

---

# *Contents*

---

## ***Preface ix***

### ***Chapter 1 Introduction 1***

The Information Processing Approach • Memory Components in the Information Processing System • The Plan of This Book

### ***Chapter 2 Sensory Processes of the Visual System 9***

Structure of the Visual System • The Response of Single Cells to Light Stimulation • Pattern Recognition • Sensory Considerations for Pattern Recognition • Summary • Suggested Reading

### ***Chapter 3 Pattern Recognition in Humans 38***

Template Models • Prototype Models • Feature Models • Pattern Recognition by Computers • Summary • Suggested Reading

### ***Chapter 4 Organization and Visual Processing 63***

Gestalt Principles of Organization • Hierarchical Structure and Global vs. Local Processing • Dimensional Structure and Attention • Summary • Suggested Reading

*Chapter 5*

***Perceiving Several Patterns at Once 94***

Iconic Store • Processing Stimuli in the Iconic Store • Models of Visual Encoding • Attention and Scanning • Summary  
• Suggested Reading

*Chapter 6*

***Word Recognition 133***

Experimental Findings • Redundancy and Word Recognition  
• Higher-Order Units • Speech Recoding and Reading Strategies  
• Recognizing Words in Sentences • Summary • Suggested Reading

*Chapter 7*

***Picture Processing and Memory 162***

Recognizing a Picture • Attentional Factors in Picture Processing  
• Memory for Pictorial Information • Recognition of Faces  
• Hemispheric Specialization • Summary • Suggested Reading

*Chapter 8*

***Visual Imagery and Mental Representation 200***

Functional Aspects of Imagery • Structural Aspects of Imagery  
• Individual Differences in Imagery Ability • Cognitive Maps  
• Alternatives to the Imagery Theory • Suggested Reading

*Chapter 9*

***Interactions Between Visual and Verbal Systems 241***

The Stroop Effect • Abstraction and Generation in Short-Term Memory • Comparing Sentences with Pictures • Accessing Pictures and Words in Long-Term Memory • Eyewitness Testimony • Suggested Reading

*Appendix A*

***Signal Detection Theory 263***

A Typical Detection Experiment • Assumptions of the Theory of Signal Detectability • Changing Sensitivity and Bias • The Receiver Operating Characteristic Curve • Summary

*Appendix B*

***Analysis of Reaction Times 271***

Donders' Subtraction Method • Additive Stage Durations  
• Summary

***References 277***

***Author Index 291***

***Subject Index 295***