

# Contents

Preface	xi
For Ivo Kohler: Scientist and Teacher on the Occasion of His 65th Birthday <i>Anton Hajos and Manfred Ritter</i>	xiii
Publications by Professor Ivo Kohler	xvii
List of Selected Readings on Perceptual and Sensori-motor Adaptation: Historical Beginnings, Monographs, and Recent Reviews <i>Manfred Ritter</i>	xxiii
Bibliography of Japanese Studies of Disarranged Vision <i>Tatsuro Makino</i>	xxv

## PART I: HISTORICAL REVIEWS

1. Through the Looking Glass and What Ivo Kohler Found There:  
Contours, Colors, and Situational Aftereffects  
*Alberta S. Gilinsky* 3
2. Ivo Kohler's Poretic Psychology and the Viennese Connection  
*Erling Eng* 23

**PART II: THEORY**

3. Adaptation in a Peephole: A Texton Theory of Preattentive Vision  
*Bela Julesz* 37
4. Visual Form Perception Based on Biological Filtering  
*Arthur P. Ginsburg* 53
5. Spatial Mapping and Spatial Vision in Primate Striate and Infero-Temporal Cortex  
*Eric L. Schwartz* 73
6. Models of Explanation in Visual Pattern Perception  
*Kai von Fieandt* 105
7. The Internal Representation of Solid Shape and Visual Exploration  
*J. J. Koenderink* 123
8. Object, Percept, Concept, Word  
*Ernst L. Moerk* 143
9. Towards an Algebraic Theory of the Spectacles Experiment  
*John C. Hay* 169
10. Subject Variables in Perception and Their Control  
*G. A. Lienert* 177

**PART III: SPACE PERCEPTION AND BODY ORIENTATION**

11. Size Constancy as a Function of Fixation Distance and Retinal Disparity  
*Manfred Ritter* 189
12. The Breakdown of Size Constancy Under Stroboscopic Illumination  
*Bernice E. Rogowitz* 201
13. Psychophysics of Visual Flow Patterns and Motion in Depth  
*David Regan and Kenneth I. Beverley* 215

14. Die zeitabhängige Veränderung der schwerkraftbezogenen subjektiven Raumrichtung beim Menschen  
(*Adaptive Changes of Subjective Gravitational Space Orientation in Man*)  
*Silvia Lechner-Steinleitner* 241
15. Körperlageregelung des Menschen bei elektrischer Reizung des Vestibularsystems  
(*The Control of Body Posture in Man During Electrical Stimulation of the Vestibular System*)  
*A. Hajos and W. Kirchner* 255
16. Some Efferent and Somatosensory Influences on Body Orientation and Oculomotor Control  
*James R. Lackner and Paul DiZio* 281
17. Dissociations Between Perceptual and Oculomotor Effects Induced by Rotating Visual Displays  
*Ronald A. Finke, Michail Pankratov, and Richard Held* 303

#### PART IV: DIRECTIONAL ADAPTATION AND LEARNED REVERSAL

18. A Comparison of Intersensory Bias and Prism Adaptation  
*Robert B. Welch and David H. Warren* 319
19. Perceptual Coding and Adaptations of the Oculomotor Systems  
*Sheldon M. Ebenholtz* 335
20. Direction-Specific Vergence Adaptation  
*David B. Henson* 345
21. Learning in Space Perception  
*Hans Wallach* 353
22. Through the Looking Glass: Rapid Adaptation to Right-Left Reversal of the Visual Field  
*Judith Rich Harris and Charles S. Harris* 365

23. Spiegelschrift und Umkehrschrift bei Linkshändern und Rechtshändern: Ein Beitrag zum Balkentransfer und Umkehrlernen  
(*Mirrorscript and Inverted Script in Lefthanders and Righthanders: A Contribution to Callosal Transfer and Learned Inversion*)  
*Richard Jung and Clemens Fach* 377
24. Richtungsspezifische Adaptation des Raum- und Bewegungshörens  
(*Direction-Specific Adaptation of Auditory Space and Movement Perception*)  
*Walter H. Ehrenstein* 401
25. Micro- and Macromelodies  
*Giovanni B. Vicario* 421
- PART V: INDUCTION BY BRIGHTNESS, COLOR, ORIENTATION, MOTION, AND DEPTH**
26. The Role of Drifts and Saccades for the Preservation of Brightness Perception  
*H. J. M. Gerrits, H. P. W. Stassen, and L. J. Th. O. van Erning* 439
27. Brightness Matching and Scaling of the Ehrenstein Illusion  
*Kenneth Fuld and Kathleen O'Donnell* 461
28. The Effects of Successive Chromatic Contrast on Spectral Hue  
*B. R. Wooten* 471
29. Änderung der Farbwahrnehmung bei gegensinniger Abfolge der Farbtöne im Farbenkreis  
(*Change of Perceived Color Dependent on Sequence of Hue Presentation*)  
*Lothar Spillmann and Christa Neumeyer* 495
30. Orientation-Specific Color Aftereffects and Simultaneous Color Contrast  
*C. F. Stromeyer III* 509
31. Size Interactions in the Perception of Orientation  
*Christopher W. Tyler and Ken Nakayama* 529

32. Illusory Line Rotation in Expanding and Contracting Displays  
*N. J. Wade and M. T. Swanston* 547
33. Visual Motion Aftereffects: Adaptation and Conditioned Processes  
*Claude Bonnett, Michel Le Gall, and Jean Lorenceau* 561
34. Aftereffects of Form, Motion, and Color  
*Stuart Anstis* 583
35. Aftereffects from Motion Parallax and Stereoscopic Depth: Similarities and Interactions  
*B. J. Rogers and M. E. Graham* 603

## PART VI: NEUROPSYCHOLOGICAL EVALUATION OF CENTRAL VISUAL DEFICITS

36. The Spatial Organization of Stereopsis in Strabismus  
*Clifton Schor, Bruce Bridgeman, and Christopher W. Tyler* 623
37. Uses and Abuses of Assessing Contrast Threshold Functions for Anomalous Vision  
*Robert F. Hess* 633
38. Phase Lag in Human Contrast Evoked Potentials  
*Ingo Rentschler and Donatella Spinelli* 651
39. Clinical Observations of Palinopsia: Anomalous Mapping From Retinal to Nonretinal Coordinates of Vision  
*Ivan Bodis-Wollner, Morris B. Bender, and Sidney P. Diamond* 659
40. Abnormal Visual Threshold Functions in Subjects with Lesions of the Central Visual Pathways  
*K. H. Ruddock* 677
41. Subkortikale Funktionen der visuellen Wahrnehmung  
(*Subcortical Functions of Visual Perception*)  
*J. Zihl* 695
- Author Index 717
- Subject Index 729