

THE

HANDBOOK

OF

Experimental

ECONOMICS

JOHN H. KAGEL & ALVIN E. ROTH

EDITORS

ECONOMICS

# THE HANDBOOK OF EXPERIMENTAL ECONOMICS

Edited by John H. Kagel and Alvin E. Roth

The eight essays in this book present a comprehensive critical survey of the results and methods of laboratory experiments in economics. The first chapter provides an introduction to experimental economics as a whole, with the remaining chapters providing surveys by leading practitioners in areas of economics that have seen a concentration of experiments: public goods, coordination problems, bargaining, industrial organization, asset markets, auctions, and individual decision making. The contributors to the volume include Colin Camerer, Charles A. Holt, John H. Kagel, John O. Ledyard, Jack Ochs, Alvin E. Roth, and Shyam Sunder.

"This book is impressive for the clarity, depth, and informativeness of its surveys. The focus on series of experiments is very instructive. . . . One can learn a lot from the issues debated, the methodological digressions, and the many suggestions for further research. . . . This is a great book that is wholeheartedly recommended." —F. van Winden, *The Journal of Economics*

"The book provides not only a comprehensive and deep review of major areas of experimental research, but it is also exceptionally intellectually stimulating and insightful for theoretical economists as well as those who are interested in more immediate policy issues." —Katerina Sherstyuk, *Economic Record*

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HAGEL & ROTH

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# The Handbook of Experimental Economics

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*John H. Kagel and  
Alvin E. Roth*  
*Editors*

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# **The Handbook of Experimental Economics**



# Preface

The impetus for *The Handbook of Experimental Economics* came from the great growth of interest in the results and methods of laboratory experiments in economics. This created a growing feeling, both inside and outside the experimental community, that it would be useful to have an overview of the field in order to lower the barriers to entry facing potential experimenters, as well as those facing economists and others who wish to have a critical understanding of what experiments accomplish in economics. The charge to the author of each chapter was therefore both to provide a survey for specialists that could help set an agenda for future research and to provide the nonspecialist with a critical review of work completed to date, with the aim of elucidating the role of experimental studies as a progressive research tool. For this reason, authors were asked where possible to concentrate on series of experiments, not merely single experiments in isolation, in order to demonstrate the way that experiments build on one another to more clearly delineate observed phenomena and to narrow their possible causes.<sup>1</sup>

This handbook is the work not only of many years, but also of many people besides the authors of the chapters. In order to invite the maximum amount of feedback to the author of each chapter, a three-day conference was convened in Pittsburgh in June 1990, at which each author presented an extended outline of his proposed chapter. Investigators from every major center of experimental economics at the time were invited to attend, and most of these centers were in fact represented.<sup>2</sup> The discussions were lively, sometimes even heated. Each author subsequently circulated the various versions of his chapter widely to both experimenters and others interested in the particular topic area and received many comments and suggestions. Indeed, the pace of experimentation was so rapid during the writing of the book that revisions were often required to take account of recent developments that had been initiated by the earlier discussions.

The capstone of this effort came in January 1994, when the (virtually) final chapters were presented at the meeting of the American Economic Association, in Boston.

This handbook has eight chapters. Every one except the first surveys an area of economics in which there has been a concentration of experiments. The first chapter, in contrast, is meant to serve as an introduction to experimental economics as a whole. In our editorial discussions with the chapter authors, they were told that they were free to write each chapter under the assumption that readers would have read the introduction. Thus each author was free to focus each chapter as sharply as seemed appropriate.

One suggestion that we received more than once during the course of this project was that the handbook should include a chapter on methodology, which



would tell people how to do experiments. We have not done this. Our view is that a better way to learn how to design and conduct experiments is to consider how good experiments grow organically out of the issues they are designed to investigate and the hypotheses among which they are designed to distinguish. For this reason, we asked each author to address methodological issues that are important for the experiments being discussed.<sup>3</sup>

One of the pleasures of participating in this project has been that it has afforded us the best seats from which to observe one of the most exciting games in town. New centers of experimental economics have sprung up continually while this work was under way, and the interaction between theorists and experimenters has increased apace. Indeed, one of the special pleasures of finally finishing this project is that it is clear that in only a few more years, a single volume will no longer be able to do even the rough justice that we manage here to such a rapidly growing area of economic research.

March 1994  
Pittsburgh

## Notes

1. This volume thus has a very different, although complementary purpose to the earlier volume *Laboratory Experimentation in Economics: Six Points of View* (Alvin E. Roth, ed., [Cambridge University Press, 1987]). In that volume, six investigators with different approaches to experimentation (John Kagel, Charles Plott, Alvin Roth, Reinhard Selten, Vernon Smith, and Richard Thaler) were each asked to describe work that illustrated their own approach. In this handbook, in contrast, the authors were asked to describe how series of experiments are mediated by and mediate the different approaches of different investigators.
2. Although we failed to preserve a complete list of attendees, some of whom attended only for a day, the following list is nearly complete: Colin Camerer (University of Pennsylvania, now at California Institute of Technology), Robin Dawes (Carnegie-Mellon University), Robert Forsythe (University of Iowa), Glen Harrison (University of South Carolina), John Hey (University of York), Elizabeth Hoffman (University of Arizona, now at Iowa State University), Charles Holt (University of Virginia), John Kennan (University of Iowa, now at University of Wisconsin), John Ledyard (California Institute of Technology), Dan Levin (University of Houston), Graham Loomes (University of York), John O'Brien (Carnegie-Mellon University), Jack Ochs (University of Pittsburgh), Vesna Prasnikar (University of Pittsburgh, now at Ljubljana and Northwestern University), Tatsuyoshi Saijo (University of Tsukuba), Andrew Schotter (New York University), Leo Simon (University of California at Berkeley), Vernon Smith (University of Arizona), Sanjay Srivastava (Carnegie-Mellon University), Richard Thaler (Cornell University), John Van Huyck (Texas A&M University), and James Walker (University of Indiana). Regrettably, no one from the active German (then West German) group of experimenters was able to accept our invitation.
3. Readers with a methodological inclination might keep an eye out for the following kinds of issues: the role of monetary incentives on behavior, demand-induced effects, subject pool effects, inducing risk preferences (the binary lottery technique), techniques for inducing infinite horizon games, effects of subject experience, within versus between group designs, and abstract versus concrete problem representation (to name some of the issues that appear in more than one chapter).

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# Contributors

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# Contents

<b>Preface</b>	xv
<b>List of Contributors</b>	xvii
<b>1. Introduction to Experimental Economics</b>	
<i>Alvin E. Roth</i>	3
<b>I. A Brief History of Experimental Economics</b>	4
A. Early Experiments: 1930–1960	5
1. <i>Individual Choice and the Wallis-Friedman Critique</i>	
2. <i>Game-Theoretic Hypotheses</i>	
3. <i>Industrial Organization</i>	
B. The 1960s to the Present	19
<b>II. The Uses of Experimentation</b>	21
<b>III. Some Series of Experiments</b>	23
A. Prisoners' Dilemmas and Public Goods	26
1. <i>The Prisoner's Dilemma</i>	
a. Experiments versus Simulations: A Methodological Digression	
2. <i>The Free-Rider Problem in Public Goods Provision</i>	
B. Coordination	35
<i>Organization of topics:</i>	
1. <i>Coordination and coordination failure</i>	
2. <i>Learning and adaptation</i>	
C. Bargaining Behavior	40
<i>Organization of topics:</i>	
1. <i>Nash's model of bargaining</i>	
2. <i>Controlling for unobserved risk posture: binary lottery payoffs</i>	
3. <i>Information in bargaining</i>	
4. <i>Risk aversion in bargaining</i>	
D. Market Organization and Competitive Equilibrium	49
1. <i>Repeated Double Auctions with Stationary Parameters</i>	
2. <i>Some Policy-Oriented Comparisons of Market Rules</i>	
3. <i>Information Aggregation: Markets as Forecasters</i>	
E. Auction Markets and Disequilibrium Behavior	60
1. <i>The Winner's Curse</i>	
2. <i>Some Other Auction Results</i>	
a. Controlling Incentives: A Methodological Digression	

F. Individual Choice Behavior	67
1. <i>Preference Reversals</i>	
a. Alternative Theoretical Directions	
b. Market Behavior	
2. <i>Other Choice Phenomena</i>	
3. <i>Why Haven't These Demonstrated Anomalies Swept Away Utility Theory?</i>	
4. <i>Experimental Control of Individual Preferences</i>	
a. The BDM Procedure for Measuring Reservation Prices	
b. Controlling Preferences with Monetary Payoffs	
c. Controlling for Unobserved Risk Preferences with Binary Lottery Payoffs	
(1) <i>Preferences and Probabilities: A Historical Digression on Binary Lotteries and Related Experimental Designs</i>	
d. To Control or Not to Control? Costs and Benefits	
Notes	86
Bibliography	98
 2. Public Goods: A Survey of Experimental Research	
John O. Ledyard	111
I. Introduction	111
A. A Simple Public Goods Experiment	112
B. The Art of Experiment: Sensitivity and Control	113
C. The Language of Experiment: Mechanisms and Environments	115
D. The Range of Public Goods Environments	118
E. What Is and Is Not to Be Surveyed	119
II. Are People Selfish or Cooperative?	121
A. Bohm: Estimating Demand	122
B. Dawes et al: Social Dilemmas	126
C. Marwell et al.: The Free-Rider Problem	130
D. Economists Begin to React	134
E. Isaac et al.: Systematic Study by Economists	137
III. What Improves Cooperation?	141
A. Thresholds and Provision Points	144
B. Experience, Repetition, and Learning	146
C. Strong Effects	149
1. <i>Marginal Payoffs and Rebates</i>	
2. <i>Numbers</i>	
3. <i>Communication</i>	
D. Weak Effects	158
1. <i>Environment</i>	
2. <i>Systemic</i>	
3. <i>Institutional</i>	
E. Unknown Effects	167

<b>IV. Final Thoughts</b>	169
<b>Appendix</b>	174
<b>Notes</b>	175
<b>Bibliography</b>	181
<b>3. Coordination Problems</b>	
<i>Jack Ochs</i>	195
<b>Introduction</b>	195
<b>I. Experiments Using Overlapping Generations</b>	
<b>Environments</b>	197
A. Adaptive Learning Processes and Rational Expectations Equilibria	197
B. The Path of Prices When the Rate of Growth of the Money Stock Is Zero	199
C. Price Inflation with a Growing Money Stock	201
D. Sunspots	205
<b>II. Coordination Games with Pareto Ranked Equilibria</b>	209
A. Payoff Dominance, Security and Historical Precedent	209
B. The Relevance of Dominated Strategies	218
C. Influencing Equilibrium Selection	222
<b>III. Experiments in Decentralized Matching Environments: Games with Multiple Optimal Equilibria</b>	233
<b>IV. Concluding Remarks</b>	244
<b>Notes</b>	246
<b>Bibliography</b>	249
<b>4. Bargaining Experiments</b>	
<i>Alvin E. Roth</i>	253
<b>I. Agreements</b>	254
A. Unstructured Bargaining Experiments	255
B. Sequential Bargaining Experiments	256
1. <i>An Initial Exchange of Views</i>	
2. <i>A Larger Experimental Design</i>	
3. <i>Investigating Observed Regularities</i>	
a. Are Players "Trying to Be Fair"?	
4. <i>Pursuing Anomalies</i>	
a. Distinguishing between Alternative Hypotheses	
b. A Cross-Cultural Experiment	
5. <i>Learning and the Role of Experience</i>	
<b>II. Disagreements and Delays</b>	292
A. The Frequency of Disagreements and Delays	292
B. Anonymous versus Face-to-Face Bargaining	294
1. <i>Two Hypotheses</i>	

a. The Uncontrolled Social Utility Hypothesis	
b. The Communication Hypothesis	
2. <i>A New Experiment</i>	
3. <i>Some Further Experiments</i>	
4. <i>Recapitulation of the Methodological Issues</i>	
C. Tests of Hypotheses about the Causes of Disagreements and Costly Delays	304
1. <i>Nonstrategic Models</i>	
2. <i>Strategic Models</i>	
a. Complete Information Models	
b. Incomplete Information Models	
c. A Digression on the Strategy Method	
D. Deadlines	323
<b>III. Concluding Remarks</b>	327
Notes	331
Bibliography	342
<b>5. Industrial Organization: A Survey of Laboratory Research</b>	
<i>Charles A. Holt</i>	349
<b>I. Overview</b>	349
<b>II. Beginnings</b>	350
<b>III. The Relevance of Experiments to the Study of IO</b>	352
A. Experiments That Evaluate Behavioral Assumptions	352
B. Tests for Sensitivity to Violations of Structural Assumptions	354
C. Searching for Empirical Regularities	354
<b>IV. Design and Procedural Issues</b>	355
A. Instructions	355
B. Design Considerations	358
<b>V. Trading Institutions</b>	360
A. Posted Prices	361
B. Uniform Prices	365
C. One-Sided Sequential Auctions	367
D. Double Auctions	368
E. Decentralized Negotiations	373
F. Discounting	373
G. Other Institutions	374
H. Disadvantages of the Cournot Quantity-Choice Institution	375
<b>VI. Monopoly Regulation and Potential Entry</b>	377
A. Monopoly	377
B. Decentralized Regulatory Proposals	382
C. Potential Competition as a Regulator: Market Contestability	383
D. Predatory Pricing and Antitrust Remedies	387

<b>VII. Market Structure and Market Power</b>	391
A. Definitions of Market Power	392
B. Market Power in Double Auctions	393
C. Market Power in Posted-Offer Auctions	396
<b>VIII. Plus Factors That Facilitate Collusion</b>	398
A. Repetition with Different Cohorts: Experience	401
B. Multiperiod Repetition with the Same Cohort	403
C. Pure-Numbers Effects and the Ability to Punish	406
D. Communication	409
E. Contractual Provisions	411
<b>IX. Product Differentiation and Multiple Markets</b>	416
A. Product Quality, Asymmetric Information, and Market Failures	417
B. Spatial Competition	419
C. Vertically Related Markets	420
<b>X. Conclusion</b>	421
Notes	425
Bibliography	435
<b>6. Experimental Asset Markets: A Survey</b>	
<i>Shyam Sunder</i>	445
<b>I. Informational Efficiency of Markets</b>	446
A. Field Data from Financial Markets	447
B. Designing Experimental Asset Markets	447
C. Dissemination of Information	450
D. Aggregation of Information	456
E. Market for Information	461
<b>II. Futures and State-Contingent Claims</b>	464
<b>III. Bubbles and False Equilibria</b>	467
<b>IV. Learning and Dynamics</b>	475
A. Adjustment Path	475
B. Variables That Transmit Information	475
C. Learning Sequences	477
D. Aggregate Uncertainty	479
E. Role of Arbitrage	479
F. Generation of Bids and Asks	480
<b>V. Econometric Comparisons of Field and Laboratory Data</b>	481
A. Variance Bound Tests	481
B. Arbitrage Relationships	482
<b>VI. Investment and Public Policy</b>	484
A. Trading Suspensions and Price Change Limits	484
B. Double Auction versus Call Market	485



C. Specialist Privileges and Book Display	486
D. Control of Speculative Bubbles	486
E. Bid-Ask Spread	490
F. Off-Floor and Block Trading	490
<b>VII. Laboratory Modeling of Asset Markets</b>	491
<b>VIII. Concluding Remarks</b>	493
Notes	494
Bibliography	495
 <b>7. Auctions: A Survey of Experimental Research</b>	
John H. Kagel	501
Introduction	501
<b>I. The Symmetric Independent Private-Values Model</b>	503
A. Experimental Procedures	504
B. Tests of the Revenue-Equivalence Theorem	505
1. <i>Tests of the Strategic Equivalence of First-Price and Dutch Auctions</i>	
2. <i>Tests of the Strategic Equivalence of Second-Price and English Auctions</i>	
C. Effects of Varying and Uncertain Numbers of Bidders	514
1. <i>Effects of Changing Numbers of Bidders</i>	
2. <i>Uncertainty Regarding the Number of Bidders</i>	
D. Auctions with Affiliated Private Values	517
E. Effects of Price Information in Private Value Auctions	520
F. Learning, Adjustment Processes, and Cash Balance Effects in First-Price Private Value Auctions	521
G. Risk Aversion, CRRA, the Flat Maximum Critique, and the Binary Lottery Procedure for Controlling Risk Preferences	523
1. <i>Risk Aversion and CRRAM As Applied to Single Unit First-Price Auctions</i>	
2. <i>The Flat Maximum Critique</i>	
3. <i>Risk Aversion and Overbidding in Related Environments</i>	
4. <i>Using the Binary Lottery Procedure to Control for Risk Aversion</i>	
<b>II. Common Value Auctions</b>	536
A. The Winner's Curse in Sealed Bid Common Value Auctions	537
1. <i>First-Price Sealed Bid Auctions</i>	
2. <i>Limited Liability and "Safe Havens"</i>	
3. <i>Second-Price Sealed Bid Auctions</i>	
B. More Winner's Curse: English Auctions and First-Price Auctions with Asymmetric Information	547