

Introduction: Where to Decision Making?

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The Plan

The overriding goal of this book is to provide a forum for fresh perspectives on decision making. The aim is to expose readers to a wide variety of promising perspectives for enhancing the scope of judgment and decision-making research. The specific purposes of the book are (a) to bridge the gap between traditional decision-making paradigms and newer lines of research and theory; (b) to expand awareness of these new theories and approaches; and (c) to demonstrate how these alternative approaches can enhance development of the judgment and decision-making field. The chapters in this volume illustrate how much richer the field is becoming through attention to a number of novel perspectives that have not been a part of traditional judgment and decision-making approaches.

Over the past several years, there has been a growing concern that the progress of decision-making research may be limited by focusing heavily on traditional schools of thought (e.g., approaches emphasizing deviations from rationality and utility theory). At the same time, there has been accumulating evidence to show that numerous unexplored factors are likely to impact judgment and choice. For example, many researchers have come to appreciate the vital roles that memory, context, and emotion play in determining decision strategies. This volume provides a forum for updating assumptions of traditional schools of thought as well as introducing new perspectives that push the envelope of judgment and decision-making paradigms.

By providing a richer context for thinking about decision making, this book is also relevant for cognitive and social scientists interested in judgment and choice behavior. Many chapters provide explicit bridges

from the study of basic psychological processes (including memory, comprehension, attention, emotion, and motivation) to the analysis of decision making. Most chapters also reflect a sensitivity to decision contexts, for example, by exploring naturalistic situations, stages of development, and levels of expertise. In addition, much of the volume includes attention to social processes, such as group and team interactions, relationship goals, and cultural influences that shape decision making.

In selecting authors for the book, we prepared an A list of authors and topics. We are pleased to say that, with only a couple of exceptions due to medical problems or overwhelming previous commitments, virtually everyone on our A list participated in the volume. Thus, in the selection of authors and topics, we believe that we hit a “home run.”

The Book

Our instruction to authors was to provide an overview of not only their own perspective, but also the overall stream of related research. We wanted authors to describe specific emerging perspectives within the broader context and to speculate on future directions/extensions of their research stream. In this way, the *Emerging Perspectives* volume offers an answer by a top group of experts to the question “Where is judgment and decision research heading as we forge into the 21st century?” Thus, the chapters here represent state-of-the-art work developed by some of the most innovative thinkers in the field.

We believe that this volume will be useful to established judgment and decision-making researchers as well as graduate students. In addition, the insights here may be helpful to scholars in related disciplines. The book is organized around five themes and concludes with a commentary. In what follows, we list major themes and provide a brief description for each of the chapters.

Fortifying Traditional Models of Decision Making

In this section, several traditional topics and issues are considered in new ways. New perspectives on expected utility theories come from examinations of the usefulness of traditional decision aids, the rationality assumptions of subjective expected utility theory, and the descriptive accuracy of rank-dependent utility models. Bayesian inference is also explored relative to a criterion for *ecological rationality*, which is defined as behavior adaptive to the current task environment.

The volume starts with one of the most central questions driving decision research: *What is a good decision?* J. Frank Yates, Elizabeth S. Veinott, and Andrea L. Patalano tackle this question in their effort to understand why people are so unreceptive to many decision aids. They report two empirical studies of subjectively “hard” and “bad” decisions and a review of major decision-aiding approaches. They show that in decision makers’ eyes, *decision quality* is a coherent construct that extends far beyond the conception that is implicit in many decision aids and in much of decision scholarship generally. This analysis therefore provides a plausible account of people’s indifference to those aids. It also highlights the need for a broader notion of a “good” decision than has been customary in decision research and suggests the shape that such a conception might take. The analyses of Yates et al. further indicate that people are subject to forces encouraging beliefs that their personal decision making is seldom problematic – beliefs that have far-reaching scholarly and practical significance.

R. Duncan Luce, one of the most notable names in choice theory, revisits the concepts underlying *subjective expected utility* (SEU) theory – the backbone of decision making under risk. Luce demonstrates that the rationality assumptions that have been so critical to SEU theory come into question when one adds two new features. These new features, *status quo* and *joint receipt*, are among the constructs that have been particularly salient in descriptive studies of decision making. If one accepts SEU theory with the additional concession that it is reasonable to distinguish gains from losses, then the representation of rational behavior in many situations is not uniquely determined. Luce suggests that researchers need to be cautious given that what seems rational may depend on how the domain of study is formulated.

In an examination of the descriptive value of variants of utility theory, Michael H. Birnbaum and Teresa Martin use a novel Web-based research tool to explore preferences for dominated options. Using a variety of new conditions, they replicate findings from previous experiments to show that altering a gamble’s representation by splitting a single event (e.g., a 20% chance of gaining \$12) into two equivalent but less probable events (e.g., two 10% chances of gaining \$12) can systematically lead people to select an inferior option. These violations of the coalescing principle support the descriptive efficacy of *configural weighting* over *rank-dependent* utility models. The studies also suggest important methodological advances in the ability to generalize across participants and procedures and to extrapolate to new predictions.

In the final chapter of this section, Laura Martignon and Stefan Krauss examine the tension between *Bayesian* decision making and *fast-and-frugal* decision strategies. They present the results from several studies to explore the conditions under which fast-and-frugal decision strategies are more or less likely to be used. They suggest that strategy shifts can be predicted by how information is represented, the difference in validity between the best cue and other cues, and the number of cues in conflict with the best cue. The authors provide an empirical test to show that the selection of a fast-and-frugal (e.g., Take The Best) or Bayesian strategy is dictated by predictable ecological properties of the environment.

Elaborating Cognitive Processes in Decision Making

The chapters in this section illustrate the interplay between contemporary decision research and advances in cognitive psychology. These chapters show how decision making can be better understood by considering the role of memory, comprehension, and developmental processes.

To open this section, Michael R. P. Dougherty, Scott D. Gronlund, and Charles F. Gettys develop a theoretical framework for incorporating memory into the explanation of decision-making phenomena. They show what various memory models predict about how *representation*, *retrieval*, and *experience* can be expected to influence decisions. Dougherty et al. emphasize the implications of abstraction-based versus exemplar-based decision representations, memory order effects, and differential activation effects in decision making, as well as memory factors associated with expertise in a decision domain. The authors conclude that the need for an integrative theory of cognition might best be met by a concerted effort to gain an understanding of the relationships between memory and decision-making processes.

Like Dougherty et al., David A. Rettinger and Reid Hastie suggest that the cognitive representation of a decision situation influences decision outcomes. However, their emphasis is on exploring how the decision content influences the type of representation adopted for the decision. Based on a pilot study and a review of relevant decision factors, Rettinger and Hastie identify seven *representation strategies* for comprehending a decision situation. They then provide evidence, based on an empirical investigation and a computer simulation, that different representations are likely for different decision content areas. Narrative

representations, for instance, tend to be more common for legal stories, whereas decision trees may be more common for gambles. Like the other authors in this section, Rettinger and Hastie conclude that a deeper understanding of decision making can be gained by combining decision processes with cognitive models that are typically applied to account for higher-order thinking.

Valerie F. Reyna, Farrell J. Lloyd, and Charles J. Brainerd return to the traditional JDM theme of rationality, but they address the issue through examination of phenomena linked to memory and development. They suggest that decision making in natural contexts can be explained by incorporating cognitive issues in an integrative approach such as *fuzzy-trace* theory. This approach identifies different levels of reasoning rather than simply categorizing decisions as either rational or irrational. They suggest that increasing reliance on the underlying *gist* of information often improves the rationality of behavior by avoiding the distractions of superficial variables that can lead to inconsistent choices.

Beth A. Haines and Colleen Moore complete this section with an extensive review of literature concerning children's decision making and identification of critical variables in the *development of decision-making skills*. First, the authors explore the advantages of a developmental perspective for gaining insights into decision-making processes. They then review the implications of cognitive and social-cognitive findings to identify how decision-making skills and biases are likely to vary as a function of development. The authors suggest that the study of decision making could be substantially improved by greater emphasis on (a) the interaction between internal and contextual variables in determining the *subjective representation* of decision problems and (b) the development of *metacognitive skills* that influence decision strategies.

Incorporating Affect and Motivation in Decision Making

The role of affect and motivation has become increasingly important in social and cognitive psychology, and judgment and decision-making researchers have been among the leaders in this exploration. All of the chapters in this section share a commitment to understanding how affective or motivational processes interact with cognitive processes to influence the ways in which decisions are made and evaluated.

To begin the section, Ola Svenson presents *differentiation and consolidation* (Diff Con) theory as a means of capturing the affective and evaluative processes that guide behavior before, during, and after decision

making. In Diff Con theory, the predecision differentiation phase involves several processes aimed at finding or creating an alternative that is sufficiently superior to its competitor(s). The postdecision consolidation phase involves processes aimed at ensuring that the outcome of the decision comes as close as possible to what was desired. Svenson provides a detailed description of these *pre- and postdecision processes*, emphasizing how an option's attractiveness is a dynamic interaction of affect and value. Svenson describes how the theoretical advances of Diff Con theory hold the potential to both broaden and deepen our understanding of decision making.

Melissa L. Finucane, Ellen Peters, and Paul Slovic briefly review the long history of research on affect and offer a new account targeted to decision making. The authors describe an *affect heuristic* process wherein positive and negative feelings, attached to relevant images, guide decision making. Empirical support for the affect heuristic is presented, along with suggestions for applications in a number of areas such as attention, deliberative versus nondeliberative processes, information representation, and psychophysical numbing (depersonalization). Finucane et al. conclude with a call to incorporate context as well as affect in exploring the complex systems guiding judgment and decision making.

Going beyond the more general exploration of affect in decision making, Alice M. Isen and Aparna A. Labroo focus on the ways in which *positive affect* can improve decision making and choice. Their chapter emphasizes the *cognitive flexibility* afforded by positive affect in a number of domains, ranging from diagnostic assessment to product representation and consideration. Their review of the literature shows the facilitating effects of positive affect in areas such as problem solving, creative thinking, negotiation, and information integration. In addition, Isen and Labroo introduce a likely neuropsychological mechanism responsible for these facilitative effects. They suggest that findings in cognitive neuroscience are likely to provide key insights into how affect influences problem solving and decision making. They recommend that decision researchers take advantage of the opportunities to expand decision-making models by integrating behavioral and biological evidence with an understanding of other factors.

In the section's final chapter, Sandra L. Schneider and Monica D. Barnes consider the advantages of elaborating common goals that people have in decision making relative to relying solely on the traditional decision goal of maximizing expected utility. The authors describe

a qualitative study in which people in varying age groups reported goals for decision making across three time frames. The results of this study, along with a brief overview of motivation and evolutionary theories, reveal a predominance of *relationship goals* and motives coupled with more *basic survival-related motives* and personal goals associated with *achievement* and *positive self-view*. Given these goals and motives, the authors emphasize the importance of temporal and situational contexts as fundamental to creating meaning in decision making. Schneider and Barnes conclude that theories of decision making are likely to be perceived as more useful if they incorporate the goals and motives that are responsible for the perceived need to decide.

Understanding Social and Cultural Influences on Decisions

Although almost everyone recognizes that decision making takes place in a social and cultural context, relatively few researchers until now have managed to incorporate such factors into decision research. This section of the volume presents some of the progress that is being made in this endeavor, along with insights for continuing development.

Jennifer S. Lerner and Philip E. Tetlock open this section with a demonstration of how the construct of *accountability* can bridge individual, interpersonal, and institutional levels of analysis. They start with the observation that decision theories typically consider individuals in isolation. Lerner and Tetlock go on to argue that accountability is a universal feature of social life, with multiple influences on judgment and decision making. Their chapter provides empirical evidence for the influence of accountability on the accuracy of the decision-making process, and provides a framework for identifying the key factors that moderate accountability's influence. The authors conclude that attention to accountability, as well as other aspects of the social context, is likely to lead to a reevaluation of what it means to be accurate or rational in judgments and decisions.

Nowhere is the importance of social context more obvious than in the area of group decision making. Tatsuya Kameda, R. Scott Tindale, and James H. Davis explore how individual preferences and cognitions are aggregated to generate group decisions. The authors focus on *social sharedness*, or the degree to which preferences and cognitions are shared by members of the group at the outset of their interaction. They discuss several models and empirical phenomena related to social sharedness to illustrate its explanatory value as a common thread in group decision

making. Kameda et al. also consider the dual meanings of consensus, distinguishing the impact of shared preferences from shared information or knowledge.

J. Richard Eiser tackles an issue in social judgment, approaching the problem from a connectionist learning perspective. His chapter is concerned with the *accentuation principle*, wherein social categorization can lead to the accentuation of differences in judgments about members of different categories. He presents two studies using connectionist computer simulations to demonstrate how the accentuation principle might arise from a self-organizing interaction among diverse influences and tendencies (rather than as a result of the manipulation of cognitive concepts, as might be predicted by the more traditional symbolic view of categorization). Eiser suggests that these demonstrations may encourage researchers to reconsider the level at which judgment processes are described. By considering a more basic level, he suggests that researchers may avoid the tendency to produce explanatory constructs that do little more than redescribe the phenomena.

The final chapter in the section, by Mark F. Peterson, Shaila M. Miranda, Peter B. Smith, and Valerie M. Haskell, considers some of the implications of the cultural and social context in organizational decision making. The authors point out how sociocultural context influences several aspects of group decision-making processes, including the *reasons for participating* in the process, *assumptions about time* and temporal aspects of the process, and the *social function* of the process. They elaborate on how these factors can influence the decision stages of information acquisition, identification, development, selection, and changed understandings. They provide an example of how these sociocultural factors can be mapped onto particular contexts using studies of international virtual teams. Peterson et al. conclude that sociocultural variables go beyond simple individual differences and that decision making cannot be understood without serious attention to the cultural context within which decisions – and decision makers – are embedded.

Facing the Challenge of Real-World Complexity in Decisions

As the chapters in this section remind us, judgment and decision making cannot be divorced from the world outside the laboratory. However, operating outside the lab brings its own challenges – and its own rewards. A sampler of these challenges and rewards is provided here.

To begin the section, Rebecca Pliske and Gary Klein, pioneers in the study of *Naturalistic Decision Making* (NDM), explain how constraints in the real world lead to alternative perspectives on decision making. This chapter provides a broad overview of the NDM perspective, including the history and scope of the NDM “movement” and a brief description of several NDM models such as the *recognition-primed decision* model. The authors explain that the typical methods of NDM research include cognitive task analysis and simulations. Using examples from the military, firefighting, weather forecasting, and other applied domains, Pliske and Klein provide a comparison of NDM and more traditional decision research, concluding that both perspectives can benefit from an integration of findings.

The next chapter provides an interesting example and analysis of the complexity of real-world decision making. Julia M. Clancy, Glenn C. Elliott, Tobias Ley, Mary M. Omodei, Alexander J. Wearing, Jim McLennan, and Einar B. Thorsteinsson describe an in-depth study of command styles in a computer-simulated (microworld) forest firefighting task. After elaborating on the characteristics of *distributed dynamic decision-making tasks*, the authors introduce a study to test how decision effectiveness is influenced by whether the leader tends to convey intentions or tends to communicate which particular actions should be taken. Clancy et al. argue that there are several advantages to an *intention-based control style* for hierarchically structured teams, given the more equitable distribution of cognitive workload and decision-making responsibility. The authors’ approach also demonstrates a method by which many variables critical to real-world performance can be investigated systematically by means of a laboratory-based experimental study.

To conclude the section, James Shanteau, David J. Weiss, Rickey P. Thomas, and Julia Pounds offer new insights and a new approach into the evaluation and assessment of *expertise* in decision tasks. The authors begin by reviewing typical approaches to assessing expertise, including measures such as experience, accreditation, peer identification, judgment reliability, and factual knowledge. They then introduce the *Cochran-Weiss-Shanteau* (CWS) approach, which combines a measure for *discrimination* with a measure for *consistency* to provide a descriptive index of level of expertise that is functionally superior to other measures. Shanteau et al. reanalyze existing data in the areas of medical diagnosis, livestock judging, and auditing to illustrate the advantages of the CWS

approach. They recommend continued research to further elaborate the usefulness of such an evaluation tool in complex decision-making arenas.

Commentary

No effort of this magnitude should end without analysis and synthesis of the new ideas and concepts presented. For this book, we were fortunate to convince Michael Doherty to take on this task of providing integrative comments. His final chapter affords a unique perspective on the new approaches and paradigms proposed here and places them in a historical context. Doherty describes *optimistic* and *pessimistic* camps and an overarching *realistic* camp within the field of judgment and decision making, comparing these camps to the perspectives of authors in this volume. In addition, he extracts several themes that are interwoven throughout the book and identifies several other directions that might be included in future projects. He offers an insightful capstone in our quest to explore “What is new in judgment and decision-making research.”

In looking back to the origins of this project and appreciating where the project has taken us, we are pleased to see all of these things that are new, exciting, and continually developing avenues in judgment and decision-making research. We are also pleased to acknowledge that there were far too many new trends and discoveries to be able to include them all in this volume. We look forward to hearing about additional breakthroughs and innovations as the judgment and decision-making field continues to evolve.