Contents

The Attention and Performance Symposia xi Participants xiii

Association lecture

1 Understanding the actions of others 3 Giacomo Rizzolatti

Part 1 Modularity: Splitting the atom of visual cognition

- **2** Core knowledge 29 Elizabeth Spelke
- 3 The evolution of human neocortex: Is the human brain fundamentally different than that of other mammals? 57

 Leah Krubitzer and Dianna M. Kahn
- 4 Analysis of topographically organized patterns of response in fMRI data: Distributed representations of objects in the ventral temporal cortex 83

 James V. Haxby
- 5 Time as coding space in the cerebral cortex 99 Wolf Singer
- **6** Separate modifiability and the search for processing modules 125 Saul Sternberg

Part 2 Investigations of the ventral visual pathway: Extracting and representing visual objects

- 7 Approaches to visual recognition 143 Shimon Ullman
- 8 The functional organization of the ventral visual pathway and its relationship to object recognition 169
 Kalanit Grill-Spector
- 9 The cartography of human visual object areas 195 R. Malach, G. Avidan, Y. Lerner, U. Hasson, and I. Levy

- 10 The neural bases of subliminal priming 205 Stanislas Dehaene
- 11 Audio-visual associative learning enhances responses to auditory stimuli in visual cortex 225

Désirée Gonzalo and Christian Büchel

12 Neural representation of object images in the macaque inferotemporal cortex 241

Manabu Tanifuji, Kazushige Tsunoda, and Yukako Yamane

13 Plasticity and functional brain development: The case of face processing 257 Mark H. Johnson

Part 3 Mechanisms of visual attention

14 Neurobiology of human spatial attention: Modulation, generation, and integration 267 Jon Driver, Martin Eimer, Emiliano Macaluso, and José van Velzen

- 15 Towards a neural basis of human visual attention: Evidence from functional brain imaging 301 Sabine Kastner
- 16 The influence of scene organization on attention: Psychophysics and electrophysiology 321 Mitchell Valdes-Sosa, Maria A. Bobes, Valia Rodríguez, Yanelis Acosta, Alejandro Pérez, Jorge Iglesias, and Mayelin Borrego
- 17 Endogenous and stimulus-driven mechanisms of task control 345 Gordon L. Shulman and Maurizio Corbetta
- 18 The role of competitive circuits in extrastriate cortex in selecting spatially superimposed stimuli 363 John H. Reynolds and Mazyar Fallah
- 19 The imaging of visual attention 381 Steven A. Hillyard, Francesco Di Russo, and Antigona Martinez

Part 4 Sensorimotor integration

- 20 Neural selection and control of action 391 Jeffrey D. Schall
- 21 Human brain imaging reveals a parietal area specialized for grasping 417 Jody Culham
- 22 A framework for the investigation of directed cortical interactions: Theoretical background and application to dynamic sensorimotor mapping 439 Rainer Goebel, Alard Roebroeck, Dae-Shik Kim, and Elia Formisano

- 23 From viewing of movements to understanding and imitation of other persons' acts: MEG studies of the human mirror-neuron system 463 Riitta Hari and Nobuyuki Nishitani
- 24 Neuropsychological perspectives on sensorimotor integration: Eye-hand coordination and visually guided reaching 481 David P. Carey

Finale

25 The achievement of brain imaging: Past and future 503 Michael I. Posner

Author index 529 Subject index 549