EIN-YA CURA, MICHAEL B. MASCHLER

Insight Into Game Theory
An Alternative Mathematical Experience

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The theory of games belongs to the mathematically-based sciences on optimal decision-making and in this sense it is one of the fields forming the cybernetics and, consequently, a note on this book belongs to this journal. On the other hand, the referred book is not written in a mathematical style and its potential reader is not assumed to be familiar with mathematical formalism neither with the mathematical theory of games in its classical form. Nevertheless, this review belongs to this journal. The goal of the referred volume is to show the principles and approach to the problems typical for the theory of games.

It is based on the presumption that the mathematical formalism of the game theory is mainly the language in which the game theoretical paradigma and conclusions are formulated. This langue is especially adequate to the game theoretical thinking, but it is not exclusive and it is not unavoidable for the understanding the principal ideas of the theory. The authors have chosen four different topics on which they illustrate the fundamental concepts and methods of the theory of games. Namely, those four topics are the following ones.

The "Matching Problem" consisting in the assigning applicants to institutions of higher learning, where individual applicants rank the institutions by their preferences and vice versa, the institutions have their own scales over the set of applicants.

The "Social Justice" problem concerns the majority voting procedure, and the fact that in some situations it does not yield clear-cut solutions.

The third topic regards the "Shapley Value" in cooperative games. This value is one of the distributions of the common profit of a coalition among its cooperating members.

Finally, the "Bankrupcy Problem" and its analysis based on the Talmud is used to present the methods of the game theory. It deals with the problem of distribution of an estate among creditors whose claims in their total amount exceed the value of the estate.

The fact that the authors avoid the using of mathematical formulas does not exclude the existence of some simple mathematical structures (like tables, arithmetic formulas, etc.) but their handling is very elementary.

Let us note that the referred book has, besides the introduction of the mathematical theory of games to those who usually avoid meeting with mathematics, another aim more. Namely, it offers a better acquitance of readers with some kind of "different mathematics" preferring deep mathematical thinking to the brief but rather complicated formulas. The acquitance is intermediated by mathematicians of an excellent quality, very well familiar with the theory of games, and guaranteeing an outstanding level of presentation of the topics in question.

It means that the book can be recommended to a wide group of readers, reaching from the students of humanities being interested in the methodology and structure of the game theoretical thinking, to the top specialists in the theory of games, operations research and mathematical economics who wish to see their own work from a rather alternative point of view. The name of Michael Maschler is a guarancy of the top quality of that alternative analysis and presentation of all presented game theoretical topics.

Milan Mareš