Contents

Notes on Contributors xi
Acknowledgments xix

INTRODUCTION

Making Sense of the Process of Proof in Litigation 3
Peter Tillers

PART ONE: COMMON SENSE REASONING

Artificial Intelligence, Mindreading, and Reasoning in Law 21
John A. Barnden and Donald M. Peterson

Common Sense, Rationality and the Legal Process 43
Ronald J. Allen

What Is "Common" about Common Sense? Cautionary Tales for 55
Travelers Crossing Disciplinary Boundaries
Marilyn MacCrimmon

PART TWO: FUZZY AND ROUGH LOGIC

From Computing with Numbers to Computing with Words: 81
From Manipulation of Measurements to Manipulation of Perceptions
Lotfi A. Zadeh

Fuzzy Logic and Its Application to Legal Reasoning — 119
A Comment to Professor Zadeh
Ron A. Shapira

A Primer on Rough Sets: A New Approach to Drawing 135
Conclusions from Data
Zdzislaw Pawlak

PART THREE: THE STRUCTURE OF FACTUAL INFERENCE IN JUDICIAL SETTINGS

Alternative Views of Argument Construction from a Mass of Evidence 145
David A. Schum

Explaining Relevance 179
Paolo Garbolino
Theories of Uncertainty: Explaining the Possible Sources of Error in Inferences  
Vern R. Walker  

Models of Data Generation vs. Models of Events that Generate Data  
Ward Edwards  

PART FOUR: DYNAMIC INFERENCE AND CHOICE IN DYNAMIC ENVIRONMENTS  

Action and Procedure in Reasoning  
Johan van Benthem  

Decision Analysis and Law  
Ronald A. Howard  

PART FIVE: ABDUCTIVE INFERENCE  

Serendipity and Abduction in Proofs, Presumptions and Emerging Laws  
Pek van Andel and Danièle Bourcier  

On the Proof Dynamics of Inference to the Best Explanation  
John R. Josephson  

Species of Abductive Reasoning in Fact Investigation in Law  
David A. Schum  

Abductive Reasoning in Law: Taxonomy and Inference to the Best Explanation  
Kola Abimbola  

PART SIX: FROM THEORY TO PRACTICE: “INTELLIGENT” PROCEDURES FOR DRAWING INFERENCES IN STATIC AND DYNAMIC LEGAL ENVIRONMENTS  

Computational Inference for Evidential Reasoning in Support of Judicial Proof  
Tod S. Levitt and Kathryn Blackmond Laskey  

Logical Argumentation, Abduction and Bayesian Decision Theory: A Bayesian Approach to Logical Arguments and Its Application to Legal Evidential Reasoning  
David Poole  

Structured Deliberation for Dynamic Uncertain Inference  
Paul Snow and Marianne Belis  

PART SEVEN: JUDICIAL PROOF AND ECONOMIC RATIONALITY  

Saving Desdemona  
Ron A. Shapira
Othello Could Not Optimize: Economics, Hearsay, and Less
Adversary Systems
Craig R. Callen

PART EIGHT: CAUSALITY

Causality and Responsibility
Glenn Shafer

Liability for Increased Risk of Harm: A Lawyer's Response to Professor Shafer
Melanie B. Leslie
The Dynamics of Judicial Proof
Computation, Logic, and Common Sense
MacCrimmon, M.; Tillers, P. (Eds.)
2002, XIX, 494 p., Hardcover
ISBN: 978-3-7908-1459-0
A product of Physica-Verlag Heidelberg