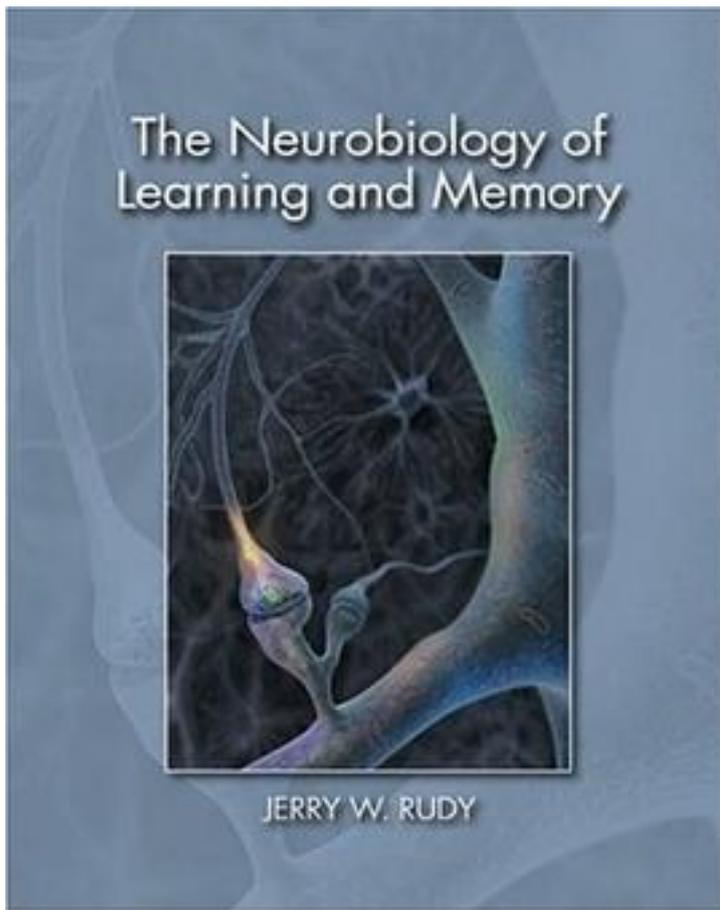


The Neurobiology of Learning and Memory



[The Neurobiology of Learning and Memory_下载链接1_](#)

著者:Jerry W. Rudy

出版者:Sinauer Aossociates, Inc. Publishers

出版时间:2013-11-15

装帧:Hardcover

isbn:9781605352305

To understand how the brain learns and remembers requires an integration of psychological concepts and behavioral methods with mechanisms of synaptic plasticity and systems neuroscience. The Neurobiology of Learning and Memory, Second Edition, provides a synthesis of this interdisciplinary field. Each chapter makes

the key concepts transparent and accessible to a reader with minimal background in either neurobiology or psychology and is extensively illustrated with full-color photographs and figures depicting important concepts and experimental data. Like the First Edition, the Second Edition is organized into three parts. However, each part has been expanded to include new chapters or reorganized to incorporate new findings and concepts.

Part One introduces the idea that synapses modified by experience provide the basis for memory storage. It next describes the long-term potentiation methodology used to study how synapses are modified and concepts needed to understand the organization of synapses. The remaining chapters are organized around the idea that the synaptic changes that support long-term potentiation evolve in four overlapping stages referred to as (a) generation, (b) stabilization, (c) consolidation, and (d) maintenance. The goal of each chapter is to reveal that each stage depends on unique molecular processes and to describe what they are.

Part Two builds on this foundation to show how molecules and cellular processes that have been identified from studies of synaptic plasticity also participate in the making of memories. It discusses some of the basic conceptual issues researchers face in trying to relate memory to synaptic molecules and describes some of the behavioral and neurobiological methods that are used. The chapters describing the processes involved in memory formation and consolidation have been extensively modified to provide a more detailed account of the molecular events that are engaged to ensure that established memories endure. The chapters on memory modulation and the fate of retrieved memories have been extensively modified to provide a more in-depth account of the relevant processes.

Part Three is organized around the multiple memory systems view--that different neural systems have evolved to store the content contained in our experience. It features discussion of the medial-temporal hippocampal system that supports episodic memory, the concept of systems consolidation, and its relationship to Ribot's law--that memories become resistant to disruption as they age. The cortical-striatal system and its relationship to what are called behavioral actions and habits is described, and the book ends with a discussion of neural systems involved in the acquisition and removal of emotional memories.

作者介绍:

Jerry W. Rudy is College Professor of Distinction in the Department of Psychology and Neuroscience at the University of Colorado at Boulder. He received his Ph.D. in psychology from the University of Virginia in 1970, and joined the UC Boulder faculty in 1980. The author of over 150 peer-reviewed research papers and book chapters, Dr. Rudy has served on the editorial boards of the *Journal of Experimental Psychology: Animal Behavior Processes*, *Psychobiology*, *Developmental Psychobiology* (Editor in Chief), *Behavioral Neuroscience*, *Neuroscience & Biobehavioral Reviews*, *Learning and Memory*, and *Neurobiology of Learning and Memory* (Associate Editor). He also served on the governing board and as President of the International Society for Developmental Psychobiology. He has received grant support from the National Science Foundation, the National Institute of Mental Health, and the National Institute of Health. Professor Rudy's research interests center on learning and memory processes. His research focused primarily on understanding the complementary contributions the hippocampus and neocortex make to learning and memory and the influence immune products have on memory. He is currently the director of the

undergraduate neuroscience program at the University of Colorado, Boulder.

目录:

[The Neurobiology of Learning and Memory_ 下载链接1](#)

标签

记忆

神经生物学

生物

学习

评论

A very nice overview about the learning and memory from molecular to network.

分为三部分，1LTP的形成与维持、退化；2LTP是记忆的基础：影响LTP的因素同时也影响动物的记忆行为；3不同的记忆系统与生理基础（主要是episodic, semantic, non-declarative中的instrumental behavior, 以及fear）。
对我的主要帮助是有一些memory formation不同阶段细胞基础和时间维度的内容，和一些关于reconsolidation的本质。

[The Neurobiology of Learning and Memory_ 下载链接1](#)

书评

[The Neurobiology of Learning and Memory_下载链接1](#)