

Book Reviews

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 $\beta \Sigma \wedge \div \lambda \pi \epsilon) \sigma \leq \lambda \approx + o \lambda \$ \Sigma \lambda \Gamma \% \alpha L \vdash o \cap \epsilon \omega - \phi \Delta \epsilon - \beta \mu \div \backslash ? + \rho \gtrsim$

The range of books reviewed is wide, covering theory and applications in operations research, statistics, econometrics, mathematics, computers, and information systems. In addition, we include books in other fields that emphasize technical applications. We list the books and proceedings received; not all books received can be reviewed because space and time are limited. Those who would like to review books are urged to send the editor their names, addresses, and specific areas of expertise. The editor commissions all reviews and does not accept unsolicited book reviews. Readers are encouraged to suggest books that might be reviewed or to ask publishers to send copies of such books to the editor.

LINDLEY, D. V. 1985, *Making Decisions* (second edition), John Wiley and Sons, London, 207 pp., \$27.95.

Those seeking a well-written, thoughtful introduction to decision making based upon the normative principle of maximizing expected utility will enjoy *Making Decisions*. Relying more on logical reasoning and verbal explanations than mathematical manipulations, D. V. Lindley provides a comprehensive introduction to single-attribute decision making under uncertainty. The text is appropriate for self-study or for use in decision analysis courses. End-of-chapter exercises and an-

swers aid in the understanding of concepts. Mathematical notation is clearly explained and elementary, making the book appropriate for a wider audience than other introductory books like Bunn [1984]. Probability and expected utility concepts are fully explained so that math anxieties are likely to be bypassed. The text would be good in a course for executive MBA students, whose logical reasoning skills are likely to be stronger than their math skills. The book is perhaps best read in a concentrated period, since previous sections and examples are often cited.

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Multiple attribute problems and decisions under certainty are discussed only briefly so the book should be supplemented with material from a more advanced book such as Keeney and Raiffa [1976]. Likewise, descriptive aspects of decisions under uncertainty are only briefly mentioned; a good companion textbook, of similar level, is Hogarth's [1980] book on behavioral decision theory. Also, the book should be supplemented with descriptions of actual decision analysis applications.

The first third of the book carefully introduces the idea of uncertainty and the measurement of uncertainty with probabilities. Scoring rules for evaluating how good a person is at stating the probabilities of uncertain events are given more emphasis than in many other texts.

The middle part of the book addresses the measurement of outcomes via utility functions and the combination of utilities with probabilities to yield expected utilities. The expected value of perfect and partial information is discussed. Decision trees are presented fairly late in the book as a convenient structure for representing options, events, and outcomes. In contrast, Raiffa [1968] introduced decision trees much earlier in the text and integrated them more fully, but did not devote as much time to explaining basic probability concepts.

The end of the book briefly discusses the assessment of the required probabilities and utilities. The final chapter evaluates and discusses extensions of the principle of maximizing expected utility. Democratic government decision making is presented as an example of group deci-

sion making. The relative merits of decision analysis techniques in different arenas, across governments as well as industries, should be more fully evaluated in textbooks and courses. For example, an attempt to apply decision analysis in China revealed the problem that Chinese cultural traditions suppressing the expression of different opinions conflict with the standard decision analysis procedures of identifying all options and clearly stating preferences [Pollock and Chen 1986].

Finally, a small amount of confusion may occur over terms which have been used differently by others or are newly introduced in this book. For example, the following is called the sure-thing principle (p. 31): if act 1 dominates act 2 both when an event E occurs and doesn't occur, then act 1 is better overall. In contrast, Savage's sure-thing principle says that if one must choose among options that all result in the same sure-thing outcome when a specific event occurs, the amount of that sure-thing outcome should not alter the choice [Keller 1985].

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