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Leland Gerson Neuberg

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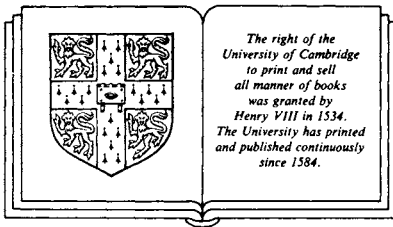
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# Conceptual anomalies in economics and statistics

*Lessons from the social experiment*

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## Preface

*Conceptual Anomalies in Economics and Statistics* synthesizes close to thirty years of study, research, and teaching in a variety of academic areas. Teachers, students, family members, an editor, schools, and funding institutions contributed indirectly to the writing of this book and deserve recognition.

Though I didn't realize it then, I started preparing to write this book at Chicago's Hyde Park High School during 1956–60, where Mrs. Eva Shull sparked the interest in mathematics evident in nearly every chapter.

During 1960–5, I studied humanities and science at the Massachusetts Institute of Technology (M.I.T.), concentrating in literature (with some philosophy) and mathematics (with some physics). Literature courses with Benjamin DeMott, Norman Holland, Louis Kampf, and William Harvey Youngren helped me develop the textual analytic writing style that permeates this book. A philosophy course with John Rawls introduced me to the work of David Hume, a discussion of which opens Chapter 4, and inspired me to study Mill and the modern philosophers on whose writings the book draws. Gian Carlo Rota's course in combinatorial analysis underpins Chapter 2. Courses in elementary classical, advanced classical, and quantum mechanics from Alan Lazarus, R. H. Lemmer, and Irwin Pless, respectively, suggested some of my examples in Chapter 5.

During 1965–7, I was a graduate student in mathematics at Northwestern University, and during 1967–8, I taught mathematics at Chicago City College, Southeast Branch. Students in a finite mathematics course that I conducted as a teaching assistant at Northwestern and in a logic course I taught at Chicago City College stimulated the interest in logical formalism which structures the book. A course in probability theory from Meyer Dwass at Northwestern lies behind parts of Chapter 4.

As a graduate student in mathematics (1968–70) and physics (1970–1) at the University of Illinois at Chicago Circle, courses in group theory from Norman Blackburn deepened my feeling for the role of deduction in

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formal mathematics. With these courses behind me, as a teaching assistant for a freshman physics course, my appreciation of the role of logic and deduction in classical mechanics grew and eventually became the basis for Chapter 5.

In 1971, I began a five-year stint as a graduate student in city and regional planning at the University of California, Berkeley. Outside field courses in mathematical statistics from Peter Bickel and Erich Lehmann would later inspire much of Part I. Disagreements with an instructor, Professor Qualls, of an outside field course in microeconomics regarding what precisely were the results of welfare economic theory would later crystallize into Chapter 8. From studying economics and statistics at Berkeley, I concluded that these fields, despite their mathematics, are far less capable of explaining society than physics is capable of explaining nature. This entire book seeks to elaborate this conclusion.

The income maintenance experiments first caught my attention as a graduate student at Berkeley searching for a dissertation topic. Many had heralded these studies as providing a methodological breakthrough, synthesizing modes of empirical inquiry in economics and statistics, and capable of putting social policy formation on a scientific footing. Skeptical of such claims, I nevertheless decided to postpone a careful study of the experiments until I had done some empirical econometric research of my own. My dissertation was an empirical microeconomic cost function analysis of electric power distribution. The struggle to keep this research deductively coherent eventually inspired Chapter 6. Discussions with two dissertation committee members – Steve Peck (economist) and Howard D’Abrera (statistician) – clarified many of the conceptual problems in economics and statistics which the book considers.

During a year as an NSF Postdoctoral Fellow at Berkeley, I taught a course in elementary statistics in the Statistics Department and revised and extended my dissertation research into two journal articles. For 1977–80, I was Assistant Professor of Urban and Policy Sciences at the State University of New York at Stony Brook’s Harriman College. In my final year there I taught a course in microeconomic theory from Henderson and Quandt. These experiences further clarified my views on the foundations of statistics and economics, deepening my conviction that neither field offers much in the way of scientific help for social policy-making. I decided to write a book exploring these views and convictions.

In the spring of 1980, I received an individual grant from the Ford Foundation to write a book on social experimentation. The following academic year, I took leave of my position at the Harriman College and

returned to M.I.T. as a Research Fellow at the invitation of Dick Larson, co-director of the Operations Research Center. Synthesizing more than twenty years of study in somewhat diverse fields and wrapping my argument around the conceptual aspects of the income maintenance experiments proved more difficult than I had anticipated. By the end of the first year, I had barely begun the task. So I resigned my position at the Harri- man College to concentrate full time on writing the book.

My initially intended one-year visit at M.I.T. ended up lasting six years. Larry Susskind arranged for a second year, this time at the Laboratory of Architecture and Planning. There then followed four years at the Statistics Center arranged by Herman Chernoff and Roy Welsch, its co-directors. Use of M.I.T.'s library system allowed me to do the research which provided the basis of Chapters 3 and 7. At a talk during one of M.I.T.'s independent activities periods, I presented an early version of some of the material from Chapter 2 and received the invaluable criticism of Herman Chernoff.

Rewriting each section several times as I proceeded, I finished the first version of the manuscript in May 1983. From the comments of two Cambridge University Press readers, I concluded two things. First, the manuscript contained two books. I decided to put one of these books aside for later reconsideration. Second, I had to rewrite the remaining book almost from scratch. I began rewriting in the summer of 1984 and finished in August 1986, again rewriting each section several times as I proceeded. As Visiting Assistant Professor of Economics at Tufts University, from September 1986 through October 1987, I constructed a third version of the manuscript which improved the second but was not a complete rewriting. Small grants from the Tufts University Committee on Faculty Research Awards and the Department of Economics enabled me to complete the book's illustrations and index.

I would like to thank my wife, Donna, and daughter, Eva, for putting up with me during the seven years I was writing the book. Also, Donna's employment was our primary source of financial support for several of those years. For Eva, who loved reading books from an early age, the seven years must have been especially strange and frustrating. From age 8 to 15 she saw that her father's primary task in life seemed to be writing, but never finishing, one book. I hope that living through that ordeal doesn't ultimately discourage her from writing books herself.

Also, during the period of writing, I was frequently setting a delivery date, failing to make it, and living in fear that Cambridge University Press would finally say it would not accept further postponements. Yet each

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time I asked for a resetting, my editor, Colin Day, graciously accepted the newly proposed date. Without his kind indulgence I would never have completed the project.

Finally, I would like to thank my parents, LeRoy and Sari. Seeing early that they had in me a son who liked school, they always encouraged and supported my studies. Without their financial aid at crucial points, I would never have gotten to the stage of writing the book, nor would I have completed it. But more important, they somehow taught me persistence, self-criticism, and yet strong belief in self. Without those three qualities I couldn't have finished the book. I'm not sure how one teaches such qualities, but I hope I have succeeded a little in teaching them to Eva by the example of writing the book.

Finally, I hope reading the book helps others to appreciate how weak is our current scientific understanding of society as much as writing it helped me to do so.

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