

groups, in particular the Dickson-Chevalley finite analogues of the exceptional simple Lie groups.

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Games and decisions: Introduction and critical survey. By R. Duncan Luce and Howard Raiffa. John Wiley and Sons, Inc., 1957. 19+509 pp. \$8.75.

This is a book written by mathematicians but "aimed primarily at those readers working in the behavioral sciences." It "attempts to communicate the central ideas and results of game theory and related decision making models unencumbered by their technical mathematical details: thus, for example almost no proofs are included." Despite these remarks from the authors' introduction, the book deserves the attention of professional mathematicians, behavioral scientists or anyone else interested in finding out about the subject matter of its title. Of these various groups I strongly suspect it is the mathematicians who will most readily understand its contents.

The book is unique in many respects. It is the first on the subject which attempts to cover the whole field, a feat it succeeds in doing with almost astonishing comprehensiveness. The authors have read, digested and present here in a lucid manner virtually every idea on games and decisions that has been put forth since these objects became the subject matter of a "theory." Even the game theory specialist will in all likelihood find branches treated here with which he is not familiar (this reviewer is grateful to the authors for the sections on statistical decision making).

The material of the book is divided up according to the following scheme: a general introductory chapter on games, a chapter on utility theory and then another more technical chapter on games, describing the extensive and normal forms. There follow three chapters on two-person games, the first on the, dare we call it, "classical" zero-sum theory, the next two on nonzero sum games, first the non-cooperative theory, then the cooperative. Already we note a sharp contrast with other books which have appeared since von Neumann and Morgenstern, and which have devoted all or almost all their attention to the zero-sum theory. The present authors hasten on to more unsettled and controversial parts of the theory which constitute their main object of study. Nevertheless, for the sake of completeness, the book includes no less than seven appendices to the two-person zero-sum chapter, covering such related topics as linear programming, infinite and sequential games among others. The next five chapters are devoted to n -person games and a presentation of