

**Preface 11**

**1. An introduction to modern  
neuropsychology 1**

General introduction 1

Functional neuroanatomy 2

An introduction to historical and modern  
research perspectives within  
neuropsychology 15

A guide to issues covered 31

**2. Disorders of perception 35**

Introduction 35

Visual sensation 37

The organisation of perception: hierarchical  
and parallel modular systems 41

Clinical disorders of perception 49

Object recognition 60

The special case of face recognition 64

Awareness of perceptual deficit and  
imagery 78

Bottom-up versus top-down disorders and  
the executive influence 81

**3. Executive dysfunction 85**

Executive dysfunction 85

Features of executive dysfunction 88

Executive dysfunction following subcortical  
atrophy 104

Models of the executive system 108

Executive dysfunction and the prefrontal cortex: the orbital, dorsolateral, and medial systems	121
Towards a model of executive function	130
Why executive function?	135

#### **4. Disorders of attention 139**

Introduction	139
A brief historical background of theory	140
A clinical description of attention disorders	167
Models of neglect	180
Relationships between attention and perception within attentional disorders	196
Attention and working memory	200
Relationship between terms of attention and process	201
Overview	204

#### **5. Memory disorders 207**

Introduction	207
A neuropsychological model of memory	208
Neuropsychological issues and memory disorders	228
Amnesia	238
Theoretical perspectives on retrograde amnesia	253

A neuropsychological model of  
memory 259

**6. Disorders of cerebral symmetry 271**

Introduction 271

The split-brain operation 275

The split-brain disconnection  
syndromes 277

Specialised contributions of the two  
hemispheres 277

Alien hand and conscious awareness 285

The clinical presentation of disconnection  
syndrome 286

Recovery from split-brain surgery 287

The nature of interhemispheric  
integration 288

**7. Language disorders 291**

PART 1: LANGUAGE SYNDROMES  
AND LANGUAGE DISORDERS 291

Introduction 291

Historical notes 292

Some introductory concepts: the example of  
anomia 295

The language area 298

A model of language disorders 298

The perisylvian aphasias 302

The transcortical aphasias 319

Subcortical aphasia 325

Language and the right hemisphere 329

Towards a new model of language  
disorders 332

PART 2: A COGNITIVE  
NEUROPSYCHOLOGICAL  
PERSPECTIVE 338

Anomia according to sensory  
modality 338

Acalculia 345

The agraphias 349

Alexia and agraphia 351

The acquired dyslexias 353

Final comment 360

**8. Movement disorders 363**

Introduction 363

The primary motor and sensory areas 365

The cortical motor system 370

Apraxia and the motor engram 375

The basal ganglia system 380

---

The cerebellum system 390  
General summary 394

**9. Emotional disorders 397**

Introduction 397  
The emotional system 401  
Further aspects of emotional and social  
dysfunction from the clinical  
perspective 424  
Theories of lateralised emotional expression  
within the clinical context 426  
Neuropsychological theories of emotional  
and social dysfunction in psychiatric  
conditions 433  
General summary 444

**10. Recovery from brain damage 449**

Introduction 449  
Mechanisms of recovery 451  
Features that influence the recovery process:  
a clinical perspective 464  
Factors that encourage recovery 472

**11. Rehabilitation 477**

Introduction 477  
The application of techniques 481  
The limitations of the patient 488  
General comments 497  
Addendum 1 498  
Addendum 2 499

**12. Integration between neuropsychological  
functions 501**

Towards a third-generation text on  
neuropsychology 501  
Links within the long-term memory store  
(LTMS): the influence of past experience  
on memory, attention, perception, and  
language 502  
Attention within perception 503  
Executive influences on attention,  
perception, memory, and language 503

**Appendix 505**

**References 509**

**Author Index 575**

**Subject Index 593**