

Contents

List of illustrations	xiv
Preface	xxix
Visual tour (how to use this book)	xxxii
1 Approaches to human cognition	1
Introduction	1
Cognitive psychology	3
Cognitive neuropsychology	7
Cognitive neuroscience: the brain in action	12
Computational cognitive science	26
Comparisons of major approaches	33
Is there a replication crisis?	34
Outline of this book	36
Chapter summary	37
Further reading	39
PART I	
Visual perception and attention	41
2 Basic processes in visual perception	43
Introduction	43
Vision and the brain	44
Two visual systems: perception-action model	55
Colour vision	64
Depth perception	71
Perception without awareness: subliminal perception	81
Chapter summary	90
Further reading	92
3 Object and face recognition	94
Introduction	94
Pattern recognition	95
Perceptual organisation	96

Approaches to object recognition	103
Object recognition: top-down processes	111
Face recognition	116
Visual imagery	130
Chapter summary	137
Further reading	139

4 Motion perception and action **140**

Introduction	140
Direct perception	141
Visually guided movement	145
Visually guided action: contemporary approaches	152
Perception of human motion	157
Change blindness	163
Chapter summary	175
Further reading	176

5 Attention and performance **178**

Introduction	178
Focused auditory attention	179
Focused visual attention	183
Disorders of visual attention	196
Visual search	200
Cross-modal effects	208
Divided attention: dual-task performance	212
“Automatic” processing	226
Chapter summary	231
Further reading	233

PART II

Memory **237**

6 Learning, memory and forgetting **239**

Introduction	239
Short-term vs long-term memory	240
Working memory: Baddeley and Hitch	246
Working memory: individual differences and executive functions	254
Levels of processing (and beyond)	262
Learning through retrieval	265
Implicit learning	269
Forgetting from long-term memory	278
Chapter summary	293
Further reading	295

7 Long-term memory systems

296

- Introduction 296
- Declarative memory 300
- Episodic memory 305
- Semantic memory 313
- Non-declarative memory 325
- Beyond memory systems and declarative vs non-declarative memory 332
- Chapter summary 340
- Further reading 342

8 Everyday memory

344

- Introduction 344
- Autobiographical memory: introduction 346
- Memories across the lifetime 351
- Theoretical approaches to autobiographical memory 355
- Eyewitness testimony 363
- Enhancing eyewitness memory 372
- Prospective memory 375
- Theoretical perspectives on prospective memory 381
- Chapter summary 389
- Further reading 391

PART III

Language

393

9 Speech perception and reading

403

- Introduction 403
- Speech (and music) perception 404
- Listening to speech 408
- Context effects 412
- Theories of speech perception 417
- Cognitive neuropsychology 429
- Reading: introduction 432
- Word recognition 436
- Reading aloud 442
- Reading: eye-movement research 453
- Chapter summary 457
- Further reading 460

10 Language comprehension

461

- Introduction 461
- Parsing: overview 462
- Theoretical approaches: parsing and prediction 464
- Pragmatics 478

Individual differences: working memory capacity	487
Discourse processing: inferences	490
Discourse comprehension: theoretical approaches	498
Chapter summary	510
Further reading	512

11 Language production **514**

Introduction	514
Basic aspects of speech production	516
Speech planning	519
Speech errors	521
Theories of speech production	525
Cognitive neuropsychology: speech production	536
Speech as communication	543
Writing: the main processes	549
Spelling	558
Chapter summary	564
Further reading	566

PART IV

Thinking and reasoning **569**

12 Problem solving and expertise **573**

Introduction	573
Problem solving: introduction	574
Gestalt approach and beyond: insight and role of experience	576
Problem-solving strategies	588
Analogical problem solving and reasoning	593
Expertise	600
Chess-playing expertise	601
Medical expertise	604
Brain plasticity	609
Deliberate practice and beyond	612
Chapter summary	619
Further reading	621

13 Judgement and decision-making **622**

Introduction	622
Judgement research	623
Theories of judgement	633
Decision-making under risk	640
Decision-making: emotional and social factors	649
Applied and complex decision-making	654
Chapter summary	663
Further reading	665

14 Reasoning and hypothesis testing **666**

- Introduction 666
- Hypothesis testing 667
- Deductive reasoning 672
- Theories of “deductive” reasoning 680
- Brain systems in reasoning 690
- Informal reasoning 694
- Are humans rational? 701
- Chapter summary 708
- Further reading 710

PART V

Broadening horizons **713**

15 Cognition and emotion **715**

- Introduction 715
- Appraisal theories 719
- Emotion regulation 723
- Affect and cognition: attention and memory 730
- Affect and cognition: judgement and decision-making 738
- Judgement and decision-making: theoretical approaches 750
- Anxiety, depression and cognitive biases 753
- Cognitive bias modification and beyond 761
- Chapter summary 764
- Further reading 766

16 Consciousness **767**

- Introduction 767
- Functions of consciousness 768
- Assessing consciousness and conscious experience 775
- Global workspace and global neuronal workspace theories 783
- Is consciousness unitary? 792
- Chapter summary 798
- Further reading 799

- Glossary 801
- References 824
- Author index 915
- Subject index 931