

Contents

Preface xi

PART I

The Nature of Mind

Chapter 1

Eliminative Materialism and the Propositional Attitudes 1

1 *Why Folk Psychology Is a Theory* 2

2 *Why Folk Psychology Might (Really) Be False* 6

3 *Arguments against Elimination* 9

4 *The Conservative Nature of Functionalism* 12

5 *Beyond Folk Psychology* 17

Chapter 2

Functionalism, Qualia, and Intentionality 23

1 *Four Problems concerning Qualia* 23

2 *The Problem of Nonstandard Realizations* 34

3 *Functionalism and Methodology* 44

Chapter 3

Reduction, Qualia, and the Direct Introspection of Brain States 47

1 *Intertheoretic Reduction* 47

2 *Theoretical Change and Perceptual Change* 52

3 *Thomas Nagel's Arguments* 56

4 *Jackson's Knowledge Argument* 61

Chapter 4

Knowing Qualia: A Reply to Jackson 67

1 *The Persistent Equivocation* 67

2 *Other Invalid Instances* 71

3 *A Genuinely Nonequivocal Knowledge Argument* 72

4 *Converting a Third-Person Account into a First-Person Account* 74

Chapter 5

- Some Reductive Strategies in Cognitive Neurobiology 77
- 1 *Introduction* 77
 - 2 *Laminar Cortex, Vertical Connections, and Topographic Maps* 79
 - 3 *Sensorimotor Coordination* 82
 - 4 *Coordinate Transformation: Its Physical Implementation* 88
 - 5 *Cortex with More than Two Layers* 96
 - 6 *Beyond State-Space Sandwiches* 97
 - 7 *The Representational Power of State Spaces* 102
 - 8 *Concluding Remarks* 108

Chapter 6

- Folk Psychology and the Explanation of Human Behavior 111
- 1 *Objections to the Theoretical View* 112
 - 2 *An Alternative Form of Knowledge Representation* 122
 - 3 *Addendum: Commentary on Dennett* 125

Chapter 7

- Reductionism, Connectionism, and the Plasticity of Human Consciousness 129
- 1 *The Plasticity Argument* 131
 - 2 *The Cultural-Embedding Objection* 132
 - 3 *Conclusion* 134

PART II

The Structure of Science

Chapter 8

- The Ontological Status of Observables: In Praise of the Superempirical Virtues 139
- 1 *How van Fraassen's Problem Collapses into Hume's Problem* 140
 - 2 *The Primacy of the Superempirical Virtues* 145
 - 3 *Toward a More Realistic Realism* 149

Chapter 9

- On the Nature of Theories: A Neurocomputational Perspective 153
- 1 *The Classical View of Theories* 153
 - 2 *Problems and Alternative Approaches* 154
 - 3 *Elementary Brainlike Networks* 159
 - 4 *Representation and Learning in Brainlike Networks* 163
 - 5 *Some Functional Properties of Brainlike Networks* 171
 - 6 *How Faithfully Do These Networks Depict the Brain?* 181
 - 7 *Computational Neuroscience: The Naturalization of Epistemology* 188
 - 8 *Concluding Remarks* 194

Chapter 10

- On the Nature of Explanation: A PDP Approach 197
- 1 *Introduction* 197
 - 2 *Conceptual Organization in PDP Networks* 200
 - 3 *Recognition and Understanding* 206
 - 4 *Prototype Activation: A Unified Theory of Explanation* 209
 - 5 *Inference to the Best Explanation* 218
 - 6 *Comparison with Earlier Models* 223

Chapter 11

- Learning and Conceptual Change 231
- 1 *Introduction* 231
 - 2 *Multiple Conceptual Competence* 234
 - 3 *Conceptual Change versus Conceptual Redeployment* 236
 - 4 *What Drives Conceptual Change?* 241
 - 5 *Automated Science* 250

Chapter 12

- Perceptual Plasticity and Theoretical Neutrality: A Reply to Jerry Fodor 255
- 1 *The Etiology of Perceptual Belief* 257
 - 2 *The Semantics of Observation Predicates* 271
 - 3 *Conclusion* 278

Chapter 13

- Conceptual Progress and Word-World Relations: In Search of the Essence of Natural Kinds 281
- 1 *Natural Kinds and Scientific Progress: The Putnam-Kripke View* 282
 - 2 *Natural Kinds as Law-Bound Kinds: Some Virtues, Consequences, and Difficulties* 287

Chapter 14

- Moral Facts and Moral Knowledge 297
- 1 *The Epistemology and Ontology of Morals* 297
 - 2 *Moral Prototypes and Moral Development* 298
 - 3 *Praxis, Theoria, and Progress* 300

References 305

Index 315