

of the account. This final tribute to the integrity of the sources manifests Davenport's keen historical sense and indicates why this book is such a valuable contribution to our understanding of the history of Christian reflection on the market.

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Insights into Game Theory

Ein-Ya Gura and Michael B. Maschler

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There are many introductory texts and complicated tomes available on game theory. Most of these books seem to fit into two categories: those for popular consumption and those for persons with significant mathematical skills. The upshot of this situation is that economists and social scientists who encounter game theory on occasion either get generalized theory and overviews about experiments and evidence, or they eventually meet a barrier in the form of very sophisticated mathematics. This text attempts to bridge the gap for nongame theorists by investigating game theory through presentations of four accessible topics. Thus, the book is both introductory and sophisticated, in a manner that engages by enabling the reader *to do* game theory. The book is quite valuable in that it offers the social scientist familiar with game theory in general terms the opportunity to discover some of the crucial features of its methods.

The authors cut to the chase, describing the general problems of each of the four cases in a sparse but readable prose. Then, they pose each problem in game theory terms and suggest theoretic techniques to address it. The authors rely on many examples to highlight the techniques of analysis, explaining each example clearly and concisely. The reader finds the real meat of the book in the practice exercises. Located at regular intervals, they serve as vehicles for solidly confirming the insights of the techniques, while giving the reader a sense of the logic that is at the core of “thinking like a game theorist.”

The techniques and exercises are arranged to increase the reader's depth of understanding in a progression that relies on helpful answers to the exercises (found in the appendix). Make no mistake, the sparse text and direct presentation are counterbalanced by challenging exercises that require patience, focus, and perseverance. The payoff is difficult to describe: I liken my reading and work on the problems to a childlike discovery of a place of wonders and adventures. This analog highlights the success of the text: readers will start in a familiar world of social science and economics—a world of a flat plain—and they will be brought into a new one of game theory—a mountain above the plain—finding the road rough and narrow but the mountaintop giving a new perspective.

The four cases are rather famous ones from great minds in the field of game theory. The first one is the matching problem driven by the observation that there are many ways to match applicants to institutions of higher learning, but there are some ways of match-

ing that are better than others. The second case presents the problem of social justice and majority voting. This is often presented in introductory economics texts, but here it is represented in fuller detail. In addition, the search for alternate voting rules receives a brief mention, along with Arrow's Impossibility Theorem. The third case presents cooperative games, and the complexity of the analysis ratchets up. Here, the authors address a variety of traditional situations, such as voluntary exchange, coalition building, partnership dissolution, and the U.N. Security Council. The final case is the bankruptcy problem in the Talmud. The case addresses those situations when many claims against an estate add up to a value that exceeds the value of the estate, suggesting the problem of determining the "fair" allocation of the estate to the claimants. Several possible allocations are suggested by the Talmud and game theory.

The authors claim that this text has three aims. The first is to introduce readers to a deep mathematical thinking that is not buried under complex formulas. The second aim is to show game theory as a tool for looking at social issues. The final aim, for those who do not merely read but also study the book, is to enhance the sophistication of their mathematical thinking. I can say with firm confidence that the text succeeds on all these counts. The presentation is definitely mathematical throughout but not so complex that one is intimidated; rather, one is brought gradually into the game theory methodology—and this method is one involving deep thinking, containing complexities and multiple interrelationships. The second aim is met by the text's ability to contribute to our understanding of social problems by bringing clarity. Indeed, the meaning of game theory's insights is easily grasped once some investment in the exercises is accomplished—admittedly with some extra time and effort. The cases are nontrivial, for they focus on important social issues such as resource allocation, social justice, mutual cooperation, and the meaning and implications of fairness.

The book is valuable in that it offers a bridge between the available introductory presentations and the advanced textbooks that contain intimidating mathematics. It is an excellent second text, for instance, to follow the basic presentation of game theory and religion in Steven J. Brams' *Biblical Games: Game Theory and the Hebrew Bible* (MIT Press, 1992) or to follow an introductory undergraduate text such as Avinash Dixit and Susan Skeath's *Games of Strategy* (W. W. Norton & Co., 1999). What is marvelous about this work is its pure focus on helping the lay social scientist access the tools of game theory that are now so prominent in the normative analysis of markets and other social interactions.

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