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## Book reviews

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Gary A. Klein, Judith Orasanu, Roberta Calderwood and Caroline E. Zsombok (Eds.), *Decision Making in Action: Models and Methods*. Ablex Publishing Corporation, Norwood, NJ, 1993.

How decisions are actually made in complex world settings, has been the focus of scientific interest since the eighteenth century. Presently, it is a common knowledge that man does not make decisions based upon calculations of expectancies or utilities. The ability to process information with our inherent cognitive apparatus is limited and our way of dealing with probabilities is hardly adequate. Furthermore, both motivational and cognitive biases threaten the rationality of choice, speaking in normative terms. These serious limitations become even more severe in the face of specific circumstances such as time restrictions and information overload.

Consequently, we still ponder, how are decisions made in naturalistic settings, as opposed to laboratory conditions which do not enable ecological validity. A workshop on decision making was organized and attended by well renowned researchers in the field. The papers presented at the workshop comprise the five sections of this book which features the presentation, definition and evaluation of a new research approach known as Naturalistic Decision Making (NDM). NDM is suggested as an alternative to the more classical and established research of Judgment and Decision Making (JDM).

The main themes of NDM are introduced in the first section, naturalistic research paradigms are exemplified and methodological problems concerning research in naturalistic settings are examined in the second and third sections, respectively. Applications of NDM are reviewed in the fourth section and in the final section, an attempt is made to evaluate the issues raised by the book.

What NDM offers as a guide to understanding how decisions are made is exemplified by quotes from Lipshitz's chapter (5) in which he integratively reviews models of NDM: 'Situation assessment is a critical element in decision making', and 'decision makers often use mental imagery', as well as 'understanding the context surrounding the decision process is essential' (p. 137).

In Chapter 6 Klein presents a 'Recognition-Primed Decision' model in which 'Experienced decision makers usually try to find a satisfactory course of action, not

the best one,' and 'they can identify an acceptable course of action as the first one they consider' (p. 147). Mental simulation is frequently applied in this process. Beach (Ch. 7) presents the Image Theory which has been described in previous publications and Rasmussen (Ch. 8) emphasizes the dynamic atmosphere inherent in the process of decision making which resembles that of the continuous control task. Montgomery (Ch. 10) presents the dominance search model, which has also been previously published, and applies it in order to explain NDM.

Of course, the major inquiry remains; does the book provide satisfactory answers to the very questions it raises? One answer can be found in the fifth section which includes the evaluative critiques of NDM thereby adding to the merits of this publication. Doherty (Ch. 21) raises concerns about the validity of the methods used in the research of NDM, the main ones being case studies and retrospective self-report, as well as the validity of performance criteria utilized in NDM research. Doherty does not agree with the negation of JDM's classical theory as expressed in earlier chapters nor consider NDM to be the 'reinvention of decision making'. He concludes his critique by stating that controlled laboratory studies are essential to the validation of a theory. Therefore, the offerings of NDM cannot be considered to be superior to those provided by the more 'Senior' JDM.

Klein, the senior editor of the book, accepts the issues raised by Doherty, including the problem of methodological limitations. Klein views the book as an 'opener' rather than an 'end all' to the quest for understanding how decisions are made. In the 'Twenty Questions' chapter, (22), Klein states that '...the focus of NDM is to open up a range of new research questions so that we can learn more about naturalistic decision strategies' (p. 403). In the 'conclusions: Decision Making in Action' chapter (23) it is argued that amongst its other contributions, NDM is 'highlighting the role of experience in decision making' and 'placing emphasis on situation assessment as part of decision processes' (p. 411).

To summarize, Doherty and Klein's comments are well taken and the major contribution of the book is in its making NDM available to the interested public. It is without doubt that the classical studies of JDM are far from being complete and a new, innovative approach can be fruitful. Optimally, the best of NDM and JDM should be combined so that, in haste, we will not 'throw out the baby with the bath water'. True, the process of combining requires effort and full scale revision.

The book is well written and easily read with extensive references and a highly valuable discussion of the key points at the conclusion of each chapter enhancing its clarity. To conclude, the book should be in the library of every researcher and person interested in the enticing field of Judgement and Decision making.

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