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Sommario/riassunto	<p>The Volume II is entitled "Neurostimulation and pharmacological approaches". This volume describes augmentation approaches, where improvements in brain functions are achieved by modulation of brain circuits with electrical or optical stimulation, or pharmacological agents. Activation of brain circuits with electrical currents is a conventional approach that includes such methods as (i) intracortical microstimulation (ICMS), (ii) transcranial direct current stimulation (tDCS), and (iii) transcranial magnetic stimulation (TMS). tDCS and TMS are often regarded as noninvasive methods. Yet, they may induce long-lasting plastic changes in the brain. This is why some authors consider the term "noninvasive" misleading when used to describe these and other techniques, such as stimulation with transcranial lasers. The volume further discusses the potential of neurostimulation as a research tool in the studies of perception, cognition and behavior. Additionally, a notion is expressed that brain augmentation with stimulation cannot be described as a net zero sum proposition, where brain resources are reallocated in such a way that gains in one function are balanced by costs elsewhere. In recent years, optogenetic methods have received an increased attention, and several articles in Volume II cover different aspects of this technique. While new optogenetic methods are being developed, the classical electrical stimulation has already been utilized in many clinically relevant applications, like the vestibular implant and tactile neuroprosthesis that utilizes ICMS. As a</p>

peculiar usage of neurostimulation and pharmacological methods, Volume II includes several articles on augmented memory. Memory prostheses are a popular recent development in the stimulation-based BMIs. For example, in a hippocampal memory prosthesis, memory content is extracted from hippocampal activity using a multiple-input, multiple-output non-linear dynamical model. As to the pharmacological approaches to augmenting memory and cognition, the pros and cons of using nootropic drugs are discussed.

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