

<<学习与记忆>>

图书基本信息

书名：<<学习与记忆>>

13位ISBN编号：9787030280770

10位ISBN编号：7030280776

出版时间：2010-8

出版时间：科学出版社

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页数：863

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### 前言

什么是百科全书？

这一名词来自于两个希腊单词：enkymion（意思是循环的）和paideia（意思是教育）。

在16世纪早期，拉丁手稿的抄写者们将这两个单词合而为一，其在英语中演化为一个单词，意思是具有广泛指导意义的工具书（The American Heritage Dictionary, 2000, Boston: Houghton Mifflin, p.589）。

从其来源可见，其希腊文原词中蕴含着以探索、综合的方式努力获取知识的含义。

无论是拉丁文还是英文，该单词泛指涵盖广泛领域知识的工具书。

希腊文中强调的以创造性手段获取知识，在神经科学领域尤其适用。

神经科学本身就是一个非常新的名词。

Francis Schmitt在本书第一版的前言中指出，本书的编写过程就是将不同领域的科学家们聚集在一起，冲击大脑研究中最顽固的难题。

他推动建立了神经科学研究项目（Neuroscience Research Program，简称NRP）。

早期的NRP成员包括一些学术巨匠，如因关于光合作用的研究获得诺贝尔奖的Melvin Calvin、诺贝尔奖获得者物理化学家Manfred Eigen、生物化学家Albert Lehninger，和当时正在努力破解基因编码的年轻分子生物学家Marshall Nirenberg。

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### 内容概要

《神经科学百科全书》原书篇幅巨大，为所有神经科学百科全书之首。书中覆盖了神经科学全部主要领域，由来自世界各地的2400多位专家撰稿人合力打造。每个词条在收入书中之前均经过顾问委员会的同行评议，词条中均含有词汇表、引言、参考文献和丰富的交叉参考内容。其内容平易而深度和广度独一无二。主编Larry R.Squire为美国神经科学学会前主席，畅销教科书《基础神经科学》(Fundamental Neuroscience)的策划人与主编。

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## 章节摘录

插图：Another training parameter that affects memory induction is neuronal activity. In the sensitization experiments described above, one site on the tail is used to test the reflex, and shock is applied to another site; thus the sensory neurons ( SNs ) at the test site do not fire during the tail shock. This form of sensitization is termed 'repeated-trial' ( RT ) sensitization. However, the shock site itself also shows sensitization, and this 'site-specific' sensitization differs from RT sensitization in that ITM induction requires only a single shock. Related to the relationship between trial number and pattern is the question of how a prior learning experience influences later training. Recently, two forms of latent learning have been described in the T-SWR. Latent learning is a phenomenon in which learning-related changes occur, but these changes are subthreshold for detection by memory tests. The presence of latent learning is typically revealed as a facilitation of subsequent memory formation, often called savings. In one study, LTM was induced and then allowed to decay. After the T-SWR returned to baseline ( the memory was 'forgotten' ) , animals were given stimulation that typically produces no learning. In previously trained animals, this stimulus pattern induced both ITM and LTM. In the second study, LTM was induced ipsilaterally, after which, animals were given a brief shock that is below threshold for induction of sensitization in otherwise untrained animals. This stimulus, given to the contralateral side, induced sensitization in previously trained animals.

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