CONTENTS

Preface xiii
List of Contributors xv
Reviewers xxv

Chapter 1
Eye-Movement Research: An Overview of Current and Past Developments 1
ROGER P. G. VAN GOMPEL, MARTIN H. FISCHER, WAYNE S. MURRAY AND ROBIN L. HILL

PART 1: HISTORY OF EYE-MOVEMENT RESEARCH

Chapter 2
Scanning the Seen: Vision and the Origins of Eye-Movement Research 31
NICHOLAS J. WADE

Chapter 3
Eye Movement Research in the 1950s 65
GERALD WESTHEIMER

Chapter 4
Fixation Strategies During Active Behaviour: A Brief History 75
MICHAEL F. LAND

PART 2: PHYSIOLOGY AND CLINICAL STUDIES OF EYE MOVEMENTS

Chapter 5
Using Eye Movements to Probe Development and Dysfunction 99
DOUGLAS P. MUNOZ, IRENE ARMSTRONG AND BRIAN COE

Chapter 6
Anti-Saccade Task Performance is Dependent Upon Bold Activation Prior to Stimulus Presentation: An fMRI Study in Human Subjects 125
KRISTEN A. FORD, MATTHEW R. G. BROWN, AND STEFAN EVERLING
Chapter 7
Commutative Eye Rotations in Congenital Nystagmus 141
LO J. BOUR, JOHAN N. VAN DER MEER AND ANKE M. VAN MOURIK

PART 3: TRANSSACCADIC INTEGRATION

Chapter 8
Transsaccadic Recognition in Scene Exploration 165
PETER DE GRAEF

Chapter 9
How Postsaccadic Visual Structure Affects the Detection of Intrasaccadic Target Displacements 193
CARMEN KOCH AND HEINER DEUBEL

Chapter 10
Transsaccadic Memory: Building a Stable World from Glance to Glance 213
DAVID MELCHER AND CONCETTA MORRONE

PART 4: MODELLING OF EYE MOVEMENTS

Chapter 11
Models of Oculomotor Control in Reading: Toward a Theoretical Foundation of Current Debates 237
RALPH RADACH, RONAN REILLY AND ALBRECHT INHOFF

Chapter 12
Modeling the Effects of Lexical Ambiguity on Eye Movements During Reading 271
ERIK D. REICHLE, ALEXANDER POLLATSEK AND KEITH RAYNER

Chapter 13
Dynamic Coding of Saccade Length in Reading 293
SHUN-NAN YANG AND FRANÇOISE VITU

Chapter 14
An Iterative Algorithm for the Estimation of the Distribution of Mislocated Fixations During Reading 319
RALF ENGBERT, ANTJE NUTHMANN, AND REINHOLD KLEIGL

PART 5: EYE MOVEMENTS AND READING

Chapter 15
Eye Movements in Reading Words and Sentences 341
CHARLES CLIFTON, Jr., ADRIAN STAUB, AND KEITH RAYNER
Chapter 16
The Influence of Semantic Transparency on Eye Movements During English Compound Word Recognition
BARBARA J. JUHASZ

Chapter 17
The Interplay Between Parafoveal Preview and Morphological Processing in Reading
RAYMOND BERTRAM AND JUKKA HYÖNÄ

Chapter 18
Foveal Load and Parafoveal Processing: The Case of Word Skipping
SARAH J. WHITE

Chapter 19
The Flexibility of Letter Coding: Nonadjacent Letter Transposition Effects in the Parafovea
REBECCA L. JOHNSON

PART 6: EYE MOVEMENTS AS A METHOD FOR INVESTIGATING SPOKEN LANGUAGE PROCESSING

Chapter 20
Eye Movements and Spoken Language Processing
MICHAEL K. TANENHAUS

Chapter 21
The Influence of Visual Processing on Phonetically Driven Saccades in the "Visual World" Paradigm
DELPHINE DAHAN, MICHAEL K. TANENHAUS AND ANNE PIER SALVERDA

Chapter 22
The Processing of Filled Pause Disfluencies in the Visual World
KARL G. D. BAILEY AND FERNANDA FERREIRA

Chapter 23
Speech-to-Gaze Alignment in Anticipation Errors
LINDA R. WHEELDON, ANTJE S. MEYER AND FEMKE VAN DER MEULEN

Chapter 24
Comparing the Time Course of Processing Initially Ambiguous and Unambiguous German SVO/OVS Sentences in Depicted Events
PIA KNOEFERLE
PART 7: EYE MOVEMENTS AS A METHOD FOR INVESTIGATING ATTENTION AND SCENE PERCEPTION

Chapter 25
Visual Saliency Does Not Account for Eye Movements During Visual Search in Real-World Scenes
JOHN M. HENDERSON, JAMES R. BROCKMOLE, MONICA S. CASTELHANO, AND MICHAEL MACK

Chapter 26
Congruency, Saliency and Gist in the Inspection of Objects in Natural Scenes
GEOFFREY UNDERWOOD, LOUISE HUMPHREYS, AND ELEANOR CROSS

Chapter 27
Saccadic Search: On the Duration of a Fixation
IGNACE TH. C. HOoge, BJÖRN N. S. VLASKAMP AND EELCO A. B. OVER

Chapter 28
Effects of Context and Instruction on the Guidance of Eye Movements During a Conjunctive Visual Search Task
JIYE SHEN, AVA ELAHIPANAH, AND EYAL M. REINGOLD

Chapter 29
Absence of Scene Context Effects in Object Detection and Eye Gaze Capture
LYNN GAREZE AND JOHN M. FINDLAY

PART 8: EYE MOVEMENTS IN NATURAL ENVIRONMENTS

Chapter 30
Learning Where to Look
MARY M. HAYHOE, JASON DROLL, AND NEIL MENNIE

Chapter 31
Oculomotor Behavior in Natural and Man-Made Environments
JEFF B. PELZ AND CONSTANTIN ROTHKOPF

Chapter 32
Gaze Fixation Patterns During Goal-Directed Locomotion While Navigating Around Obstacles and a New Route-Selection Model
AFTAB E. PATLA, S. SEBASTIAN TOMESCU, MICHAEL GREIG, AND ALISON NOVAK