## Contents

## List of contributors ix

Introduction: The evolutionary psychology of thinking	1
David E. Over	

1. The allocation system: Using signal detection processes to regulate representations in a multimodular mind 11

Gary L. Brase

Implications of a multimodular mind Primer on Signal Detection Theory 14

The allocation system 16

Misallocations and misrepresentations
The structure of the allocation system
Setting parameters in social situations
26

Other implications 28

References 29

2. Is there a faculty of deontic reasoning? A critical re-evaluation of abstract deontic versions of the Wason selection task 33

Laurence Fiddick

Social Contract Theory 34
The deontic alternative 37

Abstract deontic rules are problematic for Social Contract Theory

Is a social contract a permission or is a permission a social contract?

41

	Emotions as a cue to interpretation 44 What is the significance of these results for the study of deontic reasoning? 49 Conclusion 57 References 58
3.	Evolutionary psychology's grain problem and the cognitive neuroscience
	of reasoning 61
	Anthony P. Atkinson and Michael Wheeler
	Introduction 61
	The grain problem according to Sterelny and Griffiths 64
	The two-dimensional grain problem 69
	Levels of analysis 70
	Inferring adaptive problems from their solutions: The case
	of reasoning 73
	Inferring solutions from adaptive problems: The case of reasoning 78
	The pay-off 84 A dispute dissolved? 86
	A dispute dissolved? 86 Conclusion 90
	References 91
	References 91
4.	Specialized behaviour without specialized modules 101
◄.	Amit Almor
	Introduction 101
	Domain specificity in evolutionary psychology 102
	Evolutionary psychology and cheater detection 104
	Cheater detection—the empirical evidence 109
	A connectionist perspective 112
	Conclusion 118
	References 118
5.	From massive modularity to metarepresentation: The evolution of
	higher cognition 121
	David E. Over
	Modularity arguments and deontic reasoning 123
	Modularity arguments and probabilistic reasoning 128
	Natural sampling 131
	Metarepresentation 136
	Conclusion 141
	References 141
6.	Drobability judgement from the incide and and 145
U.	Probability judgement from the inside and out Steven A. Sloman and David E. Over
	Base-rate neglect 148
	Conjunction fallacy 154
	Summary of studies 157
	· 🗸 ** ======= = = = +

Types of probability judgement 158

More on the natural frequency hypothesis 161

Frames for probability judgement 163

Conclusion 166

References 167

## 7. Evolutionary versus instrumental goals: How evolutionary psychology misconceives human rationality 171

Keith E. Stanovich and Richard F. West

Debates about the normative response in heuristics and biases tasks:

Some examples 172

Dissociations between cognitive ability and the modal response in heuristics and biases tasks 178

Reconciling the two data patterns within a two-process view 181

Evolutionary rationality is not instrumental rationality 185

Where evolutionary psychology goes wrong

How evolutionary psychology goes wrong

189

The slippery notion of ecological rationality 206

The unacknowledged importance of the meme 209

Choosing the vehicle rather than the replicators: Evolutionary psychology without greedy reductionism 219

References 221

Author index 231 Subject index 240