Policies for National Security. Gaither Committee advisorial panel member and Republican financier Robert A. Lovett, served as an honorary trustee of the organization. Richard M. Bissell, Jr., of the CIA, served as an advisor, along with RAND's head of economics, Charles Hitch. Other members of interest with prominent CED roles include Don K. Price, Vice President of the Ford Foundation; W. Allen Wallis, Dean of Chicago's School of Business and future president of the University of Rochester; and Ralph W. Tyler, director of the Center for the Advanced Study in the Behavioral Sciences, which had been established at Stanford University with Ford Foundation money in 1955.

In July 1958, the CED publicly issued a report entitled, "The Problem of National Security: Some Economic and Administrative Aspects," which echoed the findings of the Gaither report. The clear intent of the tract was to convince its readers of the necessity of increased military spending in view of the Soviet's upcoming technological superiority, supposedly demonstrated by Sputnik, and their presumed ICBM lead. The statement also sought to persuade its readers of America's economic ability to "afford what we have to afford."<sup>106</sup> The report pointedly argued for the role of "civilian

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<sup>105</sup>See statements' caveat that "CED's by-laws emphasize that its work must be thoroughly objective in character and that each issue must be approached, not from the viewpoint of any particular economic or political group, but with regard for the general welfare." Stated in all CED policy statements.

<sup>106</sup>*Ibid.*, 52.

economizers" in defense planning, and for the need to reorganize decision-making within the Department of Defense along the lines of 'rational and efficient' defense management.<sup>107</sup> Lifting a leaf from RAND's economics chief Charles Hitch's studies of defense economics, the report emphasized the need for rational decisions and rational choices in defense management; promoted "maximiz[ing] our military capability to achieve national objectives"; advocated "rational techniques for making good choices of defense strategy and management"; and anticipated the planning-programming method of budgeting.<sup>108</sup> Thus, in addition to a massive defense buildup, the CED policy statement called for wholesale restructuring of decision-making practices within DOD on the premise that civilian defense experts could rationally manage defense resources better than military commanders.

There was a lull in public interest in the missile gap for much of 1958.<sup>109</sup> In May 1958, RAND strategist Albert Wohlstetter was invited to speak at the Council of Foreign Relations in New York.<sup>110</sup> In September he was selected to serve as deputy chief scientist in charge of a delegation of 105 scientists and strategy experts to Geneva negotiations on reducing the dangers of surprise attack. While not notable for their success, these meetings helped further Wohlstetter's career, and other RAND defense rationalists who managed to place themselves in the national spotlight.<sup>111</sup> In January, 1959, Wohlstetter published his well-known article "The Delicate Balance of Terror," in *Foreign Affairs*, reigniting concern over the missile gap and U.S. vulnerability to surprise Soviet attack. Presidential contender John F. Kennedy, who had earlier made speeches capitalizing on Eisenhower's national security weakness, ignored the gap in the late-spring Democratic primary election. However, in August, he geared up his campaign by

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<sup>107</sup>See *ibid.*, 34-35; 48-49.

<sup>108</sup>See *ibid.*, 20, 21, 34, 35, 35, 41, 43, 48, 55.

<sup>109</sup>Bottomo, *The Missile Gap* (1971).

<sup>110</sup>Digby, "Strategic Thought at Rand" (1990), 20, n 21.

<sup>111</sup>Joseph Alsop, "The New Balance of Power: War and Peace in a Strange World." *Encounter*, 10:5, May 1958; Edward L. Katzenbach Jr., "Ideas: A New Defense Industry." *The Reporter*, 2, Mar. 2, 1961; Kraft, "RAND: Arsenal for Ideas" (1960).

touting Republican weakness in the face of the Soviet threat and missile gap. Wohlstetter, and fellow RANDites participated eagerly as Kennedy speechwriter Theodore Sorenson worked their views in campaign speeches.<sup>112</sup> In response, Republican candidate and Vice President Richard Nixon's hands were tied because President Eisenhower refused to let Nixon reveal the secret intelligence which formed the basis of his confidence in America's military preparedness. Kennedy's successful exploitation of the missile gap theme in the election is consistently cited as a crucial factor in his victory.<sup>113</sup>

Despite the exposure of the U-2 spy flights, Eisenhower's secret source, in May of 1960 when the Soviets shot down a plane, Eisenhower had decided to remain silent about his knowledge of Soviet military capabilities at the peril of his own reputation, and a Democratic election victory, most likely because the veil of uncertainty reassured the Russians.<sup>114</sup> As he stepped down from office and bid farewell to the American people, he pointedly warned of the encroachment on public decision-making procedures by a "military-industrial complex," etching his famous phrase into public consciousness. He further warned that "public policy could itself become captive of a scientific technological elite." In this remark, Eisenhower was likely referring to the Gaither Committee, which had gained a life of its own in American strategic history.<sup>115</sup> Indeed, whereas Eisenhower had been alarmed at the steady increases in estimation of the nuclear bomb damages which could be delivered and sustained by both sides during his years in office, and had committed his administration to a policy of disarmament and to reducing the chances of fighting nuclear war, the legacy of the Gaither Report's "Deterrence and Survival in a Nuclear Age," and of RAND's strategic agenda, was to render nuclear war as thinkable, fightable, and survivable. A second legacy was about

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<sup>112</sup>Digby, "Strategic Thought at Rand" (1990), 20.

<sup>113</sup>E.g., Bottome, *The Missile Gap* (1971), 202; Interview of Robert S. McNamara by Brian Lamb, Apr. 23, 1995, Booknotes Transcript, C-Span.

<sup>114</sup>Herken, *The Counsels of War* (1987), 132.

<sup>115</sup>*Ibid.*, 133.

to rock the Pentagon, as Kennedy's victory landed key RANDites powerful positions in Department of Defense. These RAND alumni carried the firm commitment to reorganizing decision-making procedures within the Pentagon along the lines of rational defense management strategies developed at RAND and ushered into the high councils of government a new science of policy analysis.

### **C. Implementation—Rational Defense Management**

President-elect Kennedy's choice of Robert S. McNamara, who had assumed the Presidency of The Ford Motor Company one day after the election, to serve as his Secretary of Defense, completed the network of connections initiated by the early alliance of RAND and Henry Ford's Foundation. The alliance of Henry Ford II, his philanthropy and its chairman H. Rowan Gaither, Jr., Gaither's RAND compatriots, as well as a business constituency represented by Robert A. Lovett, John J. McCloy and the Committee for Economic Development, were united in their objectives. They promoted massive defense expenditures and a plan wholly to reorganize decision-making procedures within the Department of Defense by vesting a new policy elite whose authority would derive from the supposed objectivity of rational policy analysis. McNamara, a protégé of both Henry Ford II and Robert Lovett, served as the pointman to implement the set of strategic policies and management methods which had been under development at RAND for a decade.

McNamara's style and resumé appealed to Kennedy for a number of reasons: He was a Republican, which would help reduce partisan criticism of Kennedy's foreign and defense policies; he was Ivy League and enjoyed rapport with academics; he bristled with quantitative reasoning and economic efficiency which fit Kennedy's image; and he was imbued with youthful vitality and vigor. Most importantly, he came to Kennedy on the recommendation of Robert A. Lovett, the prominent financier on the Gaither panel,

who had followed McNamara's career ever since he had started with the Army Air Force's Statistical Control during WWII.<sup>116</sup>

McNamara's condition for accepting office was to have complete autonomy and control over all decisions affecting the Department of Defense. As a mid-level executive at Ford, McNamara had ascribed to Henry Ford II's modern, rational management program, and had implemented centralized financial planning and control. Two tenets encapsulated McNamara's management philosophy. He believed that "Management is the gate through which social, political and economic and technological change...is rationally and effectively spread through society," and that "running the Department of Defense is no different from running Ford Motor Company or the Catholic Church."<sup>117</sup>

Shortly after taking office, at his first press conference, reporters asked the new secretary about the missile gap. McNamara admitted that "if there was a gap, it's in our favor." When McNamara's easy tongue came to Kennedy's attention, the President was quite displeased, suggesting that the continued public belief in the gap was important. At subsequent press conferences, McNamara would contradict his initial statement, maintaining the fallacy of the gap.<sup>118</sup> As 1961 wore on, the believability of the gap grew increasingly difficult to sustain, and by the year's end the gap had evaporated into the annals of history.<sup>119</sup> By 1963 it was out in the open that as of September 1961, the Soviets had only produced one-thirtieth of the missiles they had been forecast to have in 1959.<sup>120</sup>

The missile gap, while ultimately having all the substance of the Cheshire Cat, nonetheless left as its legacy an indelible toothy grin. Whereas the purported "gap"

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<sup>116</sup>Shapley, *Promise and Power* (1993), 82-83.

<sup>117</sup>Cit. in *ibid.*, 389, 515.

<sup>118</sup>*Ibid.*, 98.

<sup>119</sup>For a close chronicle of the emerging and disintegrating missile gap hypothesis following contemporary press reports see Bottome, *The Missile Gap* (1971). He concludes, "Surprisingly, there have not been many published reports that attempt to explain 'Where the Missile Gap Went,' or to assess the blame for its creation," 192.

<sup>120</sup>*Ibid.*, 193.

gradually disappeared between 1957 and 1963, the manufactured fear of Soviet military superiority served as the rationale to initiate an unprecedented peacetime armaments build up. The ironic legacy of the "gap," once the U.S. weapons program got underway, was an American ICBM advantage of at least 15 to 1. The Kennedy administration, on McNamara's initiative, presided over the largest peacetime build up of the armed forces in American history, with the annual military budget rising from \$41 billion in 1961 to \$49 billion in 1962, \$54.3 billion in 1963.<sup>121</sup> Despite the initial American advantage in missiles, within the first year of office McNamara increased the number of Polaris submarines from Eisenhower's 6 to a force of 41 submarines carrying 656 missiles. Since submarines could move about the ocean undetected, and provided a guarantee of a surviving deterrent in the eventuality of a Soviet first strike, a small Polaris force satisfied those holding to a policy of minimum deterrent. But McNamara took his advice from RAND strategists who advocated a devastating second strike counter-force policy which depended on the more accurately guided, land-based ICBMs. Thus, McNamara also doubled the production of ICBM Minutemen missiles. Whereas Eisenhower had planned to have only 40 Atlas missiles in addition to the 6 Polaris subs, by the end of their first year in office, McNamara and Kennedy were building the U.S. up to 1,856 missiles, at a time when most contemporary intelligence reported that the Soviets had at most 50 to 100 missiles. Counting manned bombers, by 1967 McNamara planned to have 3,455 nuclear warheads aimed at the Russians.<sup>122</sup> This massive arms build up continued throughout the 1960s, resulting in the doubling of the defense budget

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<sup>121</sup>"Planning-Programming-Budgeting: Initial Memorandum," Prepared by the Subcommittee on National Security and International Operations, Committee on Government Operations, United States Senate, US GPO, 1967, 3, bound in *Planning Programming Budgeting*, Subcommittee on National Security and International Operations, Committee on Government Operations U.S. Senate, 91st (Wash. D.C.: GPO, 1970) (Hereafter *Planning Programming Budgeting* (1970)).

<sup>122</sup>Shapley, *Promise and Power* (1993), 104-109.



between 1961 and 1968, up to a staggering 56% of the funds in the 1969 Federal budget—10% of America's GNP—going to the military.<sup>123</sup>

McNamara came to the office of the Secretary of Defense with the vision of cutting through bureaucratic red tape and traditional military modus operandi. His determination to apply rational management techniques was matched only by his ambition for total control. During McNamara's tenure in the Pentagon, rational management and absolute central control went hand-in-hand. McNamara's changes in procedure had the effect of radically altering the locus of authority, from officers ranging the chain of command throughout the services, to the single figure of the Secretary of Defense himself, a man with no prior military experience, who had contempt for the military tradition and mindset. This de facto shift in power paralleled a shift in the principle grounding legitimate authority: instead of relying on the experience and judgment of seasoned military officers who had been tested in the crucible of battle, the new principle of authority was anchored in claims of scientific rigor and objective calculation. McNamara's takeover of the defense establishment was all or nothing; he did not deign to share decision-making power with military men, he sought to dictate decisions to them. Samuel Huntington captured the essence of the McNamara revolution in military management as it unfurled. Looking ahead to McNamara's success, Huntington observed, "strategic programs, like other major policies, are not [yet] the product of expert planners, who rationally determine the actions necessary to achieve desired goals. They are the result of controversy, negotiation, and bargaining among officials and groups with different interests and perspectives."<sup>124</sup>

As appealing as it is to credit McNamara and his zeal for power with the rational management takeover of the Department of Defense which "sparked an

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<sup>123</sup>Seymour Melman, *Pentagon Capitalism: The Political Economy of War* (New York: McGraw-Hill, 1970), 72.

<sup>124</sup>Samuel P. Huntington, *The Common Defense* (New York: Columbia University Press, 1961), 146.

intellectual revolution that changed American policy making and public life," this attribution shifts attention away from a more pervasive and interesting pattern of operational forces which underlay the implementation of a top-down, centralized decision procedure of "managerial...control and command" within the Pentagon.<sup>125</sup> Although it was McNamara who facilitated the total restructuring of DOD, he did so by acting as a gatekeeper for the wholesale importation of a defense management infrastructure which had been under design for over a decade at RAND. One can only marvel that the rational defense strategists installed under McNamara brought into Washington precisely what H. Rowan Gaither, Jr., first had envisioned as the goal of philanthropy: a professional elite, with its own set of practices and standards, which would objectively decide difficult questions of policy affecting the nation.

McNamara, who knew nothing of military matters, studied up in the few days before taking office. He was introduced to RANDites Charles Hitch and Roland McKean's *The Economics of Defense in the Nuclear Age*.<sup>126</sup> Hitch and McKean's plan for rational defense management struck a chord with McNamara. McNamara met with Hitch in December and immediately proposed that Hitch serve as Defense Comptroller. Hitch was the first of the influx of RAND appointments under McNamara. The incoming secretary, who was not studied in military matters such as weapons systems, or strategy, found in RAND researchers like-minded individuals, similarly committed to rational analysis, who could provide him with the counsel and methods he required to run the defense establishment. The list of RAND appointments would grow to include Alain Enthoven, Henry Rowen, Thomas Schelling, William Niskanen, Daniel Ellsberg, James R. Schlesinger, Bruno Augenstein, and Frank Trinkl. Many other RANDites would work with the Secretary of Defense in the three contracts set up through his office.

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<sup>125</sup>First quote from Shapley, *Promise and Power* (1993), 237; second quote from "The Gaither Report" (1976), 20.

<sup>126</sup>Charles J. Hitch and Roland N. McKean, *The Economics of Defense in the Nuclear Age*, (Cambridge: Harvard University Press, 1963), reprint of original 1960 RAND publication.

William Kaufmann advised McNamara and wrote speeches for him. RAND alumni suited McNamara's style of quantitative analysis and became his closest associates in a world of military men whom he held in contempt.<sup>127</sup> McNamara also worked closely with the Gaither report's author, Paul Nitze, whom he appointed as assistant secretary of defense for International Security Affairs.

Alain Enthoven, who had risen to prominence on the wings of Albert Wohlstetter's SAC vulnerability conjecture, became one of McNamara's most trusted appointees. McNamara was captivated by RAND's promise of decision theoretic tools and management techniques, and he created the Office of Systems Analysis which Enthoven directed as Assistant Secretary for Systems Analysis.<sup>128</sup> In an action which would end up forever changing U.S. governmental policy-making practices, and would enable a new era of "policy analysis" to dawn, RAND's "systems analysis" became an official designation. Although in practice no more clearly defined than during its RAND days, this new status signified the de facto acceptance of RAND's "systems analysis" as a credible method for reaching decisions in complex matters of logistics, weapons procurement and military strategy.<sup>129</sup> However, as was always the case with RAND's decision technologies, their usage proved to be inseparable from the politics of control. In the years ahead Enthoven's office would oversee all of DOD's systems analysis studies. As one example of the range of authority this office carried under McNamara, Enthoven headed a team of eighteen analysts who were tasked by the Secretary to rethink all of the Army's standard operating procedures, from the top, down to the level of two-man well-digging detachments.<sup>130</sup> Just as workers, foremen and engineers had been shut out of decision-making at the Ford Motor Company, so front-line military

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<sup>127</sup>Constant theme in Shapley, *Promise and Power* (1993).

<sup>128</sup>The documents generated by Enthoven's Systems Analysis Office remain classified. I am pursuing these with a freedom of information request.

<sup>129</sup>See Enthoven's discursive attempt to define "systems analysis," "Testimony of Alain C. Enthoven, Assistant Secretary of Defense (Systems Analysis)," Sep. 27, 1967, *Planning Programming Budgeting* (1970), 226-229.

<sup>130</sup>Shapley, *Promise and Power* (1993), 327.

personnel lost autonomy over local decisions, following the rationale that analysts with equations could make large- and small-scale decisions better than men in the field. McNamara's consistent pattern was to place civilian defense analysts in positions of authority over high-ranking military officers. McNamara put the former RAND economist William Gorham in charge of a military pay schedule study, wherein his subordinates included senior generals. Even though Gorham's study resulted in the largest pay increases in the history of the military, McNamara's management procedures continually alienated the military.<sup>131</sup>

McNamara's takeover of the Pentagon was dependent upon the set of decision-theoretic and management tools supplied to him by RAND staff. McNamara brought with him the commitment to, and experience with, rational management techniques he used at Ford. However, managing the defense establishment required more specialized tools, such as those which RAND researchers had been contributing to throughout the 1950s.<sup>132</sup> Thus, the core of McNamara's management tools were RAND developed, including systems analysis, cost-effectiveness (or cost-benefit) analysis, and planning-programming-budgeting.<sup>133</sup> The Planning-Programming-Budgeting System, which was foreshadowed in both the secret Gaither Report and the public Committee for Economic Development policy statements, was the centerpiece of McNamara's no-holds-barred transfer of authority from uniformed officers to himself and his cadre of civilian defense rationalists. McNamara in effect functioned as a point man for a plan to cede the forty-plus billion dollar defense establishment into the hands of civilian leadership, tied more closely to the business community's interests than to military imperatives.

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<sup>131</sup>Ibid., 327-328.

<sup>132</sup>See Gregory Palmer, *The McNamara Strategy and the Viet Nam War: Program Budgeting in the Pentagon, 1960-1968* (London: Greenwood Press, 1978).

<sup>133</sup>Aaron Wildavsky, "Rescuing Policy Analysis from PPBS," *Public Administration Review*, 29:2, Mar./Apr. 1969, repaginated in Subcommittee on National Security International Operations, Committee on Government Operations, U.S. Senate, 91st (Wash. D.C.: GPO, 1969), 5.

At the Senate hearings to affirm McNamara's nomination to the powerful position of Defense Comptroller, legislators expressed incredulity at placing the DOD into the hands of men with little military experience, and in the case of Charles Hitch, no prior budgeting experience. This concern was best articulated by Senator Bridges who remarked,

it seems to me very peculiar that this new administration should pick out a man like yourself, with no experience and background, for this job.....one of the things that has troubled me and many other people is that you were selected for this particular spot.<sup>134</sup>

Hitch was confirmed, and by spring of 1961, Secretary McNamara assigned him the task of installing RAND's Planning-Programming-Budgeting System throughout the Department of Defense within four months. This was a challenging order for which Hitch required the help of David Novick. Thus one of three contracts to RAND from the Secretary of Defenses' Office was for Novick and a sizable RAND team to implement the new budgeting system.<sup>135</sup>

The new budgeting system, officially designated as "PPBS," was characterized by three interlocking features. One was an emphasis on "planning," or associating the budgeting function with the planning function such that budget formation became a decision-maker's policy-making tool. Achieving this association required changing the categories according to which the defense budget was traditionally prepared such that instead of being ordered according to broad categories such as manpower and construction, the budget was organized by program function which the military fulfilled such as "Strategic Retaliatory Forces," and "General Purpose Forces"<sup>136</sup> The

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<sup>134</sup>Hearings before the Committee on Armed Services, Jan. 18, 1961, United States Senate, 87th Congress, 1st Session (Washington D.C.: GPO, 1961), 15-16.

<sup>135</sup>See Hitch's stress on RAND as being the source of PPBS, and of the contract with RAND in his testimony, "Systems Development and Management" (part 2), Jul. 25, 1962, House of Representatives Military Operations Subcommittee, The Committee of Government Operations, 513-147, esp. 518 and 542-543.

<sup>136</sup>Enthoven's testimony, Sept. 27, 1967, *Planning Programming Budgeting* (1970), 256; for sample budget preparations see Statement of Elmer B. Staats, Comptroller General of the U.S., Mar. 26, 1968, *Planning Programming Budgeting* (1970), 334-335.

recategorization of budget items permitted the associating of "inputs" with "outputs" so that programs would be amenable to cost-effectiveness studies. This direct linkage of strategy and budgeting represented a major change in military organization which effectively shifted the jurisdiction for strategy and operations from military officers to civilian policy analysts.<sup>137</sup>

The use of systems analysis represents the second significant feature of PPBS. Alain Enthoven's Systems Analysis Office, which would grow to have a staff of 130, had the responsibility for preparing cost-effectiveness studies on all potential budget items so that Secretary McNamara could base his decisions on objective, quantitative assessments of the military worth of various proposals. Instead of year-to-year budgets, costs and potential financial outlays were estimated for longer, five-year periods. Finally, as the Gaither and CED policy statements strongly urged, budget ceilings were removed so that defense planners could stipulate their perception of national security needs without the annoying constraint of working within the guidelines of appropriations decreed by Congress. The Gaither Report, the CED policy statement, Hitch and McKean's *The Economics of Defense*, and McNamara were agreed on inverting the policy process: instead of fiscal appropriations being handed down from Congress to meet operational needs, defense planners would articulate their needs using supposedly objective and thus incontrovertible cost-effectiveness studies. Instead of Congress determining how much national security the nation could afford, national defense imperatives should determine defense allocations on the principle that "there...[be] no presumption that the defense budget is now, or should be, near any immovable upper limit." Hitch and McKean further authoritatively observed that "As far as physical and economic feasibility is concerned, national security expenditures could be raised...by, say, \$30 billion per year."<sup>138</sup>

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<sup>137</sup>For recognition and acknowledgement of this restructuring see Charles L. Schultze's testimony, Aug. 23, 1967, *Planning Programming Budgeting* (1970), 192.

<sup>138</sup>Hitch and McKean, *The Economics of Defense* (1963), 47.

The authority for this bold restructuring came from the supposed scientific rigor promised by such a budgetary process. Enthoven, in his capacity as Assistant Secretary of Defense for Systems Analysis, frequently lectured at the nation's war colleges on the new PPBS and Systems Analysis approach to defense planning. In such presentations Enthoven put forth the following points:

- (1) Systems Analysis is a reasoned approach to problems of decision, accurately described as 'quantitative common sense.'
- (2) Systems Analysis is an application of scientific method, using that term in its broadest sense.
- (3) There are limitations in the application of Systems Analysis, although these have often been overstated.<sup>139</sup>

"Systems analysis," while in practice no less vague than during its RAND days, was constantly promoted by advocates as a "scientific" means of reaching difficult policy judgments. Charles Hitch also spoke publicly on the advantages of the new "management techniques" which aided decision-makers in "achieving realistic, balanced, rational plans."<sup>140</sup> For analysts and some policy makers, PPBS and Systems Analysis offered the promise that "[m]any significant decisions on resource allocation...[could] be rational, objective, quantitative, depersonalized, de-bureaucratized, [and] de-politicized."<sup>141</sup> McNamara's management device carried authority precisely because its practitioners wielded an epistemic edge afforded them by their claims to scientific method.

Whereas even Comptroller Hitch was quick to acknowledge that the "whole [PPBS-Systems Analysis] systems seems to be singularly plagued by terminological

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<sup>139</sup>Presentation prepared for the Special Subcommittee on the Utilization of Scientific Manpower, Senate Labor and Public Welfare Committee, 89th Congress, 2d session, May 17, 1966, with excerpts from Industrial College of the Armed Forces. In Samuel A. Tucker, ed., *A Modern Design for Defense Decisions—A McNamara-Hitch-Enthoven Anthology* (Washington D.C.: 1966, in *Planning Programming Budgeting* (1970), 565.

<sup>140</sup>"Decision-Making in Large Organizations," Royal Society Nuffield Lecture, London, England, Oct. 25, 1966, in *Planning Programming Budgeting* (1970), 574-581.

<sup>141</sup>Frederick C. Mosher, "Program Budgeting in Foreign Affairs: Some Reflections," a memorandum prepared at the request of the Subcommittee on National Security and International Operations, Committee on Government Operations, U.S. Senate, United States Senate Committee on Government Operations, *Miscellaneous Publications*, 90th Congress (Washington D.C.: GPO, 1968), 17.

confusion," consensus on the impact of PPBS by critics and proponents alike was unequivocal: it dramatically centralized decision-making in the Department of Defense, squarely placing authority for decisions in the hands of Secretary McNamara.<sup>142</sup> Thomas Schelling, a high-profile RAND alumni who worked under the Secretary, told the Senate that "budgetary processes are a means of control. Secretary McNamara surely did not use PPBS...merely to cut waste and to improve efficiency or to save money. He took advantage of his central role in the defense-budgeting process to exercise what he believed to be his authority over military policy."<sup>143</sup> PPBS worked to centralize and consolidate authority by eliminating discussion over policies and procurement decisions, and by presenting budgetary information to McNamara in such a form that he could rapidly make decisions over any financial outlay of more than twenty million dollars.

In the turf battle for control over the U.S. armed forces, the civilian defense rationalists won a decisive victory. Power for strategic weapons procurement decisions was shifted from the Joint Chiefs of Staff to the Secretary and his 'whiz kid' administrators. Outside observers were clear that the centralization of power into the hands of the civilian administrators had been both the intention behind, and the result of, the RAND-inspired budgeting system.<sup>144</sup> Furthermore, observers were clear that the means by which authority was shifted was through the epistemic leverage afforded by

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<sup>142</sup>Hitch's quote in "Decision-Making in Large Organizations" (1966), 575; Aaron Widavsky, "The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting," originally in *Public Administration Review*, 26:4, Dec. 1966, reprinted in "Planning-Programming-Budgeting: Selected Comment," Committee on Government Operations, U.S. Senate, United States Senate Committee on Government Operations, Miscellaneous Publications, 90th Congress (Washington D.C.: GPO, 1968), 63; Jackson's questioning during Enthoven testimony, Oct. 18, 1967, *Planning Programming Budgeting* (1970), 309.

<sup>143</sup>Schelling's statement is in a memorandum prepared at the request of the Subcommittee on National Security and International Operations, Committee on Government Operations, U.S. Senate, United States Senate Committee on Government Operations, Miscellaneous Publications, 90th Congress (Washington D.C.: GPO, 1968), 3.

<sup>144</sup>Schultze's testimony, Aug. 23, 1967, *Planning Programming Budgeting* (1970), 192; Frederick C. Mosher, "Program Budgeting in Foreign Affairs" (1968), 3, 2.



supposedly scientific cost-effectiveness analysis. One observer noted how the new decisions methods shifted power not just to civilians, but to a particularly trained policy elite:

[T]he more distinctive features of PPBS...[such as] the application of cost-benefit studies to budgetary decision, the analysis of alternative programs, and the consideration of tradeoffs...relied upon esoteric knowledge and techniques not immediately familiar military officers or 'traditional' budgeteers. Thus PPBS in Defense had the effect of shifting influence and power not alone upward from the military services to the Secretary of Defense but also to different kinds of specialists, i.e., particular kinds of economic analysts.<sup>145</sup>

PBBS worked to establish a hierarchical and centralized decision procedure of "managerial...control and command" within the Pentagon by setting up the parameters of all discussions since Enthoven's Systems Analysis Office oversaw all cost-effectiveness studies, and by presenting budgetary proposals in such a fashion that McNamara had unitary authority over all decisions.

Whereas it is easy as to be distracted with the appearance that McNamara and the defense rationalists were proponents of *civilian* control over the U.S. armed forces, it is necessary to recall that arguments for civilian authority over the military are based on the premise that legitimate military authority be constituted to serve the ends of representative government and to uphold the Constitution. The new policy elite were altering the rules such that authority over military procurement, strategy, and operations would reside in the hands of 'objective' policy analysts, removed from democratic politics.

McNamara initiated the most dramatic and forceful showdown with military leaders within his first months of taking office. He launched his campaign for greater efficiency in the military with his proposal to build one tactical fighter to satisfy divergent Air Force and Navy specifications, promising that this move to "commonality" would save the nation one billion dollars. Military commanders were aghast when

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<sup>145</sup>Mosher, *ibid.*, 3; Statement of Charles L. Schultze, Director, Bureau of the Budget, Aug. 23, 1967, *Planning Programming Budgeting* (1970), 197.

McNamara, who had no engineering training or mechanical facility, overruled expert engineering judgment and concluded that one aircraft to serve two conflicting functions was technically feasible and pragmatically wise. The Air Force required a highly maneuverable, high-bomb-yield plane capable of intercontinental flight and supersonic low-altitude dashes to evade Soviet radar detectors on bombing raids. The Navy had little interest in the TFX tactical fighter because it required a slower, lighter, lower-performance aircraft to loiter around, land on and store on aircraft carriers. An unprecedented four-stage bidding process ensued, with the field narrowed to Seattle-based Boeing and Forth Worth's General Dynamics after the first round. Finally, on November 22, 1962, the largest procurement contract in American history, valued initially at six billion dollars, was handed to the beleaguered Texas company. McNamara had forced the outcome, despite the fact that the military had selected the Boeing model at each stage of the bidding process, and despite the unanimous opposition of the entire Joint Chiefs of Staff which included: General LeMay, Chief of Staff of the Air Force; ten assorted generals and admirals of the Air Council; General Walter C. Sweeney of Tactical Air Command; General Mark E. Bradley of Logistics Command; Lieutenant General Bernard Schriever of Systems Command; Admiral Anderson, Chief of Naval Operations; Admiral William E. Ellis, Assistant Chief of Naval Operations for Air; Rear Admiral Kleber S. Masterson, Bureau of Weapons, and five general and flag officers representing the Source Selection Board. McNamara's sole authority in his showdown with the military's top brass was conferred by his use of supposedly scientific cost effectiveness studies. It was widely reported that the TFX project was "the showcase of ...[McNamara's] cost-effectiveness program," and that the TFX decision represented McNamara's "way to drive home his concept of 'value engineering' in the tradition-encrusted procurement system of the U.S. armed services."<sup>146</sup>

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<sup>146</sup>Richard Austin Smith, "The \$7-Billion Contract That Changed the Rules," *Fortune*, 97,

However, McNamara's flagship for cost-effectiveness and efficiency in the nation's military establishment left many questions unanswered, the most significant of which was by precisely what manner of analysis did the Secretary reach his decision. Congressmen John L. McClelland's Subcommittee of Operations, of the Government Operations Committee of the Senate, launched an investigation on February 26, 1963 which continued until President Kennedy's assassination. In testimony that filled over 2,500 pages of transcript, legislators labored to get to the bottom of the TFX decision.

At first Secretary McNamara and his civilian Secretaries Eugene M. Zuckert and Fred Korth of the Air Force and Navy, relied on a memorandum they had prepared after reaching the decision which explained their rationale. This document, which not only contained numerical errors but also claimed to have relied on a decision procedure which senators could only conclude was "a little ridiculous," was soon repudiated by the secretaries as they scrambled to construct a more credible, *ex post facto* scenario for how they had reached their decision.<sup>147</sup> They began arguing their case afresh, submitting new reasons and new documents not relevant to the original decision.

After months of questioning and painstaking concentration on countless details regarding airplane construction and the contracting process, the senators learned that Secretary Zuckert had reviewed the military's Source Selection Board recommendation and evaluation, and had determined that the Board had rested its decision on criteria which he deemed to be of only secondary significance. Whereas the military had concentrated on performance attributes of the plane designs to gain a winning edge in battle, Zuckert, at McNamara's behest, emphasized commonality of the Air Force and Navy versions of the TFX, less demanding technological innovation, and cost-realism. In looking at the Air Force's assessment of the costs of the two fighters, Zuckert felt that

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Mar. 1963, 96.

<sup>147</sup>U.S. Senate, Permanent Subcommittee on Investigation of the Committee on Government Operations, *The TFX Contract Investigation: Hearings, 88th Cong., 1st Sess., 1963, 1971* (Hereafter referred to as *TFX Hearings*); Shapley, *Promise and Power* (1993), 212.

the General Dynamic's cost of \$5,803,500,000 was more 'realistic' than Boeing's \$5,387,500,000.<sup>148</sup>

Zuckert had first briefly met with the Navy's Secretary Korth. Korth, it became evident in testimony, was utterly ignorant about aircraft design and the details upon which the decision had hinged; he had deferred to Zuckert's judgment.<sup>149</sup> Secretary Korth was from Forth Worth, and when it was disclosed in the hearings that he had engaged in active dialogue with the Forth Worth business community as Secretary, and that his bank had loaned General Dynamics' Fort Worth plant \$400,000, he was forced to resign in fall of 1963.<sup>150</sup> Zuckert had next presented his case to McNamara. Jointly, they dismissed the Air Force's internal cost analyses of the General Dynamics and Boeing bids, without so much as a back-of-an-envelope calculation of their own. This dismissal, upon which the contract seemed to hinge, became the object of intense scrutiny, since the Air Force cost analysts had put 27,000 man hours into their estimates.<sup>151</sup> Ultimately the investigating committee had to conclude, as the Secretary himself admitted, that the TFX decision rested on "rough judgments."<sup>152</sup> In 1963 Congressmen could only suspect what history would confirm: The Navy cancelled its contract with General Dynamics in 1968, and the Air Force ultimately obtained only 600 of the originally contracted 2400 planes, at a cost of 22 million dollars each instead of the initially-proposed 2.8 million.

Obviously, despite the fancy footwork and claims of superior analytic techniques, the TFX decision was more about cutting the military out of decisions than it

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<sup>148</sup>*TFX Hearings, 1*, 208-209.

<sup>149</sup>Korth testimony, *TFX Hearings*, 1502-1574, 1852.

<sup>150</sup>Shapley, *Promise and Power* (1993), 217.

<sup>151</sup>Questioning on this point draws to a heated climax on p. 2105 of the *TFX Hearings*.

<sup>152</sup>Memorandum of a GAO Interview with McNamara, Apr. 16, 1963, *TFX Hearings, 3*, 902. Even Robert J. Art's *The TFX Decision: McNamara and the Military* (Boston: Little, Brown and Company, 1968), which is sympathetic to McNamara, rests on this conclusion, see 137-139.

was about careful and rigorous analysis.<sup>153</sup> Documents from August of 1962, prior to the final contract bidding round, indicate McNamara's intent to change the established Source Selection Board evaluation process so that his office would carry full and unquestionable authority over decisions.<sup>154</sup> The established procedure was highly decentralized, with officers from all levels of the chain of command voicing input into the evaluations. McNamara objected to the fact that the top command typically, in his mind, "rubber stamped" the Source Board recommendation, without performing independent analysis. However, in changing the role of the Source Selection Board to a nominal advisory function, McNamara indicated that he was not interested in reaching decisions through fuller discussions aimed at eliciting varying opinions. After all, he had not held one single meeting with the Joint Chiefs of Staff to question their reasoning. McNamara simply wanted to alter the decision procedure so that the Secretary's office alone had authority. McNamara established that in major decisions affecting the U.S. armed services, the experience and judgment of military officers was inconsequential. Once again, he acknowledged a business constituency first; instead of holding discussions with military leaders, he established the Defense Industry Alliance Counsel through which executives of contracting firms helped the Secretary redraft the procurement process so that it would be amenable to the business community's interests.<sup>155</sup>

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<sup>153</sup>In his recent book *The Dark Side of Camelot* (Boston: Little Brown & Co., 1997), Seymour M. Hersch brings forth new information regarding the TFX decision, alleging that General Dynamics blackmailed the Kennedy administration using evidence of Kennedy's affair with Judith Exner gathered in Aug. 1962, 295-296, 317-320, 319-320, 344. Hersch makes the case that the TFX decision had nothing to do with cost-effectiveness and everything to do with blackmail. I do not dispute the possibility that blackmail on the part of General Dynamics may have played a role in swinging the decision in its favor, a potential blackmail incident in Aug. 1962 is insufficient to explain a) McNamara's original insistence on "commonality," or b) that an unprecedented three-stage bidding process, with McNamara overruling the military evaluations at each stage, had already been completed by June 1962.

<sup>154</sup>Memorandum detailing the Source Selection process and how to alter it, Aug. 18, 1962, and Oct. 2, 1962, in *TFX Hearings*, 1292 and 1300.

<sup>155</sup>DIAC appears sporadically in the *TFX Hearings*, and in *Hearings on Government Operations*. J61.E9, 88th, Vol. 4, 100-103.

In later Senate hearings, Alain Enthoven would testify that the PPBS system had little, even nothing, to do with the TFX decision.<sup>156</sup> However, in other decisions in which the PPBS procedure was used, such as Skybolt and "the purchase of a \$277 million oil-fueled aircraft carrier [the John F. Kennedy] that was obsolete before it was launched,"<sup>157</sup> the pattern was the same: McNamara and his civilian defense rationalists would reach conclusions with no discussions with the various parties involved, and consistently touted their rigorous cost-effectiveness analysis as providing them with rationale for their decisions. The PPBS-Systems Analysis process altered the rules, permitting the analysts to set the terms of discussion, maintain control over the forum, and impose decisions. Thus, when Admiral Hyman G. Rickover attempted to challenge McNamara's rejection of the Navy proposal to build nuclear-powered aircraft carriers, he was forced into the position of first challenging the cost-effectiveness method before he could even enter into the discussion.<sup>158</sup> Just as with the TFX decision, senators ultimately concluded that McNamara's choice had rested on unsubstantiated judgment. However, in each case the decision had already carried authority, and both lives and budgets were already affected.

In August of 1965, President Lyndon B. Johnson would mandate that PPBS become standard operating procedure in all Federal agencies. This sweeping institutional success of RAND's budgeting system, designed to facilitate top-down management, triggered public debate over the goals and efficacy of the system. Just as H. Rowan Gaither Jr.'s original vision for "eliminating politics from decision making" seemed on the verge of becoming government status quo nation-wide, senators found themselves asking, "Does PPBS provide a wholly rational basis for decision-making?"

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<sup>156</sup>Sep. 27, 1967, *Planning Programming Budgeting* (1970), 235.

<sup>157</sup>"Initial Memorandum," *Planning Programming Budgeting* (1970), 3-4.

<sup>158</sup>"Cost-Effectiveness Studies," Testimony, Subcommittee on Department of Defense, House Committee on Appropriations, May 11, 1966, also in *Planning Programming Budgeting* (1970).

Have we arrived at a technocratic utopia where judgment is a machine product?"<sup>159</sup> As Congress was keen to celebrate, a vital characteristic of democracy is its basis in the idea that a people be governed by reasoned argumentation in which citizens participate, directly or through elected representatives. The new technologies of social management filtering into Federal agencies from the Pentagon had an entirely different logic and looked to the claims of science, objectivity, and expertise to obviate the legislative, democratic process. In Senate hearings investigating the budgeting procedure in 1968 it was apparent that "Some advocates of PPB[S] express regret that the results of this budgetary approach must be subject to legislative review and decision, on the ground that such review introduces what they regard as elements of 'politics' in what would otherwise be a 'rational process' of decision-making."<sup>160</sup> University of California, Berkeley, Political Scientist Frederick C. Mosher also was concerned by "the ignoring of, or less generously, contempt for, democratic values and processes." He found that virtually all the proponents of PPBS disregarded "the executive and legislative processes of review and decision," and regarded "[t]he President and Congress...as enemies of rationality." He lambasted the "technocratic and authoritarian language" espoused by PPBS supporters, and concluded,

At no point does one gain the impression that the budget process is a 'due process' of administration wherein the facts, the analyses, the interests, the politics and the prejudices of people enter. Much of the literature of PPBS resembles that of the technocrats of the thirties; its aim seems to be to eliminate *politics* from decisionmaking.<sup>161</sup>

The new decision techniques replaced the logic of equals reaching decisions in open discussion with the idea that trained analysts should provide leaders with studies

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<sup>159</sup>Initial Memorandum," *Planning Programming Budgeting* (1970), 6.

<sup>160</sup>PPB Hearings, opening statement of Senator Henry M. Jackson, Mar. 28, 1968, *Planning Programming Budgeting* (1970), 321.

<sup>161</sup>Letter to Editor-in-Chief, *Public Administration Review*, 27:1, Mar. 1967, in response to "Planning-Programming-Budgeting Symposium," *Public Administration Review*, Dec. 1966, 26:4, 243-310. Also in "Planning-Programming-Budgeting: Selected Comment" (1968), quotes from 25, 26. Regarding the supporting role of philanthropy in the technocracy of 1920s and 1930s U.S., see Guy Alchon, *The Invisible Hand of Planning* (1985).

of how efficacious various policy proposals would be in meeting 'objective' national goals.<sup>162</sup> Senators were not reassured by the great secrecy which PPBS advocates thought mandatory for the "Program Memorandum," the analytically-prepared budget proposals upon which agency executives acted. PPBS proponents argued that secrecy and anonymity were essential to maintaining the impartiality of the cost-effectiveness studies.<sup>163</sup> Furthermore, senators were skeptical of the great zeal with which PPBS was presented as the panacea for all of society's ills and complexities. President Johnson introduced PPBS to Americans with the promise that it could "[i]dentify our national goals with precision," and that it would enable "us...[to] [c]hoose among those goals the ones that are the most urgent."<sup>164</sup> The President also proposed that the new system could aid in understanding "how...we [can] best help an underprivileged child break out of poverty and become a productive citizen."<sup>165</sup> Alain Enthoven stressed that "Systems Analysis can be applied to the problems of State and local government, including programs for social welfare."<sup>166</sup> In a compilation of articles assembled by RAND's David Novick, the architect of PPBS, authors advanced the idea that "the program budget is a neutral tool. It has no politics."<sup>167</sup> Other authors refer to the political process as comprised of "haphazard acts...unresponsive to a planned analysis of the

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<sup>162</sup>E.g., Henry S. Rowen, "Bargaining and Analysis in Government," in PPB Hearings, "Selected Comment," Committee on Government Operations, U.S. Senate, United States Senate Committee on Government Operations, Miscellaneous Publications, 90th Congress (Washington D.C.: GPO, 1968), 1, 46.

<sup>163</sup>Discussion of Program Memorandum and question of providing information to Congress in Comptroller General Staats' testimony, *Planning Programming Budgeting* (1970), Mar. 26, 1968, 327-328, 338-351; need for secrecy discussed by Enthoven, *Planning Programming Budgeting* (1970), 274.

<sup>164</sup>"Statement by the President to Cabinet Members and Agency Heads on the New Government-Wide Planning and Budgeting System, August 25, 1965," in *Planning Programming Budgeting* (1970), 508.

<sup>165</sup>"PPBS Excerpt from the President's Message to the Congress, The Quality of American Government, March 17, 1967, in PPB Hearings, "Official Documents," 90th Congress (Washington D.C.: GPO, 1968), 1, 6.

<sup>166</sup>Alain C. Enthoven, "The Systems Analysis Approach," *Planning Programming Budgeting* (1970), 566.

<sup>167</sup>Melvin Anshen, "The Program Budget in Operation," in David Novick, ed., *Program Budgeting: Program Analysis and the Federal Budget* (Cambridge: Harvard University Press, 1965), 370.



needs of efficient decision design" which obstruct "future planning for a rationally ordered program budget."<sup>168</sup>

Congressmen and scholars shared in the optimism that the new decision techniques could aid policy-makers in reaching conclusions.<sup>169</sup> Critics did not contend that quantitative analysis evaluating policy alternatives was inherently bad or useless. Instead, they were wary of the proponents' either naive or self-serving view that these procedures did not in themselves represent a reconstitution of political power, effectively concentrating it into the hands of analysts and agency executives seeking centralized control. Mosher observes that, "the potential effects of PPBS on power distribution within the government are surely as important as the technical improvement which are hoped for."<sup>170</sup> Aaron Wildavsky, another astute observer, noted that, "Program budgeting is a form of systems analysis that attempts to break out of the confines...[of] existing governmental policies...[and] the general decision-making machinery of the political system." He also found that "Not everyone would go along with the most far-reaching implications of program budgeting...but the RAND Corporation version, presumably exported from the Defense Department, definitely does include 'institutional reorganization to bring relevant administrative functions under the jurisdiction of the authority making the final program decision.'"<sup>171</sup>

PPBS, conceived at RAND, realized H. Rowan Gaither Jr.'s original vision of a non-political decision apparatus, handled by experts, to advise executives' policy formation. Secretary of Defense Robert S. McNamara, formerly a mid-level manager at

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<sup>168</sup>Roland N. McKean and Melvin Anshen, "Limitations, Risks, and Problems," in Novick (ibid.), 289.

<sup>169</sup>"Initial Memorandum," and "Interim Observations," *Planning Programming Budgeting* (1970), 9-25; Mosher, "Program Budgeting in Foreign Affairs" (1968); Frederick C. Mosher, "PPBS: Two Questions," in *Selected Comment, Subcommittee on National Security and International Operations, Committee on Government Operations, U.S. Senate, 90th* (Wash. D.C.: GPO, 1968); Wildavsky, "The Political Economy of Efficiency" (1966).

<sup>170</sup>Mosher, "PPBS: Two Questions" (1968), 25.

<sup>171</sup>Wildavsky, "The Political Economy of Efficiency" (1966), 63, quoting R.N. McKean and N. Anshen in Novick, ed., *Program Budgeting* (1965), 286-287.

the Ford Motor Company swept into power with the momentum of John F. Kennedy's successful exploitation of a fictitious missile gap, introduced the budgeting system and its practitioners into the Pentagon. After serving to facilitate McNamara's control over America's defense establishment, PPBS gained society-wide currency when instituted in President Lyndon B. Johnson's Great Society Program as the promise of top-down control appealed to Johnson's determination to govern. By the end of the 1960s, the blueprint for a rationally managed society was at odds with America's democratic foundations of legislative politics. Two positions were starkly demarcated. The defense rationalists-cum-policy analysts staunchly advocated a "rational" means for reaching public decisions based on scientific rigor and objective analysis, claiming that PPBS would identify national priorities and the best policies to achieve them.<sup>172</sup> Opposed to this confidence in the power of rational analysis alone to remove politics from judgment, congressmen and academics countered that whereas systematic study could yield helpful information to decision-makers, the PPBS system as described and instituted by its advocates contradicted the democratic political process and led to the top-down, centralized formation of executive judgments. However, the diligent attention of Congressional leaders and other critics faded as the force behind the rational analysts established the new decision technologies as part of the nation's intellectual and institutional endowment.

#### **D. Stabilization of a Knowledge Production Regime**

PPBS required tremendous institutional infrastructure. This was especially the case after 1965, when President Johnson mandated that PPBS be standard operating procedure in all federal agencies. The same techniques used in the Pentagon were advocated for the smooth operation of civil society. Johnson's Great Society Programs and War on Poverty proved to be fertile ground for proliferating the burgeoning field of

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<sup>172</sup>Thrust of Johnson's introductory statement of Aug. 25, 1965, *Planning Programming Budgeting* (1970), 503-504.

policy analysis. In his doctoral dissertation on RAND, David Jardini convincingly argues that as social unrest simmered to the boiling point in the 1960s, cold war decision technologies developed and harnessed to fight an external adversary were turned inward, as the real threat to "democracy" proved to be discontented citizens.<sup>173</sup> The management techniques developed at RAND to stand off a nuclear-armed opponent could similarly be deployed to fight a war on poverty. As the 1960s wore on, and as growth on the national security front tapered off, consulting in the field of domestic social welfare policy became a high-growth sector. RAND, which would have faced cut backs and institutional stagnation, led the way toward honing the tools of rational policy analysis for the challenges of domestic policy. "Systems analysis" underwent a face-lift and reassumed its identity under the more vogue phrase "policy analysis."<sup>174</sup> The basic set of decision-theoretic tools developed at RAND in the 1950s would serve as the new conceptual foundation for what would become the new field of "public policy," applicable to domestic and foreign policy.<sup>175</sup>

By the time PPBS was discontinued in federal bureaucracies in 1969 due to the lack of compatibility between its tendency to centralize and hierarchalize authority, and civilian agencies unused to military-style regimentation, the RAND-style cost-effectiveness analysis had become central to numerous institutional practices. A disciplinary revolution was already well underway: The new field of policy analysis had a specially trained elite corps of practitioners. Training programs were created for government staffers, and curriculum at leading business schools was transformed to create marketable graduates with the appropriate tools. The new decision theoretic tools were the hallmark of the proliferating think tanks and consulting agencies. 'Public Administration' schools were transformed in to 'Public Policy' programs as the new

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<sup>173</sup>Jardini, "Out of the Blue Yonder" (1996), esp. chaps. 6 and 7.

<sup>174</sup>Direct lineage of defense-style "systems analysis" and broader purview "policy analysis" are discussed by Quade, oral history interview, Feb. 18, 1988, 45.

<sup>175</sup>J. P. Roos, *Welfare Theory and Social Policy. A Study in Policy Science* (Helsinki: Societas Scientiarum Fennica, 1973), 76-105, esp. 85.

curricula and practices became routine. The new field of policy analysis was anchored by a conceptual foundation which would ground future thinking about legitimate policy-making practices and standards of fairness.

The key to success of the dual conceptual and institutional revolution was that the new methods gained a de facto legitimacy before they had been tried and debated in any public forum. The decision technologies did not filter into mainstream practice from the world of academia, but were designed in a hands-on manner to revolutionize national security decision-making and to integrate budgeting with strategic planning in order to centralize control. Subsequently, as officials such as Secretary of Defense McNamara employed the RAND-PPBS system in order to exercise top-down control, and as practitioners were appointed to prestigious, influential posts, the new decision tools which frontally challenged democratic legislative processes gained wide-spread currency.

The de facto legitimacy acquired by systems analysis and RAND's program-budgeting is contrary to a common understanding that acceptance presupposes that legitimacy has already been established. With "scientific knowledge," or at the intersection of politics and processes of knowledge production, it is often believed that superior explanatory power is the criterion for successful promulgation. For example, in *The Structural Transformation of the Public Sphere*, Jürgen Habermas argues that growing belief in the right and capability of all men to participate in governance fueled the momentum behind the increasing franchise in nineteenth-century Europe: an abstract theory of legitimate social practice served as a rationale which brought about its manifestation in material culture. A concept of legitimate governance served as the rationale anchoring the evolving practice of public sphere democracy.

With the institutionalization of systems analysis and PPBS, and the subsequent development of the new discipline of policy analysis, the interplay of theoretical validity and successful promulgation were reversed: rational decision technologies gained

legitimacy not on paper or in intellectual debate, but *because* they became institutionalized in practice and played the role of transferring authority, rationalizing ponderous decisions, and shaping the material reality of people's lives. McNamara's showdown with the Joint Chiefs of Staff hinged on his claim to superior judgment and normalized untested decision practices which in turn empowered a new policy elite and shifted the basis of authority, from multi-layered discussion throughout the military chain of command, to his office and person. As the new decision technologies proliferated in Johnson's Great Society Program, "policy analysis" became an accepted manner of making foreign and domestic policy judgments. Congressmen could only question the legitimacy of the role the new policy tools had come to play after the fact—after they had already become normalized procedures with institutional capital and socially empowered advocates. This broad de facto legitimacy, which rational policy analysis maintains to this day by its wide-spread institutional currency, cannot be isolated from the high academic standing it has come to achieve. Planning-programming-budgeting and cost-effectiveness analysis became confirmed as methods not because they demonstrated their credibility and worth, but because they became institutionalized as social practices carrying the weight of social decision.<sup>176</sup> Thus, when the rational policy tools made their way into the academy they did so with all the power and prestige of confirmed and established practices whose practitioners were well-connected and respected.

Two additional distinct points characterizing rational planning tools distinguish these tools from abstract political theory. The epistemological framework embodied in

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<sup>176</sup>See Alain Enthoven's testimony. Senators asked whether there had been any attempts to assess how effectively PPBS and systems analysis made decisions. Enthoven replied that this has never been attempted because it would cost too much, and because the officers in question would not be able to attain the necessary objectivity, Oct. 17, 1967, *Planning Programming Budgeting* (1970), 296-297; see also Staat's testimony, Mar. 26, 1968, *Planning Programming Budgeting* (1970), 370-371, and Staat's testimony to the effect that the cost of PBB remained unknown, *Planning Programming Budgeting* (1970), 361-362.

PPBS and systems analysis did not exist independently from the constitution of PPBS and systems analysis as social practices. Policy analysis as a regime of knowledge production did not exist prior to or independently from the social processes it inhabited. At both RAND and the Department of Defense, researchers and staffers contributed to the development of rational policy analysis in their efforts to effect actual policy judgments. Similarly, in both the DOD and RAND venues, the conceptual apparatus of rational planning was inseparable from the social practices which made it valuable. At RAND and subsequently in the Department of Defense, the momentum behind, and commitment to, rational decision-making tools was grounded in the authoritative leverage these tools provided. As contemporary observers noted, the new analytic policy methods were popular because they carried weight in policy discussions.<sup>177</sup> Their authority seemed distinct from the voluminous studies themselves which, most likely, few people ever read.

The establishment of rational policy analysis as a knowledge production regime followed a straightforward pattern. In a single stroke, PPBS and systems analysis gained an impressive institutional footing in the Pentagon. Because it was such a large organization, commanding more than half of the nation's federal budget and 10% of its GNP by the end of the 1960s, and controlling the lives of four million civilian and uniformed personnel, the RAND-incubated decision technologies rapidly achieved authority over numerous minds, bodies, and resources.

The myriad and weighty decisions funneled through PPBS, especially when it was instituted in the Bureau of the Budget, required echelons of trained analysts. By 1968 the number of federal employees whose jobs were devoted to PPBS had risen to over 800. Senate hearings of the late 1960s made apparent the extreme shortages of such appropriately trained staffers. According to Kenneth Mulligan of the U.S. Civil Service Commission, the government was short of over 10,000 people in the

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<sup>177</sup>Katzenbach, Jr., "Ideas: A New Defense Industry" (1961), 20-21.

administrative-analysis area. Government training programs were held for staff working with PPBS. Thousands of employees took courses ranging from two day seminars to nine month courses of university study. Economists with the correct background took leading roles. As Mosher observed, "The new leadership in federal budgeting consisted of a...special breed of economists...equipped with experience and training in the analysis of governmental programs...gained in the RAND Corporation."<sup>178</sup> Alain Enthoven found that graduates from business administration programs were more suited to analysis than were economics majors. In order to find qualified people, Comptroller General Elmer B. Staats worked with the deans of leading schools so that curriculum and training could meet the government's needs. Comptroller Staats testified in Senate hearings,

We have made a very major effort to recruit good people. We have an educator consultant panel which meets with us two or three times a year. This panel includes several deans of business schools. It also includes the dean of engineering at Johns Hopkins, a representative of the field of public administration, and so on. These people can help us relate our training programs to the changing curricula of the colleges and universities. They can help acquaint their own students with opportunities that would be presented if they came with out organization. They can also help us on our own internal training program.<sup>179</sup>

Thus, the institutionalization of PPBS and systems analysis directly affected the curriculum of professional graduate programs. Harvard University's School of Business Administration was also caught up in the excitement of the new decision technologies. Before assuming responsibility at the Ford Motor Company, Robert McNamara had been on the faculty of Harvard's business school. During his tenure as Secretary of Defense, he inspired colloquia which discussed the new policy ideas.

The pattern of interlocking RAND alumni careers weaving in and out of government, consulting bodies, and universities, was another powerful factor in establishing a knowledge production regime. The most highly visible of these career

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<sup>178</sup>Mosher, "Program Budgeting in Foreign Affairs" (1968), 16.

<sup>179</sup>Staats's testimony was to the U.S. Senate, Subcommittee on National Security and International Operations, Committee on Government Operations, Mar. 26, 1968, *Planning Programming Budgeting* (1970), 369.

paths are those of key alumni who helped to engender the disciplinary shift from Public Administration of the 1940s and 1950s to Public Policy, which had recognizably replaced it by the mid-1970s.<sup>180</sup> At Harvard, ex-RANDite Thomas Schelling, who had a joint appointment at Harvard's schools of government and business, with his rational choice oriented student Richard Zeckhauser, led the movement for core curriculum reform and the reconstitution of the old Graduate School of Public Administration under the new name of The Kennedy School of Government. At the University of California, Berkeley, RAND alumni and DOD bureaucrat William Niskanen presided over the establishment of the curriculum for the new Public Policy Program. After assuming the Presidency of RAND in 1964, and pursuing the newly established high growth area of domestic policy analysis, Henry S. Rowen joined the Stanford Business School faculty and served as director of the Urban Management Program.<sup>181</sup> Alain C. Enthoven similarly joined the Stanford Business School faculty. This set of career paths is only the most visible and easiest to articulate in the wider network of connections which served to establish rational decision technologies as a basic part of the American intellectual endowment, and as the core idea set of the newly emergent field of Public Policy.<sup>182</sup>

The institutionalization of the rational decision technologies into the practices of government, the birth of the discipline of public policy with cost-effectiveness modes of analysis as its core conceptual apparatus, and the professionalization of a new policy elite realized H. Rowan Gaither Jr.'s original vision that philanthropies such as The Ford Foundation must support

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<sup>180</sup>Werner Jann, "From policy analysis to political management? An outside look at public-policy training in the United States," in Peter Wagner, et. al., eds., *Social Sciences and Modern States* (Cambridge: Cambridge University Press, 1991), 110-130.

<sup>181</sup>For discussion of the Ford Foundations' involvement in establishing the New Look management program in the Stanford Business School between 1958-1963 see Robert E. Gleeson and Steven Schlossman, "George Leland Bach and the Rebirth of Graduate Management Education in the United States, 1945-1975," *The Magazine of the Graduate Management Admission Council*, Spring 1995, 35.

<sup>182</sup>Will add paragraph discussing the proliferation of think tanks forced upon military services in order to enter into policy debates, 1955-1965.



(a) work that will influence the policies or operations of other institutions on the widest possible scale, or (b) work that will build up a new professional corps or a new system of techniques and operating standards.<sup>183</sup>

The network of actors which Gaither worked with and supported in his dual capacities as Chair of RAND's board of trustees and first President and later Chair of The Ford Foundation, ended up attaining not just Gaither's dream of far-reaching policy impact, but also establishing rational management techniques as part of the intellectual and institutional endowment of the United States.

One final indication of the establishment of a regime of knowledge production results from the fact that despite the clear failure of rational defense planning to prosecute the war in Vietnam, rational policy analysis would go on to colonize a venue of global proportions. When in 1968, a teary and emotionally-embattled McNamara seemed incapable of enduring the pressures of his office, his aides searched for a position of sufficient prestige to which the Secretary could retreat without humiliation. Thus, upon his ignominious exit from the Department of Defense, McNamara immediately assumed the Presidency of the World Bank. At the World Bank, the RAND-style, objective, cost-benefit strategy of policy formation would be made the universal status quo in development economics—a position it still holds today.

### **Epilogue—All roads to rational choice lead from RAND**

The rise of rational choice theory in the social sciences, especially economics and political science, cannot be considered independently from the military-strategic world of the defense rationalists. In the 1950s, the phrase "rational choice" was used in reference to the policy environment in which RAND researchers attempted to base policy decisions on rational and objective calculation.<sup>184</sup> The cadre of RAND defense economists proceeded on to Washington under the designation of "defense rationalists."

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<sup>183</sup>*Report to the Study of The Ford Foundation on Policy and Program (1949)*, 113.

<sup>184</sup>See for example, Alain C. Enthoven, "Systems Analysis and Decision Making," *Military Review*, 43, Jan. 1963, 7-17.

Leading figures in developing rational choice theory in the social sciences were also key contributor in the world of rational defense strategy, including Thomas Schelling, Howard Raiffa, Duncan Luce, William Niskanen, Henry Rowen, Alain Enthoven, Herbert Simon, and Mançur Olson—all of whom spent time at RAND. Other crucial theoreticians in the rational choice world who were less focused on national security concerns but were also at RAND include Kenneth Arrow, James Buchanan, Paul Samuelson, and Robert Solow.

With the overlap of theoreticians who resided in national security world and who advocated rational choice theory, it is not surprising that the conceptual toolbox for rational choice theory was developed predominantly at RAND in the 1950s. This toolbox contained rational decision analysis considering risk and uncertainty, and more importantly, game theory. In the late 1940s and early 1950s, John Williams, head of RAND's mathematics division, avidly supported research into game theory because he and others, incorrectly, thought it promised great dividends for warfare.<sup>185</sup> RAND researchers hoped to apply game theory to situations of nuclear strategy. Von Neumann and Morgenstern's *Theory of Games and Economic Behavior*, which gained no supporters among economists in the 1940s, served as a fruitful point of origin of a research community which sprung up at RAND.<sup>186</sup> Game theory was innovative because it brought into being an axiomatically-defined concept of human rationality in which two parties selected strategies which enabled them to maximize their expected utilities. It differed from neo-classical economic theory insofar as it modeled actors who strategically interacted with each other instead of simply maximizing expected utility in a static environment without competitors rationally opposing each other. Von Neumann and Morgenstern developed the rational rules of engagement for a situation with two

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<sup>185</sup>Quote of Charles Hitch to this effect in Kraft, "RAND: Arsenal for Ideas" (1960), 76.

<sup>186</sup>Robert J. Leonard, "Creating a Context for Game Theory," in E. Roy Weintraub, ed., *Toward a History of Game Theory* (London: Duke University Press, 1992), 29-76.

players and a zero sum outcome, which seemed exploitable for the new challenges of atomic bombs in a bi-polar cold war world. Economists were slow to recognize the potential of strategic actors vying with one another for outcomes to model a market place. However, the logic of "rational action" was exploited to study two nations caught up in a nuclear showdown.

Locating the development of the conceptual apparatus for rational choice theory within the national security environment counters a basic myth frequently perpetuated about the origin of rational choice theory. This mythos contains two elements. First, that the "rational actor" has always been at the heart of, if not all economic thought since Adam Smith, then at least neo-classical economic thought of the marginalists: the rational actor seeks to maximize his pleasure per dollar spent. Second, that rational actor theory, which was originally developed in the domain of economics, was subsequently exported to other disciplines including political science, sociology, and psychology.

In celebrating RAND of the late 1940s and 1950s as crucial to the development of rational choice theory's conceptual apparatus, the mythic history is reevaluated, and some of the peculiar tensions characterizing 'rational choice theory' seem less puzzling. In the popular account, rational actor formalism developed in economic theory and anchored the neo-classical paradigm. As this popular account continues, it was natural that other disciplines would seek to capitalize off the explanatory power offered by neo-classical micro-economic theory: other fields sought the payoff of regarding humans as self-interested actors seeking to maximize expected utility according to a well-ordered set of transitive preferences. This mythic version assumes theoretical continuity within economics which cannot be substantiated. The tools of economic theory were changing in the late-twentieth-century synthesis, just as "rational choice theory" was gaining currency in the other social sciences. Thus, the toolbox of decision theoretic methods developed at RAND in the late 1940s and 1950s, including game theory,

decision theory, and Herbert Simon's "satisficing," served as a point of origin for "rational choice scholarship" that coalesced in various fields.<sup>187</sup>

With this shift in understanding, the role RAND intellectual leadership played in articulating and promulgating rational choice theory can be grasped directly, without the distraction of a supposedly parallel historical trajectory of rational choice theory already serving as the status quo in economics. This lineage reveals two crucial facts which are otherwise hopelessly obscured. The conceptual framework for rational choice theory was developed to solve strategic, military problems and not problems of economic modeling. Furthermore, this idea set was developed to inform policy decisions, not merely retrospectively to analyze behavior as the social sciences often claim of their own methodology. Thus, the first strategic "rational actor" as conceptualized in game theory and the decision sciences was a nation-state locked in the icy and treacherous grip of the cold war. The theory of rational action had interlocking descriptive, normative, and prescriptive components, and was developed to inform action respecting nuclear strategy and complex questions of weapons procurement. This set of conditions inspiring the early development of the rational choice toolbox helps to explain why the theory typically carries the self-referential presumption of intentional rational calculation on the part of actors, which must resemble something analogous to the theory itself. It also explains how the academic world of rational choice theory in the U.S. social sciences seems only a breath away from the world of policy analysis: the two began in one motion, with one set of theoreticians defining, supporting, and championing the same basic idea set in two worlds.

Four of the six canonical works "rational choice" texts are linked directly to RAND research and alumni. Kenneth Arrow wrote the landmark text *Social Choice and*

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<sup>187</sup>See Philip Mirowski and Wade Hands on Arrow and Samuelson's roles in the neo-classical synthesis, "A Budget of Paradoxes: The Postwar Stabilization of American Neoclassical Price Theory," paper to be presented to the conference "Transformation of American Postwar Economics," Duke University, Apr. 1997.

*Individual Values* while he was at RAND, surrounded by the fervor of game theory, in the summer of 1948. In the 1950s, Arrow continued contracting for RAND even as he assumed a professorship at Stanford University. His student Anthony Downs wrote the second canonical text, *An Economic Theory of Democracy*, before leaving academia to found a consulting firm. James Buchanan, another founding father of the rational choice approach to politics, wrote *The Calculus of Consent* with Gordon Tullock in 1961 (check date). Buchanan had spent the summer of 1954 at RAND. His work emphasizes the implications of rational choice analysis to the world of public finance and policy. Mancur Olson, who was at RAND in the late 1950s, received copious notes on his manuscript for *The Logic of Collective Action* from prominent RANDite Thomas Schelling.

Only two key contributors to the early history of rational choice theory did not set foot at RAND: Vincent Ostrom and William Riker. Nonetheless, they benefited from the same intellectual heritage supported by RAND's original chairman of the board, H. Rowan Gaither. Gaither, who since the 1940s had been committed to developing the social sciences as a means to solve various problems facing humanity, was inspired to establish a center for the study of the behavioral and social sciences in the early 1950s. This idea reflected his abiding interest in Program Area V of The Ford Foundation, devoted to studying human behavior. When he assumed the Presidency of The Foundation, he was unflagging in his efforts to establish such an institution. His vision for the center was to have independent grounds and buildings for scholars working on research interests furthering the understanding of human nature and society. One stumbling block was finding a university which would allocate the buildings and grounds. Gaither and his associates had little success at Harvard and other East Coast schools. In conversation with Clark Kerr, then president of the University of California, the idea emerged of building this center at Stanford University. Stanford, with its spacious campus, accepted the Ford Foundation's proposal, and in 1956 the Center for the Study of the Behavioral Sciences was established on a hill overlooking the campus.

Like RAND, the Stanford Center was off the beaten track, and permitted its researchers the luxury of concentrated work balanced with stimulating conversation. Fitting even more closely with Gaither's vision, the center was remote from the common world of mass culture and mass society. Its experts were in a quasi-think tank environment, above the fray of everyday social politics. Nor were its thinkers accountable to mass society. Gaither's Ford Foundation staffer who was investigating public perception of the Foundation concluded,

People seem willing to grant us special areas of competence which they don't presume to judge; the [Stanford] Center, for instance, is referred to as "the Monastery" and "the think factory," both of which emphasize that it's outside plain folks' orbit.<sup>188</sup>

Vincent Ostrom, who would become a path-breaking rational choice theorist working at the intersection of rational choice-oriented social science and policy-making, resided at the Center its first year, in the company of the RAND decision theorists Howard Raiffa and Duncan Luce. William Riker, who was rescued from a year of teaching responsibilities at Lawrence University, Wisconsin, by a Ford Foundation grant in the 1950s, also profited from the Stanford Center and its RAND influence. Riker spent his crucial year of 1961-1962 at the Center, before taking up his position on the faculty of the department of political science at the University of Rochester. It was during this year, a year spent in the company of Kenneth Arrow and Duncan Black, that Riker wrote his first rational choice-oriented theoretical account of the workings of American democracy, *The Theory of Political Coalitions*.

H. Rowan Gaither's steadfast support of the social sciences as tools for social management and rational defense management had a two-fold impact on the emergence of the rational choice framework. Both at RAND and through the Ford Foundation's establishment of the Stanford Center for the Behavioral Sciences, theorists had the freedom to generate a body of ideas. Furthermore, the empowerment of the defense

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<sup>188</sup>Memo from Adie Suehsdorf to Gaither and Newton, Apr. 5, 1956, Gaither Series VI, box 12, folder 145, FFA.

rationalists helped to gain currency for their ideas of rational and objective policy analysis. As these theorists found their way back to academia after stints of service in Washington, they had the prestige helpful to making their idea set part of the mainstream intellectual endowment of American society. William Riker's establishment of a Public Policy program within this Policy Science department at the University of Rochester in 1975 is consistent with this general pattern of the inseparability of "rational choice theory" as an empirical social science from rational policy analysis.

A final twist helps keep perspective on the aim versus the outcome of philanthropic beneficence. Despite the seeming complete triumph of his original vision, a generational gap existed between Gaither and the next wave of hard-hitting rationalists who he helped to establish. Gaither, though elitist and promoting a concept of enlightened social management at odds with public sphere democracy, believed spiritual fulfillment, and mental and emotional well-being, to be essential attributes of human existence.<sup>189</sup> Gaither's world was still one wherein the idea of public service offset a narrow view of self-interested rational action.<sup>190</sup> Gaither took a dim view of "'schools of economic thought [which] have from time to time constructed over-all 'systems' through the use of convenient and unrealist abstractions, such as...the fiction of the 'economic man.'"<sup>191</sup>

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<sup>189</sup>*Report of the Study for The Ford Foundation on Policy and Program (1949), 22.*

<sup>190</sup>*Ibid.*, 18.

<sup>191</sup>*Ibid.*, 72.

**PART III:****RATIONAL CHOICE THEORY AS A TRANSFORMATION IN THE LANGUAGE OF DEMOCRACY**

Part Three accomplishes four goals. First, it defines rational choice theory as a clear-cut historical object. Second, it advances the argument that rational choice theory was articulated as a multi-disciplinary set of interlocking revolutions that included public policy, social choice, public choice, public finance, positive political theory, and neo-classical economics. Rational choice theory is also germane to law and economics, and international finance and development economics, but these fields will not be discussed. Third, it explores how rational choice theory has been consistently developed in the joint contexts of theory and practice. Fourth, I argue that rational choice theory represents a new language of politics with implications for both democratic theory and democratic practice. I make this four-pronged argument by focusing on three core disciplinary transformations, including the transition from social welfare economics to social choice precipitated by Kenneth J. Arrow's *Social Choice and Individual Values* (1950s to the present); the public choice approach which affected public finance and thinking about constitutional design spearheaded by James M. Buchanan and Gordon Tullock (1960s to the present); and the movement in political science referred to as positive political theory masterminded by William H. Riker (1950s to the present).

This chapter challenges three commonly accepted, but simplistic, historical accounts of the development of rational choice. Whereas each of these accounts is a worthwhile starting place, even combined they are insufficient to grasp fully either the nature of rational choice as a historical object, or the pattern of its successful development. I briefly touch on each in turn to acknowledge the importance of the research which has been done to comprehend the rational choice movement. Most often practicing researchers find it helpful to think of the roots of the rational choice tradition



as readily demarcated by the six consensually-acknowledged canonical works which continue to anchor their field. These texts include: von Neumann and Morgenstern's *Theory of Games and Economic Behavior* (1944); Duncan Black's "On the Rationale of Group Decision Making" (1948); Kenneth J. Arrow's *Social Choice and Individual Values* (1951); Anthony Downs' *An Economic Theory of Democracy*; James M. Buchanan and Gordon Tullock's *The Calculus of Consent* (1962); and William H. Riker's *The Theory of Political Coalitions* (1962), and Mancur Olson's *The Logic of Collective Action* (1965). The idea that the history of rational choice is synonymous with these pathbreaking classics is reinforced by theorists making sense of their own origins. Thus, that the center of gravity to the rational choice movement lies within these texts is echoed by rational choice scholars who sketch out their roots when providing retrospective accounts of the genesis of their field.

Certainly the rational choice canon cannot be dismissed as less than crucial to the establishment of the rational choice tradition, and it may further seem plausible that the entire rational choice movement could be circumscribed by studying the genesis of these individual texts, their relations to each other, and the institutional affiliations of their authors. However, it soon becomes apparent that tracing the intellectual, biographical and institutional histories related to these texts does not explain insufficient to the task of explaining the dramatic emergence of rational choice theory as a field. This is because focusing on the texts makes it appear that rational choice developed as a single trajectory of ideas whereas, as I will argue below, it is more appropriate to see rational choice as a set of distinct, although mutually reinforcing and overlapping, theoretical movements. Focusing on the rational choice canon as the center of the movement obscures the fact that in actuality the key texts of the canon in themselves represent the three distinct disciplinary transformations which structure this chapter: social choice, public choice, and positive political theory. Furthermore, focusing on the rational choice canon as a single, unified trajectory detracts from

understanding how the rational choice canon developed as a "complex of knowledge," characterized by distinct hubs of activity with shared researchers, institutions, ideas, and funding patterns. Concentrating on a canon distracts from its embodiment in concrete institutions and tangible networks of people. The path breaking rational choice scholars all shared two institutional foci crucial to the institutional and professional success of rational choice. Von Neumann, Arrow, Downs, Buchanan and Olson were all affiliated with RAND; and Black, Downs, Riker, Tullock, Buchanan and Olson were all members of the Public Choice Society. This shared institutional affiliation is telling of rational choice's development as a complex of knowledge which grew up in distinctly recognizable disciplines and yet shared professional resources and sites for scholarly interaction. As will become evident, each of the three disciplinary movements discussed here, while representing a distinct branches of rational choice scholarship, all share common hubs of professional activity. Thus whereas it is appropriate to study each movement by itself, comprehensive understanding of rational choice scholarship requires appreciating the myriad interconnections between distinct avenues of research.

A second frequently held idea about the development of rational choice theory is that it is sufficient to focus on rational choice as a disciplinary revolution in political science or in other social sciences, including economics, sociology, and psychology, to comprehend the essence of the movement. Thus, for example, Gabriel Almond discusses how rational choice theory represents a Kuhnian style disciplinary revolution in political science.<sup>1</sup> This focus on an individual social sciences, or on social science in general, fails

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<sup>1</sup>Gariel A. Almond, "Rational Choice Theory and the Social Sciences," *A Discipline Divided: Schools and Sects in Political Science* (London: Sage Publications, 1990), 117-137; Donald P. Green and Ian Shapiro, *Pathologies of rational choice theory: A critique of applications in political science* (New Haven: Yale University Press, 1994); Steven G. Medema, "'Related Disciplines': The Professionalization of Public Choice Analysis," unpublished manuscript of paper given at a Duke University history of economics conference, Spring 1999. Anthony Downs, *Journal of Political Economy*, 72, Feb. 1964, 87-88; Irwin N. Gertzog, *American Political Science Review*, 63, Dec. 1964, 973-974; Henry G. Manne, *George Washington Law Review*, 31, June 1963, 1065-1071; R.J. May, *The Australian Quarterly*, Dec. 1963, 111-113; Robert McGinnis, *The Annals of the American Academy of Political and Social Science*, 346, Mar. 1963, 188; James E. Meade, *Economic*

to adequately grasp the historical development of rational choice theory, although it is useful to have a sense of disciplinary transformation delimited by disciplinary boundaries. Hence, articles like the one by Almond are helpful; but they are incomplete in not appreciating the manner in which the impetus behind the successful promulgation of the rational choice idea set had a greater point of reference than a social science, or even the social sciences more generally. Focusing on a single social science makes it difficult to see how some of the power behind the movement stemmed from its relevance to a larger arena which spanned both social science and hands-on policy formation. In the account I put forth which focuses on rational choice as developing as a complex of knowledge, it becomes clear that disciplinary developments within, say, political science, are interconnected with other disciplinary revolutions in public policy, social choice and public choice, and are interrelated with a larger scope of research outside of political science. For example, Arrow, Buchanan and Tullock, and Riker all have interests in the domain of policy in addition to their roles squarely defined by social science inquiry.

A third version of the development of rational choice theory presents it as "economics imperialism," holding that the methods of economics, and the assumption that self-interested rational action characterizes human behavior, spread from economics and "took over" other disciplines such as political science.<sup>2</sup> The problems with this depiction are three-fold: First the thesis holds that rational choice theory was

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*Journal*, 73, Mar. 1963, 101-104; R.S. Milne, *Political Quarterly*, 33, Oct. 1962; Mançur Olson Jr., *American Economic Review*, 52, Dec. 1962, 1217-1218; C.M. P., *Ethics*, 75, Oct. 1963, 65-68; William H. Riker, *Midwest Journal of Political Science*, 3, May 1959, 207-210; William H. Riker, *Midwest Journal of Political Science*, 6, Nov. 1962b, 408-411; Kenneth Vines, *The Journal of Politics*, 25, Feb. 1963, 160-161; and Benjamin Ward, *Southern Economic Journal*, 29:4, 1963, 351-353.

<sup>2</sup> Gary J. Miller, "The impact of economics on contemporary political science," *Journal of Economy Literature*, 35, Sep. 1997, 1173-1204; Dennis C. Mueller, "Public Choice: A Survey," in J.M. Buchanan and R.D. Tollison, eds., *The Theory of Public Choice-II* (Ann Arbor: University of Michigan Press, 1984); and Robert M. Solow, "How did economics get that way and what way did it get? American Academic Culture in Transformation: Fifty Years, Four Disciplines," *Daedalus*, Winter 1997, 39-58.

fully articulated within economics and then colonized, as it were, other fields, whereas more accurately rational choice was developed simultaneously in several fields. Second, this theory displaces the credit for innovation from interdisciplinarily-based researchers to mainstream economists. Third, the "economics imperialism" scenario ignores that economics as a discipline was undergoing internal turmoil in the 1940s and itself was transformed by the rational choice approach in the 1960s and 1970s as game theory made its way into the heart of microeconomic analysis, and market phenomenon were increasingly seen to be interlaced with market "externalities" requiring that "political economy" once again be regarded as a single unit of study.

These three ways of understanding the development of rational choice theory represent the extent of the literature on its history; each is a good starting point but ultimately proves unsatisfactory for understanding either how rational choice was constituted as a historical movement, or its broad-ranging significance which spans the social sciences and beyond to encompass public policy, ethics and justice, as well as law and economics, and which has profound implications for democratic theory and practice. In my account I integrate the two impulses to trace out either the development of the canonical literature, or the apparently free-standing disciplinary revolutions. I proceed by focusing on the three distinct, though interrelated, disciplinary transformations initiated by Arrow; Buchanan and Tullock; and Riker. Respectively these four scholars wrote three of the canonical texts and initiated the academic subfields of social choice, public choice, and positive political theory. In focusing on these three distinct though interrelated intellectual movements, I am reconstituting the way in which we understand rational choice theory as a historical object. Combined with my previous discussion of the disciplinary formation of public policy, which too represents a subfield of rational choice, I show how rational choice is articulated as a complex of knowledge which has distinct hubs of professional activity but shares players, resources, institutional affiliations and ideas. Thus, rational choice scholarship

which has developed in well-defined movements such as Buchanan and Tullock's Center for the Study of Public Choice, and Riker's University of Rochester department of political science, represents a single tapestry with distinct patterns which are woven out of a shared set of theoretical commitments, fundamental actors, core institutions and resources. "Rational choice" is an umbrella term which covers a distinctive set of independently recognizable disciplinary transformations that were mutually inspiring and reinforcing and are anchored in the same research conventions.

Besides elaborating how social choice, public choice, and positive political theory are distinctive, yet intertwined, academic traditions, I will also show how in each case theory and practice were interrelated concerns. Although rational choice theory was certainly developed within the context of social science investigation which understands itself to be providing theoretical explanations of human actions and human society, in social choice, public choice, and positive political theory theoretical developments were related to normative conclusions, and to public policy. The various theoretical strands comprising rational choice theory have from the start, and throughout its articulation, played descriptive (or explanatory), normative, and prescriptive roles.<sup>3</sup> In addition, the theoretical content of rational choice is unique in the social sciences because it spans between the researcher and his subject, incorporating both into the same meaning of action contexts. "Rational action" represents the researchers' ideal of human behavior and it explains the action context of the subject under study. Rational choice theory is used as a tool to understand human behavior and it is also used to motivate and legitimate policy initiatives.

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<sup>3</sup>To get a sense of the interrelationship between rational choice theory and decision-making technologies, as well as of the interrelationship between descriptive, normative and prescriptive elements, see the collection of papers from the 1983 Harvard Business School conference on decision science, in David E. Bell, Howard Raiffa, and Amos Tversky, eds., *Decision Making: Descriptive, Normative, and Prescriptive Interactions* (Cambridge: Cambridge University Press, 1988).

Besides arguing that rational choice theory developed as a complex of knowledge which bridged across the hypothetical divide of social theory and social practice, I also argue that rational choice theory has represented a significant transformation in the language and practice of politics, specifically American democracy. In the three cases of Arrow; Buchanan and Tullock; and Riker, I will argue that these theorists contributed to a new language for describing political processes of collective decision-making. The terms of this new language include a total commitment to methodological individualism, a formal definition of self-interested rational action, an ordinal measure of utility, and the idea that the legitimacy of collective decision-making procedures hinges on an appropriate mathematical mapping from individuals' desires to a collective social states. These terms will be fully explored in the upcoming discussion.

I argue that this transformation of the vocabulary used for addressing political processes underlies a sea change in the intellectual and practical moorings of democracy. The rational choice approach to democracy, although drawing from some earlier traditions such as the political economy of Adam Smith, the utilitarianism of Jeremy Bentham, and the marginalist economists' attempts to measure collective social welfare, introduced an unprecedented set of terms for evaluating democratic procedures aimed at achieving collective decisions. This new language resulted in radical conclusions which challenged traditional artifacts of democratic rule such as the concepts of public interest, majority rule, and rational deliberation. In articulating the terms of this new language of politics, I will concentrate on eliciting these new terms, and will also provide a few contrasts of formerly viable languages of politics and democracy which, to their advocates, seemed as legitimate as the rational choice vocabulary seems to contemporary theorists. For example, the political vocabulary of John Dewey has radically different consequences for democratic theory and practice because it is built on entirely different premises. The language of rational choice, once its founding assumptions are accepted, unyieldingly leads to a set of conclusions about democracy

which define many parameters of our contemporary political theory and even, increasingly, our political practice. Furthermore, as the rational choice vocabulary has been accepted as the intellectual standard in professional programs ranging from business to law and public policy, and to internationally relevant arenas of scholarship such as international finance and development economics, this vocabulary has become a standard-bearer for concepts of democracy with world-wide significance. As I proceed through the material I strive to elicit how rational choice scholarship, far from representing a new intellectual movement of limited validity to the social sciences, increasingly has set the terms of national discussions of democratic theory, constitutional design, justice, and the conceptual foundations of public policy analysis.

## Chapter 4

### Kenneth J. Arrow, *Social Choice and Individual Values*, and the Transformation of Social Welfare Economics

In 1948, Kenneth J. Arrow, a Columbia University economics doctoral student, served as an intern at the RAND Corporation. There he began working on the paper which would be published in 1951 as the monograph *Social Choice and Individual Values*. This text mathematically proved that the democratic principle of majority rule does not guarantee "generally beneficial" collective social outcomes. Arrow's text challenged the foundations of democratic theory. In the following years it initiated the economics subfield called "social choice," and it transformed the tradition of social welfare economics, democratic theory, and the foundations of policy analysis. In 1972, Arrow received the Nobel prize in economics, in large part for his work on *Social Choice and Individual Values*.

"Social choice" refers to a research tradition initiated by Kenneth J. Arrow's 1951 text *Social Choice and Individual Values*. Unlike many intellectual movements, such as Buchanan and Tullock's public choice, or Riker's positive political theory, social choice scholarship did not result from a specific institution or school, but grew as the result of independent scholars contributing to a recognizable field of literature.<sup>1</sup> The social choice tradition gained momentum in the 1950s and was an established sub-discipline within economic by the publication of Arrow's second edition of *Social Choice and Individual Values*, in 1963.<sup>2</sup>

This chapter on Arrow, social choice theory, and the transformation of welfare economics, is broken into the following sections. The first discusses the genesis of

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<sup>1</sup>For the collection of papers representing the backbone of this tradition see Charles K. Rowley, ed., *Social Choice Theory, Vol. I The Aggregation of Preferences; Vol. II Utilitarian and Contractarian Goals; Vol. III Social Justice and Classical Liberal Goals* (Brookfield, VT: Edward Elgar Pub. Co., 1993).

<sup>2</sup>Kenneth J. Arrow, *Social Choice and Individual Values*, 2nd ed. (London: Yale University Press, 1963).



Arrow's text and provides three interpretations of the text's significance and key insights. I argue that Arrow's famous result did not so much convey new information as it provided a new language for addressing problems of collective decision-making ranging from social welfare to democratic government. The second section discusses the reception of Arrow's social choice among welfare economists who were interested in a different set of research questions; this discussion elicits the differing frameworks of the two sets of researchers. The third section explores the elements characterizing Arrow's new language of social choice with respect to their novelty and relevance to political theory. The fourth section discusses the interconnectedness of social choice theory and the world of policy analysis. A concluding section revisits the "economics imperialism" thesis, showing how it is lacking.

#### **A. The Genesis of *Social Choice and Individual Values***

There are three ways to tell about Arrow's brilliant invention of the mathematical proof structuring *Social Choice and Individual Values*: the "brilliant Nobel laureate account," the "priority dispute" account, and the "new language" account. The first version is associated with Arrow's own account; the second is that of the ill-fated economist Duncan Black who always felt overlooked among the rational choice pantheon; the third version represents my analysis of the significance of the ideas introduced in *Social Choice and Individual Values*. In distinguishing the three versions and presenting them separately, I draw attention to the significance of my wider argument that rational choice constitutes a new language of politics. The two earlier versions of Arrow's discovery provide evidence to support my claim that the originality in Arrow's work is greater than the impossibility theorem itself, and that it extends to the language which Arrow invented for discussing how individuals' preferences over social outcomes should be aggregated to achieve a collectively rational result.

Throughout the mid-1940s Arrow cast about unsuccessfully for a dissertation topic, at one time thinking he would write a response to Hick's *Value and Capital*.<sup>3</sup> However, this topic proved intractable and Arrow continued to search for a research project. Arrow's career break came in the summer of 1948 when he accepted a internship at the RAND Corporation. Arrow had no fixed job description, and worked at the level of a "confidential" security clearance. His boss, the mathematician Olaf Helmer, assigned him the cold war task of deriving a mathematical function which would predict collective social outcomes for the entire Soviet Union. Arrow's assignment grew out of RAND's attempt to apply von Neumann and Morgenstern's game theory to problems of nuclear strategy. Game theory could be applied to scenarios of nuclear brinkmanship if it were possible to define "utility" functions for the adversaries. Utility functions essentially provide all the information required to know how a rational opponent would make decisions based on his preferences over a set of possible outcomes and his attitudes toward risk. In von Neumann and Morgenstern's theory of games, the rational actors in question were single individuals, and so the problem of deriving their "utility functions" was comparatively straightforward. However, in applying game theory to the bi-polar cold war world of American-Soviet antagonism, it was necessary to construct a single utility function for an entire nation of individuals with disparate aims.

When Arrow set upon this task it reminded him of work he had done on the well-known Bergsonian social welfare function.<sup>4</sup> In Arrow's assessment, the purpose of the social welfare function was to design a mathematical function which would translate individuals' needs and desires into a single expression for a social outcome preferred by the whole. Arrow's assignment also reminded him of the problem of decision-making

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<sup>3</sup>For an account of Arrow's graduate career see his interview in George R. Feiwel, in George R. Feiwel, ed., *Arrow and the Ascent of Modern Economic Theory* (Washington Square, NY: New York University Press, 1987), 192.

<sup>4</sup>Abram Burk Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics*, 52, 1938, 310-334.

within a firm. The goal of a firm is to maximize profit, yet decisions over how best to achieve this are made by the company's board of directors. If the members of the board are disagreed over, for example, how much risk is acceptable given different strategies for maximizing profit, how should the board reach a decision in the best interest of the company? In contemplating the problem Arrow also drew upon a course in logic that he had taken with the Polish émigré Alfred Tarski during his time at Columbia.

In the Arrow-centric account of the breakthrough leading to the central theorem structuring *Social Choice and Individual Values*, Arrow synthesized these various theoretical elements and constructed his proof: he showed that it is impossible to construct a mathematical mapping which translates individual preferences into an aggregate preference, given weak assumptions about the expression of preferences and principles structuring the aggregation process. These minimal requirements, including that there not be a dictator, that individual's preferences be positively reflected in the group's preference, that the outcome not be imposed independently of individuals' preferences, and that individuals be permitted to adopt any set of preferences, seemed to represent non-controversial features consistent with legitimate democratic decision-making procedures.<sup>5</sup> Therefore Arrow's proof seemed to undermine the premise that democratic decision-making is guaranteed to lead to outcomes which reflect the preferences of individual voters. Arrow's theorem similarly rendered the social welfare function impossible, and also applied to collective outcomes reached through the marketplace.<sup>6</sup>

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<sup>5</sup>I am leaving out the condition of the "independence of irrelevant alternatives" which stipulates that if a set of possible outcomes is removed from the selection set, neither individual nor the group preference ordering should change. Discussion over Arrow's criteria is complicated by the fact that subsequent to his 1963 edition of *Social Choice*, the middle to conditions were united into the Pareto Condition. Thus in social choice literature Arrow's conditions are often referred to in shorthand using the letters U (universal domain; all preference profiles permitted); I (independence of irrelevant alternatives); P (Pareto condition); and not D (dictatorship).

<sup>6</sup>Arrow's version of the inspiration leading to his impossibility theorem is echoed in Amartya Sen, "Social Choice and Justice: A Review Article," *Journal of Economic Literature*, 23, Dec. 1985, 1764-1776.

In a second account of Arrow's breakthrough, the above version leaves out one fundamental source of inspiration: a paper written by the economist Duncan Black which provided an economic analysis of non-market decision processes such as elections.<sup>7</sup> In this version, Black submitted his paper, "On the rationale of group decision making," to the prestigious journal *Econometrica* for which Arrow served as an anonymous reviewer. Black led the way in showing how it is possible to study voting processes using the mathematical and conceptual tools of economic analysis, presented "a type of reasoning which will contribute to the development of the theory of trade unions, the firm, and the cartel," and provided "the basis for a theory of the equilibrium distribution of taxation or of public expenditure."<sup>8</sup> Black tackled the voting problem using a two-dimensional spatial model, and introduced the concept of "equilibrium" as relevant to voting problems. When Black received his reviews almost a year later, he was told that his paper would be published contingent upon citing Arrow's work. Appalled, Black subsequently submitted and published his paper in the *Journal for Political Economy*.

In his paper, Black had revisited the work of the Enlightenment social scientist Condorcet who had proven that when three people are voting over three choices A, B, and C, and if their preferences for A, B, and C are configured such that each voter has different preferences over the couples A & B, B & C, and C & A ( $A > B > C$ ;  $B > C > A$ ;  $C > A > B$ ), then there is no clear majority winner, i.e., no "Condorcet winner." Collectively, A is preferred to B, B is preferred to C and C is preferred to A. Black had reevaluated what is known as "Condorcet's paradox," in the contemporary language of economics and had proven that the Condorcet paradox could be overcome in majority voting if individuals' preference sets were restricted such that only "single-peaked"

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<sup>7</sup>Arrow mentions reading Black's article, but only *after* he had his inspiration. See his account in an interview with George R. Feiwel, *Arrow and the Ascent* (1987), 192.

<sup>8</sup>Duncan Black, "On the Rationale of Group Decision Making," *The Journal of Political Economy*, 56, 1948, 133.

preference orderings are permitted.<sup>9</sup> Significantly, the Condorcet paradox is central to the crucial creative breakthrough in Arrow's *Social Choice and Individual Values*, and Arrow incorporated Black's results into his discussion of the impossibility theorem.<sup>10</sup> Arrow exploits the failure of transitivity characteristic of Condorcet's paradox to show that the deadlock in achieving a collectively transitive preference ordering can be broken by permitting one individual's preferences to prevail over one pair of choices such that, in the above example, outcome A is preferred to B and to C. This individual whose preferences prevail to avoid the Condorcet paradox, is, in Arrow's terms, the "dictator" who proves the impossibility of achieving collectively rational outcomes without dictatorship.<sup>11</sup> Black's supporters continue to agitate for recognition which they feel unfairly went to Arrow, who allegedly relied on Black's work for his fundamental insight.<sup>12</sup>

However, neither the "brilliant Nobel laureate," nor the "priority dispute" account suffices to explain the significance of Arrow's text. The Arrow-centric account neglects to do justice to the crux of Condorcet's eighteenth-century analysis; in fact, in many ways Arrow's proof consists of a generalization of Condorcet's three person proof to  $n$  persons; Arrow demonstrates that just as it is impossible to guarantee a collectively

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<sup>9</sup>"Single-peaked" refers to the graphical image of voters' strength of preference over outcomes having only one peak given that possible outcomes are linearly represented along one axis.

<sup>10</sup>Arrow cites Black; Arrow's discussion of single-peaked preferences translated into the language of symbolic logic is in Arrow, *Social Choice* (1963), 75-80.

<sup>11</sup>As Sen has argued, correcting for the failure in achieving a collectively transitive preference ordering is "half" of Arrow's proof; the other "half" is the demonstration that conditions I, P and U require that permitting one individual's preferences to prevail over one couplet entails that their preferences be decisive over all couplets of choices. See Sen, "*Social Choice and Justice: A Review Article*" (1985), 16-17.

<sup>12</sup>For Black's side of the story see foreward by Ronald H. Coase to Iain McLean, Alistair McMillan and Burt L. Monroe, *The Theory of Committees and Elections*, 2nd rev. ed. (Amsterdam: Kluwer, 1998) and Rowley, *Social Choice Theory* (1993). The priority dispute over the fundamental insight has been difficult to resolve because it appears that the 1949 version of Arrow's paper has been systematically "purged" (word used by RAND archivist) from the RAND archives. I have not yet been able to get hold of this first version of Arrow's social choice argument. Furthermore, it is impossible to get hold of Arrow's Columbia doctoral dissertation; University of Michigan microfilm archives can only release it under the permission of the author.

rational preference ordering for a society of 3, it is impossible to achieve it for a society of  $n$ , unless one permits dictatorship. The "priority dispute" version, while perhaps correctly assigning a crucial insight to Duncan Black, does nothing to explain why Arrow's work received citations, and why Arrow's text came to be regarded as *the* classic text.<sup>13</sup> Indeed, one could go further and ask why it is at all surprising that if problems arise for majority rule among a society of 3, that problems similarly arise for majority rule among a society of  $n$ . Condorcet's paradox has been with us since the dawn of American democracy; why does Arrow's work cut to the heart of democratic theory while Condorcet's work remained a curiosity among mathematically-inclined social theorists?

Stepping beyond either simple account, I argue that it is fruitful to recognize Arrow's text as a brilliant contribution because Arrow constructs a new language for discussing collective decision-making procedures. Arrow's leap of insight transported economic analysis and the analysis of collective decision-making procedures into a new realm. Arrow's theorem represents a threshold moment in intellectual history because he formulated an entirely new grammar and vocabulary for evaluating the legitimacy of collective decision-making procedures. This new language is stark, minimalist, and elegant in its elements. These elements include the idea of an "ordering" drawn from Tarski's symbolic logic; von Neumann and Morgenstern's axiomatically delineated concept of human rationality; and the idea that legitimate social outcomes must represent a mapping from individual preferences to a collective preference ordering.

Arrow's text is epochal for starting a tradition both in social choice theory and welfare economics, but also in economics more generally, to use an axiomatic, symbolic logic to analyze problems. Arrow had the very important precedent of *The Theory of Games and Economic Behavior* which was the first social science text to use an axiomatic

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<sup>13</sup>*Social Sciences Citations Index* shows the dramatic attention which Arrow's text received, and continues to receive and presents a contrast to Black's relatively neglected article and book.

style. Von Neumann, a mathematician and physicist, used the set theoretic language with which he was familiar to give structure to Morgenstern's vision of modeling an exchange economy as a strategy competition instead of the standard economic method using simultaneous equations and parametric modeling.<sup>14</sup> Von Neumann and Morgenstern's contribution to economic theory went virtually unacknowledged by economists, who saw little value in the theory of games but were interested in the notion of expected utility theory. Arrow found the axiomatic style compelling and adopted it for his impossibility theory, but went a step further than von Neumann and Morgenstern by adopting Tarski's notion of "orderings" to avoid the pitfall of attempting to provide numerical measures to convey individuals' utility functions.<sup>15</sup> Arrow, who was well-aware that he was coining a new language into economic parlance, introduced the convention of describing each individual's set of preferences over outcomes as an "ordering" which conveys no information about how the preferences are weighted other than according to the scale of more, less, or indifferent.<sup>16</sup> Similarly, within this system it is impossible to interpersonally compare individuals' weightings of likes and dislikes.<sup>17</sup> The sole property used to describe agent's preferences is that of "transitivity" captured by the consistency conditions holding that if an individual prefers entity A to entity B, and prefers entity B to entity C, that A must be preferred to C.

You may recall from the earlier discussion of the marginalist economists that there was heated argument over the nature of utility, and whether or not utility could be compared across individuals. Economists advocating the concept of cardinal utility held that it was possible to have an intra-personally comparable measure of utility, while the ordinalist faction held that it is impossible to compare utility across

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<sup>14</sup>Andrew Schotter, "Oskar Morgenstern's Contribution to the Development of the Theory of Games," in E. Roy Weintraub, ed., *Toward a History of Game Theory* (Durham: Duke University Press, 1992), 15-28.

<sup>15</sup>John Von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (Princeton: Princeton University Press, 1944), 15-31.

<sup>16</sup>Arrow, *Social Choice* (1963), 11-16.

<sup>17</sup>*Ibid.*, 11.

individuals.<sup>18</sup> Arrow's importation of set theoretic notation embedded the ordinalist theoretical commitment into social choice theory as a methodological necessity. This theoretical commitment stipulates that it is impossible to compare a poor person's utility for, say, water, to a rich person's utility for gold. Furthermore, it does not assume that individuals derive equal satisfaction from equivalent experiences.

Arrow's second major innovation in the new language he was assembling for analyzing collective decision-making processes was the definition of human reason. Arrow introduced into his text the concept of rational agency which he adopted from von Neumann and Morgenstern, with the distinction of their respective formulations of "utility." Even though it had been the precedent in economics to conceive of humans as maximizing utility, the practice of thinking of economic agents as being *deliberately* and *strategically* rational was wholly new to von Neumann and Morgenstern. Their text can be cited as the definitive point of origin of the theory of rational human agency which characterizes "rational choice theory." Their concept of "rationality" is exhaustive, comprehensive and exclusive. As they state,

[W]e wish to find the mathematically complete principles which define 'rational behavior' for the participants in a social economy, and to derive from them the general characteristics of that behavior...The immediate concept of a solution is plausibly a set of rules for each participant which tell him how to behave in every situation which may conceivably arise.<sup>19</sup>

Von Neumann and Morgenstern's rational actor, like *Homo Economicus* before, was driven by the desire to achieve the same exactitude characteristic of natural science, especially physics. Whereas the concept of "rational action" characterizing early twentieth-century economics modeled the economic behavior of people on the principle of least action from physics, in their new mathematics of game theory von Neumann and Morgenstern model a exchange economy in which "the rules of the game" resemble "the

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<sup>18</sup>For treatment of the controversy over ordinal and cardinal utility, and its implications for discussions of welfare see Robert Cooter, "Were the Ordinalists Wrong About Welfare Economics?," *Journal of Economic Literature*, 22, June 1984, 507-530.

<sup>19</sup>Von Neumann and Morgenstern, *Theory of Games* (1944), 31.



laws of nature," and statistical indeterminacies in outcomes result from the probabilistic nature of expected utility.<sup>20</sup> The role played by human reason for von Neumann, Morgenstern and Arrow was to introduce a pattern of regularity into a system of human interaction such that it could be methodically studied. Just as the "rationality" characterizing the rational action of *Homo Economicus* was wholly dependent for its characterization on the definition of maximization in differential calculus, so is von Neumann and Morgenstern's rationality defined by the mathematical structure of their system. Human rationality is defined in conjunction with the mathematical apparatus which calculates "how much the participant under consideration can get if he behaves 'rationally.'"<sup>21</sup> The new mathematics of game theory, which is strategic (dependent for its outcomes upon the joint actions of players) and probabilistic (players have expected utility functions), gives rise to the rational actor which has come to characterize rational choice theory. This rational actor follows in the footsteps of the calculus-based *Homo economicus*, but must be recognized as a new agent with new behavioral rules, and a new grounding mathematics. Just as *Homo economicus* has no existence without differential calculus to explicitly define his "rational action" of constrained maximization, so von Neumann and Morgenstern's rational agent is defined in accordance with the mathematics of game theory which axiomatically defines rational behavior to coincide with actions, which when considered in conjunction with others' actions, will likely result in the greatest utility.

Whereas Arrow does not make explicit use of *The Theory of Games and Economic Behavior* in his impossibility proof, game theory is a consistent theme throughout *Social Choice and Individual Values*. Arrow's definition of human reason built on the concept of a transitive ordering and self-interest is consistent with von Neumann and Morgenstern's strategically rational actor, and Arrow directly used von Neumann and Morgenstern's

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<sup>20</sup>Ibid., 10 and 32.

<sup>21</sup>Ibid., 33.

mathematics of game theory in a 1951 paper fleshing out the basic parameters of the nascent rational choice approach.<sup>22</sup>

Using symbolic logic and a minimalist understanding of human rationality, Arrow tackled the problem of how individual preferences are translated into a collective preference. Arrow starts with his definition of individual reason, based on transitivity, maximization, and self-interest, and strives to construct a concept of collective reason which embodies the preferences of individuals. He is searching for a mathematical function which would aggregate individual preferences into a collective outcome in a non-arbitrary, meaningful way resulting in a single collective preference ordering. In *Social Choice and Individual Values*, he addresses collective decision-making in the marketplace, in democracy, and the policy environment of welfare economics. Arrow states that "Social good...[must] in some sense be a composite of the desires of individuals." He makes overt his claim that "a viewpoint of this type serves as a justification of both democracy and laissez-faire economics." (23) Arrow's abstract analysis of collective decision-making is potentially relevant to all manners of achieving collective social outcomes. In all cases, the test is whether a mathematical function can produce a mapping from individual desires to a collectively-preferred social state. In Arrow's analysis, collective will formation becomes a technical puzzle of constructing a function which aggregates individuals' desires into definitive group preference profile while avoiding the quagmire of collective irrationality and upholding the conditions of nondictatorship.<sup>23</sup> Regardless of the fact that Arrow proved it impossible to derive a statement of public good from individual preferences (in cases with  $n + 2$  choices, obeying the above conditions), Arrow set in motion the language which scholars would

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<sup>22</sup>Kenneth J. Arrow, "Mathematical Models in the Social Sciences," *The Policy Sciences: Recent Developments in Scope and Method* (Stanford: Stanford University Press, 1951).

<sup>23</sup>As well as the other conditions of U (universal domain); I (independence of irrelevant alternatives); and P (Pareto condition).

use to discuss public welfare in democratic theory, welfare economics, and policy analysis.

We learn a lot about the development of disciplines by watching the reception of Arrow's *Social Choice and Individual Values*. In *Social Choice and Individual Values* Arrow clearly and unmistakably addresses himself to social welfare economics, democratic theory, and to the marketplace. He concludes that in all three instances, neither institution represents a mechanism which results in legitimate collective social choices. Interestingly, whereas social welfare economics and democratic theory each underwent respective crises of confidence, Arrow's identical critique of the marketplace went unnoticed.

### **B. Arrow's Reception and the Transformation of Social Welfare Economics**

The reception of Arrow's *Social Choice and Individual Values* falls into three categories: its impact on the tradition of social welfare economics, its implications for political theory, and the attention it received regarding the marketplace. As for economists' interests in its ramifications for the ability of the marketplace to yield collectively rational preferences, the literature in the 1950s is nonexistent. James M. Buchanan wrote two articles in the early 1950s comparing the marketplace and polity as social choice mechanisms, but did not assess the implications as to why it is problematic for the social welfare function and voting procedures not to result in rationally social outcomes, but not problematic for the marketplace.<sup>24</sup> By contrast, in the 1950s and 1960s, scholars in the fields of social welfare economics and political theory reevaluated their foundations.

*Social Choice and Individual Values* received immediate attention from a wide-ranging set of journals, including *The Journal of Political Economy*; *The American*

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<sup>24</sup>James M. Buchanan, "Social Choice, Democracy, and Free Markets," *Journal of Political Economy*, 62, 1954, 114-123; James M. Buchanan, "Individual Choice in Voting and the Market," *Journal of Political Economy*, 62, 1954, 334-343. This uneven reception is a topic ripe for both analytic and historical investigation.

*Sociological Review*; *The American Catholic Sociological Review*; and *Ethics*. These reviews commented on Arrow's unprecedented use of symbolic logic to construct his argument, which was presaged only of by von Neumann and Morgenstern's *Theory of Games and Economic Behavior*.<sup>25</sup> Reviewers explain Arrow's theorem as a generalization of the well-known Condorcet paradox of voting holding among three individuals and three choices.<sup>26</sup> The *Journal of Political Economy* provided a helpful synopsis Arrow's proof, explaining his five conditions a legitimate social welfare function should fulfill, and his conclusion that the translation from individual to a group preference ordering cannot be made unless unpalatable, restrictive conditions are applied to individuals' preferences. The *American Sociological Review* pointed out that Arrow's proof requires the exclusion of the possibility of interpersonal comparisons of utility.<sup>27</sup> *Ethics* finds that Arrow's theorem has fundamental and far-reaching consequences for "social scientists in general, and to ethical and social philosophers as well." This is because Arrow tackles a foundational problem of society, that of deriving legitimate collective decisions out of individuals' preferences. Arrow's theoretical breakthrough is to present a familiar problem of the paradox of voting in a "highly perspicuous form," drawing on "the logic of relations," and sets the apparatus in motion to analytically study the relationship between individuals' desires and collective outcomes in social welfare economics, and democratic government.<sup>28</sup> The *Journal of Political Economy* concluded that "this is a challenging and disturbing book that demands the attention of everyone concerned with

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<sup>25</sup>Reviews commenting on Arrow's *Social Choice and Individual Values*, Abram Burk Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics*, 68, 1954, 233-251; Irving M. Copi, *Ethics*, 62, 1952, 220-222; Richard G. Davis, "Comment on Arrow and the 'New Welfare Economics,'" *The Economic Journal*, 68, 1958, 834-835; Leo A. Goodman, *American Sociological Review*, 18, 1953, 116-117; Murray C. Kemp, "Arrow's General Possibility Theorem," *The Review of Economic Studies*, 21, 1953-1954, 240-243; I. M. D. Little, *Journal of Political Economy*, 60, 1952, 422-432; Gerald J. Schnepp, *The American Catholic Sociological Review*, 12, 1952, 243; Harold M. Somers, *Journal of Political Economy*, 60, 1952, 170-171.

<sup>26</sup>Copi, *Ethics* (1952), 221; Goodman, *American Sociological Review* (1953), 116-117.

<sup>27</sup>Goodman, *American Sociological Review* (1953), 117.

<sup>28</sup>Copi, *Ethics* (1952), 221.

economic policy," because any selection of public policy requires a rationale of somehow serving the public.<sup>29</sup> *The American Catholic Sociological Review* was alone in noting further that *Social Choice and Individual Values* "gives small comfort to those who advocate using the market mechanism as the social welfare function."<sup>30</sup>

Three authors from within the social welfare economics tradition did not review Arrow's text so much as present articles challenging the impossibility theorem's relevance to welfare economics. Two of these scholars, I.M.D. Little and Abram Bergson, were leading figures in social welfare economics. Throughout the first half of the twentieth century, the problem of social welfare, or of how to guarantee that an economic system yielded maximum benefit to all participants, was a focal question for economists. Much of this interest in social welfare stemmed from the concern with demonstrating that free competition resulted in beneficial social states.<sup>31</sup> The core of welfare economics was the attempt to construct mathematical functions which would enable the theorist to evaluate how various policies, such as lump sum taxes or bounties, would effect a community's overall welfare. Discussions did not shy from adopting the perspective of a social planner, not inconsistent with the economics of the New Deal, or with the war-time planned economy.<sup>32</sup> It was recognized that social welfare economists played a role in evaluating the impact of public policies, such as the British Corn Laws, and their goal was to build scientific models that would demonstrate how various policy initiatives effected constituents' interests.<sup>33</sup>

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<sup>29</sup>Somers, *Journal of Political Economy* (1952), 171.

<sup>30</sup>Schnepp, *The American Catholic Sociological Review* (1952), 243.

<sup>31</sup>For a historical overview and analysis of the social welfare tradition see Paul A. Samuelson, *Foundations of Economic Analysis* (Cambridge: Harvard University Press, 1948), 203-253.

<sup>32</sup>Abba Lerner, *Economics of Control. Principles of Welfare Economics* (New York: McMillan Company). See to the late 1940s "planned economy" debate in which economists argued over the theoretical possibility of creating a planned economy which would lead to overall social welfare, see Theo Surányi-Unger "Individual and Collective Wants," *Journal of Political Economy*, 61:1, Feb. 1948, 1-22. The social welfare economists accepted discussion of interpersonal comparisons of utility if it were recognized that such discussion introduced value judgments.

<sup>33</sup>Samuelson, *Foundations of Economic Analysis* (1948), 250.

In the 1940s, the New Welfare Economics school crystallized on the premise that welfare economics must only take into consideration ordinal preferences, on the assumption that cardinal preferences cannot be measured and are therefore unscientific.<sup>34</sup> Abram Bergson was considered the leading theorist of this school, and one of the leading social welfare theorists of the 1940s. A goal of the new welfare economics was to maintain the relevance of welfare considerations to economic theory through the argument that normative judgment is inescapably related to decisions over economic policy. It was already suspected in 1948 that discussions of social welfare barring any ethical assumptions were void of much content, and it was questioned whether a meaningful social welfare function that could differentiate objectively between the collective desirability of various social states could be derived. According to Samuelson, the ordinalist welfare economics program of the 1940s was little further in its ability to draw conclusions from Pareto's ordinalist welfare economics of optimality: In both cases, it is possible to identify a set of points representing individuals' social welfare socially preferable to a larger set of points, but that it is not possible to further narrow the field of points.<sup>35</sup> The welfare economists recognized the inherent impossibility in attempting to derive objective measures of social welfare from scientific analysis, and recognized the inescapable role of normative judgments in selecting economic policies.<sup>36</sup>

In constructing his "Possibility Theorem,"<sup>37</sup> Arrow synthesized his knowledge of the Bergsonian social welfare function constructed as a constrained maximization problem considering wages, productivity, and consumption, with the aggregative logic

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<sup>34</sup>Even so, it was stated in the literature that cardinal measures could be introduced if one were aware of the normative judgments implied. See Bergson, "A Reformulation of Certain Aspects of Welfare Economics" (1938).

<sup>35</sup>Samuelson, *Foundations of Economic Analysis* (1948), 250.

<sup>36</sup>See Bergson, "A Reformulation of Certain Aspects of Welfare Economics" (1938), 7, "The object of this paper is to state in a precise form the value judgments required for the derivation of the conditions of maximum economic welfare..."

<sup>37</sup>Arrow referred in his theorem as the "Possibility Theorem," while in the literature consensus has deemed it more appropriately referred to as the "impossibility theorem."

leading to the intransitivity paradox with voting over three outcomes. Arrow combined two formerly distinct discussions concerning social welfare and voting by addressing both with one approach.<sup>38</sup> Using "transitivity" as the key concept characterizing individual and collective reason, Arrow proved that collectively rational group decisions achieved through the marketplace, voting, or the social welfare function were all logically impossible, granted the acceptance of his conditions. For the welfare economists, discussion had centered on how individuals' welfare was affected through normative judgments such as equalizing the distribution of resources.<sup>39</sup> Arrow's proof shifted the focus from an ethical evaluation of ends achieved through manipulating economic policies, to demonstrating the impossibility of achieving a rationally consistent statement of collective ends (given the starting point of rational self-interest and mild assumptions about preferences and methods of aggregation).

The response of welfare economists to Arrow's theorem was overwhelmingly negative. Little wrote, "Arrow's work has no relevance to the traditional theory of welfare economics...," and Murray C. Kemp argued that "Arrow's conditions are unreasonable and that the conclusion is uninteresting."<sup>40</sup> Bergson, too, was agreed; "Arrow's theorem is quite different from, and has little relevance to traditional welfare economics."<sup>41</sup> Writing with more hindsight, the welfare economist E.J. Mishan observed in 1964, "While the formal layout of Arrow's argument was impressive, it would not be unfair to suggest that the conclusion was hardly surprising."<sup>42</sup> This sentiment was not

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<sup>38</sup>While it is possible to draw conceptual similarities between Arrow's *Social Choice* and Bergson's essay, their arguments are encoded in such different languages and are represented by such different questions, that they are difficult to compare directly.

<sup>39</sup>See, e.g., Bergson, "A Reformulation of Certain Aspects Of Welfare Economics" (1938), 15.

<sup>40</sup>Little, "Social Choice and Individual Values," *Journal of Political Economy* (1952), 425; Kemp, "Arrow's General Possibility Theorem," *The Review of Economic Studies* (1953-1954), 240.

<sup>41</sup>Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics* (1954), 240.

<sup>42</sup>E. J. Mishan, *Welfare Economics: Ten Introductory Essays*, 2nd ed. (New York: Random House, 1964), 61.

driven by an imperative to "save welfare economics," since these theorists had developed their own critiques of the welfare economics tradition. The welfare economists' critique of Arrow's impossibility theorem and its relevance to their field was constructed on three different levels.<sup>43</sup> First, they found that the conditions upon which Arrow based his proof were not essential to social welfare economics.<sup>44</sup> Second, they argued that Arrow's theorem applies to social decision-making processes, but not to the discipline of social welfare, which only attempts to assess the consequences of varying economic arrangements for participating individuals, *without making a grand statement about the social welfare function representing individuals' choices*; thus Arrow's theorem applied to problems of designing collective decision-making procedures, and not to questions of social welfare.<sup>45</sup> Third, they contended that Arrow's design of the social choice problem formulates as relevant the wrong questions and misapprehends the relationship between ethical judgment over ends and collective social choices; Arrow attempts to derive collectively rational ends *from* the social choice function while the welfare economists sought to determine how normative judgments affected social outcomes.<sup>46</sup>

It is remarkable that the welfare economists, to whom Arrow mostly presented his case in *Social Choice and Individual Values*, were united in finding the theorem uninteresting and irrelevant to their field of study. And yet, Arrow's theorem would

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<sup>43</sup>For another discussion of Arrow's reception among welfare economists see J.P. Roos, *Welfare Theory and Social Policy. A Study in Policy Science* (Helsinki: Societa Scientiarum Fennica, 1972), 131-134.

<sup>44</sup>There were heated arguments over condition I, and condition positive association of values, as well over the meaningfulness of upholding the transitivity condition. Little also pointed out the accidental nature of the dictator in Arrow's proof who ends up dictator only due to the joint line up of preferences. I.e., he doesn't choose outcomes so much as is selected as the dictator due to the circumstances of the problem.

<sup>45</sup>Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics* (1954), 240-251 and Little, *Journal of Political Economy* (1952), 422-432; the problem of the "tyranny of the majority" is often cited to distinguish between social welfare concerns and the procedure of majority rule which, if the majority so desired, could exploit a minority for its own gain.

<sup>46</sup>See, esp. Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics* (1954), 240-249.



over time initiate the tradition of social choice theory, would be one of the most cited classic texts in the social sciences, and would come to represent a common point of departure for the conceptual foundations of public policy analysis and for political theory. It might seem that the welfare economists had a bad case of sour grapes, and were putting up an intellectual battle to save their field from demolition. However, the welfare economists had already mounted an internal critique of their field and were not critical of Arrow's theorem simply out of fear that it proved discussion of social welfare to be impossible.<sup>47</sup> Instead the debate was over retaining control over which set of terms was crucial to the practice of social welfare economics. Arrow claimed that his general impossibility theorem proved the goal of constructing a social welfare function to be a hopeless tilt at a windmill. The welfare economists recognized the impossibility of constructing a social welfare function relying on positive analysis alone, and integrated the need to evaluate the consequences of normative judgments within economic models of social outcomes impinging on individuals' well-being.<sup>48</sup> Arrow's theorem adopted as standard fare precisely those set of terms which the welfare economists already recognized as rendering their field powerless to make positive statements about social welfare, such as ordinal utility and the Pareto condition, but he went on to pose a different question. Insisting that collective social ends be selected as a direct product of his social choice function, Arrow demonstrated that a function upholding even the most minimally desirable conditions cannot guarantee a collective rational agreement on ends. Thus, his proof ruled out the even more stringent conditions common to the discussion of

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<sup>47</sup>For the internal critique of the social welfare economics tradition see Roos, *Welfare Theory and Social Policy*. (1973); I.M.D Little, *A Critique of Welfare Economics*.(Oxford: Clarendon Press,1957); Jan de V. Graff, *Theoretical Welfare Economics* (Cambridge: Cambridge Univeristy Press, 1957); and Mishan, *Welfare Economics* (1964).

<sup>48</sup>See, eg., Bergson, "But in welfare economics objection is usually made not to interpersonal comparisons, but to the contention that these comparisons can be made without the introduction of ethical premises. No such contention has been or need be made here. The individual members of the community all are supposed to order social states on the ethical premise that distribution should be according to need," "On the Concept of Social Welfare," *Quarterly Journal of Economics* (1954), 245.

the social welfare economists, such as investigating the condition of egalitarian distribution. The welfare economists were aware that these minimalist conditions failed to produce a meaningful statement of social welfare, and they held that normative judgments were unavoidable. In their estimation, individuals are affected by economic principles coupled with economic policies. It is economists' job to show how these various normative policy goals such as Pareto optimality or equitable distribution affected individuals. Usually they took each individual as interchangeable, each seeking a likable job with good wages, with strong consumption related to strong productivity.<sup>49</sup> Arrow turned the tables on this discussion by insisting that any selection of social ends must be the product of the social choice function, and he proved that the social choice function itself is an impossibility.

Arrow's theorem, then, was fatal to the "New Welfare Economics," because it introduced a new conceptual apparatus for addressing issues of "social choice" which undermined the possibility of meaningfully speaking about social welfare. Arrow's theorem altered the relationship between scientific analysis and normative judgment by making the latter subject to the former. The welfare economists created economic models to show how individual welfare was affected by varying policy initiatives; Arrow's theorem forbade the very discussion of "social welfare" because it could not stand up to the rigors of logical analysis. Although publications in the New Welfare Economics tradition continued throughout the 1950s,<sup>50</sup> by the 1960s the language of *Social Choice and Individual Values* had become the intellectual standard for addressing questions formerly in the domain of welfare economics.

The indications of the rise of the social choice approach as standard to the discipline are everywhere apparent. Looking back, Amartya Sen, the 1998 Nobel

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<sup>49</sup>See Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics* (1938), 310-334.

<sup>50</sup>Little, "Social Choice and Individual Values," *Journal of Political Economy* (1952).

laureate in economics who spent his life working within the social choice framework, observed in 1985 that

Within a comparatively short time, the new subject of social choice theory was firmly established as a discipline with immediate and extensive implications for economics, philosophy, politics, and the other social sciences.....Welfare economics, in particular, was quite transformed.<sup>51</sup>

Supporting his conclusion, Sen cited the establishment of the specialist journal *Social Choice and Welfare*, and the fact that nonspecialist journals such as *Journal of Mathematical Economics*, *Theory and Decision*, and *Mathematical Social Sciences* also published social choice articles. In addition, editors of *Econometrica*, *Journal of Economic Theory*, and *Review of Economic Studies* began to actively discourage social choice submissions due to their over-representation. Sen estimated that by 1985 the number of papers and books addressing social choice theory exceeded one thousand.<sup>52</sup> Another indication of how dramatic and clear cut was the rise of social choice as a subdiscipline is found in Charles K. Rowley's three volume, fifteen-hundred page, collected set of papers representing core research developments within social choice theory.<sup>53</sup> These collected papers clearly delineate the literature and core research questions structuring social choice scholarship.

In assessing the significance of Arrow's contribution, and of the dramatic transformation of the social welfare economics tradition, a pivotal question arises. If we accept that Arrow introduced a new language for addressing problems of collective decision-making ranging from the market, to democracy, to the social welfare function, does this new language yield insights not accessible through the former languages of the New Welfare Economics, and political theory? Does Arrow's new social choice approach enable new forms of analysis which give rise to formerly unattainable results?

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<sup>51</sup>Sen, "Social Choice and Justice: A Review Article," *Journal of Economic Literature*, 23 , Dec. 1985, 1764-1776.

<sup>52</sup>Ibid., 1765.

<sup>53</sup>Rowley, ed., *Social Choice Theory* (1993).

Arrow's theorem as delineated in *Social Choice and Individual Values* is a combined package of one immediate and two secondary results, *and* it represents the introduction of an entirely new method and set of terms for addressing problems of social welfare which span the formerly disparate fields of economic welfare and democratic decision-making processes. The most visible immediate result is the failure to achieve collective rationality from individual rationality, given Arrow's definitions and conditions.<sup>54</sup> This immediate result undermines the concepts of public interest and social welfare, and the legitimacy of most democratic voting procedures. Of course the transitivity problem in achieving collective decisions from voting over more than three alternatives was well-established and not surprising. Furthermore, difficulties in achieving statements of social welfare from individualist parameters, once cardinal utility measures are barred from the discussion, also was well-established. It is difficult to conclude on these counts that Arrow's theorem represented an advance in understanding.

Arrow did draw impressively far-reaching conclusions from his theorem that seemed to surpass what had been proved rigorously before his work regarding the theoretical impossibility of deriving statements of collective welfare from individuals' preferences. In *Social Choice and Individual Values*, Arrow spoke with great authority on rationality, the social welfare function, voting procedures, the relationship of game theory to social choice, and discussed Immanuel Kant and Jean Jacques Rousseau's political philosophies in light of his theorem. He also claimed that the two-party voting system was virtually the only way out of the voting paradox. It is this all-encompassing quality of Arrow's theorem which caught the attention of scholars spanning the social sciences, philosophy and policy. Surely from this wide-ranging relevance it is possible to concede that Arrow's theorem represents a theoretical advance over previous

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<sup>54</sup>Sen has shown that Arrow's theorem depends equally on the failure of collective transitivity *and* on what he calls the "neutrality condition," which Arrow derives when he shows that permitting dictatorship over one pair of alternatives to avoid the Condorcet paradox requires an individual to be a dictator over all alternatives comprising the group's preference profile, "*Social Choice and Justice: A Review Article*" (1985), 16-17.

scholarship tackling the concern of how groups can reach legitimately binding collective decisions. Here we hit on the central and most fascinating feature of Arrow's proof: the proof formulates the problem of collective decision-making in new terms, and simultaneously reaches an unprecedented and heart-stopping conclusion. Arrow's theorem cast doubt on meaningfulness of speaking of "public interest," and "social welfare." It challenged democratic theory to reformulate the theoretical foundations of voting procedures. It challenged public policy makers to construct an acceptable rationale for making policy initiatives. Generally, it proved that there was virtually no way to achieve collectively rational decisions based on individuals' preferences.

Why does Arrow's theorem have this sweeping power? This question is all the more pressing if we agree that the collective transitivity paradox has been recognized since the Enlightenment, and problems with the inherent fairness of majority rule were also widely recognized.<sup>55</sup> What new information does Arrow's theorem contain that made it so devastating to puzzles of collective will formation, and immediately initiate the well-defined field of social choice scholarship? I argue that what is innovative in Arrow's work is *not* its conclusion that it is impossible to derive statements of collective welfare from individuals' preferences but *rather* to establish as a precedent that this manner of analysis serve as the basis for evaluating all procedures for reaching collective decisions. Arrow's brilliance lay in devising a new means of assessing the relationship between individual wants and collective outcomes. He set a precedent for evaluating the legitimacy of collective outcomes in terms of a mathematical aggregation of individual preferences into a single group preference-ordering. Arrow's theorem did not tell us something new about democratic government; instead it reformulated the rationale underlying democratic government. The key to understanding the significance of Arrow's *Social Choice and Individual Values* is not so much grasping the impossibility

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<sup>55</sup>Discussion of the tyranny of the majority is a big theme in J.S. Mill's *On Liberty* (New York: Penguin Books Ltd., [1859] 1984) and is also discussed in Alexis de Tocqueville's *Democracy in America* (New York: Vintage Books, 1990).

theorem as comprehending how the theorem changed the terms of the discussion. The measure of the significance, again, is the sweeping impact this reformulation of basic terms had for numerous academic fields in which practitioners found they had to think in the new terms in order to be current with contemporary discussion.

### **C. Arrow's New Language of Social Choice**

Next, then, I focus on eliciting how *Social Choice and Individual Values* shifted the terms of the discussion regarding social welfare and democracy. The strength of Arrow's presentation lay precisely in the deftness and completeness with which he assembled a new vocabulary and grammar for evaluating how a collective social outcome can be said to legitimately represent the constituent interests of citizens or consumers. In the same stroke Arrow introduced a new logic as providing the rationale underlying both democracy and social welfare discussions. Certainly there was a precursor to Arrow's method in Jeremy Bentham's utilitarian approach, to which Arrow voiced clear sympathy.<sup>56</sup> Bentham united the concerns of legislation and social welfare in his system by suggesting that the measure of social welfare be the greatest happiness of the greatest number, and requiring that laws be written such as to further social welfare. Arrow followed in the intellectual tradition of Bentham in numerous ways. Like Bentham, he assumes that the individual must be the arbiter of his own happiness. Also like Bentham, he holds that the measure of social welfare must be an aggregate of personal likes and desires. Unlike Bentham, however, Arrow rejects the possibility of interpersonal utility. Also, unlike Bentham, or anyone else before him, Arrow introduces Tarski's logic of orderings to set up the central problem of social choice, providing an expression of the aggregation of preferences.<sup>57</sup>

Whereas Arrow's approach bears resemblance to the utilitarian philosophy of maximizing social utility by raising most people's individual utility, Arrow's new

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<sup>56</sup>For Arrow's roots in the utilitarian tradition see *Social Choice*, 22-23.

<sup>57</sup>*Ibid.*, 103.

language was not anticipated by Bentham. The supreme elegance of Arrow's presentation is evident in his three basic methodological assumptions. Using symbolic logic, Arrow transforms the economic man defined in accordance with constrained maximization into the rational actor whose rationality hinges on the property of transitivity combined with the postulate of maximization, anchored in the premise of self-interest.<sup>58</sup> Arrow relies on the assumption of methodological individualism, common to utilitarianism, that all statements of collective welfare *must* be derived from individuals' satisfaction. Arrow states that this utilitarian starting point is consistent with a hedonist psychology in which personal well-being and collective welfare is equated with individual and aggregate desire satiation.<sup>59</sup> Methodological individualism, then, sets up the social choice problem, necessarily, to be one of providing a mathematical mapping which links individual preference profiles to a decisive collective social choice representing optimal social welfare. Self-interested reason, defined in accordance with transitivity and maximization, is translated into collective rationality, similarly defined in accordance with transitivity and maximization, through a non-arbitrary mathematical function.

Arrow's set of terms for addressing problems of collective welfare and decision-making boils down to a narrowly defined concept of rationality consistent with hedonist psychology, and the concept of collective rationality derived from individual rationality, consistent with methodological individualism. This new set of terms is precise and minimalist. Furthermore, the new terms seem consistent with the attempt to remove normative judgment from social scientific inquiry in order that social science have the status of "positive" science. Arrow's assumptions and terms are sufficiently sparse and abstract that they could readily be applied to the generalized problem of collective

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<sup>58</sup>Clearly articulated in both *Social Choice* and Daniel M. Hausman and Michael S. McPherson, "Economics, Rationality, and Ethics," in Daniel M. Hausman, ed., *The Philosophy of Economics an Anthology*, 2nd ed. (Cambridge: Cambridge University Press, 1993).

<sup>59</sup>Arrow, *Social Choice* (1963), 23.

decision-making characteristic of markets, democracy and social welfare discussions, instead of being so robust as to be relevant only to a single discussion, as had formerly been common.<sup>60</sup> Thus Arrow's new vocabulary and grammar offered a precise and minimalist default set of assumptions consistent with the dictates of value-neutral positive science, of universal applicability to a wide range of social choice problems. Collective will problems all become mathematical puzzles to see which normative conditions are permissible given the goal of mapping from individual preferences to a group preference ordering.<sup>61</sup>

Granted that welfare economists already had a dour view of their own field due to frustrations over their ability to reach strong conclusions on the nature of social welfare, it is worth asking how Arrow's theorem could threaten their enterprise. His shifting of terms underlying the social choice problematic had the effect of undermining the welfare economists' central goal of studying the interaction between economic models and normative goals. In Arrow's sparse set of terms, normative judgments of the sort the welfare economists thought essential to their undertaking were ruled out. The scholars working in the school of the "new welfare economics" of the 1940s and 1950s were unabashed in revealing their political leanings in the direction of socialism or liberalism.<sup>62</sup> In their minds, within economics with its relevance to social policy, normative considerations are unavoidable. The role of the social welfare economist is to sort out the social consequences of various policies of, say, taxation.<sup>63</sup> Any evaluation of collective social statement of goals is necessarily a normative undertaking and the role

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<sup>60</sup>For comment to this effect with quote from Arrow see Little, "Social Choice and Individual Values," *Journal of Political Economy* (1952), 427.

<sup>61</sup>Arrow, *Social Choice* (1963), 29.

<sup>62</sup>See Little, *A Critique of Welfare Economics* (1957).

<sup>63</sup>All of this clear in Samuelson, *Foundations of Economic Analysis* (1948); Little, "Social Choice and Individual Values," *Journal of Political Economy* (1952).



of the welfare economist is to spell out the relationship between norms, policy initiatives and social outcomes.<sup>64</sup>

Arrow's method of studying problems of social choice effectively limited normative judgment to a role prescribed by scientific analysis. In *Social Choice and Individual Values*, these judgments are restricted to the five conditions of universal domain, independence of irrelevant alternatives, citizen's sovereignty, non-imposed social welfare function, and non-dictatorship. Arrow, of course, shows that even given these minimalist normative conditions, the achievement of a collective rational preference ordering is impossible. Here we have the impasse between the old tradition of social welfare economics, and the novel social choice approach. Arrow, using minimalist and default terms, demonstrates that normative judgments which paled in comparison to the sort of judgments the welfare economists sought, could not result in a cohesive basis for defining social welfare. Therefore, stronger normative judgments characterizing social welfare economics, such as study of distributional concerns, seemed out of the question.

Bergson pinpoints the differences in rationales underlying the assumptions and methods contrasting the program of the social welfare economists versus Arrow's social choice approach. In Bergson's mind, the clear role of the social welfare economist is to provide "counsel" to individual citizens or policy makers, not as to how they *should* vote or make decisions, but to show them the implicit normative position inherent in their decisions.<sup>65</sup> The social welfare economist would not tell the individual which ultimate state or policy goal to select, but would help the individual understand how ethical criteria are related to social ends, given economic models. For example, tax reform would affect members of the community in different ways; the job of the welfare

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<sup>64</sup>Especially apparent in Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics* (1938).

<sup>65</sup>Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics* (1954), 240.

economist is to make explicit these implications from the vantage point of constituent interests. This view, that any selection of ends is inherently an ethical judgment, follows from a long tradition of scholarship holding that scientific analysis could produce information about achieving ends, but is irrelevant to actually selecting ends. Thus, individual and collective decisions over ends were under the jurisdiction of ethics, and the social welfare economists could help inform individuals as to the moral implications of their choices. Welfare economists were not making ethical evaluations, but they were articulating the relationship between individual choices and social consequences. Normative judgments are inescapable in selecting ends, and the social welfare economist's role was to make explicit the social implications of this selection process.

Arrow's starting point has little in common with the welfare economists. He asks a different set of questions and applies a different method. Arrow is interested in producing a collective social ordering, starting from the premise of rational self-interest and defined according to a mapping from individually transitive orderings to a collectively transitive ordering. He made the problem of collective end selection solely a logical puzzle of achieving collectively rational preference ordering from unrestricted individual preferences, constrained only by weak ethical conditions themselves subject to logical validation. For Arrow the conclusion that no collectively rational social ordering can be obtained from individuals' unrestricted preferences reflects a *logical* failure, and not a normative judgment, other than holding transitivity to be a key principle to be obeyed by individuals and groups.

Arrow and the welfare economists are speaking two different languages which are oriented toward divergent goals. For the social welfare economists, any discussion of ends, especially collective ends, is by definition the domain of ethics.<sup>66</sup> When an individual selects ends, his decision will be better informed if he understands the ethical position consistent with his selection. Thus, for example, an individual will know

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<sup>66</sup>Clear statement of this position in Bergson (*ibid.*), 240-247.

whether or not he is supporting egalitarian principles. In Arrow's formulation of the social choice problem, by contrast, ends for the individual are the province of hedonist psychology and are not necessarily subject to any ethical reflection. Arrow's point of departure is radically at odds with the welfare economists because he assumes a position consistent with moral relativism,<sup>67</sup> that the only meaningful expression of collective rationalist must be derived from individually formed subjective preferences. This starting point, in conjunction with Condorcet's voting paradox, renders Arrow's conclusion that collective rational decisions are unattainable (given minimal restrictions) hardly surprising.

Arrow reconstrues the relationship between ethics and science by constructing his proof such that any normative judgments over collective outcomes must be consistent with the structure of his proof. Collectively rational social outcomes—a social choice function representing the socially optimal selection of ends—is the subject of scientific analysis and can manage without "extra-scientific" analysis such as moral reflection evaluating ends. For the welfare economists, the point was to render explicit the inherent values grounding any collectively selected social state. By contrast, for Arrow the setup of the social choice problem based on hedonist psychology and the derivation of a collective ordering from individual preferences, implied that moral discussion over ends is superfluous to defining collectively rational ends. Arrow's formulation of the social choice problem enabled economists to banish ethical discussions from the center of their discipline to its periphery. Now the logic of the collective choice problem dictated which minimalist norms were permissible.

The old division of labor between science and ethics consistent with the distinction between means and ends was altered. For Arrow, hedonist psychology anchored discussions of individual ends. Furthermore, collective ends could only be

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<sup>67</sup>Little's conclusion, "Social Choice and Individual Values," *Journal of Political Economy* (1952), 427-428.

evaluated from the vantage point of an ordering logically derived from individual desires given the constraints of transitivity, universal domain, non-imposition, citizen's sovereignty, independence of irrelevant alternatives and non-dictatorship. Normative discussion of social ends plays no part in Arrow's system because the social choice problem is merely one of obtaining a mathematical mapping from individual social preference to collective social ends whose merit cannot be judged independently of the mapping.<sup>68</sup>

*Social Choice and Individual Values* seemingly made it possible to address problems of collective decision-making in democracy and social welfare discussions subject to scientific investigation. Rigorous argumentation and precisely defined terms permitted the application of scientific analysis to thorny problems of legitimate collective will-formation. Arrow's theoretical construct also seemed to make it possible to draw sharp distinctions between scientific analysis and normative judgment. Arrow's proof demonstrated that if the least contentious imaginable conditions for collective rationality are impossible, that it is nonsensical to attempt to introduce more stringent conditions such as that of equitable distribution. Arrow's proof fit with the temper of a positivist era which embraced the transformation of welfare economics into social choice theory with its minimalist terms, its rigorous logic, and its tidy prioritization of scientific analysis over normative judgment.

Arrow built into his new language the firm subjugation of normative judgment to positive analysis in direct contrast to the welfare economists' tradition which construed positive analysis and normative judgment as necessarily partners. Acceptance of Arrow's language by the welfare economists would have required them to change their central mission, which was to evaluate how social policies affected the social welfare of constituents. Arrow showed that since it is impossible to define "social welfare," it is

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<sup>68</sup>Arrow realized that any agreement over social ends, as is characteristic of Rousseau and Kant's political philosophies, negates the impossibility of collective rationality implied by his proof, *Social Choice*, 81-86.

doubly impossible to assess how social welfare is effected under various economic policies. Instead, Arrow introduced a new avenue of study which was to restrict discussion to those areas in which positive analysis is possible. Thus Arrow's analysis hinged on the universally endorsable criterion of "Pareto optimality," already familiar to studies of general equilibrium, which establishes that "efficiency" versus equity serve as the strongest possible measure of collective rationality.

The newly established social choice tradition focused on the puzzle of evading the dire consequences of Arrow's theorem. The apparent deadlock presented by this challenge negated the possibility of more pointed discussions of social welfare. The surviving welfare economists who continued writing in the 1950s stuck to their program of constructing analysis of how individuals' welfare was affected through economic policies. Meanwhile, the new social choice tradition which replaced social welfare economics directed its energies toward trying to solve the voting paradox and discovering the limits of what could be said about social welfare within the language of social choice.<sup>69</sup>

Arrow's proof circumscribed the problematic of social choice within the confines of scientific analysis by making minimalist normative criteria subject to scientific analysis. In his impossibility theorem, the problem itself is the scientifically defined problem of moving from individual to collective preference; the normative conditions of universal domain, independence of irrelevant alternatives, non-imposition, citizen's sovereignty and non-dictatorship become subject to the scientific analysis. In this way, scientific analysis can determine which normative terms are permissible. Scientific reasoning dictates what normative content is admissible under the condition of logical possibility. Scientific reasoning, then, sets up the terms of the discussion, admits potentially desirable normative criteria, and renders an evaluation as to their feasibility.

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<sup>69</sup>See Rowley's introduction to *Social Choice Theory* (1993).

The apparatus of scientific analysis plays the primary and decisive role in determining what social norms are feasible.

Obviously the approach of the New Welfare Economics school was opposed to this. Certainly they, too, sought after precise notions of economic welfare. However, their practice entailed a different relationship between scientific analysis and normative judgment. For them, normative judgment is unavoidable in evaluating the outcomes of economic policies. Welfare economics is an attempt to devise terms which enable the economist to objectively study how various economic policies, predicated on various norms, effect the populace. Normative judgment of this impact is not secondary to scientific analysis. Normative judgment is a social reality which economists can either admit and participate in, or ignore at their own peril.<sup>70</sup>

For Arrow, scientific analysis determines which terms and normative judgments are acceptable. This translation of language and problematic altered the logical foundation of democratic government by reformulating the terms by which legitimate democratic decision-making procedures are assessed. Arrow's new rules for evaluating collective decision-making processes elevated the method of analysis—constructing a mathematical mapping from individual to a group preference ordering, predicated on the terms of "rationality," methodological individualism, and collective rationality—above normative judgments by requiring that normative judgments survive the challenge of the proof. Normative judgments had to survive the rigors of scientific analysis in order to be evaluated as feasible. Again, Arrow finds that the most minimalist normative goals are inconsistent, and thus leaves even greater doubt about the collective rationality of more stringent norms.

Arrow's account seems scientific by assuming the bare minimum about human rationality and human nature. Once Arrow's terms and grammar of analysis are

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<sup>70</sup>Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics* (1938), 20 and Little, "Social Choice and Individual Values," *Journal of Political Economy* (1952).

accepted, the social choice problem becomes binding upon all attempts to relate individuals with a collective social state. Former ways of envisioning democracy, from John Locke, James Madison, Thomas Jefferson, Rousseau, Kant and John Dewey seem naive and quaint by comparison. Specifically in response to Rousseau and Kant, Arrow determines that their political philosophies require "a consensus as to social ends," which violates his condition that individuals be permitted to have any preference set .

The social choice approach, with its seeming congruence with scientific principles, encroaches upon what was formerly the domain of political theory, public policy, and even the philosophy of ethics and justice.<sup>71</sup> The social choice framework draws a new boundary between value judgments and science by holding the former accountable to the latter through the setup of the social choice problem. Arrow's *Social Choice and Individual Values* gave rise to a new language which made scientific and formal analysis have jurisdiction over formerly value-laden discussions of welfare, democracy and policy. Just as the movement characterizing the shift from Public Administration to Public Policy was to alter the division of labor between the politicians and the administrators, so the social choice formulation altered the division of labor between ethicists and social scientists.<sup>72</sup> In Arrow's world, the social scientist is able to determine which normative standards are permissible given an objective rendering of the collective decision-making problem. As we will see later, this conceptual shift in discussions of welfare and democratic will-formation coincided with similar efforts to construct "policy science" in which minimalist, default assumptions dictated which normative judgments were acceptable in a science of policy. Arrow's theorem presents an philosophical framework in which there is no ability to speak about "the public," nor

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<sup>71</sup>For this claim repeated in yet another place see Amartya Sen, *Collective Choice and Social Welfare* (San Francisco: Holden-Day, Inc., 1970), vii.

<sup>72</sup>See Vincent Ostrom regarding the shift from the old division of labor between the political process, which determines ends, and administrators, who efficiently execute ends, and the new policy science which itself produces ends.

about meaningful political direction. It develops in conjunction with the attempt to carve out a minimalist, uncontroversial value-free stance toward public policy.

An aspect of the new language encapsulating individual self-interested reason and collective reason demands notice. It is remarkable that the minimalist default set of terms upon which the social choice framework is based is so readily and unquestioningly considered to be scientific and value-neutral. This aspect of the rational choice reception—how quickly its terms and grammar were widely accepted—raises questions about why this particular language was compelling to so many scholars. This is a significant question because the theoretical structure of social choice theory is far from "value-free" despite its appearance to the contrary. The remainder of this discussion draws attention the ways in which social choice, while seemingly in line with the scientific premise of objectivity, imports its own particular brand of moral assumptions into the core of the collective decision-making problem. Once these initial assumptions are accepted, the dramatic and anti-democratic conclusions follow inescapably.

Social choice theory as formed by Arrow builds in a normative definition of human rationality into its core. Somehow the fact that at the heart of social choice analysis lies an attempt to provide a normatively binding account of human reason seems unproblematic to many scholars working in the social sciences. How this minimalist definition of rationality, with its assumptions of transitivity, maximization, and self-interest, could seem neutral and uncontroversial reveals more about the world view of its adherents than it discloses about "human rationality" as a universally applicable standard of decision and action. Whereas social choice and rational choice scholars share unbounded faith in their understanding of rationality,<sup>73</sup> historically it is clear that their rendering is only one among numerous possible renderings of "reason."

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<sup>73</sup>I don't mean to suggest uncritical confidence. See, for example, Amartya Sen, "Rational Fools: A Critique of the Behavioral Foundation of Economic Theory," *Choice Welfare and Measurement* (Oxford: Basil Blackwell, 1982), 84-106. However, regardless of the awareness of problems and limitations of this formulation, it continues to provide an unassailable common point of departure.



Reason has implied a range of normalizing standards ranging from Plato's *logos*, to Habermas' communicative rationality. Leaving aside transitivity (which is fraught with problems of temporally dynamic learning), the assumptions of self-interest and maximization serve to delimit a contemporary notion of rationality which opposes many other world systems such as Christianity and Buddhism, and the civic humanist tradition founded on responsibility, integrity and public service.<sup>74</sup> The idea that self-interest and maximization represent the paragon of human character is a new importation which has assumed the status of a binding normative standard. The notion of self-interested rational action is descriptive, normative, and prescriptive; it conveys intrinsic and extrinsic meaning which encompasses both the context of the agent under study and the context of the researcher. It "simultaneously provides a theory of the causes and consequence of people's...choices *and* of the *reasons* for them."<sup>75</sup> Moreover, scholars have discussed that in the capacity of a normative standard, the definition of "rationality" itself can alter human behavior as individuals adopt its tenets as standards for action.<sup>76</sup>

Often two considerations are brought in to support the definition of self-interested rational action based on consistency and maximization. One avenue of argumentation is to anchor this definition of reason into a naturalistic account of epistemology which holds that such a definition of rationality is a prerequisite for both survival and success. Two arguments are put forth to support this view. First, that if an individual is "irrational" in making choices, and changes his preferences over time, he

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<sup>74</sup>There are many attempts currently to encompass these other thought systems within the rational choice framework by showing that individuals in these alternative narrative structures were actually maximizing their self-interest, only in accordance with other social systems and value schema.

<sup>75</sup>Hausman and McPherson, "Economics, Rationality, and Ethics" (1993), 258. For a similar critique of the normalizing assumption of rationality which has come to characterize economics see 256-259.

<sup>76</sup>For this effect regarding the self-interest postulate see Gerald Marwell and Ruth Ames, "Economists Free Ride. Does Anyone Else? Experiments on the Provision of Public Goods. IV," *Journal of Public Economics*, 15:3, June 1981, 295-310.

will be the loser by consistently paying more for what he formerly had.<sup>77</sup> This linkage of "rationality" with physical survival and success follows from the assertion that rational behavior exploits natural relations inhering in the world. This position can be taken one step further by interconnecting this bare-bones notion of rationality with the theory of evolution and natural selection. In this scenario, nature selects for and rewards "rational behavior" which is consistent both in its own preferences and in assembling rational beliefs about the world. As we will see in the case of William Riker, the rational choice framework can easily be interpreted as a consistent part of the Darwinian account of evolution. Self-interested rational behavior which is consistent and maximizes survival variables will be rewarded, and its success is proof of its rationality.<sup>78</sup>

A second argument in favor of the minimalist account of reason characterizing social choice theory is the familiar idea that whereas ends are the subject of moral reflection, means are subject to rational, scientific analysis. Thus, it follows that an account of rational behavior which only considers the best achievement of ends must be consistent with science. Certainly this is a popular account of the formula for rational behavior upon which rational choice is constructed.<sup>79</sup> Individual autonomy is upheld in the move to equate subjective preferences with individual well-being, and rational action solely refers to following the best plan to achieve individual ends in a parametric or strategic environment. However, again it must be recognized that this entailment of "rationality" represents a choice in itself, and stands opposed to other systems of human action in which ends themselves are subject to rational analysis.<sup>80</sup> In addition, the idea

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<sup>77</sup>This is the well-known "money pumping" example, Hausman and McPherson, "Economics, Rationality, and Ethics" (1993), 259.

<sup>78</sup>This theoretical confluence between rational choice theory and evolutionary biology can be seen in Robert Axelrod and William D. Hamilton, *The Evolution of Cooperation* (USA: Basic Books, 1984).

<sup>79</sup>See, eg., Hausmann and McPherson, "Economics, Rationality, and Ethics" (1993), 256-259. This construct goes back at least to David Hume who claimed that "reason can only be the slave of the passions."

<sup>80</sup>Immanuel Kant, *Groundwork of the Metaphysics of Morals*, trans. H.J. Paton (New York: Harper Torch Books, 1964); John Dewey, *The Public and Its Problems* (Chicago: Swallow

that ends are the product of self-interest also represents a choice. Throughout rational choice literature it is conventional to point out that the "rational self-interest" can accommodate any utility schedule, including one born of altruism. However, in practice most rational actor models default to the narrow version of self-interested ends, as does Arrow in *Social Choice and Individual Values*.<sup>81</sup> Following Arrow's precedent, rational choice scholarship tends to make standard assumptions about rationality that ends are not subject to rational reflection and that rational action is defined by a narrowly construed definition of self-interest. The point here is not to offer a critique of the definition of "rationality" grounding social choice theory, but merely to point out that this definition was adopted as a contingent, extra-scientific, matter of choice, and that the acceptance of this definition has a myriad consequences for theories of collective choice pertinent to discussions of social welfare and democratic theory. It is fair to ask how, given the manner in which the theory of rationality upon which social choice is grounded far-exceeds positive analysis, has social choice come to prevail as an uncontroversial, scientific doctrine? How has the zenith, the highest standard of human behavior, that of "reason" defined in terms of rational self-interest and a transitive preference profile, come to anchor discussions of social welfare, democratic government, and public policy?

Social choice theory, with its strict adherence to methodological individualism and commitment to defining social well-being wholly in terms of the subjective satisfaction of individual agents, does not permit the concept of public interest or social welfare. Rather than exclaim surprise at this result, it is worth noting that the idea that public interest could be derived from subjective self-oriented preferences has typically been recognized as an impossibility. Arrow did not tell us anything new about the

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PPress, [1927] 1988; and Jürgen Habermas, *The Theory of Communicative Action*, vols 1 and 2 (Boston: Boston Beacon Press, 1981).

<sup>81</sup>Arrow, *Social Choice* (1963), 17-21..

challenges of building a social order out of a society of egoists.<sup>82</sup> Thomas Hobbes had already concluded that authoritarian dictatorship was necessary to counter the divisive impulses of egoists pursuing their own ends. What Arrow's theorem did, however, was to normalize self-interested maximizing reason as a starting point for all analyses of collective decision-making extending beyond the marketplace to include social welfare, public policy and democratic will formation.

The ready acceptance of Arrow's starting assumptions by so many theorists in the ensuing years raises questions over why Arrow's new language proved compelling and satisfying. At this point I can raise to several hypotheses. Social choice is consistent with a capitalist ethos, and to the move to constrain policy analysis within a scientific framework. Social choice theory, and the policy science coincident with it, are heavily status quo-oriented in their conclusions, as will be made evident in an up-coming discussion of cost-benefit analysis. Whereas the economists of the New Welfare Economics school were frequently unabashedly sympathetic with socialism, the emerging social choice tradition avoided any discussion of values, save those regarding Arrow's five conditions. The transformation of the language of social welfare economics to a system which seemed scientifically neutral fit well with the cold war, anti-McCarthy tendency which exercised a tacit censorship over intellectual products.<sup>83</sup>

That "rational choice" could have become such a powerful intellectual standard for evaluating all collective decision-making processes, both as a theoretical enterprise and increasingly in a policy environment, demonstrates the extent to which the conceptual foundations of democratic government have shifted since the time of John Dewey, Mark A. May, Morris R. Cohen, and Robert K. Merton. There is no reason in

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<sup>82</sup>Make sure to note how self-interest is not theoretically demanded from structure, but is almost always added in anyway. Arrow, *Social Choice* (1963) and Hausman and McPherson, "Economics, Rationality, and Ethics" (1993).

<sup>83</sup>There is room for much research on the fate of economists during the McCarthy era. For a start see Winton U. Solberg and Robert W. Tomilson, "Academic McCarthyism and Keynesian Economics: The Bowen Controversy at the University of Illinois," *History of Political Economy*, 29:1, 55-81.

particular to select this group of America public intellectuals of the 1930s and 1940s as a contrast because practically all other theorists, too, offer stark contrasting philosophies, including John Locke, the Federalist Papers, or even lesser-known political movements such as the Home Rule Movement.<sup>84</sup> These particular American theorists are, however, instructive because their era of public intellectuals both exhibited a deep-rooted interest in the nature and well-being of democratic society, and directly precedes the social choice era initiated by Arrow's *Social Choice and Individual Values*. These figures proposed that scientific methodology and democratic government formed a partnership, both relying upon universalism, objectivity, non-authoritarian exchange, and rational deliberation.<sup>85</sup> The differing point of departure between their respective views on democratic society and the rational choice approach, separated by the threshold of generational change, offers a stark contrast. Social choice scholarship recasts the relationship between science and democracy, and represents a variant of democratic liberalism at odds with that of Dewey and Merton.

Dewey, with his prolific writings on pragmatist epistemology and participatory democracy, provides the most clearly delineated contrast because his and Arrow's democratic societies are as distinct as day and night. This dissertation is not the forum for an exhaustive contrast of Dewey's and Arrow's blueprints for a democratic society.<sup>86</sup> However, as dramatic as the contrast is, it is neither appropriate to relegate

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<sup>84</sup>For a helpful discussion of the basis of Locke and the Federalist Papers take on political philosophy see Rogers M. Smith chapter, "The Arms of Liberalism," *Liberalism and American Constitutional Law* (Cambridge: Harvard University Press, 1985), 11-60; on Home Rule see Thomas Bender, "Intellectuals, Cities, and Citizenship in the United States: The 1890s and 1990s," in James Holston, ed., *Cities and Citizenship* (Durham: Duke University Press, 1999), 21-41.

<sup>85</sup>See, e.g., Robert K. Merton, "A Note on Science and Democracy," *Journal of Legal and Political Sociology*, 1, 1942, 116; for a full discussion see "The Defense of Democracy and Robert K. Merton's Formulation of Scientific Ethos," and "Science as a Weapon in *Kulturkämpfe* in the United States during and after World War II," in David A. Hollinger, *Science, Jews, and Secular Culture: Studies in Mid-Twentieth-Century American Intellectual History* (Princeton: Princeton University Press, 1996), 80-96, 155-174.

<sup>86</sup>For a thorough account of Dewey's views on and experience with democracy see Robert B. Westbrook, *John Dewey and American Democracy* (Ithaca: Cornell University Press, 1991).

it to a footnote. The main building blocks of Arrow's democracy have no ready counterpart in Dewey's; the languages are mutually exclusive. For Arrow, language of the public is not feasible due to the impossibility of deriving public interest or social welfare from individuals' self-oriented preference sets. This point of departure of individually constructed preference orderings and a mathematical mapping to derive a collective preference profile upholding transitivity and maximization is entirely foreign to Dewey. This is because his opening assumptions stand askance to Arrow's: Reason and knowledge for Dewey are not limited to the fulfillment of private desires and to the ascertainment of matters of fact. Science for Dewey is a similar practice to democracy because both are predicated on communities of individuals with the shared values of disinterestedness, universalism, organized skepticism and rational discourse. These individuals enter into reasoned discussion in order to reach consensually binding conclusions. Participatory democracy, like science, depends on reasoned discourse to consensually determine the ends of society. A public forum and discursively based reason is essential to the practice of both science and democracy.<sup>87</sup> By contrast, for social choice and rational choice theorists, reason is non-discursive, and is wholly distinct from evaluating individual or collective ends.<sup>88</sup>

Although the rise of social choice theory coincides with change of economics discipline to conservatism, and to the cold war anti-socialist fervor, on the other hand it must be recognized that the social choice approach, while perhaps being scientific, does not automatically harbor a political position. Social choice theorists by and large continue to be concerned with the question of human welfare, and on looking for

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<sup>87</sup>John Dewey, *The Public and its Problems* (Chicago: Swallow Press, [1927] 1980); see also Jürgen Habermas, *The Structural Transformation of the Public Sphere*, trans. by Thomas Burger (Cambridge: MIT Press, 1989); and Habermas' *Between Facts and Norms* (Cambridge: MIT Press, 1996), see 33 and 291 for specific contrast with rational choice theory.

<sup>88</sup>Any interest in discussive formats generally are rendered within the rational choice framework, see William H. Riker, *The Strategy of Rhetoric: Campaigning for the American Constitution* (New Haven: Yale University Press, 1996); and Jon Elster, ed., *Deliberative Democracy* (Cambridge: Cambridge University Press, 1998).

objective means of discussing questions of human welfare. Rowley finds that many of the scholars working within the social choice tradition lean toward advocating degrees of social planning, or social engineering. Arrow himself, although personally cagey about his political position, is widely taken to be a social democrat. Amartya Sen has the reputation of being heavily concerned with issues of social justice, and has adopted policy stands in accordance with his scholarship. Jon Elster, also firmly within the social choice/rational choice tradition, is considered to be Marxist in his orientation. Thus, the shift in language initiated by *Social Choice and Individual Values*, although affecting what was permissible within the discussion, did not necessarily translate into a political position, although we shall see that social choice, public choice and positive political theory do tend to be associated with scholarship of political persuasions.

#### **D. Arrow, the New Policy Elite, and Policy Analysis**

I have spent the preponderance of the discussion on Arrow focusing on his conceptually dense *Social Choice and Individual Values* because much historical work remains to be done assessing the large role the Impossibility Theorem played in shaping a new research paradigm. It is difficult to grasp the destabilizing and wide-ranging significance of the impossibility theorem without acknowledging that Arrow invented a method for posing questions about collective decision-making procedures as much as he provided a specific answer regarding the impossibility of non-arbitrary voting procedures in cases with more than two choices. The focus on Arrow's published research is also warranted by the current inaccessibility of his personal papers.<sup>89</sup> This brief section touches on Arrow's role in the new policy elite which emerged after World War II, and on the interrelationship between social choice theory, the conceptual foundations of policy analysis, and hands-on policy analysis.

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<sup>89</sup>Arrow's personal papers are being sent to the Duke University collection of twentieth-century economists' papers, but are being sent in reverse chronological order with only the most recent having arrived.

As much as public intellectuals of the stature of John Dewey were common in America of the 1920s and 1930s, a new technocratic policy elite emerged in the 1950s and 1960s. The leading role of scientists in the post-war era was the product of the key role science had played in the war effort and the increasing sense that scientific knowledge was essential to American national security. Whereas much attention has been paid to the burgeoning field of science policy and to the newly constituted class of defense intellectuals, little attention has been focused on a new policy elite which played crucial roles in and out of government in the 1950s and 1960s. Arrow was a leading figure in this transition from Dewey's era of the public intellectual to the post-war emphasis on esoteric and "classified" specialized expertise. Arrow continually played consulting roles for government agencies, both directly and through his RAND affiliation. He continued consulting for RAND throughout the 1950s and he made important contributions to health care policy and to risk assessment in the insurance industry.<sup>90</sup> He served as a staff economist for the U.S. Council of Economic Advisors in 1962, and he has served as a President of The Institute of Management Sciences. Most recently Arrow had worked on the problem of global climate change for the federal government.<sup>91</sup> Arrow's interest in policy analysis is consistent with his Stanford Professorship in Economics, Statistics, and Operations Research. Arrow's many and varied prestigious professional roles included establishing the neo-classical orthodoxy of economic theory along with fellow RANDites and Nobel laureates Paul Samuelson and Robert Solow. Arrow's receipt of the Nobel prize in economics in 1972 indicates that by the 1970s, social choice theory was a mature and generally recognized field of study.

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<sup>90</sup>George R. Feiwel, "The Potentials and Limits of Economic Analysis. The Contributions of Kenneth J. Arrow," in George R. Feiwel, ed., *Arrow and the Ascent of Modern Economic Theory* (Washington Square, NY: New York University Press, 1987), 78-83. See also "Behavior under Uncertainty and its Implications for Policy," in David E. Bell, Howard Raiffa, and Amos Tversky, eds., *Decision Making: Descriptive, Normative, and Prescriptive Interactions* (Cambridge: Cambridge University Press, 1988), 497-507.

<sup>91</sup>This resulted in the publication of *Climate Change 1995: Economic and Social Dimensions of Climate Change*.



The establishment and propagation of social choice theory occurred in dialogue with the simultaneous development of highly formalized decision technologies in which Arrow was equally prominent.

It would take a broader study to do justice to this new class of technocratic experts who have played key roles in post-war American society.<sup>92</sup> The point of drawing attention to Arrow's multi-faceted roles in venues including the neo-classical synthesis and policy analysis is to situate social choice theory within a more encompassing complex of knowledge which includes decision technologies and economic modeling devices. Social choice theory is related to cost-benefit analysis, policy science, and neo-classical economy theory because it shares their underlying assumptions and methods. Furthermore, in addition to occupying the same conceptual space, social choice theory is the product of a research effort which overlapped with these other areas.

Besides arguing that social choice theory is interrelated with a more comprehensive complex of knowledge to which Arrow was an active contributor, I am also arguing that social choice theory has been relevant to key discussions regarding the conceptual foundations of policy analysis, to political theory and the philosophy of justice.<sup>93</sup> Arrow directly expresses that social choice theory has "implications for economic policy."<sup>94</sup> Arrow has written on the conceptual foundations of policy analysis, and he notes that,

Recommending a policy is making a choice, and the inevitable question arises, by what criteria should a choice be made? While the subject abuts closely on philosophers' theories of justice, in fact the only philosophical influence has been that of classical utilitarianism—which is, to a large extent, the work of economists.<sup>95</sup>

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<sup>92</sup>These experts include: Robert Solow, Paul Samuelson, John Harsanyi, Howard Raiffa, Thomas Schelling, Robert McKean, Charles Hitch, William Niskanen, Enthoven, Henry Rowen, Herbert Simon.

<sup>93</sup>See the collected papers of Kenneth J. Arrow entitled *Social Choice and Justice* (Oxford: Basil Blackwell, 1984).

<sup>94</sup>"The Principle of Rationality in Collective Decision" (ibid.), 45.

<sup>95</sup>Ibid., viii.

Arrow, whose work is consistent with the utilitarian approach, introduces a distinctive philosophical fingerprint into his writings on policy analysis. In Arrow's view, an individual's "entire social ethic" is captured in his preference ordering.<sup>96</sup> Also for Arrow it is possible that "ethics may have survival value for political systems, and therefore [have] descriptive as well as prescriptive significance."<sup>97</sup> In putting forth his understanding of the conceptual foundations of policy analysis, Arrow is in dialogue with John Rawls, Robert Nozick and Gordon Tullock.<sup>98</sup>

Given that social choice theory is widely taken to be foundational to post-war policy science, it remains to be demonstrated that beyond serving a role as philosophical underpinning, Arrow's social choice framework has been relevant to actual policy evaluations and actual political practices for reaching collective decisions. One of the early indications of the crossover between the rational choice approach as it was formulated as a scientific methodology and the policy environment is found in an essay Arrow contributed to a volume edited by Daniel Lerner and Harold D. Lasswell entitled *The Policy Sciences: Recent Developments in Scope and Method* (1951). Arrow's essay is remarkable for fleshing out in their entirety the parameters identified as "rational choice theory." Arrow articulates his philosophical commitment to mathematics as the lingua franca of the social sciences due to its "superior clarity and consistency," and subscribes to the positivist insistence on clarity characteristic of Bertrand Russell's *Introduction to Mathematical Philosophy*.<sup>99</sup> To Arrow, mathematical expression "is the acme of consciousness."<sup>100</sup> This essay is remarkable in proposing the key identifying traits of rational choice theory including methodological individualism with the attendant

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<sup>96</sup>"The Principle of Rationality in Collective Decision" (ibid.), 49.

<sup>97</sup>Arrow, "Tullock and an Existence Theorem" (ibid.), 87.

<sup>98</sup>Ibid.

<sup>99</sup>Kenneth J. Arrow, "Mathematical Models in the Social Sciences," in Daniel Lerner and Harold D. Lasswell, eds., *The Policy Sciences: Recent Developments in Scope and Method* (Stanford: Stanford University Press, 1951), 129; Bertrand Russell, *Introduction to Mathematical Philosophy*, 2nd ed. (London: G. Allen Unwin, Ltd., 1920).

<sup>100</sup>Ibid., 131.

dependence on aggregation to yield collective outcomes, and a theory of rational action consistent with game theory. Thus the first clearly articulated version of rational choice theory is put forth in a volume devoted to "[t]he continuing crisis of national security in which we live," and to improving "the rationality of the policy process."<sup>101</sup> This volume is the first to refer to "the 'theory of rational choice,'" in the explicit terms of von Neumann and Morgenstern's game theory, and Arrow's "theory of choice." Significantly, the phraseology "rational choice" from the start contained a double entendre implying both individually rational choices and rational policy choices.<sup>102</sup>

In seeking to understand the relevance of the social choice framework to the actual policy environment of government, it is necessary to recognize the parallel development of social choice scholarship and the decision technologies directly associated with policy science. Most specifically, the transformation of the social welfare tradition wrought by *Social Choice and Individual Values* went hand-in-hand with the adoption of cost-benefit analysis as the preferred method for reaching public policy decisions. One astute observer notes, "the crisis of welfare economics has given way to the development of a policy science...[involving] operations analysis, systems theory and related disciplines."<sup>103</sup> RAND style cost-benefit analysis became the preferred method to tackle policy evaluations because it did not run afoul of the varied critiques of the social welfare tradition. Most significantly, cost-benefit analysis performed the evaluation free from value judgments regarding distributional consequences of policy proposals. Cost-benefit analysis seeks superior policies by weighing costs and benefits of policy consequences on constituents. A weakened Pareto criterion is adopted according to which, as long as *in principle* winners would compensate losers for a disproportionate impact of a new policy, like road construction, there is considered to

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<sup>101</sup>Harold D. Lassell, "The Policy Orientation," *The Policy Sciences* (1951), 3-4.

<sup>102</sup>*Ibid.*, 4-5.

<sup>103</sup>J.P. Roos, *Welfare Theory and Social Policy. A Study in Policy Science* (Helsinki: Societas Scientiarum Fennica, 1973), 85; see also Roland McKean, *Efficiency in Government* (New York: Wiley, 1958).

be "surplus gain." Thus, if drivers utilizing a new highway could monetarily compensate residents now living next door to the highway, the project is considered to have passed the cost-benefit test regardless of whether such compensation is actually carried out. Cost-benefit analysis measures net gain without getting into the murky territory of distributional consequences.<sup>104</sup> Cost benefit analysis has become a standard policy tool in the United States and at its core is based on the reworked welfare economics tradition consistent with Arrow's *Social Choice and Individual Values*.<sup>105</sup> The social choice framework provides the key logic which also serve to ground mainstream policy tools such as cost benefit analysis.

The interconnectedness of policy science, decision technologies and social choice theory is also extremely evident in a 1978 textbook for public policy students co-authored by Edith Stokey and Richard Zeckhauser of Harvard University's John F. Kennedy School of Government. Cost-benefit analysis and social choice theory stand side-by-side as partners who share the same underlying conceptual foundation. Cost-benefit analysis is structured in accordance with value-free policy sciences and works to select policy goals, regardless of distributional concerns, according to the objective logic of cost-benefit analysis.<sup>106</sup> Social choice theory demonstrates the logical impossibility of defining social welfare, and fits well with the cost-benefit analysis approach of selecting policy alternatives independently from distributional consequences.

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<sup>104</sup>For a discussion of this feature of cost-benefit analysis see E.J. Mishan, *Cost-Benefit Analysis: An Introduction* (New York: Praeger Publishers, 1971); Mishan has a detailed discussion of the relationship between cost-benefit analysis and social welfare economics, 307-324.

<sup>105</sup>Edith Stokey and Richard Zeckhauser, *A Primer for Policy Analysis* (New York: W.W. Norton & Co., 1978), 283: "most policy analysis in the United States rests on the maximize-net-benefits approach," which is cost-benefit analysis as described above.

<sup>106</sup>See esp. the chapter containing a combined presentation of social choice theory and cost-benefit analysis, "Public Choice—To What Ends?," *A Primer for Policy Analysis* (ibid.), 257-286.

## **E. Conclusion**

It is generally conceded that Arrow's *Social Choice and Individual Values* has had a wide-ranging impact on diverse fields such as welfare economics, political theory, the philosophy of justice, and the foundations of public policy analysis, and that it gave rise to the distinct subfield of social choice theory. In this chapter I have devoted the most attention to articulating the manner in which Arrow's Impossibility Theorem represents a new language for addressing collective decision-making problems spanning social welfare and political processes for reaching collective agreements. This new language was at odds with that of the New Welfare Economics because its underlying assumptions and logical structure prohibited the social welfare economists' goal of showing the normative implications inherent in specific policy proposals. I have argued that regardless of the elegance and brilliance of Arrow's theorem, it is not the content of the proof so much as its introduction of a new language that grants it the status of one of the most significant theoretical findings of the twentieth century. To support this claim, I have drawn attention to the contemporary welfare economists' disdain for Arrow's treatise, and have argued that the theorem itself yields no more information about the difficulties inherent in defining social welfare, or intransigencies implicit in democratic voting procedures, than was already widely known. And yet, regardless of this lack of new content, Arrow's text became a widely cited classic, initiated an entire sub-discipline, and shook established fields to their foundations. I have argued that this apparently paradoxical result lends evidence to my claim that Arrow invented a new language for discussing social choice problems. This language is stark and minimalist in its terms and makes collective decision-making problems into a mathematical puzzle of deriving a group preference ordering from individuals' wants. Over time this new language would become the widely-accepted standard for addressing questions of public policy, political processes for achieving group outcomes, and for issues bearing on constitutional design.

Social choice theory is related to actual political practice, as I have shown above, and represents one facet of a larger "complex of knowledge" which spans the social sciences and policy science. Arrow himself spent his career at the cross-roads of social scientific research and policy analysis, and typifies the post-World War II U.S. tendency toward a policy elite with technocratic expertise playing prestigious and significant roles in guiding society by establishing social policies. I have also argued that social choice theory grounded ensuing discussions of social welfare and shared the same conceptual foundation with the widely used policy tool of cost-benefit analysis. Cost-benefit analysis replaced the old social welfare discussions as a means of providing policy advice. At its core it is consistent with the language introduced by Arrow's *Social Choice and Individual Values*. It attempts no analysis of social welfare but restricts itself to scientific analysis of net benefits by leaving distributional effects out of the analysis.

Finally, I conclude by briefly revisiting the "economics imperialism thesis." The most egregious oversight perpetuated by this thesis is the idea that economics as a discipline has, regardless of historical development, somehow always been consistent with the basic premises underlying "rational choice theory," and that somehow the theory of rational choice has identifiable features which are consistent with "economics" at large. Such a simple account ignores the nuances which differentiate periods of economic thought into distinctive schools and pretends that even during one time period within American economics, there was one unified approach. There are numerous idiosyncratic features to the new rational actor of rational choice theory which distinguish him from *Homo Economicus*. Arrow's rational agent orders his preferences in accordance with Tarski's logic of relations instead of maximizing his budget in accordance with the principles of variational calculus. Arrow's rational actor can operate in both parametric and strategic environments, the latter characterized by the mathematics of game theory. Arrow's methodology, grounded in methodological individualism which analyses all outcomes as the product of individual actions was at

odds with the then-dominant approach of Keynes. In Arrow's words, "[t]he various representations of the Keynesian theory in mathematical form all involve functional relations among magnitudes which cannot be identified with the behavior of any individual."<sup>107</sup> Perhaps more damning for proponents of an economics imperialism thesis, economics in the 1940s was having its own internal dispute over the role formal models should play in economic analysis. Paul Samuelson's *Foundations of Economic Analysis* (1947) touched off heated debate over "the role of mathematics in economics." Economist Kenneth E. Boulding asks,

Is economics an essentially mathematical science? Must the student of economics become proficient in the use of the higher mathematical analysis before he can qualify to be called an "economist"? What is the basic minimum of mathematics which must be required of all students of economics?

Boulding notes that "The conflict between the mathematical and the so-called 'literary' economists still rages in our schools," and he argues that "Mathematics is only part of the foundations of economic analysis...If economics becomes a preserve of the higher mathematicians, it will lose its essential humanistic and empirical quality."<sup>108</sup> The economics imperialism thesis does not recognize the ferment within the economics discipline in the late 1940s, nor does it acknowledge the new crystallization of a language of rational choice which emerged as a unique intellectual product. If some "imperialism" thesis were valid it, would be more accurate to look to the increasing role that formal analysis has come to play in the social sciences, including economics. Then it might be possible to see rational choice theory as representing a type of "formal imperialism," but this interpretation detracts from recognizing that the theory of rational choice as put forth by Arrow in the late 1940s and 1950s represents an unprecedented approach to collective action problems. The theory of rational choice articulated by Arrow, who drew upon von Neumann and Morgenstern's game theory, represents a new

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<sup>107</sup>Arrow, "Mathematic Models in the Social Sciences" (1951), 134.

<sup>108</sup>Samuelson, *Foundations of Economic Analysis* (1948); Kenneth E. Boulding, "Samuelson's *Foundations: The Role of Mathematics in Economics*," *The Journal of Political Economy*, 61, June 1948, 187-199, quotes from 187 and 199.

"language game" with its own founding premises and its own grammatical structure for tackling problems of collective will formation.

Whereas Arrow came out of the economics tradition when he formulated the impossibility theorem, it is not fair to say that Arrow was "merely extending economic analysis to democracy and public policy" because in developing the framework for social choice he was reformulating the terms of economic analysis, including those which had formerly grounded the social welfare economics tradition. Certainty, the idea of self-interested instrumental reason is old and familiar. However, Arrow translated the Homo Economicus of constrained maximization into the potentially strategic rational actor of von Neumann and Morgenstern. Furthermore, Arrow defined rationality in terms of the notions of transitive orderings drawn from symbolic logic. Thus Arrow's theoretical innovation in *Social Choice and Individual Values* instead of representing "economics imperialism" must be recognized as a new point of departure for economics which over the next four decades would follow Arrow's lead in a) promoting formal language; b) using symbolic logic and the notion of orderings; c) adopting the microfoundational approach characteristic of the social choice approach; d) couching problems in terms of game theory. These four conventions typical of Arrow's work were far from the status quo in 1940s economics which a) continued to be the domain of non-formally oriented theorists; b) was based on the mathematics of constrained maximization; c) took seriously the macroscopic approach characteristic of Keynes; d) thought game theory to be irrelevant to economic science.

To conclude this chapter on the transformation of the social welfare economics tradition, using the already-established internal critique of the New Welfare Economics, it is clear that Arrow's impossibility theorem did not tell the welfare economists something new about social welfare. Instead, it introduced a new vocabulary with universal applicability to problems of collective choice which carried embedded within it a set of theoretical commitments including a minimalist sense of rationality based upon



self-interest, consistency, and maximization, and collective rationality as defined as a mathematical mapping from individual preferences to a collective preference ordering. One of the big shifts in Arrow's new social choice language was to alter the relationship between scientific analysis and normative judgment. Welfare economics had based itself on the position that scientific analysis could show how various normative judgments in the form of political initiatives would affect constituents. Arrow shifted the goal of researchers to assessing what normative judgments are permissible given the grammar and terminology of the social choice problem of achieving collective rationality from individual rationality.

## Chapter 5

### James M. Buchanan and Gordon Tullock, and Public Choice

"Public choice" has two connotations, one referring to a specific school established by James M. Buchanan and Gordon Tullock, and the second being broadly synonymous with the encompassing disciplinary-designation "rational choice." In both respects, Buchanan and Tullock are leading figures who not only established their own school but were also the founding members of the interdisciplinary Public Choice Society. Unlike Arrow's *Social Choice and Individual Values*, which initiated a school of thought independent from any specific institutionalized school, Buchanan and Tullock's public choice theory has been furthered by the earnest institutional efforts of the two founders. This discussion of public choice is broken into a section on *The Calculus of Consent* and on the Public Choice Society. The first discusses Buchanan and Tullock's location within the rational choice canon, and argues that *The Calculus of Consent* both introduces a new language of politics and deserves recognition as a significant contribution to contractarian political theory and political liberalism. The second section concentrates on demonstrating that public choice scholarship is best characterized as a set of interlocking disciplinary movements, once again contradicting the "economics imperialism" thesis. A brief concluding section touches upon the interrelationship of public choice with the world of policy analysis.

#### A. Buchanan and Tullock's Collaborative *The Calculus of Consent*

James M. Buchanan graduated from the University of Chicago with a Ph.D. in economics in 1948, and throughout his career would remain consistent with the particular Chicago School credo of free trade, limited government and fiscal conservatism. Buchanan became acquainted with Gordon Tullock when Tullock spent a year at Buchanan's Thomas Jefferson Center for the Study of Political Philosophy at the University of Virginia in 1958-59. Buchanan had an interest in Knut Wicksell's analysis

of the role rules play in creating the incentives structuring economic institutions.<sup>1</sup>

Tullock had worked for nine years in the U.S. Foreign Service and had given thought to the role of self-interest in bureaucracy. *The Calculus of Consent* was the product of a quickly crystallizing collaboration by correspondence in the year following Tullock's visit at Virginia.

Buchanan and Tullock's *The Calculus of Consent*, subtitled, *Logical Foundations of Constitutional Democracy*, may be regarded as a logical step in the new language game of politics which had been verbalized by von Neumann and Morgenstern, Black, Arrow, and Arrow's student Anthony Downs.<sup>2</sup> Arrow and Black had considered the properties of collective decision-making procedures characteristic to elections, and in his *Economic Theory of Democracy*, Downs applied the idea of self-interested rational action to political parties' attempts to win office and hold power. Downs' novel approach was to locate individuals' decision-making as the site of analysis, to explain individual action in terms of the narrowly construed rational self-interest using transitive orderings and utility schedules, and the assumption that "more is always preferred to less." According to Downs' estimation, a political party's primary goal is to win election and not, as was generally supposed, to enact specific policy initiatives. From this hypothesis, and using quantitative analysis, Downs drew the predictive conclusion that political parties will tend to cater to the "median voter" who holds views in the center of the political spectrum.<sup>3</sup> Buchanan and Tullock followed Downs in maintaining the theoretical possibility of evaluating political outcomes as a direct consequence of *politicians'* self-interested calculations.

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<sup>1</sup>Knut Wicksell, *Finanztheoretische Untersuchungen*, (Jena: Gustav Fisher, 1896); for commentary see Buchanan's Nobel lecture published as "The Constitution of Economic Policy," *American Economic Review*, 77, June 1987, 243-250.

<sup>2</sup>James M. Buchanan and Gordon Tullock, *The Calculus of Consent* (Ann Arbor: University of Michigan Press, 1962).

<sup>3</sup>For a discussion of the research in the public choice tradition that Downs' argument inspired see Charles K. Rowley, introduction to *Public Choice Theory, 1*, (Brookfield, VT: Edward Elgar, 1993), xiv-xvi.

Buchanan and Tullock set about the task of explaining the constitutional foundations of democracy based on the premise of methodological individualism and self-interested rational action. They were interested in government at two levels, both the level of decision-making that went into designing a constitution, and then the collective outcomes of decision-making once they were adopted as laws. Thus, Buchanan and Tullock attempted to model what sort of constitutional structure self-interested rational actors would create following the rationale that these actors will only agree to a constitution that is in their self-interest. Having adduced a constitutional structure motivated out of individuals' calculated self-interest, Buchanan and Tullock proceed to analyze the results of self-interested rational action within the confines of these rationally motivated constitutions. They study both the initial adoption of a constitution and the consequences of the constitutional rules once adopted.

*The Calculus of Consent*, published in 1962, was reviewed by numerous journals representing the fields of economics, political science, sociology and law.<sup>4</sup> As the authors had predicted, their book was extremely timely and was generally accepted as an important contribution both to political theory and to the newly burgeoning field of political economy. One reviewer observed, "*The Calculus of Consent* is...a closely reasoned and major contribution to systematic political theory."<sup>5</sup>

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<sup>4</sup>Steven G. Medema provides an in depth discussion of these reviews in his "'Related Disciplines': The Professionalization of Public Choice Analysis," unpublished manuscript of paper given at a Duke University history of economics conference, Spring 1999. Anthony Downs, *Journal of Political Economy*, 72, Feb. 1964, 87-88; Irwin N. Gertzog, *American Political Science Review*, 63, Dec. 1964, 973-974; Henry G. Manne, *George Washington Law Review*, 31, June 1963, 1065-1071; R.J. May, *The Australian Quarterly*, Dec. 1963, 111-113; Robert McGinnis, *The Annals of the American Academy of Political and Social Science*, 346, Mar. 1963, 188; James E. Meade, *Economic Journal*, 73, Mar. 1963, 101-104; R.S. Milne, *Political Quarterly*, 33, Oct. 1962; Mancur Olson Jr., *American Economic Review*, 52, Dec. 1962, 1217-1218; C.M. P., *Ethics*, 75, Oct. 1963, 65-68; William H. Riker, *Midwest Journal of Political Science*, 3, May 1959, 207-210; William H. Riker, *Midwest Journal of Political Science*, 6, Nov. 1962b, 408-411; Kenneth Vines, *The Journal of Politics*, 25, Feb. 1963, 160-161; and Benjamin Ward, *Southern Economic Journal*, 29:4, 1963, 351-353.

<sup>5</sup>*Conflict Resolution*, 7:2, 176.

Buchanan and Tullock's rapid collaboration was fueled by the sense that getting their precedent-setting ideas in print to gain priority was more important than getting all the details right the first time around.<sup>6</sup> Unlike Arrow, who delineated a new language of social choice in precisely defined terms and reached definitive conclusions using symbolic logic, Buchanan and Tullock's new approach is much more one of an unremitting commitment to methodological individualism and politics as trade, combined with analytic tools drawn from game theory and the welfare economics tradition.<sup>7</sup> They reach conclusions from discursively presented analyses instead of from formal proof.<sup>8</sup> Despite the lack of formal proof, they quantitatively assess the premise that individuals' personal calculation of costs and benefits must provide the foundational rationale for the practice of constitutional design. Buchanan and Tullock conclude that the principle of majority rule cannot be rationally motivated and instead look to unanimous consent as necessary to legitimize constitutional rule.

Buchanan and Tullock's analytic structure and new way of conceptualizing the problem of constitutional design was responsible for the book's classic status more so than were its models, which were some what ad hoc demonstrations of the principles upon which the book was founded. Arrow's theorem, which continues to be taught in economics, public policy, and positive political theory, used the weight of mathematical proof to demonstrate the logical impossibility of democratic rule leading to a meaningful sense of the "will of the people." Buchanan and Tullock's *The Calculus of Consent* does not put forth a similarly pointed and indisputable result. Instead, their contribution was

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<sup>6</sup>James M. Buchanan to Gordon Tullock, Sep. 9, 1959, Tullock-Buchanan correspondence, JMB papers.

<sup>7</sup>See chapters 11-13; it is frequently claimed that Buchanan's background in the public finance tradition of Wicksell and Musgrave is also important. R.E. Wagner, "The Calculus of Consent: A Wicksellian Retrospective," *Public Choice*, 56, 1988, 153-166.

<sup>8</sup>For evidence of the continuance of this contrasting style see Arrow's reformulation of Tullock's *Toward a Mathematics of Politics* (Ann Arbor: University of Michigan Press, 1967) in formal terms, "Tullock and an Existence Theorem," in *Social Choice and Justice: Collected Papers of Kenneth J. Arrow*, (Oxford: Basil Blackwell, 1984), reprinted from *Public Choice*, 6, 1969, 105-112.

to provide a new means of evaluating the logical foundations of constitutional democracy. In couching their analyses in terms of self-interested, rational acceptance of constitutional rules, Buchanan and Tullock consider themselves to be working squarely within the contractarian tradition of political theory, which holds that at its root the formation of a constitutional state depends on the social contract between the individual, who agrees to obey the constitutionally mandated sovereign, and the state, which guarantees individual rights under the law. Tullock and Buchanan's contribution to this contractarian tradition was to use their idiosyncratic logic of market relations to refashion political liberalism.<sup>9</sup> Buchanan and Tullock were providing a new interpretation of American political liberalism as contained in such fundamental documents as the Constitution and the Federalist Papers, and suggested that their analyses upholding methodological individualism and self-interested rational action grasped the foundations of what was at stake in the process of constitution building. This was already evident in already evident in Buchanan's self-fashioning of the Thomas Jefferson Center for Studies in Political Economy and Social Philosophy at the University of Virginia in the late 1950s<sup>10</sup> Thus, for example, they claimed that their analyses supported the intent of the *Federalist Papers* section number 10.<sup>11</sup>

Buchanan and Tullock's *Calculus of Consent* is a bold contribution to political theory which reinvented the logical foundations of constitutional democracy to resemble the logic of the market. In markets, individuals participate if they stand to gain, and theoretically, in all voluntary market exchanges, all parties gain. Buchanan and Tullock

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<sup>9</sup>Their analysis is presented in explicitly anti-Keynesian terms and also stands opposed to the Chicago school's approach to political economy; see Rowley, introduction to *Public Choice Theory* (1993), xi-xii.

<sup>10</sup>The Center's pamphlet announced under "general aims," "The Center is organized to promote scholarly discussion of the basic ideals of Western civilization and of the solutions to modern social problems most in accord with those ideals. The Center is a community of scholars who wish to preserve a social order based on individual liberty. The Center will encourage students to see the philosophical as well as the technical issues entering into problems of social organization," undated.

<sup>11</sup>Buchanan and Tullock, *The Calculus of Consent* (1962), 25.

similarly thought of politics as a process of exchange in which individuals accede to the power of the state because in promising obedience, they stand to gain from the rule of law. For Tullock and Buchanan, the puzzle of legitimate constitutional design lay in striking the correct balance between permitting the coercive power of government to enhance and to hinder individuals' interests. In agreeing to the terms of a constitution, each person balances between the negative impact of decision rules which lead to outcomes based on less than unanimous consent and the negative costs of decision-making if strict unanimity were to be required for every policy decision. Decision rules requiring less than unanimity may impose costs on an individual because he cannot veto policies he does not agree to; on the other hand, requiring unanimous agreement in all cases adds a procedural cost of time and resources strictly devoted to reaching collective decisions.

Buchanan and Tullock's recasting of constitutional design in the language of narrowly construed rational self-interest created a new strand of political liberalism which resonates with Adam Smith's political economy.<sup>12</sup> In Buchanan and Tullock's calculated version of political consent, the political destiny of collective individual self-oriented utility maximizers can only ever be the unintended by-product of individuals efforts toward self-gain. As they repeatedly suggest, social collectives are no more than individuals who only look so far as their own needs. It is also fundamental to Tullock and Buchanan that individuals have no concern for each other's well-being, unless that interest is specifically entered into a utility function.

The consequences of Buchanan and Tullock's foray into political theory was to put forward a clearly articulated version of political liberalism which adds to the contractarian tradition of political philosophy, and sets forth a new precedent for

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<sup>12</sup>Buchanan and Tullock, *The Calculus of Consent* (1962), 250; for a more general comment of Buchanan's sense of working in Adam Smith's tradition of political economy see his manuscript, "Virginia's Decade in Political Economy: Positive Elaboration of an Academic History," JAB papers, 6; see also Special Session, "The Founding Fathers," Public Choice meeting, Mar. 24, 1995, 2.

understanding the foundations of a constitutional state. In an appendix, Buchanan places *The Calculus of Consent* within the long-standing traditions of both political realism and contractarianism, looking to such thinkers as Plato, Hobbes, Spinoza, Locke and Hume. The puzzle for theorists working within this (non-idealist, non-organic) tradition was whether "the existing organization of the State [can] be 'explained' as an outgrowth of a rational calculation made by individual human beings."<sup>13</sup> Although finding much to be admired in both Spinoza and Hume, Buchanan thought that his and Tullock's new approach to political science and political economy surpassed these earlier efforts.

Buchanan and Tullock's political theory and science of political economy boils down to a few basic principles which have far-reaching implications. Their assumption of self-interested rational action, although a normative hypothesis subject to empirical testing, permits them to draw a clear line between moral philosophy and political science: moral philosophy pertains to discussions of how individuals should act given such concepts as responsibility, obligation and duty, while political science assumes nothing about how agents *should* act, and only upholds the minimalist assumption that agents will be rationally self-serving in their actions. This division of labor between moral philosophy as judging human action, and political science as accepting humans as they are, enables Buchanan and Tullock to create analytic, value-free, models of how self-interested agents act given a) the question of designing a constitution and b) the question of acting within a system of law once a constitution has been adopted. All of these latter considerations fall squarely within the province of a science of politics and political economy for Tullock and Buchanan.

Tullock and Buchanan are also concerned with normative questions of constitutional design, but using the system which they have constructed, they maintain that there are a set of normative questions which can be approached scientifically. In

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<sup>13</sup>Buchanan and Tullock, *The Calculus of Consent* (1962), 316.



fact, for Tullock and Buchanan, the entire enterprise of political science should be oriented toward having practical impact. They manage to both distinguish themselves from moral philosophers and to put forth a normative vision by building their platform on an analysis of human agency, supposedly as it is instead of how it might be. Tullock and Buchanan argue that they have traced out the logical consequences of self-interested rational behavior in both arenas of constitutional design and operational rule-following, and that a normative approach to politics can be objectively built upon this platform.

As Buchanan states,

Normative theory must be erected upon and must draw its strength from the propositions of positive science, but it is only when this extension of normative theory is made that 'reform' in existing institutions can be expected to emerge from specialized scholarship. Indeed the only purpose of science is its ultimate assistance in the development of normative propositions.<sup>14</sup>

Given the assumption of self-interested rational action, it is possible to strive for more efficient constitutions by analyzing the consequences of constitutional design for collective social outcomes. Like Arrow, normative standards can be validated through scientific analysis. It is a hallmark of the rational choice approach to politics to insist that normative judgments can be derived from positive, objective, scientific analysis.

Tullock and Buchanan hold that their analysis epitomizes the reasoning grounding the contractarian tradition in political theory.<sup>15</sup> Within this tradition, the authors believe that they have made theoretical advances over their predecessors. The main three advances include: first, their distinction between moral philosophy and positive political theory, and their argument that normative conclusions can be built upon positive analysis. Second, they are not captivated with the origins of the social contract; rather they are interested in providing an analysis of the implications of contemporary constitutional design for current collective action problems. It is their hope that the basic law structure can be altered to best serve individuals' interests

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<sup>14</sup>Buchanan's appendix, *The Calculus of Consent* (1962), 308.

<sup>15</sup>See esp. 317-320 of Buchanan and Tullock, *The Calculus of Consent* (1962).

according to the familiar efficiency criterion of Pareto optimality. Third, they use the Pareto efficiency condition to reach the iconoclastic conclusion that the principle of "majority rule" has no more theoretical basis than would have a rule of 49% or 51%. Majority rule potentially incurs too much cost for a rational agent who seeks to avoid the negative repercussions of unfavorable policies.

Buchanan and Tullock's analysis in *The Calculus of Consent* has several important implications for political theory. Most significant, they obliterate the concept of "the public" as a meaningful category of analysis.<sup>16</sup> The notion of "public" necessarily falls away in a theoretical system in which the only meaningful unit of analysis is self-oriented actors. As in Arrow's *Social Choice and Individual Values*, there is no theoretical means to ground a notion of public, public good, or public interest. Collective outcomes can only ever be assessed from the vantage point of individual actors. The public sphere as an arena of orientation toward others or the social whole is rendered theoretically effete, and all that remains as a conceptual tool is a calculation of how collective outcomes affect private interests. Tullock and Buchanan go beyond Arrow by holding that even the attempt to construct a function which maps from individual to a group will be a misguided effort and smacks of a smothering organicism.<sup>17</sup>

Also, similarly in keeping with Arrow, the entire analysis based upon the presumption of self-interested utility maximizing agency places the problem of collective decision-making in the domain of mathematical aggregation. The public sphere as a discursive community oriented toward the rational discussion of ends is rendered ineffective on the two counts of methodological individualism and aggregative utility maximization. The resulting political liberalism strives to erect a framework in which individuals' self-interested, well-informed, rational pursuits are automatically channeled

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<sup>16</sup>Ibid., 316.

<sup>17</sup>One reviewer states explicitly what Tullock and Buchanan voice implicitly, that the individualist approach stands opposed to a Marxist analysis dependent on nebulous concepts like "class exploitation," R.J. May, book review, *The Australian Quarterly*, Dec. 1963, 112.

to lead to a mutually satisfactory group outcome measured by individuals' unanimous agreement to "play by the rules." The creation of such a framework represents the problem of constitutional design for Tullock and Buchanan. Constitutions are objectively evaluated according to their ability to coordinate self-interested actions in a mutually acceptable way. The objective benchmark for evaluating "mutually acceptable outcomes" is the minimalist criterion of Pareto optimality which looks to unanimous consent in order to make legitimate alterations to the constitution.

Tullock and Buchanan's contractarian calculus of consent leaves room for the intentional direction of society by individuals through the use of a science of politics which shows how self-interested actions can be more effectively coordinated. Their confidence in the power of a science of politics to provide objective judgments as to how to improve constitutional design places their thought squarely within the "social engineering" tradition discussed in chapter one. Like Jeremy Bentham's utilitarianism, Tullock and Buchanan think it possible to create an objective basis of law whose legitimacy is evaluated in terms of individuals' rational calculations. In a lucid explanation, the reviewer R.J. May explains,

The analysis proceeds from a simple model: individuals are seen as members of a social group in which collective action is guided by a set of rules; participating in the political process of formulating (or improving) existing rules, all individuals seek to maximise their individual utilities (i.e., individuals are 'rational'); individual utility functions differ; only those rules which benefit each individual are accepted; the government is simply a machine which allows collective action to take place. On these assumptions the authors examine the calculus of the individual in deciding which activities will be organised privately and which collectively, and formulate an economic theory of constitutions in which the individual's preferences for collective action is seen to be determined by the expected relative costs of collective and private voluntary organisation.<sup>18</sup>

Buchanan and Tullock's framework operates not to directly maximize aggregative utility, but to raise the issue of constitutional design itself to a level of individual calculation. Individuals form an agreement to constitutional principles when it is in their best interest, and then achieve certain social outcomes when they operationally follow rules

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<sup>18</sup>Ibid.

once a constitution is adopted. In this analysis, careful study will show how to alter constitutional principles so that the outcomes of operational rule-following achieves "more efficient" outcomes.

Although Buchanan took umbrage when one reviewer suggested that his politics were those of the extreme right, Tullock and Buchanan's school of public choice has consistently been associated with the conservative political position of fiscal restraint and individualist philosophy consistent with the "pull yourself up by the bootstraps" credo. In response to Mancur Olson's 1964 review, Buchanan personally wrote to Olson that *The Calculus of Consent* is politically neutral and that furthermore his own politics must be characterized as that of "an old-fashioned or nineteenth century liberal."<sup>19</sup> Still, an intense political conservatism has continued to characterize Tullock and Buchanan's work.<sup>20</sup> Buchanan's keen interest in politics is readily apparent from his writings, from the position he took regarding student unrest in the 1960s, and in the letters of recommendation he wrote, which consistently place the candidate in question definitively within the political spectrum.<sup>21</sup> The politics of the public choice school deserve mention because the public choice movement has staked its claim on the proposition that scientific investigation can inform normative, political decisions; public choice scholars such as Buchanan and Tullock hold that the normative political implications of their work follow as a logical consequence of their objective, scientific, analysis. The public choice movement, which stands for an individualistic notion of society in which collective good is an illegitimate concept and private gain is the only measure of effective rule, has helped to provide the philosophical underpinnings of late twentieth-century conservatism.

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<sup>19</sup>Draft of letter to Olson in file contained reviews of *The Calculus of Consent*, undated, James M. Buchanan papers.

<sup>20</sup>For a comment on this see Rowley, *Public Choice Theory* (1993), xiii-xiv.

<sup>21</sup>See e.g., Buchanan's *The Limits of Liberty: Between Anarchy and Leviathan* (Chicago: Chicago University Press, 1975); see WSJ article of Jul. 31, 1970, see also file of correspondence discussing article in JMB papers; letters of recommendation in JMB's papers.

*The Calculus of Consent*, unlike Arrow's *Social Choice and Individual Values*, did not of its own accord initiate an academic subfield. The academic subfield of public choice, associated with Tullock and Buchanan's intellectual leadership, was established through the direct institutional efforts of the two leaders. During the period of collaboration in 1960, Buchanan already was a central figure in organizing the Thomas Jefferson Center for Studies in Political Economy at the University of Virginia. Other key professors who were on the faculty included Ronald H. Coase and G. Warren Nutter.<sup>22</sup> In 1968 Buchanan resigned from the University of Virginia in protest of Tullock's third-time denial of tenure by the university's administration.<sup>23</sup> The two conjunctive events caught campus-wide attention and it seemed that Tullock's tenure case ran afoul of two-directional university politics which ultimately did not support the scholarship and politics advanced by Buchanan's program. The campus newspaper devoted attention to Tullock's tenure case and hypothesized that the university's decision had been fueled by the sentiment of the political science department, which supposedly took issue with Tullock and Buchanan's scholarship and politics.<sup>24</sup> The university white-washed the tenure denial, asserting that the decision had been made entirely on the basis of Tullock's failure to be productive.<sup>25</sup> Reminiscing about the event later, Buchanan thought that the university's stance was motivated by ideologues who were not open-minded enough to accept the truth behind Buchanan and Tullock's realistic assertions about the political process.<sup>26</sup> Buchanan and Tullock moved to Virginia Polytechnic Institute, where they

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<sup>22</sup>Coase is a leading figure in the early law and economics movement which, not-coincidentally was housed at different times at the University of Rochester and George Mason University. The history of the law and economics movement represents another parallel development of rational choice theory and deserves more attention.

<sup>23</sup>Buchanan mentions the Tullock decision as the most significant factor in his decision, JMB to Leland Yeager, Jan. 15, 1968, JMB papers.

<sup>24</sup>Letter from Rod MacDonald of *The Cavalier Daily*, University of Virginia to Gordon Tullock, Feb. 8, 1968, file of Tullock-Buchanan Correspondence, JMB papers.

<sup>25</sup>Tullock was also a controversial figure because he only had an masters degree.

<sup>26</sup>Buchanan discusses the politics among University of Virginia faculty in the 1960s in "Special Session: The Founding Fathers," Public Choice Society Meeting, Mar. 24, 1995, 2.

established the Center for the Study of Public Choice. This Center was moved a second time to George Mason University in 1983.

In concentrating on Buchanan and Tullock's foray into constitutional theory, I am intentionally not discussing ensuing work accomplished by the Virginia school of public choice, which studied interest groups, rent-seeking, the legislature, the executive, the judiciary, and the federal bureaucracy.<sup>27</sup> A common theme throughout these writings are the inefficiencies in government which cannot effectively coordinate self-interested actions in contrast to the marketplace.<sup>28</sup>

### **B. The Public Choice Society**

Although Buchanan was at RAND in 1956-1957, and although he was exposed to the new analytic language of collective decision-making as put forward by Arrow and Downs, he and Tullock formed their collaboration outside of any other well-formed intellectual movement. After publishing *The Calculus of Consent*, they were centrally involved in establishing an interdisciplinary professional society which had much wider scope of operation than their Center at the University of Virginia. This society, dubbed "The Public Choice Society" in 1967, would form a continual organizational focus for both despite their trekking about from university to university over the ensuing years. The society, which was originally met as the "Committee for Non-Market Decision Making," drew together scholars who were working in the same vein as Tullock and Buchanan by concentrating on positive analyses of non-market decision-making problems using the tools of economics. The society became a mecca for scholars of disparate academic fields to interact, and met yearly to discuss academic papers. Tullock and Buchanan were the group's founders, and in the first three years of the society following the initial meeting in 1963, it could boast of including participants such

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<sup>27</sup>For a synopsis of this work see Rowley, introduction to *Public Choice Theory* (1993); these volumes also contain a compilation of pertinent articles.

<sup>28</sup>For discussion of the Virginia public choice school's approach see William C. Mitchell, Virginia, Rochester, and Bloomington: Twenty-five years of public choice and political science," *Public Choice*, 56, 1982, 106-110.

as: James S. Coleman, Anthony Downs, John Harsanyi, Samuel P. Huntington, Roland McKean, Mancur Olson, Vincent Ostrom, John Rawls, Thomas Schelling, and Aaron Wildavsky. In the third year of operation the political scientist William Riker also took on a key organizational role.

The Committee for Non-Market Decision Making applied for and received grants from the National Science Foundation and the Social Science Research Council. The society is noteworthy for several reasons. First, with its prominent and interdisciplinary list of participating members, the society is illustrative of how the rational choice movement unfolded as a complex of knowledge or interlocking set of interdisciplinary revolutions. The fields represented in the society included economics, political science, public policy, sociology and philosophy. Rather than representing the imperialism of one field over another, the spirit of the enterprise was one of a new synthesis which created the field of public choice by crystallizing a new language of political economy in the space between mainstream economics and political science. Meeting yearly, the society helped to establish the critical mass necessary to generate a new field. Thus, for example, Anthony Downs, Henry G. Manne, Mancur Olson and William Riker all reviewed Tullock and Buchanan's *The Calculus of Consent*.<sup>29</sup> The manuscript for Buchanan's 1965 *Democratic Finance* was reviewed by four active members of the Committee for Non-Market Decision Making.

Out of the three published compilations of papers presented at the first three meetings of the proto-society grew the journal "*Public Choice* ." With the selection of this terse phrase countering "social choice," which still conjured up images of the welfare economics tradition, the movement initiated by Tullock and Buchanan gained a cachet

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<sup>29</sup>Robert McGinnis, professor of sociology at Cornell, also reviewed the book and attended meetings; Manne was a leading in the law and economics movement and established a center at George Mason University's law school.

helpful to gaining a wider currency.<sup>30</sup> The term would always convey some tension between larger community of researchers who met as members of the Public Choice Society and Buchanan and Tullock's Virginia-based school of Public Choice which capitalized on the same phrase. With the establishment of the journal, which continues to be a bastion of formal analysis today, a field of scholarship was born that was dedicated to "the application of essentially economic tools and methods of reasoning to areas outside traditional economics."<sup>31</sup> The new journal was necessary specifically because traditional economics journals did not recognize the intellectual forays and adventures of this rogue clique of scholars as germane to their territory. Mainstream economists were not leading the enterprise of extending economic analysis to new fields. Instead initiated by and led by a set of interdisciplinary-based researchers, a new field was born which drew its self-identify from its commitment to self-interested rational action and studied collective outcomes as the result of the micro-foundations of individual decisions. The unique style that coalesced out of public choice scholarship represented a unique synthesis which, while drawing inspiration from various strands of economic theory, over time would itself influence mainstream economics. Mançur Olson has articulated this nuanced transition within economics observing, "In recent years...economic theory has come to be conceived as a general theory of rational behavior, rather than merely a description of market behavior in capitalist economies..."<sup>32</sup>

The newly established public choice tradition challenged basic economic assumptions which drew a clean distinction between political processes and law on the one hand, and the economic marketplace on the other hand. Vincent Ostrom, writing a

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<sup>30</sup>William C. Mitchell claims to have coined the phrase, a claim which is corroborated by Buchanan's recollections in "Special Session: The Founding Fathers," Public Choice Society Meeting, Long Beach, Mar. 24, 1995, 5.

<sup>31</sup>Draft of NSF Proposal to fund publication of *Papers on Non-Market Decision Making*, undated, file "Papers on non-market decision making," JMB papers.

<sup>32</sup>Review of *The Calculus of Consent*, *The American Economic Review*, 52, Dec. 1962, 1217-1218.



general memorandum regarding a constitution for the Public Choice Society, noted the group's interest in "the application of economic reasoning to problems of public choice or non-market decision making." He also acknowledged that scholars interested in public choice took up questions outside the scope of mainstream economics, and that these scholars "are lifting the veil of the law and order postulate and [are] inquiring about the logic of collective action, the strategies of conflict and of inter-dependent decision-making, the principles of political constraint, the calculus of consent and the calculus of threat systems."<sup>33</sup> Over the following decades, insights and methods from public choice scholarship such as game theory, a focus of micro-foundations and institutionalized factors constraining market transactions, would become increasingly central to economics.

If the public choice movement had emerged from a pattern of "economics imperialism," we would expect to see that mainstream economics extended its domain by increasingly recognizing external subject matter to be pertinent to its core enterprise. Instead the clear pattern which Vincent Ostrom articulates was the establishment of a field of study drawing on methodological individualism and self-interested rational action to pose an entirely new set of questions not of interest to most economists. As Ostrom sees it, the public choice movement was essentially interdisciplinary, and has stimulated numerous paradigmatic revolutions sweeping the social sciences:

**The works of Mancur Olson and of Gordon Tullock have provided devastating critiques of group theory and of the Weberian theory of bureaucracy—two of the old classics in political science and sociology—and pointed the way toward the use of a fundamentally different paradigm in the analysis of collective action. Buchanan and Tullock's introduction of a cost calculus into the analysis of decision rules opens new possibilities for developing a rigorous form of institutional analysis which was never realized by the earlier institutional economists. Together with the work of Boulding and Schelling in relation to international decision making, Black, Downs, and Riker on elections, parties and coalitions, and Musgrave and Baumol in public finance, we have many of the**

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<sup>33</sup>Memorandum from Vincent Ostrom to Members and Prospective Members of the Public Choice Society, Sep. 10, 1969, 2.

elements which I would expect to grow into a basic paradigmatic revolution in political science, sociology, anthropology and law.<sup>34</sup>

The movement which Ostrom described carried the sense of multi-disciplinary, interlocking revolution with a common basis in a shared vision. With the membership of the public choice society spanning many fields, it is crucial to note that the movement unfolded simultaneously in parallel in several fields instead of in accordance with the economics imperialism thesis holding that rational choice theory emanated from economics. The economics discipline did not play host to the revolution Ostrom discussed, neither by giving rise to its core research concerns, nor by providing institutional support for research initiatives. Ostrom recognized that

Prospective members of the Public Choice Society will thus have ties to the variety of social science disciplines which serve as the basis for departmental organization in many universities while sharing theoretical interests based upon a common paradigm that tends to cross disciplinary boundaries.<sup>35</sup>

From within the movement it was clear that there was a well-defined community of scholars participating in a shared research enterprise of analyzing collective decision-making processes according to the new ground rules of methodological individualism, and self-interested rational action in parametric and strategic environments. According to Ostrom, the propagation and development of public choice is a single "paradigmatic revolution" which "is occurring within a universe of discourse as wide as the social sciences," and which "can be expected to have a major impact upon work in the various social sciences." Far from representing the colonization of the social sciences by economics, this new intellectual tradition "is essentially inter-disciplinary in its thrust," and has a common source of origin in the interstices between traditionally defined academic fields. Economics, as much as the other social sciences, would feel the impact of the public choice movement as its own set of research questions and methods were altered to face the new challenges raised by the savvy public choice scholars who

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<sup>34</sup>Ibid.

<sup>35</sup>Ibid., 3.

consistently saw economic transactions as intertwined with non-market decision-making procedures.<sup>36</sup>

One example of the extraordinary creative impulse of this new interdisciplinarily-defined field was the manner in which it added kindling to the creative spark underlying one of the most famous contributions to political theory and moral philosophy of the latter twentieth-century: John Rawls' *Theory of Justice*.<sup>37</sup> Rawls presented his paper "Justice and the Theory of Constitutional Choice" at the 1963 meetings of the Committee for Non-market Decision Making, and developed his ideas in dialogue with Buchanan and other public choice scholars as well as with scholars of the social choice persuasion such as Arrow and Amartya Sen. In the 1963 meeting, Rawls presented a blueprint of his future tome on justice, and argued that

A theory of justice is essential to an explanation of why citizens of a democracy accept their constitution and why they are willing to abide by the rules. It should be noted at the outset that the theory of justice is regarded as a necessary supplement to the theories of constitutional choice worked out by political economists.<sup>38</sup>

In addition to articulating the basic principles underlying what would become his theory of justice, this early paper also makes it clear how Rawls' thought emerged within the theoretical framework set up by the public choice scholars' approach, and by Tullock and Buchanan's work on constitutional design. Even though Rawls states that "The theory of justice is a part, perhaps the most significant part, of the theory of rational choice," Rawls' stellar significance has out-illuminated his origins in public choice.<sup>39</sup> Few today locate his theory of justice within the broad set of theoretical accomplishments which grew out of the public choice movement. To some extent this may be because Rawls later insisted that his theory of justice entailed more than the basic principles of

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<sup>36</sup>All quotes are from Memorandum from Vincent Ostrom to Members and Prospective Members of the Public Choice Society, Sep. 10, 1969.

<sup>37</sup> John Rawls, *A Theory of Justice* (Cambridge: Harvard University Press, 1971).

<sup>38</sup>Abstract to Rawls' paper, "Proceedings of the Big Meadows Conference," Oct. 12-13, 1964, 6.

<sup>39</sup>Rawls, *A Theory of Justice* (1971), 16.

rational choice, yet despite this denial it is worth recognizing Rawls' indebtedness to the public choice movement.<sup>40</sup>

Rawls, like Tullock and Buchanan, falls within the contractarian tradition of political liberalism that attempts to work out a compromise between the costs and benefits which an individual experiences in recognizing the sovereignty of a constitutionally mandated state. Rawls, also like Tullock and Buchanan, attempts to base the individual's acceptance of constitutional rule upon individuals' rational self-interest.<sup>41</sup> All three thinkers strive to find the principles of constitutional rule which individuals accept through a process of rational calculation. Furthermore, all three hold that the ideal constitutional form would function as a framework which automatically coordinates agents' self-interested actions. The problem as Rawls expresses it is "to think of a human society as a more or less self-sufficient system of cooperation regulated by a common conception of justice. Social institutions are seen as schemes of cooperation for reciprocal benefit among free and independent persons."<sup>42</sup>

All three authors make use of some tools of economic analysis to draw pointed conclusions about what self-interested rational agents would agree to in selecting constitutional principles to regulate their society. The Pareto criterion plays a key role in all of these analyses by providing a basic starting point from which to motivate rational acceptance on the part of citizens: the Pareto condition guarantees unanimous acceptance because all social institutions are to be structured so that any changes which benefit a single member of the community while negatively impacting no members are selected as an optimal state. While all authors use the Pareto condition as a benchmark for making their arguments, Rawls departs from Tullock and Buchanan by arguing that

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<sup>40</sup>For discussion of Rawls' consistency with a strict rational choice philosophy see Susan Moller Okin, "Reason and Feeling in Thinking about Justice," *Ethics*, 99, Jan. 1989, 240-249.

<sup>41</sup>*Ibid.*, 11.

<sup>42</sup>Abstract to Rawls' paper, "Proceedings of the Big Meadows Conference," Oct. 12-13, 1964, 7.

in a hypothetical "original position" in which the social contract is hammered out, agents would go further than the Pareto condition and would adopt a stronger position which he called "the difference principle."<sup>43</sup> As Rawls explains, "the difference principle goes beyond the notion of (Pareto) efficiency to a principle of justice, because it adds the requirement that differences of earning potential within a society must always be structured so as to benefit the least off."<sup>44</sup>

Rawls emulates Tullock and Buchanan in developing his idea of a "veil of ignorance," behind which people reach constitutional agreement without having any knowledge of their station in life, even including their race and gender. Similarly, for Tullock and Buchanan an individual is uncertain as to his "precise role[s] in society, and that therefore the individual "is considered not to have a particular and distinguishable interest separate and apart from his fellows."<sup>45</sup> The two sets of thinkers share this operational starting point of "uncertainty," or "ignorance," concerning an individual's precise role in society, and the rational calculus of interests which the individual employs to assess which constitutional principles are his interests, even though they diverge on the extent of the uncertainty and ignorance involved in this "original position." Tullock and Buchanan, and Rawls ultimately reach different conclusions in their positively derived systems because for Tullock and Buchanan individuals' assent to constitutional principles must be reaffirmed every fifteen years, while for Rawls the

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<sup>43</sup>Ibid., 8.

<sup>44</sup>Difference principle vs. principle of unanimity: Use the same method to get to justice or a constitutional framework for coordinating ends for both. Rawls imports the language of political economy efficiency, Pareto optimality as the heart of his system and derives his "difference" principle from economic consideration. In economics it became standard to distinguish between questions of efficiency and questions of distribution using the criterion of Pareto optimality. According to the Pareto condition, full efficiency is reached when no further trades or changes can be made which leave at least one person better off and none worse off. Tullock and Buchanan use the Pareto condition to ground their unanimity principle; Rawls uses the Pareto condition to select a pool of socially optimal outcomes and then adds as a distributive criterion his "difference principle" which holds that among the Pareto efficient points the one which most advantages the least well-off member of society should be selected.

<sup>45</sup>Buchanan and Tullock, *The Calculus of Consent* (1962), 78.

initial assent granted in the original position behind the veil of ignorance is binding for society for all time.

Despite their differences, however, Tullock, Buchanan, and Rawls contribute to a theory of political liberalism in which the goal is to design constitutional structures and political institutions which automatically coordinate individuals self-interested actions.

Articulating this objective, Rawls states

Ideally the rules should be set up so that men are led by their predominant interests to act in ways which further socially desirable ends. The conduct of individuals guided by their rational plans should be coordinated as far as possible to achieve results which[,] although not intended or perhaps even foreseen by them[,] are nevertheless the best ones from the standpoint of social justice.<sup>46</sup>

As Rawls acknowledges, this tradition in political theory which looks to set up a framework in which individuals' rational self-oriented aims are automatically coordinated is consistent with the political philosophies of Adam Smith and Jeremy Bentham.<sup>47</sup> The emerging public choice tradition articulated by Tullock and Buchanan, and inspiring Rawls, provides a new language with which to understand and evaluate collective decision-making processes central to government. This new generation of theorists worked in the older tradition of political economy which saw market transactions and political institutions as inextricably interrelated.

However, as Buchanan was well aware in recognizing the new language of public choice, this new language was insignificant unless it provided new results in addition to a new vocabulary.<sup>48</sup> And, whereas the language and methods of public choice were consistent with long-standing features of the political economy tradition, the public choice scholars unequivocally thought that their analyses provided unprecedented insights afforded by the precise techniques in which they were grounded. The language which permitted these novel insights was that of methodological individualism, self-

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<sup>46</sup>Rawls, *A Theory of Justice*, 57.

<sup>47</sup>Ibid.

<sup>48</sup>Commentary on Mancur Olson's paper, "Proceedings of the Big Meadows Conference," Oct. 12-13, 1964, prepared by W.C. Stubblebine, 6, JMB papers.

interested rational action within parametric and strategic contexts, an ordinal measure of utility which ruled out interpersonal comparisons, and the Pareto condition as providing the means to distinguish between positive questions of efficiency and ethical questions of distribution. The sparse elements of this vocabulary, which grew out of the social welfare tradition and the crystallization of rational choice theory through the works of von Neumann and Morgenstern, Black, Arrow, Downs, Tullock and Buchanan, Riker, and Olson yielded powerful conclusions from apparently minimalist assumptions. In Buchanan and Tullock's hands, the combined assumptions embedded in the language of public choice ruled out the concept of public interest; challenged the legitimacy of majority rule; erected a clear dividing line between questions of social efficiency and distributive concerns, recognizing one as the province of scientific analysis, and the other as the province of moral discussion; made it standard practice to evaluate collective decision-making procedures according to a rational calculus of interests; and set a precedent for tackling normative questions of social order through positive, or scientific, analysis.

### **C. Conclusion**

The discussion of Buchanan and Tullock's *The Calculus of Consent* and the Public Choice Society has argued that the two protagonists helped to coalesce a new language of politics, or reformulate the old language of political economy. Furthermore, it has argued that this language must be recognized not as the outcome of economics imperialism but rather as a facet of a set of disciplinary movements which shared a common hub of activity. The theme of "economics imperialism," recited by rote and with great frequency, is insufficiently nuanced to convey any helpful information about the emergence of rational choice theory as a readily identifiable field of scholarship. In as much as public choice scholarship has roots in economic theory, the economics discipline of the 1930s and 1940s was heterogeneous, with the Keynesian approach dominating. Buchanan self-consciously positioned his work to challenge not only the

reigning Keynesian legacy, but also to counter the steadily strengthening Chicago neo-classical school which promoted an unexamined yet hermetic separation between markets and politics.<sup>49</sup> Public choice represents a new tradition of thought which had common features to some former strands of economic theorizing that emphasized *Homo economicus* as a utility maximizer under a budget constraint. However, rational choice theory grew up in "that vague unclaimed territory between economics and political science,"<sup>50</sup> and developed in parallel in numerous fields including political science, sociology, philosophy, public policy, and economics. Although the rational choice approach, committed to methodological individualism and strategically competitive rational agency, has become widely accepted as the current neo-classical orthodoxy in economics, the arrival of this idea set coincided with its parallel development in many fields; rational choice "colonized" economics, as it were, at the same time that it occupied the minds of theorists in other fields.

James Buchanan's receipt of the Nobel prize in economics in 1986 signaled the arrival of public choice scholarship as an internationally acclaimed body of research. It also signaled the swan song of Buchanan and Tullock's long-term collaboration, as Buchanan lobbied to be the sole recipient of the coveted prize, and Tullock's career-long contributions would for all time be deemed secondary. Whereas Buchanan's work, specifically, and public choice scholarship, generally, had since its debut in the 1960s been deemed outside the scope of traditional economic concerns, two decades later the rebirth of political economy, and the attendant study of interrelationships between political decisions underlying the formation of decision rules and economic policies themselves, found its place in the formerly recalcitrant and entrenched economics discipline.

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<sup>49</sup>Rowley, introduction to *Public Choice Theory* (1993), x-xiv.

<sup>50</sup>R.J. May, review of Buchanan and Tullock, *The Calculus of Consent* (1962), *The Australian Quarterly*, 1963, 111.



The language of political economy characterizing the work of Buchanan and Tullock's Virginia school represents an important contribution to political and economic liberalism. The collaborators saw a close relationship between the logic determining the efficacy of economic policies and the logic structuring the decision rules which select economic policies. They sought to understand how self-interested rational agents would select decision rules and how these decision rules would function to achieve collective social outcomes once in operation. They adopted the same foundational assumptions characterizing the other works of the rational choice canon, including an insistence on studying all collective social outcomes as the product of individuals' self-interested, rational actions. Tullock and Buchanan use their theoretical commitments combined with analytic analysis to demonstrate the frequent inefficiencies produced by collective actions relying on government. They show that private efforts to achieve ends avoid the costs of subjecting individuals to others' desires. Similarly, they conclude that majority rule is indefensible because the costs exacted from the remainder outweigh the remainder's incentives to join in such a constitutionally mandated state.

The liberalism of Buchanan and Tullock, with its congruence with Adam Smith's political economy, demanded of institutions and collective decision-making procedures that they coordinate individuals' self-interested aims most effectively, meaning that it should be in each individual's best interest to participate.<sup>51</sup> Like Smith, these two authors trusted private enterprise and demonstrated the inefficiencies inherent in many collective actions by government. Their liberalism also shares with Smith its social-science premise that positive study of society can lead to prescriptive conclusions regarding how better to organize institutions or develop effective decision-making rules. Whereas Buchanan and Tullock contribute to this long-standing tradition of political and economic liberalism, consistent with the natural jurisprudence tradition emphasizing contracts and property rights as opposed to virtue and civic duties, they translate the

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<sup>51</sup>Buchanan and Tullock, *The Calculus of Consent* (1962), 250-253.

language conveying this tradition into the rational actor formalism. The rational actor formalism, with its total commitment to methodological individualism and its symbolically logical self-interested actor who maximizes his satisfaction according to a well-ordered set of transitive preferences in a strategic environment, represents an unprecedented means of grounding discussions of the theoretical foundations of constitutional democracy.

In addition to arguing that Tullock and Buchanan's public choice scholarship represents an innovative language for approaching traditional problems of political theory, and that this language of public choice emerged as a mutually reinforcing set of interdisciplinary movements as opposed to "economics imperialism," I also maintain that public choice has been intertwined with the world of policy analysis. It is wise to exercise caution in making this claim because unlike Kenneth Arrow, the two current protagonists did not devote considerable portions of their careers to actualizing their scholarship in a policy environment. However, neither should the relevancy of public choice to public policy be overlooked. Scholars associated with The Center for the Study of Public Choice have been keen to apply their analyses in varied institutional and policy settings. They have offered detailed analyses of specific policies such as price controls, public health, environmental policies, plant closings, and military draft.<sup>52</sup> Tullock had the sense of public choice coming of age as a viable political ideology when his and Buchanan's former student J. Miller served under Ronald Reagan as the Director of the Office of Management and Budget.<sup>53</sup> Furthermore, Tullock notes with pride that a former majority leader of the House of Representatives, Newt Gingrich, is a public choice enthusiast. The Public Choice Society member William Niskanen played numerous role in government, consulting, and in establishing the academic curricula of public policy analysis in U.C. Berkeley's newly founded Public Policy school. Mancur

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<sup>52</sup>Mitchell, "Virginia, Rochester, and Bloomingdale," *Public Choice*, 56, 1982, 107.1.

<sup>53</sup>Gordon Tullock, "Origins of Public Choice," in Arnold Heertje, ed., *The Makers of Modern Economics*, 3 (Brookfield, VT: Edward Elgar, 1997), 135.

Olson, more moderate in his interpretation of the policy implications of public choice, established a center for its study at the University of Maryland and was a familiar visitor on policy matters at the International Monetary Fund. Another important figure active in the early gatherings of the Public Choice Society, Vincent Ostrom, was also keen on the relevance of public choice scholarship for policy analysis. He established the Workshop in Political Theory and Policy Analysis at Indiana University which he ran with his wife Elinor. Vincent Ostrom contributed to the intellectual underpinnings of the conceptual transformation which gave rise to the public policy tradition out of the ashes of the public administration tradition.<sup>54</sup> Elinor Ostrom devoted her research to empirically testing the relevance of public choice theory to the provision of public services. Signaling the widely acknowledged role which public choice research has come to play in political science, she was elected to be the president of the American Political Science Association in 1996. These scholars were all highly aware they were advancing a new language for understanding government and political economy. This language provided an original means for assessing democratic institutions and the interrelationship between public policy and the ideal of free market exchange. In addition, this language gave rise to the possibility of drawing normative conclusions about public policy, justice, and constitutional design from a supposedly incontrovertible platform of positive analysis. Thus the novelty of the language lay not only in its minimalist description of human agency and the key challenge of government as collective action, but also in its encompassing the logic according to which conclusions grounding the legitimacy of social institutions for collective decision making were established. Scholars working with their newly constituted language of public choice researched its ramifications for political theory, the foundations of public policy analysis, and concrete policy proposals.

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<sup>54</sup>Vincent Ostrom, *The Intellectual Crisis in American Public Administration*, Revised Ed. (Alabama: The University of Alabama Press, 1974).

## Chapter 6

### William H. Riker and Positive Political Theory

Over the past three decades, positive political theory has become a central and widely accepted method for studying politics. At the beginning of the 1960s, however, the Rochester School which launched the positive political theory movement in political science was no more than the idea of a lone intellectual, William H. Riker. He was the visionary and institution builder who founded and established the Rochester School of political science with the aid of his University of Rochester colleagues and students. Because Riker master-minded "positive political theory" himself, and because he trained so many of the political scientists who spread the Rochester approach to other universities, establishing it as mainstream within the field of political science, to a large extent the name "William H. Riker" is synonymous with the Rochester School.

The Rochester approach to political science, which Riker referred to as "positive political theory," and in contemporary parlance is a variant of rational choice theory, has two essential elements. First, it upholds a methodological commitment to placing political science on the same foundation as other scientific disciplines such as the physical sciences or economics. Thus, it holds that political theory should be comprised of statements deduced from basic principles that accurately describe the world of political events. The goal of positive political theorists is to make positive statements about political phenomena, or "descriptive generalizations," which can be subjected to empirical verification. This commitment to scientifically explaining political processes involves the use of formal language including set theory, mathematical models, statistical analysis, game theory and decision theory. Second, positive political theory looks to individual decision-making as the source of collective political outcomes and postulates that the individual functions according to the logic of rational self-interest. Individuals

are thought to rank their preferences consistently over a set of possible outcomes, taking risk and uncertainty into consideration, and acting to maximize their expected payoffs<sup>1</sup>.

The goal of positive political theorists is to build models that predict how individuals' self-oriented actions combine to yield collective outcomes. This method is applied to such political processes as elections, the platform formation of political parties, legislative behavior such as coalition formation and bargaining, public goods such as the "tragedy of the commons" and the "free rider," and treaty formation and diplomatic strategy in international relations. Using game theory and formal models, positive political theorists strive to determine whether these complex, strategic political interactions have predictable, law-like outcomes that exhibit stability. Stable outcomes, referred to as "equilibria," signify that agents' actions combine in such a way that given the collective social outcome of agents' self-oriented actions, no individual could achieve a greater (expected) payoff if he had selected an alternative course of action. Equilibria are significant to positive political theorists because they indicate that the political processes under investigation result in predictable, stable social outcomes which best serve individuals' constituent interests. The sequence of strategic choices that form an equilibrium and that imply specific outcome events constitute the core of a predictive science of politics. The motivation to maximize expected payoffs provides the explanation of political action and provides the basis for predictions about processes that lead to outcomes.

This chapter covers a number of aspects of the Rochester School. Because Riker is mostly known for his institution-building achievements, it necessarily focuses more on the steps he took to establish positive political theory as a mainstream method within political science and less on specific theoretical achievements. The main three sections of this chapter discuss Riker's theoretical synthesis (1955-1962); Riker's vital period of

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<sup>1</sup>E.g., see David Austen-Smith and Jeffrey Banks, "Elections, Coalitions, and Legislative Outcomes," *American Political Science Review*, 82, 1998, 405-422.

institution building at the University of Rochester between 1963 and 1973, by which time positive political theory existed as an identifiable, if not widely shared, research program; and Riker's important institutional milestones from the mid-1970s to the late 1980s. This chapter does not address theoretical contributions of the Rochester school, but discusses Riker's *Liberalism Against Populism* (1974), in which Riker draws conclusions about how positive political theory has consequences for the political philosophy of democracy.<sup>2</sup> A final section draws conclusions for all the chapters of Part III, including Arrow's social choice, and Buchanan and Tullock's public choice.

#### **A. State of Political Science 1945-1955**

Following World War II, political science lacked a unifying method. Instead, American political scientists debated over the appropriate method and substance of their field, leading some of their number to despair, "The political sciences are a very fair illustration of the following: as a whole they are sure neither of their methods nor even of their subject matter, but [are] hesitant and groping; and further, taking it all in all, can they really boast of a sufficiently abundant harvest of achievement to resolve doubts about their essential premises?"<sup>3</sup> In the post-war period there were two articulated, mutually opposed tendencies in the field. Some political scientists sought to "emulat[e]... the natural sciences...Objective description and precise measurement have become their ideals." Others promoted political science as a normative enterprise in which the study of particular political institutions is guided by values and ethical

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<sup>2</sup>For theoretical contributions see S.M. Amadae and Bruce Bueno deMesquita, "The Rochester School: The Origins of Positive Political Theory," in Nelson W. Polsby, ed., *Annual Review of Political Science*, 3 (Palo Alto: Annual Reviews, forthcoming); Gary J. Miller, "The Impact of Economics on Contemporary Political Science," *Journal of Economic Literature*, 35, Sep. 1997, 1173-1204; and David Lalman, Joe Oppenheimer and Piotr Swistak, "Formal Rational Choice Theory: A Cumulative Science of Politics," in Ada W. Finifter, ed., *Political Science: The State of the Discipline* (Washington D.C.: The American Political Science Association, 1993), 77-104.

<sup>3</sup> Charles Eisenmann, "On the Matter and Methods of the Political Sciences," *Contemporary Political Science: A Survey of Methods, Research and Teaching* (Paris: Unesco, 1950), 91.

postulates.<sup>4</sup> Variants of political science practice included the historical, case study approach that resonated with then-popular public law and public administration studies (Leonard D. White); public opinion and survey research (Walter Lippman); psychological approaches (Harold D. Lasswell); political and democratic theory (John Dewey); and the growing behaviorist approach emphasizing surveys and statistics (Charles E. Merriam and David Easton).

Although there was already a clear tendency to promote statistical methods and quantitative techniques, especially evident with the behavioral school, there was nothing on the intellectual map of political science remotely resembling what would come to be "positive political theory," or "rational choice theory."<sup>5</sup> Its seemingly closest cousin, the then-flourishing behavioral approach, emphasized statistical correlation and empirical testing but lacked the concept of axiomatic treatment of human behavior and reliance on minimalist assumptions which yields general laws. The behavioral approach instead generally focused on psychological attitudes to derive empirical generalizations.

#### **B. Riker's Theoretical Synthesis and the Origins of Positive Political Theory (1955-1962)**

William H. Riker graduated with his Ph.D. in political science from Harvard University in 1948, studying under Carl Friedrich. His dissertation, on the Council of Industrial Organizations, reflected the then-popular case study approach. Pressured by a poor hiring climate, upon completing his graduate studies Riker accepted a faculty position at Lawrence College in Wisconsin in 1949. There he remained for the next decade, building up a small political science department, and striving to articulate his thoughts on political science methodology. During this period he was awarded two

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<sup>4</sup> Thomas I. Cook, "The Methods of Political Science, Chiefly in the United States," *Contemporary Political Science: A Survey of Methods, Research and Teaching* (Paris: Unesco, 1950), 72.

<sup>5</sup> For detailed analysis of the forces behind increasing formalization of the American social sciences including political science during the twentieth century see the collection of essays ed. by Samuel Z. Klausner and Victor M. Lidz, *The Nationalization of the Social Sciences* (Philadelphia: University of Pennsylvania Press, 1986).

fellowships, a Ford Foundation education grant, which he relied on to write his first textbook, and a Rockefeller fellowship, which he used to assemble his thoughts on a new approach to the science of politics.

As significant as the transition would be between Riker's work and other work characteristic of political science in the 1950s, Riker's textbook, *Democracy in the United States* (1953), shows that an equally dramatic shift occurred within his own thinking. Whereas all his writings after 1955 exhibited a remarkable consistency, this textbook is indicative of Riker's own roots in a discipline of political science governed by normative conclusions. In this text, Riker proclaims, "Democracy is self-respect for everybody. Within this simple phrase is all that is and ought to be the democratic ideal....If self-respect is the democratic good, then all things that prevent its attainment are democratic evils".<sup>6</sup> Riker's upcoming personal conversion to the vocabulary of self-interested rational action would signify the profound change in the language that would increasingly come to structure insights into politics.

Dating back to his days as a graduate student, Riker had been intellectually dissatisfied with the dominant case study approach which political science shared with the overlapping fields of legal history and public administration. He was casting about for a new method to serve as the platform upon which to build a sturdy science of politics. In 1954, two RAND scholars, L.S. Shapley and Martin Shubik, published a paper with a formal treatment of what they called a "power index."<sup>7</sup> This paper defined the "power index" as a mathematical formula expressing a legislator's power as a function of his ability to swing decisions. It exemplified a new vein of literature that addressed political processes in the language of mathematics, including the work of John Von Neumann and Oskar Morgenstern, Duncan Black, Kenneth Arrow and Anthony

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<sup>6</sup>William H. Riker, *Democracy in the United States* (New York: The MacMillan Co., 1953), 19.

<sup>7</sup>L.S. Shapley and M. Shubik, "A Method of Evaluating the Distribution of Power in a Committee System," *American Political Science Review*, 54, 1954, 787-792.



Downs. Riker rapidly introduced this work into his curriculum at Lawrence College, and used it as the basis for his new science of politics.

Drawing from this array of texts, in the mid-1950s, Riker had a stimulating collection of approaches to the study of political phenomenon including methodological individualism, an emphasis on micro-foundations, game theory, spatial models, axiomatic set theoretic treatment of rational action, and generalized Condorcet results questioning the validity of processes for collective decision-making. However these approaches and results were marginal in their own fields, and required disciplined and unifying development before they could be recognized as the canonical works of a new tradition, or as a recognizable method for studying political events. Notably, Riker was the first non-RAND theoretician to recognize the potential of game theory to understand political interactions. It was Riker who bestowed upon game theory the promise of a new life after RAND defense strategists concluded the theory was of little merit for studying warfare, and before economists grasped its promise for grounding a new mathematics of the market.

Between 1957 and 1962 Riker wrote three formal papers which indicated tentative steps toward his eventual theoretical synthesis. Two papers drew on Shapley and Shubik's formulation of the "power index," and a third paper set about determining whether Arrow's Possibility Theorem, which predicted that  $n$  person voting procedures for more than 2 outcomes should demonstrate an inherent instability, pertained to actual voting practices.<sup>8</sup> Whereas these papers were mathematical and attempted to draw generalized conclusions by combining theoretical deduction with empirical tests, they did not as yet put together the pieces that would later characterize positive political theory. Notably, even though Riker was engaging in experiments in coalition formation

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<sup>8</sup>William H. Riker and Ronald Schaps, "Disharmony in Federal Government," *Behavioral Science*, 2, 1957, 276-290; William H. Riker, "A Test of the Adequacy of the Power Index," *Behavioral Science*, 4, 1959, 120-131; William H. Riker, "The Paradox of Voting and Congressional Rules for Voting on Amendments," *American Political Science Review*, 52, 1958, 349-366.

using a game theoretic structure, neither game theory nor an explicit "rational action" model was relevant to these early papers.

Riker also authored two papers published in philosophy journals before the close of the decade. These papers discuss the importance of carefully circumscribing the events defining a scientific study, and the need to base science on "descriptive generalizations."<sup>9</sup> Whereas these articles were not earth-shattering to the philosophical community, they did betray Riker's grasp of the philosophical and conceptual issues necessary to ground his developing positive approach to politics. In them, Riker challenged the standard view in political science that promoted the study of the idiosyncratic details of rare and influential events. This challenge to the case study method and to so-called thick analysis remains at the core of methodological debates today.

The earliest indication that Riker's theoretical synthesis was complete is found in his application as a nominee to the Center for the Advanced Study in the Behavioral Sciences, submitted in 1959. In this application, Riker distances himself from his earlier work on Federalism, and states that, "I describe the field in which I expect to be working at the Center as 'formal, positive, political theory.'" He elaborates, "By Formal, I mean the expression of the theory in algebraic rather than verbal symbols. By positive, I mean the expression of descriptive rather than normative propositions."<sup>10</sup> This document is telling of Riker's own sense of intellectual development, and his reflective and unabashed program for political science. He states,

I visualize the growth in political science of a body of theory somewhat similar to...the neo-classical theory of value in economics. It seems to be that a number of propositions from the mathematical theory of games can perhaps be woven into a theory of politics. Hence, my main interest at present is attempting to use game theory for the construction of political theory.<sup>11</sup>

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<sup>9</sup> William H. Riker, "Events and Situations," *Journal of Philosophy*, 54, 1957, 57-70; William H. Riker, "Causes of Events," *Journal of Philosophy*, 56, 1959, 281-292.

<sup>10</sup>"Supplemental Statements," application to Center for the Advanced Study in the Behavioral Sciences (CASBS), undated, submitted in fall, 1959, WHR papers.

<sup>11</sup>William H. Riker curriculum vitae, submitted to CASBS, fall, 1959, 2, WHR papers.

Riker was a fellow at the Stanford Center in the 1960-1961 academic year. In this fertile year away from the responsibilities of teaching, Riker wrote *The Theory of Political Coalitions*, which served as the manifesto for his freshly-articulated positive political theory.<sup>12</sup>

*The Theory of Political Coalitions* is highly innovative and joins the aforementioned texts by Von Neumann and Morgenstern, Black, Arrow, and Downs as part of the rational choice canon. The book's opening chapter served as a prolegomena for "The Prospect of a Science of Politics," and puts forth how a science should be built up of deductive structures derived from intuitively justified axioms which are subject to empirical tests. Riker proposed studying politics by analyzing its micro-foundations in the decision-making of agents whose actions could be modeled like particles in motion. Just as a particle's trajectory could be traced by knowing its momentum and the force on it, so an agent's actions can be predicted by knowing her preferences and the environment structuring her choices. Then, the political scientist could model the results of collective actions through analysis of the parameters of individual decision-making.

Riker adopted David Easton's definition of politics as "the authoritative allocation of value," and made the crucial distinction which set apart his theory of politics from economic theory. Whereas collective outcomes that occur in the market place are made in "a quasi-mechanical way," collective outcomes which are the stuff of politics are made by conscious processes.<sup>13</sup> This is a crucial distinction because the rational actor in political arenas intentionally calculates how to achieve aims in a strategic environment with other strategically acting agents. Riker drew heavily on Von Neumann and Morgenstern's formulation of human rationality, as well as their zero-sum, n person game theory.

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<sup>12</sup>William H. Riker, *The Theory of Political Coalitions* (New York: Yale University Press, 1963).

<sup>13</sup>*Ibid.*, 11.

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

In n-person, zero-sum games, where side-payments are permitted, where players are rational, and where they have perfect information, only minimum winning coalitions occur.<sup>14</sup>

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

An exchange with another fellow at the Center for Advanced Studies in the Behavioral Sciences indicates the extent to which Riker's formulation of a new method for studying political phenomenon was sufficiently expansive to reach from politics to evolutionary biology, even at this early date. It is clear from the record of a conversation between Riker and Larry Friedman that Riker suggested the connection between rational action and political success, implying that the "criterion of success or failure meaningfully relate[s] to the rationality or irrationality of a man's behavior."<sup>15</sup> In addition, Riker hypothesized that rational behavior is similarly rewarded in evolution, provoking Friedman to respond,

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<sup>14</sup> Ibid., 32.

<sup>15</sup> Letter from Larry Friedman to Riker, Feb. 24, 1961, 2, WHR papers.

[regarding] your genetic drift hypothesis...I think that most geneticists would deny that the gene pool of the human race is vulnerable to such transient and variable changes in the human genetic processes. In any event, the implicit assumption that losers are irrational and that winners are rational strikes me as not only unproven as a hypothesis but an untenable hypothesis.<sup>16</sup>

This wide scope of Riker's positive political theory, applicable to the achievement of political goals and also pertinent to evolutionary "success" illustrates how Riker's ambitious method of political science was consistent with a view of the world in which political rationality measured by successful attainment of goals was in some sense equivalent to evolutionary "success" in survival and species propagation. Riker hypothesized that "rational action" formed a seamless continuity from human competitive goal-seeking action in the political arena to successful survival and reproduction of the evolutionary winners. This speculative exchange between Riker and Friedman anticipates a feature of the emerging rational choice theory which overtime would draw more explicit connections to evolutionary biology.<sup>17</sup> Riker's recasting of "rationality" is bold and breathtaking. Rationality, rather than being a uniquely human trait which distinguished people from other beings and from inanimate matter, had now been re-presented as a universal "score card": any winning course of action is by post-facto definition "rational," while any losing course of action is by post-facto definition "irrational."

By the time of his year at the Center for the Advanced Study in the Behavioral Sciences, and with the proclamatory publication of *The Theory of Political Coalitions*, Riker had assembled all the elements of his novel method for studying political events such as elections and legislative behavior. Drawing from the works of his predecessors, Riker's positive political theory was based on methodological individualism, the strategic rational actor from game theory, and the idea that all collective outcomes must

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<sup>16</sup>ibid.

<sup>17</sup>See, e.g., Robert Axelrod and William D. Hamilton, "The Evolution of Cooperation in Biology," in Robert Axelrod, *The Evolution of Cooperation* (U.S.A.: Basic Books, 1984), 88-108.

be studied as the product of self-interested rational action. More so than Arrow, Tullock and Buchanan, Riker's work emphasized "equilibria" in which stable outcomes when no individual could have done better for himself by acting differently. This equilibria concept, like Arrow's attempt to mathematically define collective welfare as a function of individuals' preferences, maintains that all assessments of collective well-being can only be assessed as an aggregate of individuals' satisfactory attainment of goals.

### **C. Building a Department, 1963-1973**

It is clear that it took imagination and vision to synthesize the leads provided by Von Neumann, Morgenstern, Black, Arrow and Downs into a coherent theory of politics based on the idea of methodological individualism encapsulated in a theory of rational, strategic action modeled by n-person game theory. However, brilliant vision does not inevitably lead to achievement. Riker's ambitious platform for reorienting political science may have gone little further than his personal bibliography had he not tirelessly and deftly built up a graduate program specifically geared toward generating theorists who ultimately proved capable of transforming the entire discipline of political science. This achievement required a unique constellation of circumstances that provided Riker with the resources and institutional infrastructure requisite to carry out his program for reform.

Shortly before setting forth to the Stanford Center in 1960, Riker caught the eye of administrators at the University of Rochester who sought to establish graduate programs in the social sciences with national standing. The University of Rochester, throughout most of the 1960s, was flush with capital provided by the beneficence of Joseph Wilson, head trustee of the Haloid-Xerox Corporation, who was committed to science as a means of bettering human lives. This beneficence gave the University of Rochester an endowment which was third nationally only to Harvard and Yale for much of the 1960s. Support abounded on campus to build up the social science departments

by emphasizing programs oriented toward rigorous quantitative analysis resembling the successful programs in the physical sciences. Riker, whose work admirably fit this bill, was hired to create a graduate program in political science. Also newly appointed were Lionel McKenzie, brought in to chair the Economics Department and build its graduate program, and W. Allen Wallis, formerly Dean of the Chicago Business School, to head the University of Rochester as chancellor. Wallis and McKenzie, too, were committed to the development of analytic and formal social science, and would become close colleagues and active supporters of Riker.

Riker rapidly outlined a strategy for building the Rochester Political Science Department. His strategy emphasized both behavioral methods and positive theory. He sought to rival the then-nationally-significant programs at Yale, Chicago, Northwestern, MIT, and the Michigan Survey Research Center. The result was fourteen new courses and seminars, an entire new curriculum, which contained: Scope of political science; theories of strategy; positive political theory; techniques of research in political science; theories of decision-making; theories of organization; problems in measurement of political events; political parties; legislative behavior, political sociology, comparative politics, problems in constitutional interpretation; national security policy; and recent political philosophy. Riker, always highly self-conscious of his goals and methods, wrote to the graduate dean, "What is proposed here is the creation of another department to join the half-dozen just mentioned in seeking and creating a discipline." He stated that he was placing a "two-fold emphasis...on (1) objective methods of verifying hypothesis (i.e., 'political behavior') and (2) positivistic (i.e., non-normative) theories of politics."<sup>18</sup> The new Ph.D. program's requirements stressed quantification and formal analysis. In an unprecedented move, Riker persuaded the graduate dean to accept the substitution of statistics for a modern language. He shifted the emphasis

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<sup>18</sup>Proposal for building the Rochester political science dept. complete with course descriptions and faculty vitae, undated, written fall/winter 1963, quotes from pages 12 and 5, respectively, WHR papers.

common in other programs from the literature to his focus on developing the tools necessary to do rigorous research into the theoretical properties and empirical laws of politics.

Faculty recruitment was Riker's next priority. When Riker arrived at the University of Rochester, the political science department had three active faculty, including Richard Fenno, Ted Bluhm and Peter Regenstrief. Over the ensuing years, Riker added Jerry Kramer, Arthur Goldberg, John Mueller, Richard Niemi, Alvin Rabushka, Gordon Black, and G. Bingham Powell. Along with faculty, Riker worked to recruit students. Whereas in 1959, the Rochester political science department did not graduate a single undergraduate major, by the early 1970s it was flourishing with over one hundred undergraduates and between 25 and 30 graduate students. As of June, 1973, the department had graduated 26 doctoral students, and 49 master's students; it moved up in the American Council of Education ratings from being unrated in 1965 to holding 14th place in 1970. In student placement during the 1960 to 1972 period, Rochester's political science program was second only to Yale; Yale placed 62% of their total placements in American Council of Education rated departments, and Rochester placed 58%. The students trained in the first decade of Riker's lead of the political science department would take up appointments in the next decade at numerous nationally recognized programs including Cal Tech, Carnegie Mellon, Washington University, University of Iowa, U.C. Davis, Dartmouth College, Trinity College, University of Michigan, SUNY-Buffalo, SUNY Albany, University of Wisconsin, Ohio State University, McGill University, Texas, and Washington University. These trailblazing students included Peter Ordeshook, Kenneth Shepsle, Barbara Sinclair, Richard McKelvey, John Aldrich, David Rhode, Morris Fiorina and others. This first generation of Rochester Ph.D. students, coming from a then unknown program, would be crucial to transforming the study of politics in the decades ahead.



Other political science departments were quick to notice the marshaling of a leading program. A quick succession of recruitment raids to acquire Riker himself were advanced by the University of Illinois, Rice University, Northwestern University, U.C. Berkeley, Emory University, and even the University of Michigan which wanted Riker to serve as its "dean" of operations to build a new political science program in 1965.<sup>19</sup> The recruitment raids also extended beyond Riker to his carefully assembled faculty. A key to the Rochester School's success was its virtually impenetrable esprit de corps. Despite these constant attempts, in the first decade the department only lost Jerry Kramer to Yale and Arthur Goldberg, internally, to the Dean's office. During the entire process of institution building, Riker remained uncannily self-reflexive. In a letter to the Graduate Dean Riker observed, "One main reason for this departmental success is, in my opinion, the fact that the department has had a coherent graduate program, centering on the notion of rational choice in political decision-making."<sup>20</sup>

By 1973, Riker had built up the infrastructure necessary to train students who would set forth from the Rochester nest to contribute to the positive political theory research program, and to spread the vision of a positive science of politics to political scientists in other programs. However, Riker's efforts on behalf of positive political theory extended beyond the confines of his home department at the University of Rochester. He maintained an active publication record, contributing so many articles to the flagship journal of political science, *the American Political Science Review*, that its editor wrote to him, "There is some danger of turning this journal into the 'William H. Riker Review.'"<sup>21</sup> Another step in establishing his method as a part of the discipline-wide currency was his co-authorship with Peter Ordeshook of a textbook which

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<sup>19</sup>Letters from these institutions are in WHR "Personal" file, WHR papers; letter from the University of Michigan is from Samuel J. Eldersveld to WHR, Jan. 11, 1965, WHR papers.

<sup>20</sup>"Department of Political Science: 10-Year Report," Sep. 1973, in President's Office Administrative Files, file on Political Science Dept.

<sup>21</sup>Austin Ranney to WHR, Mar. 22, 1967, WRH papers.

elucidated the parameters of positive political theory. This text, entitled *An Introduction to Positive Political Theory* (1972), was aimed at advanced undergraduates and beginning graduate students, and was an important step in defining positive political theory for a wide-spread audience.<sup>22</sup> It introduced the assumption of rationality and the formal account of preference orderings, and it demonstrated the positive approach to political science through its application to political problems such as political participation, voting and majority rule, public goods, public policy and electoral competition. The text also contained discussions on formal theory and deductive results from formal theory including n-person and 2-person game theory, the power index, and the size principle. It is not clear that the textbook was introduced into the curriculum of many political science programs, but it was a necessary step in paving the way for a rational choice approach to politics to be widely recognized and well-defined. It provided a resource for those outside Rochester who sought to participate in the research program launched by the Rochester school.

#### **D. Securing a Legacy**

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

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<sup>22</sup>William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory* (Englewood Cliffs, NJ: Prentice Hall, 1973).

Washington University. These programs, like Rochester's, became important centers of positive political theory. By 1985 Morris Fiorina and Kenneth Shepsle had attained appointments at Harvard which were for Riker one of the greatest signs that positive political theory had arrived. His alma mater, which had for the longest time insisted on perpetuating what he took to be dated and non-scientific approaches to politics, had at last come around to acknowledge the rightful and leading role that his positive political science played. Meanwhile, back at Rochester, a second generation of students was prepared to reinforce those already practicing in the field, and another wave of students resulted from the steady pedagogy of Rochester's first progeny. The second generation of Rochester students, like their predecessors, have become leaders in many subfields of political science. Keith Poole, Keith Krehbiel, James Enelow, and others emerged as leading scholars of American politics in the positivist tradition. Michael Altfeld, James Morrow, David Lalman, and Woosang Kim emerged as important early contributors to the development of a positive political theory of international relations. Subrata Mitra established a beachhead for rational choice models in the study of South Asian politics as Daryl Dobbs did in political theory. The consistent, thorough preparation of students who recognized themselves to be part of a distinct movement to alter political science, their camaraderie and tight-knit sense of community, and their impressive scholarly productivity ensured that Riker's pioneering vision would become one of the field's standards. These scholars were steadfast in their commitment to positive political theory, and unyielding in their efforts to research and advance the theoretical paradigm of rational choice. Their advances and branches of study are the subject of a following section.

Riker personally met with additional career successes that established his legacy and served as community recognition that he had played a significant role in making over political science. In 1974 Riker was nominated to the National Academy of Sciences and thus was among the first political scientists to be inducted into the elite

society. Soon other Rochesterians were in his midst, including Fenno, Shepsle, McKelvey, and Fiorina, as well as "fellow travelers" like John Ferejohn. This admittance into the NAS signaled the acceptance of political scientists into the community of natural scientists for having met the dictates of rigorous scientific inquiry; it further served to emphasize that part of that acceptance was due to the facility with formal models so clearly displayed by Rochester School members. Thus, when political science made the grade of inclusion into the NAS, this was in no small part due to Riker's steadfast promotion of a quantitative and deductively rigorous approach to politics. Of the fourteen political scientists who have been elected to the National Academy over the past two and a half decades, one third were either faculty at or Ph.D. graduates from the University of Rochester. This is all the more remarkable considering that the Rochester program was always very small, often enrolling fewer than ten students per year. The induction of Rochester-trained political scientists into the NAS had the further effect of elevating the status of the political science departments and universities that could count them among their numbers for the purposes of accreditation and national ranking. In turn, political science departments were encouraged to follow suit in order to acquire faculty who would be similarly elected.

Riker's nomination to the American Academy of the Arts and Sciences in 1975 was also a significant accomplishment, even if overshadowed by the National Academy of Sciences. In 1983 when Riker was chosen to serve as President of the American Political Science Association, all political scientists, whether sympathetic or not to the Rochester credo, nonetheless had to acknowledge that positive political theory had changed the terrain of political science. In the next decade all major departments would have faculty who worked within the rational choice/positive political theory research tradition.

### **E. Riker's *Liberalism Against Populism***

Riker's joint theoretical and empirical exploration of the nature of democracy based on the social choice work of Kenneth Arrow demonstrates the power of positive political theory to influence our hopes and aspirations for democratic government. In his book *Liberalism Against Populism*, Riker uses social choice theory to argue that the populism of Jean Jacques Rousseau is untenable, while the more limited liberalism of James Madison is realistic.<sup>23</sup> Riker makes his case by recounting the lesson of Arrow's Possibility Theorem which proves that no means of democratically aggregating votes for more than two outcomes can be devised which have the desired properties of citizen sovereignty, Pareto optimality, non-dictatorship, independence of irrelevant alternatives and universal domain. In effect, Arrow demonstrated the limits of democratic processes for reaching collective outcomes. Riker, who was often frustrated by the lack of recognition of the implications of Arrow's work amongst political scientists, used Arrow's result to question the efficacy of democratic government to result in outcomes which are somehow publicly beneficial. He put democratic theory to the test, asking what normative goal it postulated and what practical goals were attainable.

Riker sketched out the two ideas of democracy. According to Riker, in the Madisonian view, the criteria for democratic government are achieved by the conditions of election and limited tenure. In the Madisonian view, it is crucial that the public seals the fate of political leaders, but it is not necessary to add that political leaders best serve the interests of a majority of the population. For Madison, the threat that the public exerts on officials during elections is sufficient to ensure that they will be responsive to people's interests. Populism, on the other hand, as expressed by the eighteenth-century political theorist Jean Jacques Rousseau, proposes that voting, as an expression of individual participation in the self-regulation of government, inherently

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<sup>23</sup>William H. Riker, *Liberalism Against Populism: A Confrontation between the Theory of Democracy and the Theory of Social Choice* (San Francisco: W.H. Freeman, 1982).

signifies a general will of the people. For Rousseau, the content of the people's voice expressed in elections has the significance of a self-prescribed law which embodies the oxymoron of freely taking up the bonds of society. The people's voice, or general will, governs fairly through democratic government because the content of the collective outcome itself has the property of expressing the popular will. Whereas liberalism only holds that citizens can select leaders and outcomes, and can upset others, without concluding that the winning politician or ballot measure intrinsically embodies the public will, populism claims that popular participation results in outcomes which inherently reflect popular desires. In Riker's view, populists believe that democratic processes are legitimate insofar as they translate individual aims into a collective result which embodies the general interest.

For Riker, the Condorcet paradox, and Arrow's more general treatment of it, totally undermines the populist hope for government of the people collectively pursuing the general interest. As can easily be demonstrated with three voters and three alternatives, the popular will aggregated by democratic means is not guaranteed to result in an outcome which can meaningfully be said to reflect the common good. Riker drew on positive political theorists' practical study of politics to challenge the populist ideal by pointing out that empirical study shows that political leaders can control agendas to manipulate outcomes such that *their will prevails despite the constellation of others'* wills. Riker also reminded his readers that in cases with more than three alternatives more often than not the collective result is the product of the means by which the aggregate tally was made. Therefore, the lesson of social choice theory is that democratic procedures cannot be trusted to result in a single popular will which represents the collective interests of the citizenry. Riker concludes, "[c]learly populism cannot survive."<sup>24</sup>

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<sup>24</sup>Riker, *Liberalism Against Populism* (1982), 115.

As to whether liberalism passes the challenge of social choice theory, Riker concludes that it remains viable because its claims are so limited. Liberalism is a minimalist theory of democracy which only asks that voters have the power to remove elected officials from power; "[i]t does *not* require that voting produce a clear, consistent, meaningful statement of the popular will. It requires only that voting produce a decisive result: that this official or this party is retained in office or rejected."<sup>25</sup> Liberals do not hold that the outcomes of voting are inherently meaningful; they only require that people can curb tyranny by having the control over longevity in office. While acknowledging this reality is far from the lofty ideal proposed by the populists, Riker cheerily concludes that the liberal version of democracy still preserves the important dictates of freedom and quality. It is clear from Riker's *Liberalism versus Populism* that positive political theory as a "value-neutral" method of political science could be used to address normative questions of political theory.

#### **F. Conclusion**

William Riker's career of intellectual vision and institution building was key to the widespread establishment of rational choice scholarship as a general category of study. His work added the critical mass necessary to establish the identity of "rational choice" as a single research tradition incorporating social choice, public choice, positive political theory, as well as the approach taken by law and economics scholars including G. Warren Nutter and Robert Cooter, and by policy scholars such as Mançur Olson, Thomas Schelling, William Niskanen and Richard Zeckhauser. Rational choice theory, although relevant to various social sciences including economics, sociology, and psychology, had its greatest impact within political science. It was Riker's successful promulgation of positive political theory within political science which has lent the most weight to establishing rational choice as a recognizable intellectual movement, specifically because of Riker's visibility in affected an entire academic discipline. Riker's

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<sup>25</sup>Ibid., 116.

impact on political science is a new chapter in the on-going saga of turmoil within political science, as departments have become polarized along the methodological axis of rational choice formal models versus other methods of analysis such as survey research, behavioralism, and political theory. These disputes have been heated, with starkly defined camps, strong allegiances, and tenured positions at stake.

Riker's accomplishments support the arguments I have woven throughout the narrative of Part III. My prior arguments discussing Arrow, and Buchanan and Tullock provide evidence contradicting the economics imperialism thesis; Arrow because he was at the forefront of the movement to establish the rational choice-oriented neo-classical orthodoxy within economics; Buchanan and Tullock because they were in the margins of their profession. Neither Arrow, Tullock nor Buchanan represented a monolithic or mainstream movement within economics when they generated the new set of ideas typifying what has come to be referred to as "rational choice theory." Riker's example, too, makes it difficult to support the theory that economists or economic ideas colonized political science. Most obviously, Riker, his colleagues and students, who exerted such impact on the political science discipline, were all trained as political scientists. Of course, there have been disciplinary interlopers from economics into political science, but these have been few. The main impetus of change within political science, to first create positive political theory as a viable method of research, and then to make it an accepted research standard in most U.S. political science departments, especially among the top ranked, has been card-carrying political scientists.

The claim may still be made that although political scientists transformed their own discipline, they owed their methodological innovations to economists who were the intellectual trail blazers.<sup>26</sup> Certainly Riker and the other Rochester positivists benefited from the powerful and highly acclaimed University of Rochester economics department,

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<sup>26</sup>For a bold articulation of this position see Gary J. Miller, "The Impact of Economics on Contemporary Political Science," *Journal of Economic Literature*, 35, Sep. 1997, 1173-1204.



run by Lionel McKenzie in the 1960s. Exchange of ideas was facilitated by the close proximity of the two departments, housed on contiguous floors in the same small building. However, juxtaposition, like correlation, is not necessarily indicative of causation; rather than supporting the economics imperialism thesis, this close proximity is indicative of a larger complex of knowledge with shared researchers, resources and core ideas which fueled rational choice research. The economics imperialism thesis misconstrues the historical landscape and inserts an inappropriate chronology by suggesting that economists had fully articulated Riker's positive political theory, and that he and his colleagues then continually borrowed insights from their further advanced and more scientific brethren in economics.<sup>27</sup> Riker's intellectual trajectory as discussed in this chapter shows this account to be fallacious on many counts.

As previously described, Riker's early innovations which lead to his 1959 articulation of positive political theory were inspired by the writings of two RAND researchers tackling the notion of "power" with mathematical formulae, and by the game theoretic approach pioneered by von Neumann and Morgenstern and pursued at RAND while shunned by economists. In addition, Riker learned from the iconoclastic texts of Black, Arrow, and Downs, who presumed to tackle collective decision problems of elections. It is not a stretch to argue that Riker's vision of positive political theory profited from the close relations and disciplinary sympathy between the Rochester economics and political science department. However, it is crucial to recall that economics as a discipline was itself undergoing dramatic transition in the 1960s, as the neoclassical syntheses generated by Samuelson, Solow, and Arrow became the discipline's orthodoxy. Significantly, McKenzie's economics department played an active and leading role in this transformation within economics, so that the pattern which emerges is, once again, one of interlocking, parallel disciplinary movements. Instead of seeing economists as leading the rational choice movement, the more accurate

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<sup>27</sup>This is the tone of Miller's paper, *ibid*.

description is that Riker developed positive political theory in conjunction with McKenzie's efforts to establish a new protocol in economics which was friendly toward game theory and microfoundations while critical of a Keynesian, macroeconomic approach. Riker had a strong vantage point to build a school which could exert major influence on the entire discipline of American political science, but not because he pirated ideas from economists and used them to take his own field by force. Quite to the contrary, Riker's efforts prospered because he had strong institutional support which, not coincidentally, similarly advanced McKenzie's vision of economics. The University of Rochester, whose trustees were firmly committed to advancing scientific methods within the social sciences, amply demonstrates as a case study how rational choice theory was furthered as a complex of knowledge spanning several fields and bridging to policy science.

The University of Rochester's president and chancellor during the 1963-1974 period was W. Allen Wallis, who had just served as dean of the University of Chicago's business school. Wallis, a denizen of the national security world, had led an impressive career. He had managed the Statistics Research Group of the Applied Mathematics Panel of the Office of Scientific Research and Development during World War II, had served as a member of the Office for Strategic Services, and had been considered to head the economics division of RAND, instead offered to Charles Hitch. Allen Wallis saw a close overlap between the decision theoretic tools of policy science and formal models in the social sciences, and was firmly committed to both. Under his authority the University of Rochester agreed to oversee the Navy's RAND-style think tank, the Office for Naval Analysis, starting in 1967 and throughout the 1970s.

Riker's establishment of a public policy program housed within his political science department, with overlapping faculty and course listings, also vividly demonstrates how the development and perpetuation of rational choice in the social sciences is inseparable from a more encompassing movement spanning academic

research and active policy analysis. Riker was motivated to establish the policy program as a revenue source for the department by providing a popular terminal masters degree. In turn he worked to ensure that graduates of the policy program had a strong track record of obtaining good jobs. Rational choice theory has in part been successful and powerful because it draws resources and prestige from the active world of policy-making. To see this complex and intricate process of disciplinary formation as simply "the impact of economic theory on political science"<sup>28</sup> ignores a vast array of institutional interconnections, and sees a tidy heritage of ideas neatly constructed by economists to be adopted by others. The University of Rochester was a powerhouse in supporting the interconnected set of disciplinary movements constituting rational choice scholarship evident not only in political science and economics but also clear in the early law and economics movement. The first program in law and economics, headed by Henry G. Manne, was established at the University of Rochester.<sup>29</sup> Riker would have been hard-pressed to have had the wide-spread impact he did without the backing of similarly committed, resource rich university administrators.

With respect to Arrow, Tullock, and Buchanan, I have also argued that rational choice theory is interrelated with political practice. In the case of social choice theory I have described the close relationship between the demise of the social welfare economics tradition and the wide spread acceptance of the value-free policy tool, cost-benefit analysis, which became the commonly used means of reaching policy decisions in the 1960s and 1970s. In the case of Tullock and Buchanan and the public choice movement I touched on the policy-oriented work of Mancur Olson, Vincent Ostrom and Elinor Ostrom. In Riker's case, beside the obvious interrelationship between positive political theory and public policy analysis concretized by his department's organization, it is

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<sup>28</sup>Title to Miller's economic imperialism thesis article, *ibid.*

<sup>29</sup>Manne was Kenan Professor of Law and Political Science at the University of Rochester from 1968-1974; for more information see Henry G. Manne, *An Intellectual History of the School of Law, George Mason University* (Arlington, VA: Law and Economics Center, George Mason University School of Law, 1993).

easy to see that his articulation of positive political theory coincided with a personal shift in political attitudes and affiliations. Although Riker began his professional life as an enthusiast of Wisconsin democrat William Proxmire, and maintained his Democratic party affiliation so that he could strategically vote in Democratic primaries, he thought that rational choice theory endorsed the more libertarian principles guiding the Republican party.<sup>30</sup> I am in no way suggesting that rational choice theorists necessarily embrace a specific political party or position; I am rather suggesting, as exemplified by Riker, that many rational choice scholars find that a rational choice theory of politics informs their personal political philosophy and practice.

It would be possible to extend the research I have undertaken to additional movements such as law and economics, and the acceptance of a rational choice approach to international finance and development economics by the International Monetary Fund and the World Bank. Throughout my discussions of social choice, public choice, and positive political theory, I have worked to show that the character of the rational choice movement is not that of economics imperialism, nor that the story is limited to a single field, or even the social sciences more generally. Instead I have shown how social choice, public choice, and positive political theory were interrelated in part through a shared canon and the Public Choice Society, and in part with a more encompassing complex of knowledge that similarly rewarded formal models in the social sciences, and decision-technologies to be used for policy analysis. Not accidentally, the rational actor formalism fit both research niches and provided cross-linkages so that just as RAND-style decision-technologies were becoming incorporated into the language of the American state through the sprawling defense complex and through Johnson's Great Society Program, so did the rational actor formalism gain ground in economics, political science, and the other social sciences. This loop is completed when it is realized that Arrow's social choice analysis dovetails perfectly with RAND's cost-benefit analysis,

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<sup>30</sup>Can cite public declaration of support in the contentious case of G.

and Riker's positive political theory shared a joint faculty and curriculum with Rochester Public Policy Program.<sup>31</sup> Similarly, rational choice theory informs the policy studies of Mançur Olson, Thomas Schelling, William Niskanen and Richard Zeckhauser. Rational choice theory spans the gap between the active practice of policy making and the social science commitment to modeling, describing, and explaining. The same language has currency in two worlds which are more separated by a hypothetical divide between explanation and prescription than by actual the possibility of maintaining a hermetic seal between theory and practice.

Besides providing an alternative means of comprehending the geography connecting the various areas of rational choice research, I have argued that rational choice theory represents a new language of politics. I have built this argument by identifying trademark ideas including methodological individualism, rationality defined in terms of transitivity and strategic interaction, and collective outcomes assessed in terms of an aggregation of individual preferences. These minimalist assumptions grounding the rational actor formalism have transfigured understandings of the collective decision-making procedures underlying democratic government. Rational choice theory has been an important contribution to the conceptual foundations of democracy because, as I have argued, it provided a new language for framing questions about democracy. Rational choice theory has yielded specific theoretical findings such as Arrow's proof that democratic voting procedures cannot (in most circumstances) guarantee non-arbitrary outcomes; Buchanan and Tullock's argument that majority rule has no underlying logic; and Riker's argument that rational choice theory undermines concepts of popular sovereignty put forth by Rousseau, but supports Madisonian

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<sup>31</sup>This close connection is often alluded to but not explored, see David Lalman, Joe Oppenheimer, and Piotr Swistak, "Formal Rational Choice Theory: A Cumulative Science of Politics," in Ada W. Finifter, ed., *Political Science: The State of the Discipline II* (Washington D.C.: American Political Science Association, 1993), 95; see also the numerous articles devoted to public policy analysis in Ada W. Finifter, ed., *Political Science: The State of the Discipline* (Washington D.C.: The American Political Science Association, 1983).

liberalism. More importantly, I have argued, the theoretical contributions made by rational choice theory are not as significant as the advance of a new framework for assessing questions of democracy. Although some of the findings of rational choice theory have led to disciplinary reformulations, this display detracts from the more powerful fact that the rational choice language defines the terms by which political actions and collective decisions are understood.

Pocock and Skinner argue that it is impossible to separate political philosophy from its historical context.<sup>32</sup> By contrast, rational choice theory proposes that universal laws of human action can be applied throughout human history, to all human cultures, and even implies an extension to non-human interaction by suggesting links between rational choice theory and evolutionary biology.<sup>33</sup> According to rational choice theorists, given the principle of self-interested rational action, individuals' preferences and the institutional structure in which collective outcomes are formed, it is possible to build predictive and explanatory general models. My point is not to concede to either position of entirely context dependent ideas leading to insurmountable problems of interpretation or commensurability,<sup>34</sup> or to the universalizing context-free rational choice approach which supersedes concern for interpretive frameworks or actions contexts. However, I am arguing that rational choice theory is itself a form of political discourse, very much contextualized by post-war American society. Rational choice

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<sup>32</sup>See J.G.A. Pocock, "Authority and Property: The Question of Liberal Origins," in his *Virtue, Commerce, and History: Essays on Political Thought and History, Chiefly in the Eighteenth Century*. (Cambridge: Cambridge University Press, 1985) and Quentin Skinner, *Meaning and Context: Quentin Skinner and his Critics*, James Tully, ed. (Princeton: Princeton University Press, 1988).

<sup>33</sup>See Barry R. Weingast, "The Political Foundations of Democracy and the Rule of Law," *American Political Science Review*, 91:2, Jun. 1997, 245-263, on the application of rational choice theory to sixteenth-century England; for discussion of rational choice and evolutionary theory see Robert Axelrod and William D. Hamilton's "The Evolution of Cooperation in Biological Systems," in Robert Axelrod, *The Evolution of Cooperation* (U.S.A.: Basic Books, 1984).

<sup>34</sup>For a like-minded response which balances historical context with the inherent logical structure of political philosophies see Knut Haakonssen's methodological introduction to *Natural Law and Moral Philosophy: From Grotius to the Scottish Enlightenment* (Cambridge: Cambridge University Press), 13-14.

theory, with its minimalist assumptions and linkage to the decision technologies used to scientifically ground policy analysis, is a product of the cold war national security state. The language of rational choice, although obviously having antecedents in past theoretical developments, represents the coalescence of a new language of collective decision-making which provides a new rationale for political actions based on "rational," self-oriented interest having both explanatory and normative implications. This language exists as an explanatory method in the social sciences and anchors prescriptive public policy analysis.

Regardless of whether the rational choice method is contributing new findings and advancing social knowledge, I argue that translating political concepts basic to democratic government into the rational choice vocabulary itself is a significant event worthy of attention. Rational choice theory exists as a mode of political discourse which not only models and explains events but also reinterprets the meanings of political actions. It conveys meanings to individuals' actions with descriptive, normative, and prescriptive import; it provides a reevaluation of political institutions in its terms, and provides an underlying logic for actual decision-making in policy environments and also pertains to jurisprudence through the law and economics movement. Perhaps the most vivid example of the manner in which rational choice theory reconstitutes political actions is the example of voting.<sup>35</sup> In the American and French revolutions, voting was considered to be a privilege of citizenship worth fighting and even dying for. The privilege and practice of voting represented a citizen's right to political expression and was deemed fundamental to the legitimating principle of democratic government of, for, and by the people. Today, rational choice theorists struggle to explain why people vote and virtually propose that from each individual's

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<sup>35</sup>For a discussion of the rational choice study of "the paradox of voter turnout," see Donald P. Green and Ian Shapiro, *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science*, (New Haven: Yale University Press, 1994), chapt. 4, 47-71; for a response see Susanne Lohmann, "The Poverty of Green and Shapiro," *Critical Review*, 9:1-2, Wint.-Spr. 1995, 127-154, see esp. 143-149.

perspective, since one vote rarely if ever makes a difference, it is irrational to vote. An action which seemed eminently worthwhile and self-explanatory in early American democracy has taken on an entirely new meaning in a rational choice theory of politics. This stark contrast between the value judgments on the worth of voting shows how political acquires acquire alternate meanings when construed within different systems of political discourse. I argue that the "voter's paradox" is an artifact of a particular historically and culturally localized political discourse in which the paradox follows as a consequence of the language game embodying rational choice theory.



## CONCLUSION:

### RATIONAL CHOICE LIBERALISM

The purpose of rational choice is to provide a grand theoretical framework for designing human institutions.....[T]he primary motivation for practitioners of rational choice theory, in the course of its evolution since the 1950s, has been to create an integrated, empirical theory of market and polity that would serve the normative purpose of designing "good" institutions.<sup>1</sup>

Institutional victories and the high-profile status of Rochester-trained political scientists, as well as consistent determination on the part of Rochester school members to displace other forms of political science, have positioned the Rochesterians and positive political theory at the center of much heated debate. As Riker boldly and antagonistically asserted, "the rational choice paradigm is the oldest, the most well established, and now,...the one that by its success is driving out all others."<sup>2</sup> Donald P. Green and Ian Shapiro's 1994 *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science* served to both underscore the arrival of the rational choice method as an accepted and mainstream practice within political science, and to articulate reservations about its explanatory powers. Debate over the efficacy of a rational choice theory of politics continued in a forum provided by the journal *Critical Review* which devoted an entire issue in 1995 to the controversy generated by Green and Shapiro's widely cited book. Within these collected articles it is evident that debate over the merits and efficacy of a rational choice theory of politics is engaged on three levels. As in Green and Shapiro's critique, scholars disagree whether positive political theory's theoretical findings and empirical evidence provide meaningful insight into political phenomena. At a secondary level, scholars disagree over the definition and legitimate practice of social science, generally, and political science, particularly. At an even more

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<sup>1</sup>Norman Schofield, William Taussig Professor of Political Economy and Director of the Center in Political Economy at Washington University, St. Louis, "Rational Choice and Political Economy," *Critical Review*, 9:1-2, Wint./Spr. 1995, 189-190.

<sup>2</sup>Riker, unpublished manuscript, Taiwan lecture, "A Paradigm for Politics," 1983, WHR Papers.

inclusive level, the heated nature of the exchanges results from a fundamental disagreement as to whether the rational actor model is sufficient to explain all facets of human behavior.

Despite this collection of papers articulating the debate, it remains difficult to get a penetrating sense of the deeply-seated reasons why the rational choice approach has provoked such heart-felt disagreement. In this conclusion I argue that the heat of this controversy is generated by the relevance of rational choice research to concerns which exceed the bounds of social science methodology and spill out into visions of American science and American democracy. This instance of disciplinary turmoil is a manifestation of a larger set of debates which are inevitable because rational choice theory has a wider scope and a more comprehensive mission than its innocuous identity as a social science methodology indicates. Due to the dramatic divide between the actual scope of rational choice and its claimed status, it is insightful to contextualize rational choice scholarship by considering political scientists' long-standing interest in their disciplinary history and in the dialectical relationship between their field and American democracy.<sup>3</sup> This conclusion concentrates on political science because rational choice theory has primarily engendered passion by providing a reformulation of the language giving meaning to democratic politics.

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<sup>3</sup>For earlier texts taking up this set of concerns see Albert Somit and Joseph Tanenhaus, *The Development of Political Science: From Burgess to Behavioralism* (Boston: Allyn and Bacon, Inc., 1967); David M. Ricci, *The Tragedy of Political Science: Politics, Scholarship and Democracy* (New Haven: Yale University Press, 1984); Raymond Seideman, with the assistance of Edward J. Harpham, *Disenchanted Realists: Political Science and the American Crisis, 1984-1984* (Albany: State University of New York Press, 1985); Gabriel A. Almond, *A Discipline Divided: Schools and Sects in Political Science* (London: Sage Publications, 1990); Rogers Smith, "Still Blowing in the Wind: The American Quest for a Democratic, Scientific Political Science," *Daedalus; American Academic Culture in Transformation: Fifty Years, Four Disciplines*, 126:1, Wint. 1997, 253-288; For social science more generally see Andrew C. Janos, *Politics and Paradigms: Changing Theories of Change in Social Science* (Stanford: Stanford University Press, 1986); and Thomas Bender, "Politics, Intellect, and the American University, 1945-1995," *Daedalus; American Academic Culture in Transformation: Fifty Years, Four Disciplines*, 126:1, Wint. 1997, 1-38.

### A. Science, Democracy, and the Enlightenment Project of Modernity

Rational choice theory has been at the center of a heated controversy over methodology in political science, and to a lesser degree other social sciences, and has attracted attention for its parsimonious theory of human action predicated solely on self-interested rational action presented in mathematical language. This debate over method is related to debates over a vision of human life and ultimately, as I shall argue, over political ideology. Despite the attention and controversy, it is difficult from these discussions alone to grasp why the heat in the exchanges; it is difficult to discern from the content of the discussions alone why scholars from different sides of the issue space are so intensely provoked.<sup>4</sup> In attempting to answer this question I will argue that rational choice theory is closely related to concerns which exceed the bounds of social science methodology and spill out into visions of American science and American democracy.

The most basic place to begin this contextualizing discussion is to understand how rational choice relates to the long-standing sense that science and democracy are allies in the Enlightenment project of modernity. Obviously this is not the location to review this vast literature. However it is easy to situate rational choice theory within this history by starting with David A. Hollinger's work on Thomas Merton, John Dewey, and other American public intellectuals of the 1930s and 1940s who were keen to promote both scientific inquiry and democratic government as allies countering Christian provincialism on the one hand and Nazi facism on the other.<sup>5</sup> Science and democracy,

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<sup>4</sup>Eg., Donald P. Green and Ian Shapiro, *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science* (New Haven: Yale University Press, 1994); *Critical Review: Rational Choice Theory*, 9:1-2, Wint./Spr. 1995; James Johnson, "How Not to Criticize Rational Choice Theory: Pathologies of 'Common Sense,'" *Philosophy of the Social Sciences*, 26:1, Mar. 1996, 77-91.

<sup>5</sup>David A. Hollinger, "The Defense of Democracy and Robert K. Merton's Formulation of Scientific Ethos," and "Science as a Weapon in *Kulturkämpfe* in the United States during and after World War II," in *Science, Jews, and Secular Culture: Studies in Mid-Twentieth-*

according to these thinkers, shared an ethos of "universalism," "disinterestedness," "communism," and "organized skepticism." In both cases, reasoned discussion among equals leads to agreement, either on research findings or on communal ends. It was important to Dewey and Merton to defend both science and democracy as group activities dependent upon shared values which they found to be threatened by fascist regimes or religious zealotry.

Political scientist John G. Gunnell similarly focuses on the traditional American identity of science and democracy as sharing the values of tolerance, skepticism, and pragmatism. Given the close relationship between American political science and American government, it is not surprising that U.S. political science traditionally promoted both as shared endeavors, much as Hollinger describes through the work of Merton and Dewey. However, Gunnell argues, the influx of fleeing European émigrés in the 1940s destabilized this comfortable partnership between science and democracy which had been since the dawn of American democracy central to the ethos of American political scientists. Gunnell argues that émigrés such as Leo Strauss, Hannah Arendt, Hans Morgenthau, Theodor Adorno, Eric Voegelin, Franz Neumann, Arnold Brecht, Max Horkheimer, and Herbert Marcuse countered this American tradition and held that the liberal values underlying science and democracy were specifically those which miscarried to result in totalitarianism and the modern crisis.<sup>6</sup> These thinkers, who over time took on the identity of political theorists, challenged the comfortable relationship between science and democratic liberalism, finding both to be incapable of diverting, or even complicit in encouraging, the impulse toward fascism expressed in Continental Europe. According to Gunnell, "The assessment advanced by émigré scholars...was that the

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*Century American Intellectual History* (Princeton: Princeton University Press, 1996), 80-96, 155-174.

<sup>6</sup>"American Political Science, Liberalism, and the Invention of Political Theory," *American Political Science Review*, 82:1, Mar. 1988, 73.

problem of totalitarianism was at root a problem of science, liberalism, and relativism and that it was susceptible in large part to a philosophical or religious solution."<sup>7</sup>

Gunnell argues that the émigrés' challenges to American liberalism resulted in the distillation of "political theory" as an isolated field within American political science, an isolation still very evident today, as émigrés staked out their territory of commentary and American political scientists reasserted the alliance of science and democratic liberalism characteristic of their field. Gunnell finds that chief among these efforts to reclaim the enlightened ties linking scientific inquiry and democratic values were those of David Easton, the leader of the nascent behavioral movement. Easton, and others such as Harold D. Lasswell and Herbert Simon, reformulated the epistemology of the social sciences in keeping with a traditional American instrumental pragmatism combined with logical positivism.<sup>8</sup> Easton's opening chapter of his famous 1953 *The Political System* echoed Dewey and Merton's concern to advance an empiricist and skeptical epistemology which simultaneously sustained and grounded liberal democratic values.<sup>9</sup>

Even though William Riker was adamant in disassociating positive political theory from the burgeoning behaviorist movement, nonetheless he was captivated by Easton's vision of a science of politics, and he often used Easton's definition of politics as "the authoritarian allocation of values."<sup>10</sup> Riker, too, was an enthusiast of democratic values in opposition to any which could be construed as totalitarian, fascist, organicist or socialist. Kenneth Arrow and James Buchanan similarly were keen to advance science and liberal democratic values in opposition to those seemingly responsible for communism or fascism.<sup>11</sup> Gunnell's argument about political theory and the behaviorist

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<sup>7</sup>Ibid., 77; I don't agree with all aspects of Gunnell's argument, but it has many merits.

<sup>8</sup>Ibid., 83.

<sup>9</sup>David Easton, *The Political System* (New York: Knopf, 1953), see 10-11.

<sup>10</sup>Basic definition used in Riker's *Theory of Political Coalitions* (New Haven: Yale University Press, 1962), 10-11.

<sup>11</sup>See also Daniel Lerner and Harold D. Lasswell's *The Policy Sciences: Recent Developments in Scope and Method* (Stanford: Stanford University Press, 1951), to which Arrow contributed "Mathematical Models in the Social Sciences," 129-154.

movement, while perhaps not necessarily helpful in all respects for assessing the forces behind the rise of Riker's positive political theory, social choice theory, or the public choice movement, still draws attention to an important point: rational choice theory represents a continuation of the Enlightenment project of promoting scientific inquiry and democratic government.

Rational choice theory is much in keeping with the traditional American political scientists' dual commitment to the mutually sustaining values of science and democracy. An emphatic enunciation of this stance is provided by political scientist Simon Jackman, a 1995 University of Rochester Ph.D., who is determined to stave off postmodernism with a joint commitment to science and liberalism:

I...link[ed] both science and liberalism as complementary products of the Enlightenment. I remarked that both science and liberalism are relativist and pragmatic—liberals and scientists make few assumptions about absolute truth. The arguments within social science that I survey here show liberalism is actually fairly accommodating of "conditionality" or "contingency," concepts dear to postmodernists, and, as it turns out, concepts that are actually at the heart of science as well. The admission of a contextualized basis for knowledge is not an abandonment of science, but rather an acknowledgement of the richness of the world that is, if anything, an invitation to inquiry. This admission was the mutual origin of both science and liberalism, the source of their resilience, and will ensure their safe passage through the post modernist "storm."<sup>12</sup>

Jackman's defense of the partnership of science and democracy against "postmodernism" represents a different context from the post-war concern with totalitarianism, but the single-minded devotion to science and democracy as siblings remains constant.

Rational choice theory represents a contribution to a modernist epistemology which supports democratic liberalism by upholding the values of free inquiry, universalism, individual autonomy, and government by trade and negotiation, as opposed to autocratic tyranny or irrational mob rule. Many rational choice scholars also uphold a liberalism of free-market trade, and believe there is a strong correlation between democratization and free markets. Among these scholars, the fall of the Berlin

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<sup>12</sup>Simon Jackman, University of Rochester Ph.D. 1995, "Liberalism, Public Opinion and their Critics," in Paul R. Gross, et. al., eds., *The Flight from Science and Reason* (London: Johns Hopkins University Press, 1996), 346-368.

Wall and the demise of the Soviet Union are seen as victories for freedom, liberal democracy, and free markets. Science, democratic liberalism, and capitalism are commonly believed to be based on toleration; free trade and free association; personal autonomy permitting subjective moral standards; an experimental epistemology based on universal laws subject to empirical test; and legitimate rule as a reflection of individuals' interests. Whereas it is necessary to recognize that rational choice theory falls within the Enlightenment project of advancing knowledge and liberal government, it is also necessary to see that it represents one specific way of understanding the relationship between scientific epistemology and the legitimating principles of democratic rule.

### **B. American Political Science and Classic Republicanism**

Besides understanding that rational choice theory is very much an active participant in furthering a commitment to scientific inquiry and democratic government as joint ventures, I also argue that it is helpful to understand the location of rational choice theory within the centuries-old debate between the two political discourse traditions of classic republicanism emphasizing virtuous citizenship and natural jurisprudence catering to property rights and commerce. In the wake of the impressive works by J.G.A. Pocock and Quentin Skinner, much attention has been drawn to the interplay between these two traditions, and to the key role played by classic republicanism in establishing American democracy.<sup>13</sup> It has been widely recognized that although the classic republic tradition was important to early American democracy, this tradition waned over the nineteenth-century in favor of a tradition favoring commerce, property rights, contracts, and an institutionalized version of virtue.<sup>14</sup> Because of the

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<sup>13</sup>See J.G.A. Pocock, "Authority and Property: The Question of Liberal Origins," in his *Virtue, Commerce, and History: Essays on Political Thought and History, Chiefly in the Eighteenth Century*. (Cambridge: Cambridge University Press, 1985) and Quentin Skinner, *Meaning and Context: Quentin Skinner and his Critics*, James Tully, ed. (Princeton: Princeton University Press, 1988).

<sup>14</sup>Seidelman, *Disenchanted Realists* (1985).

close relationship between American political scientists and American government, this declining fortune of republicanism has been reflected within the academic pursuits of political scientists. James Farr writes about this interlocking transformation in American statehood and American political science, suggesting that the latter responded to the ebbing of civic republicanism by reciprocally relinquishing its tendency toward a civic-minded pedagogy oriented toward instilling republican values in citizen-students. Farr observes, "in the course of the first century, American political science was transformed from a political discourse in the service of republican principles to a professional discipline in the service of the administrative state."<sup>15</sup>

Although the emergence of rational choice in the late 1940s and 1950s is much later than the period covered by Farr's analysis, the remnants of this transition in American political science are evident in William Riker's early work. Riker's 1953 textbook for undergraduates very much falls within the tradition of republican pedagogy. Riker idealistically anchors democracy in terms contrary to the principle of self-interested rational action, telling students, "Democracy is self-respect for everybody. Within this simple phrase is all that is and ought to be the democratic ideal."<sup>16</sup> Riker's mid-1950s letters concerning Wisconsin democrat William Proxmire's senatorial campaigns also reflect the vestigial republican concern with honor, integrity, and public service. In one letter Riker touts "the nobility of public service," and "patriotic motive."<sup>17</sup> In another letter he refers to Proxmire's "sense of public duty," and "his duty as a citizen to work for his political ideals."<sup>18</sup> Riker's writings of the later 1950s exhibit a dramatic shift from the familiar language of republicanism to a rational choice language based upon actors competitively pursuing self-gain in political "games." The

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<sup>15</sup>James Farr, "Political Science and the State," in James Farr and Raymond Seidelman, eds., *Discipline and History: Political Science in the United States* (Ann Arbor: University of Michigan Press, 1993), 66.

<sup>16</sup>William H. Riker, *Democracy in the United States* (New York: MacMillan Co., 1953), 19.

<sup>17</sup>WHR to Marvin Kagen, Feb. 17, 1956, Proxmire file, WHR papers.

<sup>18</sup>WHR to Editor, *The Post-Crescent*, Oct. 1, 1954, Proxmire file, WHR papers.



language of rational choice theory is exclusive of the classic republican tradition, but fits perfectly well with the language of commerce, property rights and contracts which has increasingly become the language of American statehood over the nineteenth and twentieth centuries.<sup>19</sup>

As much as it seems appropriate to see rational choice theory as implicated in the furtherance of a specific type of democratic liberalism which counters either Pocock, Skinner, and James T. Kloppenberg's emphasis on classic republicanism, or the communitarian reinvocation of the virtue-based civic humanist tradition in the works of Charles Taylor, Michael J. Sandel, and Alasdair MacIntyre, there has been a surprising failure to recognize the close association of rational choice theory and the rights-centric liberalism characteristic of John Rawls.<sup>20</sup> Political scientist Rogers M. Smith, in his disciplinary retrospective, "Still Blowing in the Wind: The American Quest for a Democratic, Scientific Political Science," comes the closest to recognizing the association of rational-choice-driven political theory with a contractarian and rights-oriented liberalism standing in clear opposition to civic republicanism.<sup>21</sup> It is this position of rational choice scholarship within the midst of mainstream, contemporary discussions over liberalism, and as a logical step in the language of natural jurisprudence emphasizing

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<sup>19</sup>Attempts to work "virtue" into rational choice theory always have recourse to demonstrations that in order to be a serviceable concept, virtuous behavior must ultimately serve actors' best interests, see, eg., Kenneth J. Arrow, "The Principle of Rationality in Collective Decisions," in *Collected Papers of Kenneth J. Arrow: Social Choice and Justice* (Oxford: Basil Blackwell, 1984), 45-58, esp. 49; David Gauthier, *Morals by Agreement* (Oxford: Clarendon Press, 1986); and Russell Harsanyi, *Morality within the Limits of Reason* (Chicago: University of Chicago Press, 1988).

<sup>20</sup>James T. Kloppenberg, *The Virtues of Liberalism* (Oxford: Oxford University Press, 1998); Charles Taylor, *Human Agency and Language* (Cambridge: Cambridge University Press), 102-105; Alasdair MacIntyre, *After Virtue*, 2d ed. (Notre Dame, IN: University of Notre Dame Press, 1984); Michael J. Sandel, *Liberalism and the Limits of Justice* (Cambridge: Cambridge University Press, 1982); Michael J. Sandel, "Introduction," in Michael J. Sandel, ed., *Liberalism and Its Critics* (Oxford: Blackwell, 1984); it is too simple to state that Rawls' theory of justice is fully consistent with rational choice theory, this relationship needs to be carefully explored; for discussion of Rawls and rational choice theory see Susan Moller Okin, "Reason and Feeling in Thinking about Justice," *Ethics*, 99, Jan. 1989, 229-249.

<sup>21</sup>Rogers M. Smith, "Still Blowing in the Wind" (1997), 253-287, notably 264-265.

commerce, natural law, and right, that needs to be further explored. This need is all the more urgent given that rational choice theory is already germane to American political practices since it informs the conceptual foundations of public policy analysis and has become increasingly significant to American jurisprudence through the success of the rational choice-based law and economics movement.

### **C. Rational Choice Liberalism and Adam Smith's Political Economy**

One reason why attention has not been focused on rational choice scholarship as an important contribution to political theory furthering a particular sort of liberalism is that rational choice scholars have successfully billed their theory as objective, value-free social science. In fact, this identity of rational choice theory as quintessential social science is one of its most valued hallmarks which provides it with status and prestige in venues such as the National Academy of the Sciences, the National Science Foundation, and in the policy world wherein policy *science* and technocratic expertise are a coveted means to escape partisan politics. Just as it was useful to recall the relationship between American political science and actual practicing American democracy in order to better place the significance of rational choice, so it is helpful to revisit the genealogy of ideas back to Adam Smith's early social science classic, *The Wealth of Nations*.

I have earlier disputed the direct lineage of the rational actor formalism to Smith's industrious and prudent agent, nonetheless there are two striking points of similarity between rational choice theory and Smith's political economy. The first is that both Smith and rational choice scholars articulate a mode of political discourse which emphasizes a natural jurisprudence tradition of property and rights over the alternative civic humanist tradition. The second is that Smith and the rational choice theorists similarly straddle the commitment to impartial social science *and* prescriptive political ideology. Social science and normative political philosophy have a particular relationship with the former structuring the latter: "natural" laws governing human actions necessarily take precedence over human attempts to legislate human order; the

possibilities of intentional legislation are dictated by pre-existing and pre-determined "natural" laws. Jurisprudence and policy science must derive legislation and policy initiatives from the inherent laws governing individual and collective action. Because of the complex inherent tension involved in treating human agency as determined by universal laws while still permitting leeway for intentional organization of human institutions, I do not attempt to articulate all ramifications of this paradox here; my point is to note that this tension plagues the methodology of both Adam Smith and rational choice scholars. On one level, "The tension arises...because such causal accounts tend deterministically to deny any consciously self-directed agency to the phenomena they study. A science of human political behavior thus can seem to debunk the self-understandings of democratic participants and the meaningfulness of their conscious choices."<sup>22</sup> On a second level, despite having relieved agents of reflexive responsibility for their collective actions, both Smith and rational choice theorists paradoxically suppose that scientific analyses can be used to motivate legislation and public policy.

Smith, who was inspired by Isaac Newton's scientific method and world system, was innovative in assembling a descriptive account of the inherent laws governing human society. However, Smith was also a radical proponent of free trade and opposed the legal principles supporting the idea of "just price." Thus, Smith simultaneously put forth a scientific account of the workings of human society *and* he used his analysis to advocate for particular form of social organization, in his case, the hands-off policy of *laissez faire*. In chapter one, I discussed the epistemological grounding of Smith's attempt to follow the natural jurisprudence tradition; here I emphasize the close parallel relationship for Smith between "natural laws" governing human actions and human society, and the science of jurisprudence as the practice of actively

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<sup>22</sup>Despite the significance of this tension it seems not to have drawn much attention in the Anglo-American social science tradition; for an allusion to it see Rogers M. Smith, "Still Blowing in the Wind," (1997), 256-257; and Rogers M. Smith, "If Politics Matters: Implications for new Institutionalism," *Studies in American Political Development* 6, 1992, 1-36. See also Skinner, *Meaning and Context* (1988), 119-134.

legislating social order. For Smith, human society functions best when human legislation operates in conjunction with the natural laws inherently governing human actions. Thus, using his case study of English society, Smith develops his notion that social order is spontaneously generated by the two principles of individual industriousness generating overall prosperity, and sympathy giving rise to justice. For Smith, any attempt to impose laws at odds with the natural laws governing human actions can only detract from the social order which would otherwise arise automatically. For Smith, left to the natural principles of individuals' pursuit of self-interest and sympathy, overall prosperity is spontaneously generated. Smith advances a normative vision of how society could best function grounded upon a scientific study of how society does function.

This feature of Smith's early social science to seek inherent laws governing human actions, coupled with the advocacy of a specific political philosophy, also characterizes rational choice scholarship. Rational choice theory proceeds, like Smith, in accordance with the strict rules of scientific inquiry, and looks for universal laws which accurately predict the outcomes of collective decision problems. After discovering these "natural" laws which inherently structure human actions and social outcomes as a function of institutionally sanctioned incentives and personal preferences, these analyses can be applied to problems of constitutional or institutional design. This approach is evident in the work of Buchanan and Tullock, or Riker, and is also evident in the work of Amartya Sen, David Gauthier and Russell Hardin.<sup>23</sup> "Rationality," though a normative concept, itself exhibits the property of enforcing predictable law-like behavior; "rational action" causally connects agents' preferences with outcomes in the same way that a

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<sup>23</sup>Amartya K. Sen, *Collective Choice and Social Welfare* (San Francisco: Holden-Day, Inc., 1970), esp. chap. 8, "Theory and Practice," 187-200; Amartya K. Sen, introduction to his *Choice, Welfare and Measurement* (Oxford: Basil Blackwell, 1982), 1-38; David Gauthier, "Constituting Democracy," in David Copp, et. al, eds., *The Idea of Democracy* (Cambridge: Cambridge University Press, 1993), 314-334; Russell Hardin, "Public Choice Versus Democracy," in Copp, et. al, eds., *The Idea of Democracy* (1993); and Schofield, "Rational Political Economy" (1995).

particle's predictable trajectory is caused by a force field.<sup>24</sup> The key point of comparison linking Smith and the rational choice theorists is their commitment to study humans in a like manner to physical systems subject to law-abiding relations in which collective outcomes are not so much intentionally coordinated as they are the automatic product of agents' law-abiding pursuit of self-interest.<sup>25</sup> The same tension between treating human agency as determined by universal laws and simultaneously proposing a normative template for improving human circumstances through either jurisprudence or policy science links Smith's *Wealth of Nations* and contemporary rational choice scholarship. Conceiving of individuals actions as determined strips agents of reflexivity in intentionally bringing about collective outcomes *and* develops a problematic reflexivity in assuming that notwithstanding this pre-given law-abiding behavior, it is possible to intentionally design institutions. The only way out of this spiraling paradox is to consistently assume, as do Tullock, Buchanan, Riker and Gauthier, that all acts, even those aimed at altering political institutions, are similarly motivated by self-interest.<sup>26</sup>

Following this line of thought it is possible to identify a hallmark of the rational choice approach to political theory and political liberalism which similarly has a precedent in Smith's political economy. Rational choice theory, in accordance with its

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<sup>24</sup>This law-like property of rationality is governing agents' actions is evident in von Neumann and Morgenstern, *Theory of Games* (1944), even though their strategically rational outcomes conveyed a statistical predictability similar to quantum physics.

<sup>25</sup>For a discussion of this property of rational choice theory which relies too much on a thesis of continuity between marginalist economics and rational choice theory, see James Bernard Murphy, "Rational Choice Theory as Social Physics," *Critical Review*, 9:1-2, Wint./Spr. 1995, 155-174.

<sup>26</sup>Buchanan and Tullock, *The Calculus of Consent* (1962); Riker, *Liberalism Against Populism* (1982); David Gauthier, *Morals By Agreement* (Oxford: Clarendon Press, 1986); for an impressive collective of articles devoted to the search for a rational basis for cooperation see Richmond Campbell and Lanning Sowden, eds., *Paradoxes of Rationality and Cooperation* (Vancouver: The University of British Columbia Press, 1985); other theorists fully conversant with the rational choice approach have attempted to push slightly beyond the confines of narrowly construed definitions of rational action, though this still marks their basic point of departure, see Amartya K. Sen, "Rational Fools: A Critique of the Behavioural Foundations of Economic Theory," in Amartya K. Sen, *Choice, Welfare and Measurement* (1982), 84-106; Jon Elster, *Sour Grapes: Studies in the Subversion of Rationality* (New York: Cambridge University Press, 1983); and Robert Nozick, *The Nature of Rationality* (Princeton: Princeton University Press, 1993), 133-181.

methodological individualism and self-interested calculus, necessarily tackles collective decision problems characteristic of government as an interactive payoff matrix in which stable, equilibrium outcomes are those in which no single individual could have achieved a better payoff by acting differently.<sup>27</sup> Just as equilibrium of supply and demand are coveted in economic analysis, so equilibrium outcomes in which individuals' self-interested actions produce a stable, mutually beneficial social states is the hoped for outcome in a rational choice theory of politics because social order is seen to be the by-product of self-oriented behavior automatically coordinated by appropriate institutional structures. In collective action problems ranging from international politics to legislative behavior, voting, and party politics, stable outcomes or equilibria occur as a function of individual preferences, knowledge conditions, and institutional arrangement of the "game" or situation. Human agents, like inanimate particles, do not reflexively create social order but instead are governed by universal principles of action which determine the results of collective interactions. In this way, this rational choice approach to collective action problems can be considered a secularized, or "demystified" version of Smith's invisible hand. Smith, as discussed in chapter one, assumed that human society will spontaneously coordinate on the principles of individual industriousness and the hands-off *laissez faire*, approach leaving legislation to national defense and education, and out of market relations.

Although some rational choice scholars follow Smith in expressing confidence in the ability of unmediated market relations to lead to beneficial results, others analyzing political institutions are not so sanguine and find that the efficient coordination of outcomes is the result of the inherent structure in which the game or collective decision problems occur.<sup>28</sup> Thus, even though Smith and the rational choice scholars are worlds

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<sup>27</sup>Generally characteristic of rational choice approaches to democratic government and collective action, see Norman Schofield, "Rational Choice and Political Economy," (1995).

<sup>28</sup>For various approaches see the collection of essays in Cambell and Sowden, *Paradoxes of Rationality* (1985), including Russell Hardin, "Individual Sanctions, Collective

apart in the specificities of their methods, their overall analyses share the idea that human society inheres according to natural law-like relations which lead to predictable results. For both Smith and the rational choice scholars, because individuals' behavior is an unmaleable given, human attempts to legislate social outcomes can only have beneficial consequences if they are designed in light of prior impartial analysis of the parameters governing human action.<sup>29</sup> Unlike the social contract approach of Rousseau, the Kantian kingdom of ends, the civic education approach of the classic republicans, Dewey's participatory democracy, or Habermas' government by communicative rationality, Smith and the rational choice scholars stake their claims to legitimate method on the "realistic" premise that humans must be accepted "as they are." Given this "scientific" analysis of human action, prescriptive assessments in the form of policy initiatives can be put forward much like engineers can tinker with machines given the law-abiding actions of mechanical systems.<sup>30</sup> Rational choice liberalism supposes that human agency is determined by inherent laws guiding action in accordance with the principle of self-interested rational action. Theorists seek to discover institutional structures which generate equilibria; they strive to discover frameworks which automatically coordinate agents' self-interested actions. Policy initiatives and jurisprudence are derived from a theory of human action which strips individuals of the reflexive responsibility to intentionally coordinate their actions. Rational choice scholars

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Benefits," 339-354; Robert Axelrod "The Emergence of Cooperation among Egoists," 320-339; David Braybrooke, "The Insoluble Problem of the Social Contract," 277-306; John Watkins, "Second Thoughts on Self-Interest and Morality," 59-75; David Gauthier, "Maximization Constrained: The Rationality of Cooperation," 75-93.

<sup>29</sup>Rational choice theorists typically purport to comprehensively address all situations in which agents' ends could be determined in any fashion, including those consistent with altruism, in practice rational choice theorists almost always default to a narrow construal of human agency to a narrow principle of self-interest, see, e.g., introductory paragraph to Jeffrey Friedman's "Economic Approaches to Politics," *Critical Review*, 9:1-2, Wint./Spr. 1995, 1-2.

<sup>30</sup>For the close relationship between rational choice theory and a "social engineering" approach to practical political problems, see Peter C. Ordeshook, "Engineering or Science: What is the Study of Politics?," *Critical Review*, 9:1-2, Wint./Spr. 1995, 175-188.

and Smith both use scientific analysis to advance what are essentially political philosophies by using their analyses to "serve the normative purpose of designing 'good' institutions."<sup>31</sup> My point in identifying the rational choice approach to democracy as an important variant of political liberalism has not been to propose that "rational choice liberalism" represents a univocal position, but rather to argue that the rational choice approach to social welfare, morality and political theory is an important contribution to political liberalism unified by a common framework for posing questions.

I have devoted my dissertation to retracing the heritage of ideas linking rational choice theory to the marginalist economists and to Adam Smith's political economy, and to showing how the rational choice formalism was related to the decision-technologies of cost-benefit analysis developed at RAND to de-politicize policy decisions. I have argued that rational choice theory represents a new language of politics which spans the divide between theory and practice, descriptions and norms. In this conclusion I have touched on how this rational choice language of politics is part of the ongoing dialectical relationship between American political science and American democratic government. This dialectic is especially pertinent to the long-standing American confidence in the alliance of science and democracy, and fits squarely within the movement away from classical republicanism toward the embrace of commerce, contracts, and rights.

Most importantly, I have argued that rational choice theory, both representing a rupture in political discourse, and yet demonstrating continuities with Smith's social scientifically constructed political economy, is a significant contribution to American liberalism.<sup>32</sup> Rational choice liberalism follows the social science tradition pioneered by Adam Smith which subjects human agency to predictive scientific analysis and proposes that a focal problem of political theory is to discover a framework which automatically

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<sup>31</sup>Norman Schofield, "Rational Choice and Political Economy" (1995), 189.

<sup>32</sup>For contributions to a theory of liberal democracy consistent with a rational choice approach see the collected essays ed. by David Copp, Jean Hampton and John E. Roemer, *The Idea of Democracy* (Cambridge: Cambridge University Press, 1993); and Jon Elster, ed. *Deliberative Democracy* (Cambridge: Cambridge University Press, 1998).



coordinates individuals' self-interested actions. Legislation and jurisprudence are derivative of a scientific study of society according to which laws and policies can only alter the institutions structuring collective interactions of rationally self-interested agents. This significance of appreciating rational choice theory as an important contribution to political liberalism is made all the more weighty given the wide-spread acceptance of the rational actor formalism spanning theory and practice, thus having relevance both as a social scientific method, and to public policy.



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