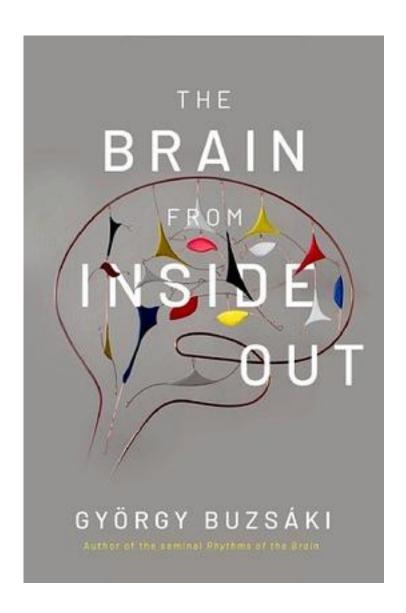
The Brain from Inside Out



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Is there a right way to study how the brain works? Following the empiricist's tradition, the most common approach involves the study of neural reactions to stimuli presented by an experimenter. This 'outside-in' method fueled a generation of brain research and now must confront hidden assumptions about causation and concepts that may not hold neatly for systems that act and react.

György Buzsáki's The Brain from Inside Out examines why the outside-in framework for understanding brain function have become stagnant and points to new directions for understanding neural function. Building upon the success of Rhythms of the Brain, Professor Buzsáki presents the brain as a foretelling device that interacts with its environment through action and the examination of action's consequence. Consider that our brains are initially filled with nonsense patterns, all of which are gibberish until grounded by action-based interactions. By matching these nonsense "words" to the outcomes of action, they acquire meaning. Once its circuits are "calibrated" by action and experience, the brain can disengage from its sensors and actuators, and examine "what happens if" scenarios by peeking into its own computation, a process that we refer to as cognition.

The Brain from Inside Out explains why our brain is not an information-absorbing coding device, as it is often portrayed, but a venture-seeking explorer constantly controlling the body to test hypotheses. Our brain does not process information: it creates it.

作者介绍:

György Buzsáki is Biggs Professor of Neuroscience at New York University.

Member of the National Academy of Sciences USA, Co-recipient of the 2011 Brain Prize.

His main interest is "neural syntax", how segmentation of neural information is organized to support cognitive functions.

Book: G. Buzsáki, Rhythms of the Brain, Oxford University Press, 2006

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