## Contents

Preface  
*Harold Morowitz*  
xi

Mental Processes and Brain Architecture: Confronting the  
Complex Adaptive Systems of Human Thought  
(An Overview)  
*Jerome L. Singer*  
1

Complex Adaptive Systems  
*Murray Gell-Mann*  
11

Near Decomposability and Complexity: How A Mind  
Resides in a Brain  
*Herbert A. Simon*  
25

Can There Be A Unified Theory of Complex Adaptive  
Systems?  
*John H. Holland*  
45

Neurobiology of Mental Representation  
*Patricia S. Goldman-Rakic*  
51

The Organization of Memory  
*Larry R. Squire and Barbara J. Knowlton*  
63

Can Neurobiology Teach us Anything About  
Consciousness?  
*Patricia Smith Churchland*  
99

The Rediscovery of the Unconscious  
*John F. Kihlstrom*  
123
Contents

Affects and Neuro-Modulation: A Connectionist Approach
   David Rumelhart 145

Thinking Away and Ahead
   John Antrobus 155

Natural Learning, Natural Teaching: Changing Human Memory
   Roger C. Schank and John B. Cleave 175

Does Mind Piggyback on Robotic and Symbolic Capacity?
   Stevan Harnad 203

Evolution as An Algorithm—The Ultimate Insult?
   Daniel C. Dennett 221

Index 225