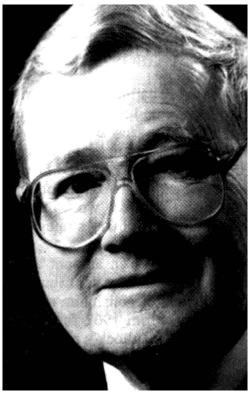

THE

SELECTED

WORKS OF

GORDON

TULLOCK

VOLUME 10

Economics without Frontiers

THE SELECTED WORKS OF GORDON TULLOCK

VOLUME 1 *Virginia Political Economy*

VOLUME 2 *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (with James M. Buchanan)

VOLUME 3 *The Organization of Inquiry*

VOLUME 4 *The Economics of Politics*

VOLUME 5 *The Rent-Seeking Society*

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VOLUME 9 *Law and Economics*

VOLUME 10 *Economics without Frontiers* (includes a cumulative index for the series)

Gordon Tullock

THE SELECTED WORKS OF GORDON TULLOCK

VOLUME 10

Economics without Frontiers

GORDON TULLOCK

Edited and with an Introduction by

CHARLES K. ROWLEY

Liberty Fund
Indianapolis

This book is published by Liberty Fund, Inc., a
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The cuneiform inscription that serves as our logo and
as the design motif for our endpapers is the earliest-known
written appearance of the word "freedom" (*amagi*), or "liberty."
It is taken from a clay document written about 2300 B.C.
in the Sumerian city-state of Lagash.

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CONTENTS

INTRODUCTION

Economics without Frontiers, the concluding volume in the Selected Works of Gordon Tullock, brings together, in seven parts, an eclectic set of Tullock's essays, many of which significantly expanded the frontiers of economic science, always within the underlying framework of the rational-choice model. This volume highlights intellectual qualities that have directed a great deal of Tullock's scholarship throughout a lengthy and highly productive career, namely, the use he makes of his powers of observation to engage in successful economic imperialism.

Successful Economic Imperialism

In 1992, the Royal Swedish Academy of Sciences awarded the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel to Gary S. Becker "*for having extended the domain of microeconomic analysis to a wide range of human behavior and interaction*, *including nonmarket behavior*."

In the view of the Swedish Academy, Becker's contribution consisted "*primarily in having extended the domain of economic theory to aspects of human behavior which had previously been dealt with—if at all—by other social science disciplines such as sociology*, *demography and criminology*." In so doing, he had stimulated economists to tackle new problems.

Central to Becker's use of the economic approach is his contention that "the economic approach is uniquely powerful because it can integrate a wide range of human behavior."[1] To this end, Becker's research program is founded on the idea that the behavior of individuals and groups adheres to the same set of fundamental principles in a wide range of different circumstances.

Specifically, Becker deploys maximizing behavior explicitly and extensively across all areas of human behavior, be they the utility or wealth function of the household (and its separate components), firm, labor union, special interest group, or government bureau. He assumes the existence of equili-

1. Gary S. Becker, *The Economic Approach to Human Behavior* (Chicago: University of Chicago Press, 1976), 5.

brating markets (usually viewed as being efficient) that both coordinate and constrain the desires of different participants so that their behavior becomes mutually consistent. The preferences of individuals are assumed to be homogeneous across individuals and not to change substantially over time.[2] Becker also assumes that all individuals and groups are well informed about the market (or nonmarket) environment in which they participate.

The assumptions that underpin Becker's economic approach reflect the more general approach of the Chicago School in offering a tight prior equilibrium theory of human behavior in which markets clear quickly and efficiently and in which changes in outcomes are driven not by changes in tastes but by changes in constraints.[3] In this manner, Becker has successfully invaded other disciplines in the social sciences and has used the rational-choice approach to advance understanding of human behavior.

Over the past forty years, Tullock has matched Gary Becker in the successful imperialistic invasion of rational-choice economics into contiguous social science territories as well as, even more ambitiously, into the natural sciences. As earlier volumes in this series clearly demonstrate, Tullock has deployed the rational-choice approach of economics to disturb conventional thinking not only in economics but also in the disciplines of political science, social studies, the law, biology, and scientific method.

Tullock's economic approach, however, differs in significant respects from that of Becker and, as a result, provides different insights into the predictable implications of human (and nonhuman) interaction. Tullock retains the *Homo economicus* assumption of maximizing and self-seeking man, while being much more willing than Becker to recognize the importance of nonwealth arguments in the individual's utility function.

Tullock allows for the possibilities that markets will not always clear and that when they do clear they may do so inefficiently (especially political markets). He allows for the possibility that information will not be widely dispersed (especially in political markets). He allows for differences in individual preferences and for changes in those preferences over time, not least in response to persuasive advertising (especially in political markets).

2. George J. Stigler and Gary S. Becker, "De Gustibus Non Est Disputandum," *American Economic Review* 67 (March 1977): 76–90.

3. Melvin W. Reder, "Chicago Economics: Permanence and Change," *Journal of Economic Literature* 20 (March 1982): 1–38.

In combination, these assumptions define a diffuse rather than a tight prior equilibrium as the hallmark of Tullock's scholarship.[4] Markets are not always in equilibrium, though they do adjust dynamically toward equilibrium. Market outcomes may be inefficient in allocating resources, and they may offer high-cost solutions. Institutions matter and cannot be ignored. Ideas are important and shape outcomes. In all these respects, Tullock's analysis diverges sharply from that of the Chicago School.

Economics without Frontiers: Tullock's Contributions at the Frontier of Economics

Part 1, "The Economic Approach to Human Behavior" (coauthored with Richard McKenzie), sets the scene for the volume. It begins with the provocative statement: "Economics is not what it used to be!" The authors outline just how rational-choice economics should be applied to areas, such as criminal behavior and the production and rearing of children, that traditionally fell outside the scope of the discipline.

Part 2, "The New World of Economics," applies the rational-choice model to a diverse range of previously off-limit fields, clearly demonstrating the relevance of the economic approach to all human decision-making over the allocation of scarce resources.

"Marriage, Divorce, and the Family" (coauthored with Richard B. McKenzie) analyzes dating and courtship as investments in information concerning the suitability for the contract of marriage. The authors view the marriage contract as necessarily incomplete and as conditioned by the ease or difficulty of subsequent breach and the expected cost of divorce. They analyze the division of labor within the household from the perspective of economic efficiency conditioned by the comparative advantages of the marriage partners. Love plays a role in all this analysis, primarily as a reciprocal or unilateral externality that reduces the cost and improves the efficiency of household decision making.

"Child Production" (coauthored with Richard B. McKenzie) analyzes the process of child production and child rearing within the family as a joint

4. Charles K. Rowley, *The Right to Justice* (Aldershot and Brookfield, Vt.: Edward Elgar, 1993), 42–43.

household investment and consumption decision. The authors recognize that choices of this kind are more boundedly rational (i.e., subject to information and cognitive limitations) than most investment and consumption decisions, not least because children have wills of their own that cannot be foreseen at the point of reproduction. Such decisions are also more subject to error (not least because of the fallibility of contraceptive devices). At the margin, however, they are predictably responsive to change in perceived costs and benefits.

"The Economic Aspects of Crime" (coauthored with Richard B. McKenzie) deploys simple demand and supply analysis to evaluate the predictable behavior of potential criminals under alternative cost conditions. They demonstrate that criminal behavior will decline as the expected cost, measured in terms of the probability of apprehension, conviction, and the extent of punishment, increases. This prediction holds even if a significant proportion of criminals are irrational. The authors also evaluate the predictable behavior of rational individuals in seeking to remain nonvictims. The authors conclude that the police, at most, play a secondary role in crime prevention. They provide statistical support for their hypotheses.

"The Economic versus the Sociological Views of Crime" (coauthored with Richard B. McKenzie) compares the economic view that crime is a profession whose size is driven by the magnitude of expected net returns, with the sociological view that criminals are individuals who are deformed by environmental disadvantages and who are incapable of rational decision-making. McKenzie and Tullock survey compelling statistical evidence in favor of the economic hypothesis. This has important implications for controlling crime, namely, that increased punishment will deter crime much more than attempts at the rehabilitation of criminals.

"Why Government" (coauthored with Richard B. McKenzie) outlines criteria for determining rationally the respective roles of private markets and democratic governments as mechanisms for allocating scarce resources among competing ends. The authors suggest that the division of labor should be determined by the magnitude of externalities and public goods. When these are low, private markets are more efficient. When they are high, democratic governments are more efficient. The authors warn that government actions often impose negative external effects upon third parties.

"Rationality in Human and Nonhuman Societies" (coauthored with Richard B. McKenzie) evaluates the results of pioneering experimental economic studies in a search for evidence of rational behavior. The authors conclude that experimental evidence strongly supports the hypothesis that sane human beings, as well as the inhabitants of mental institutions, birds, rats, and microscopic animals, are rational in that they typically choose to buy in the cheapest market and that they respond predictably, at the margin, to changes in benefits and costs.

"Universities Should Discriminate against Assistant Professors" attempts to justify the common practice of discriminating in favor of more senior faculty in the allocation of research and secretarial support. Tullock points out that senior faculty have less economic incentive to publish, given tenure, than do more junior, untenured faculty. Positive discrimination is therefore necessary to obtain research output from senior faculty.

Part 3, "Bioeconomics," applies the rational-choice approach to a diverse range of nonhuman decision-makers. The essays brought together here constitute part of Tullock's pathbreaking and highly successful application of the rational-choice approach to biology.[5]

"Sociobiology" (coauthored with Richard B. McKenzie) demonstrates that nonhuman societies are endowed with many of the characteristics endemic to human societies. Animals, insects, and even plants are real-estate owners that engage in such apparently rational decisions as whether or not to defend their estates or to predate on the estates of others. Such nonhuman societies are often characterized by dominance structures that provide for the efficient protection of the followers by the leaders. Insects such as ants, bees, and termites organize themselves into groups that provide for an efficient division of labor. While there is little reason to suppose that humans can learn to organize themselves more efficiently by studying nonhuman behavior, the behavior of nonhuman species appears to conform, nevertheless, to the principle of rationality.

"Economics and Sociobiology: A Comment" notes that modern biology was, in a sense, founded by the economist Thomas Malthus, whose writings inspired Charles Darwin's seminal text, *On the Origin of Species*.[6] Not surprisingly, therefore, a number of economists attempt to explain human behavior in terms of nonhuman behavior. Tullock takes issue with the attempt by Gary

5. A number of Tullock's most famous bioeconomics papers are published in *Virginia Political Economy*, volume 1 of the series.

6. Thomas R. Malthus, *An Essay on the Principle of Population* (1798; London: Cambridge University Press, 1992); Charles Darwin, *On the Origin of Species by Means of Natural Selection, Or the Preservation of Favoured Races in the Struggle for Life* (London, 1859; Norwalk, Conn.: Easton, 1963).

Becker to explain altruism within the human species as the consequence of narrowly self-interested rational calculation.[7] Not so, explains Tullock. Direct altruism, in the sense of voluntary gifts, is an expression of tastes or, perhaps, of inborn drives.

"Sociobiology and Economics" discusses the fact that both economics and modern biology use the methodology of Karl Popper, who emphasized that theories should be tested against their predictions rather than their assumptions.[8] Tullock also notes that modern biology assumes that species act through natural selection as if to maximize utility subject to constraints. In consequence, surviving species exhibit efficient behavior. However, because humans are at the top of the predator chain, they face quite different evolutionary conditions than other species, most notably because their main causes of unnatural deaths are attacks by members of their own species. For this reason, human society has little to learn from the study of animal behavior.

"Territorial Boundaries: An Economic View" demonstrates the rational behavior of birds in determining their property boundaries. Tullock analyzes, from the perspective of rational choice, the efficient geographic nest location of a second bird given that one bird has already made its nest in an adjacent area and may be prepared to defend that location against perceived invasion. Tullock develops a testable model of the shape and size of each bird's nesting territory, relevant in periods of either high or low bird populations.

"Evolution and Human Behavior" draws upon behavior patterns evident among nonhuman species to explain the existence within the human species of behavior patterns that do not satisfy the narrow self-interest postulate. Tullock shows that such apparently deviant behaviors as altruism toward strangers and the willingness to risk one's life for one's tribe were and are frequently important for the evolutionary survival of more-primitive species.

"The Economics of Nonhuman Societies" is a monograph that represents Tullock's most significant contribution to bioeconomics. Here we see Tullock at his observing best, developing important economic theories on the basis of his careful tracking of animal, insect, and plant life.

Tullock shows how numerous nonhuman species, including animals, insects, and even plants, accomplish extraordinary feats of cooperation and of adaptation to changes in their environment. They do so without either of the

7. Gary S. Becker, "Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology," *Journal of Economic Literature* 14 (September 1976): 817–26.

8. Karl R. Popper, *The Logic of Scientific Discovery* (New York: Basic Books, 1959).

two major organizational techniques used by human beings, namely, central control or the market. Students of human societies normally do not even know about the nature of these nonhuman societies. Biologists, although impressed by the efficiency of large ant and large bee communities, do not seem to realize how difficult such coordination is for species with such microscopic brains, to say nothing about the apparently rational behavior of plants that have no brains at all. It is not without significance that Tullock's favorite nonhuman species is the slime mold, surely one of the most primitive organisms ever to inhabit the planet.

Part 4, "Public Finance," brings together five papers by Tullock that explore important issues of public finance from the perspectives of methodological individualism and public choice.

"Science Fiction and the Debt," originally published in Italian in 1963, uses an ingenious example to demonstrate why government debt is always and exclusively a burden on the future generations.[9]

"Subsidized Housing in a Competitive Market: Comment" notes that housing vouchers issued to the poor are likely to be illegally discounted by landlords of lower-priced housing who will remit a cash payment to cover part of the differential. Instead of housing-specific vouchers, Tullock argues, a somewhat lower, but non-housing-specific, cash payment to the poor is more welfare enhancing.

"Optimal Poll Taxes" and "Optimal Poll Taxes: Further Aspects" evaluate the efficiency implications of imposing negative or positive poll taxes, respectively, on individuals who do not vote or who do vote in democratic elections. Tullock makes a convincing welfare economics argument against the imposition of negative poll taxes and in favor of the imposition of positive poll taxes designed to cover the overall cost of running an election.

"Bismarckism" is a critique of the current system of social security in the United States. Tullock shows the harmful consequences of this system both for the poor and for the well-off and the significantly declining benefits to the median-income group. He outlines the fiscal illusion, if not the outright fraud, perpetrated by successive U.S. governments to "protect" social security. Tullock is doubtful about the long-term political viability of the system.

Part 5, "Monetary Economics," comprises six papers that reflect Tullock's

9. Gordon Tullock, "Who Bears the Burden?" *Revista di Diritto Finanziaro e Scienza della Finanze* 22 (June 1963): 207–13.

early thinking on the relationship between the supply of money and price inflation in China and South Korea.

"Hyperinflation in China, 1937–49" (coauthored with Colin D. Campbell) is Tullock's first scholarly paper, published in 1954, several years before he entered the American academy. The paper is based on Tullock's personal observations during his spell as a foreign service officer in Tientsin, from 1948 to 1950. The authors demonstrate that the Chinese experience over the period 1937–49 shows that people are prepared to retain currency as a medium of exchange under conditions of hyperinflation, while discarding it as a store of value and as a unit of account. The Chinese were willing to pay a high price to avoid the disadvantages of barter during a lengthy period of volatile inflation and hyperinflation.

"Paper Money—A Cycle in Cathay" charts the history of inflation and the rise and fall of paper money in China through seven dynasties, each with its own monetary institutions. Because paper, ink, and printing were all invented in China, it is not surprising that paper currency also first appeared there in the ninth century. Tullock clearly shows how the abuse of the printing press by successive Chinese dynasties culminated in inflation, the collapse of the dynasty, the temporary abandonment of paper money, its reinstatement, further abuse, dynasty collapse, paper currency abandonment, and reinstatement until 1500, when the old Chinese system broke down under Western influence.

"Some Little-Understood Aspects of Korea's Monetary and Fiscal Systems" (coauthored with Colin D. Campbell) is based on Tullock's experience of monetary expansion and price inflation in South Korea during his spell as foreign service officer from September 1953 to December 1954. Tullock notes that many U.S. advisers simply failed to recognize the endemic nature of inflation in South Korea following the expulsion of the Japanese, in 1945. The Koreans adapted well to high and variable rates of inflation. The *won* (subsequently the *hwon*) remained in use as a medium of exchange and even as a unit of account, though not as a store of value. Resort to barter was largely avoided.

"Competing Monies" and "Competing Monies: A Reply" both draw on Tullock's experiences in China and South Korea. In China, between 1948 and 1950, two kinds of silver dollar, small gold bars, and the Chinese Nationalist paper currency (later the Chinese Communist paper currency) all circulated at the same time. In Korea, between 1952 and 1953, there were, once again, three currencies. Tullock demonstrates how inflation, and varying rates of inflation, will influence the demand by individuals across each of these competing currencies.

"When Is Inflation Not Inflation?" focuses on the situation of rising prices induced by the discovery of some highly valued resource (diamonds, gold, or oil). If the value of a country's currency remains stable or appreciates in terms of foreign currencies, Tullock questions whether the observed phenomenon should be designated as inflation from the perspective of those living and working in that country.

Part 6, "Size and Growth of Government," brings together two of Gordon Tullock's contributions to understanding the positive and negative roles of government in influencing the rate of economic growth of the economy and in dealing effectively with the provision of public goods.

"An Empirical Analysis of Cross-National Economic Growth, 1951–80" (coauthored with Kevin B. Grier) provides a comprehensive econometric analysis of the determinants of economic growth over the period 1951–80 in Organisation for Economic Co-operation and Development (OECD) countries, Asia, Africa, and the Americas. The authors find a persistent negative correlation between the growth in a government's share in gross domestic product and economic growth for the OECD, Latin America, and Africa, but not for Asia. Inflation variability adversely affects economic growth in all sectors except in Latin America. Although there is evidence of convergence of growth rates within the OECD, this does not hold for the rest of the world.

"Provision of Public Goods through Privatization" argues that the provision of public goods by for-profit firms, at least in the case of pharmaceutical research, is more efficient than public provision. Governments typically provide the benefits of such research at a zero price, primarily to their own citizens. Private corporations, on the other hand, provide patented products at a market price worldwide. Arguably, the latter solution dispenses outputs more efficiently, if world welfare is the relevant criterion.

Part 7, "The Theory of Games," brings together four papers that deal with prisoners' dilemma situations and their possible resolution.

"An Economic Theory of Military Tactics" (coauthored with Geoffrey Brennan) analyzes armies as collections of individuals who may be as much at war with one another and with their own leaders as they are with enemy forces. The authors model the situation as a prisoners' dilemma in which the rational choice for each individual is to desert unless the enemy forces desert first, whereas the rational choice for the group is to stand and fight. In such circumstances, the chief element in winning the war is to convince the opponent of one's determination to fight. If so convinced, the opposition will be tempted to desert. Positive incentives, such as the spoils system, and negative incentives, such as torture and execution for those who desert, play essential roles in mitigating the prisoners' dilemma.

"Jackson and the Prisoner's Dilemma" attempts to explain the relatively low rate of rifle firing by infantrymen during battle in terms of a prisoners' dilemma situation. Firing one's weapon attracts the attention of the enemy to the infantryman in question, raising his probability of injury or death. Yet, firing one's weapon provides a public good for one's colleagues. By grouping infantrymen closely together, the prisoners' dilemma can be eased, since the group as a whole and not the individual becomes the target for enemy return fire. Mechanisms such as grouping are far more likely to reduce shirking than are attempts at morale-building by generals.

"Adam Smith and the Prisoners' Dilemma" suggests that the artificial nature of the prisoners' dilemma is not usually replicated in the real world. In the real world, individuals typically select those with whom they contract on the basis of reputation and prior experience. In such circumstances, opportunities for cooperation exist, even in environments imbued with distinct prisoners' dilemma characteristics. Specialists in game theory typically underestimate the capacity of individuals for realizing gains-from-trade in the real world.

"Games and Preference" challenges the usefulness of game theory, other than in its simplest prisoners' dilemma format, as a formal body of mathematics allegedly applying to human action. Tullock claims that game theory has provided genuine insights into only a very small collection of special cases. The end product of game theory is, in Tullock's judgment, its contribution to our vocabulary and to our methods of thinking about certain kinds of economic problems. As a solution device, it is severely crippled.

In its breadth and diversity, *Economics without Frontiers* is an apt representation of Tullock's half-century of contributions to economic science. His testament is in his life and in his work. It is fitting, therefore, to end the introduction—and the series—with the epitaph engraved on the tomb of Sir Christopher Wren in St. Paul's Cathedral: *Lector, si monumentum requiris*, *circumspice* (Reader, if you seek his monument, look around).

PART I

THE ECONOMIC APPROACH TO HUMAN BEHAVIOR

THE ECONOMIC APPROACH TO HUMAN BEHAVIOR

Richard B. McKenzie and Gordon Tullock

Economics is not what it used to be! This can be said about most disciplines, but it is particularly applicable to economics. At one time students could think of economics as being neatly contained within the sphere of "commercial life," and most courses and books on the subject have traditionally revolved around such topics as money, taxes and tariffs, stocks and bonds, and the operation of the market as it pertains to the production and sale of automobiles and toothpaste. In recent years, however, economists have greatly expanded their field of concern, and, as a result, the boundaries of economics as a discipline are rapidly expanding outward, encroaching on areas of inquiry that have historically been the exclusive domain of other social sciences. The change in direction and scope of the discipline has been so dramatic that the economists who have been involved in bringing about the change are no longer inclined to debate the issue of what is or is not economic in nature. They merely ask "What can economics contribute to our understanding of this or that problem?"

This book reflects this expanded vision. Accordingly, we will introduce you to topics and points of discussion you may never have imagined would be included in an economics book. We will talk about family life, child rearing, dying, sex, crime, politics, and many other topics.[1] We do this not because such topics add a certain flair to the book, but rather because we believe that these are extraordinarily important areas of inquiry and that economic analysis can add much to our understanding of them. In addition, we are convinced that you will learn a good deal about economics through their consideration.

In dealing with such topics, we cannot avoid coming to grips with human behavior and making it the focus of our concern. The simple reason is that crimes cannot be committed, children cannot be reared, sex cannot be had,

Reprinted, with permission, from *The New World of Economics: Explorations into the Human Experience* (Homewood, Ill.: Richard D. Irwin, 1975), 3–22.

1. Actually, Adam Smith was concerned with several of these problem areas in *The Wealth of Nations*, which was published in 1776. He would not be surprised that economists are now giving such topics more attention.

and governments cannot operate without people "behaving" in one respect or another. We argue that before we can ever hope to understand social phenomena we must understand why people behave the way they do. To do this we must have some perception, or model, of how behavior is motivated and organized, from which the revealed actions of people can be interpreted. Economists have such a model, which has been developed and refined since the days of Adam Smith, and it is because we employ this model in our discussion that we consider this to be an economic treatise. All we intend to do here is to extend the application of this model into unconventional areas.

This is not to say, however, that economics can give a complete understanding of these problem areas. Other social scientists have long considered many of the topics included in this book, and their contributions to our understanding of human behavior cannot be overlooked. By viewing these topics through the thinking process of economists, we must be ever mindful that what we are dealing with is *one* particular point of view, which can be complemented by many of the findings in other disciplines.

You may at times have reservations about accepting what we have to say, but this is not necessarily unwelcome to us. We could easily write a book with which the reader would readily agree; however, we imagine that such a book might deal only with trivial issues and very well be a monumental bore. We take the view that at any given time there are many important issues that are to some degree unsettled; we believe that learning requires that an individual not only know the settled issues but also be able to explore those issues over which there may be some disagreement.

You do not need to have a large reservoir of economic knowledge in order to understand what we have to say. We will provide you with the necessary principles on which later discussion will be founded. Furthermore, we do not intend to waste your time with a lot of esoteric theory that will never be used. We understand that you want to make as efficient use of your time as possible, and we intend to cooperate with you. (Remember, this is a book on economics!) The principles that we do develop and the points that we make will at times be very subtle and a little tricky to handle—we cannot escape this. You may be pleasantly surprised, however, at how few in number these principles are and at how useful they will be in thinking about topics that are and are not included in this book. First, we need to lay the foundation—to explain how economists look at their subject and at human behavior.

For nearly two hundred years economists have periodically struggled with the problem of defining economics, and it is still a live issue. At times the