

Contents

Contributors *vii*

Part 1 **Introduction**

- 1 Cognition and conditionals: An introduction 3
Mike Oaksford and Nick Chater

Part 2 **Working memory: Function, representation, and process**

Logic

- 2 The mental logic theory of conditional propositions 39
David O'Brien and Andrea Manfrinati
- 3 Conditionals and possibilities 55
Ruth M.J. Byrne and Philip N. Johnson-Laird
- 4 Logic and/in psychology: The paradoxes of material implication and psychologism in the cognitive science of human reasoning 69
Walter Schroyens
- 5 The logical response to a noisy world 85
Keith Stenning and Michiel van Lambalgen

Probability

- 6 Conditionals and probability 103
Vittorio Girotto and Philip N. Johnson-Laird
- 7 Causal discounting and conditional reasoning in children 117
Nilufa Ali, Anne Schlottmann, Abigail Shaw, Nick Chater, and Mike Oaksford
- 8 Conditionals and non-constructive reasoning 135
David E. Over, Jonathan St. B.T. Evans, and Shira Elqayam
- 9 The conditional in mental probability logic 153
Niki Pfeifer and Gernot D. Kleiter

Part 3 **Long term memory: Function, representation, and process**

Logic

- 10 Semantic memory retrieval, mental models, and the development of conditional inferences in children 177
Henry Markovits
- 11 Counterexample retrieval and inhibition during conditional reasoning: Direct evidence from memory probing 197
Wim De Neys

Probability

- 12 How semantic memory processes temper causal inferences 207
Denise Cummins
- 13 A successive-conditionalization approach to conditional reasoning 219
In-mao Liu
- 14 Pragmatic conditionals, conditional pragmatics,
and the pragmatic component of conditional reasoning 233
Jean-François Bonnefon and Guy Politzer

Part 4 **Integrative approaches**

- 15 Reasoning with conditionals in artificial intelligence 253
Robert Kowalski
- 16 Towards a reconciliation of mental
model theory and probabilistic theories of conditionals 289
Sonja M. Geiger and Klaus Oberauer
- 17 Conditional inference and constraint satisfaction:
Reconciling mental models and the probabilistic approach 309
Mike Oaksford and Nick Chater
- 18 Towards a metacognitive dual process theory of conditional reasoning 335
Valerie A. Thompson
- 19 A multi-layered dual-process approach to conditional reasoning 355
Niki Verschueren and Walter Schaeken
- 20 Two aspects of reasoning competence:
A challenge for current accounts and a call for new conceptual tools 371
Guy Politzer and Jean-François Bonnefon

Part 5 **Epilogue**

- 21 Open issues in the cognitive science of conditionals 389
Nick Chater and Mike Oaksford

Index 403