

Contents

Preface, ix

PART I: ORGANIZATION OF VISUAL CORTEX

1 Changing Concepts of Visual Cortex Organization in Primates 3

Jon H. Kaas

The Subdivisions of Visual Cortex, 9

The Functional Organization of Primary (Striate) Cortex, 13

The Second Visual Area, V-II, 19

The Middle Temporal Visual Area, MT, 20

Processing Streams in Visual Cortex, 22

Conclusions, 25

References, 26

PART II: DISORDERS OF OBJECT PERCEPTION

2 Cerebral Disturbances of Elementary Visual Functions 35

J. Zihl

Introduction, 35

Visual Field Disorders, 36

Impairments in Visual Acuity, 43

Comment, 52

References, 55

3 Disorders of Visual Gnosis	59
<i>D. Frank Benson, M.D.</i>	
Visual Color Disturbances,	61
Visual Language Disturbances,	63
Visual-Spatial Disturbances,	64
Visual Memory Disturbances,	66
Visual Geographic Disorders,	67
Visual Object Disturbance,	68
Visual Facial Disturbances,	71
Visual Motor Disturbances,	72
General Visual Gnostic Disturbance,	73
Discussion,	73
References,	75
 4 Finding the Way Around Topographical Impairments	 79
<i>M. J. Riddoch and G. W. Humphreys</i>	
Introduction,	79
Impairments in Viewpoint-Dependent Representations,	82
Problems in Representing and Using Spatial Information in Working Memory,	92
Disorders of Long-Term Topographical Memory,	95
Lesion Sites,	97
References,	99
 5 Visuomotor Ataxia	 105
<i>Pierre Rondot</i>	
Visuomotor Ataxia—Clinical Syndrome,	108
Experimental Data,	111
Physiopathology,	113
References,	117
 PART III: NEGLECT	
 6 Components of Visual Attention Disrupted in Unilateral Neglect	 123
<i>Guido Gainotti, Patrizia D'Erme, and Caterina De Bonis</i>	
Clinical Features and Time Course of Unilateral Spatial Neglect,	124
Theories Advanced to Explain the Unilateral Neglect Syndrome,	125

Unilateral Spatial Neglect and Right Hemisphere Damage,	130
Research on the Influence of Visual Search and Eye Fixation Disorders on Unilateral Spatial Neglect of Right and Left Brain-Damaged Patients,	133
Clinical Findings Pointing to a Selective Eye Fixation Disorder in Unilateral Spatial Neglect of Right Brain Damaged Patients,	137
Implications of these Results for Theories of Hemi-Neglect,	139
References,	141

7 Unilateral Misrepresentation of Distributed Information: Paradoxes and Puzzles

145

Edoardo Bisiach, M.D. and Anna Berti, M.D.

Introduction,	145
Neuropsychological Evidence,	146
A Neural Model of a Representational System,	148
The Structure of Representation in Long-Term Store,	151
Conclusions and Prospects,	157
References,	159

PART IV: DISORDERS OF VISUAL IMAGERY

8 Comments on Some Positive Visual Phenomena Caused by Diseases of the Brain

165

Lawrence Jacobs, M.D.

Introduction,	165
Palinopsia,	165
Characteristics of Palinopsia; Clinical Circumstances in Which it Occurs,	166
Polyopia and Monocular Diplopia,	175
Visual Allesthesia,	177
Related Phenomena,	179
References,	180

9 The Neuropsychology of Mental Imagery	183
<i>Martha J. Farah</i>	
Introduction,	183
Representation in Mental Imagery,	184
Mental Image Generation,	191
Conclusions,	198
References,	199
10 A Dual Coding Perspective on Imagery and the Brain	203
<i>Allan Paivio</i>	
The Empirical Approach: Convergent Operations,	204
Theoretical Assumptions and Evidence,	204
Basic Adaptive Functions,	212
General Conclusions,	214
References,	215
PART V: THEORETICAL ISSUES	
11 Taxonomy of the Subjective: An Evolutionary Perspective	219
<i>Ernst Pöppel</i>	
References,	231
12 Essay on Perception	233
<i>Jason W. Brown, M.D.</i>	
Preliminaries to a Theory of Object Formation,	234
Microgeny of Objects,	238
Stages in Perceptual Microgenesis,	240
Self Knowledge and Object Awareness,	248
References,	255
Author Index,	257
Subject Index,	265