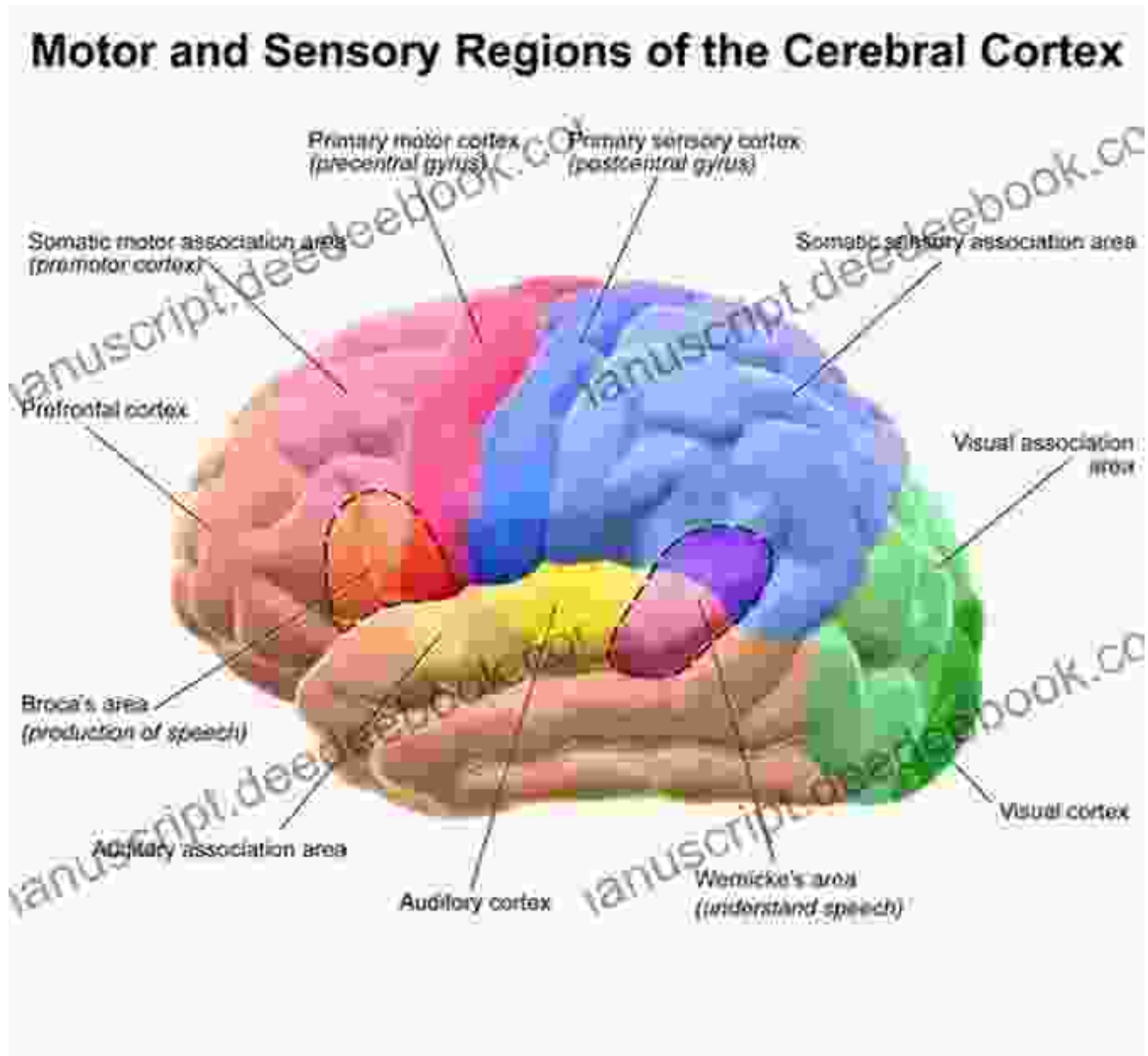
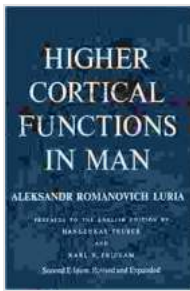


Higher Cortical Functions in Man: A Comprehensive Guide



Higher cortical functions are complex cognitive abilities that distinguish humans from other species. They include language, memory, attention, perception, decision-making, and problem-solving. These functions are mediated by the cerebral cortex, the outermost layer of the brain.



Higher Cortical Functions in Man by Mary Crosland

★★★★☆ 4.6 out of 5

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The cerebral cortex is divided into two hemispheres, each with its own set of higher cortical functions. The left hemisphere is responsible for language, logic, and analytical thinking. The right hemisphere is responsible for spatial reasoning, visual-motor skills, and emotional processing.

Higher cortical functions are essential for human survival. They allow us to communicate with each other, learn from our experiences, and make decisions that help us to adapt to our environment.

Language

Language is one of the most important higher cortical functions. It allows us to communicate our thoughts and feelings to others. Language is also essential for learning and thinking.

The language areas of the brain are located in the left hemisphere. These areas include Broca's area, which is responsible for speech production, and Wernicke's area, which is responsible for language comprehension.

Damage to the language areas of the brain can lead to aphasia, a disorder that impairs the ability to produce or understand language.

Memory

Memory is the ability to store and retrieve information. There are two main types of memory: short-term memory and long-term memory.

Short-term memory is used to store information for a short period of time, such as a phone number or a grocery list. Long-term memory is used to store information for a long period of time, such as facts, events, and skills.

The memory areas of the brain are located in the medial temporal lobes. These areas include the hippocampus, which is responsible for the formation of new memories, and the amygdala, which is responsible for the emotional aspects of memory.

Damage to the memory areas of the brain can lead to amnesia, a disorder that impairs the ability to remember information.

Attention

Attention is the ability to focus on a particular stimulus or thought. Attention is essential for learning, problem-solving, and decision-making.

The attention areas of the brain are located in the frontal lobes. These areas include the prefrontal cortex, which is responsible for executive

functions such as planning and decision-making, and the parietal lobes, which are responsible for spatial attention.

Damage to the attention areas of the brain can lead to attention deficit disorder (ADD), a disorder that impairs the ability to focus and concentrate.

Perception

Perception is the process of interpreting sensory information. The sensory areas of the brain are located in the occipital lobes (vision), the temporal lobes (hearing), and the parietal lobes (touch).

The perceptual areas of the brain are responsible for combining sensory information into a meaningful whole. For example, the perceptual areas of the brain would combine the visual information from your eyes and the auditory information from your ears to create a perception of a moving car.

Damage to the perceptual areas of the brain can lead to agnosia, a disorder that impairs the ability to recognize objects or interpret sensory information.

Decision-Making

Decision-making is the process of choosing between two or more options. The decision-making areas of the brain are located in the frontal lobes. These areas include the prefrontal cortex, which is responsible for executive functions such as planning and decision-making, and the orbitofrontal cortex, which is responsible for evaluating the emotional consequences of decisions.

Damage to the decision-making areas of the brain can lead to impaired decision-making, which can lead to poor judgment and impulsive behavior.

Problem-Solving

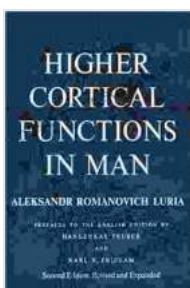
Problem-solving is the process of finding a solution to a problem. The problem-solving areas of the brain are located in the frontal lobes. These areas include the prefrontal cortex, which is responsible for executive functions such as planning and decision-making, and the parietal lobes, which are responsible for spatial reasoning.

Damage to the problem-solving areas of the brain can lead to impaired problem-solving, which can make it difficult to find solutions to problems and make decisions.

Higher cortical functions are essential for human survival. They allow us to communicate with each other, learn from our experiences, and make decisions that help us to adapt to our environment.

Damage to the areas of the brain that are responsible for higher cortical functions can lead to a variety of disorders, including aphasia, amnesia, attention deficit disorder, agnosia, and impaired decision-making.

Understanding the role of higher cortical functions in human behavior is essential for the diagnosis and treatment of these disorders.

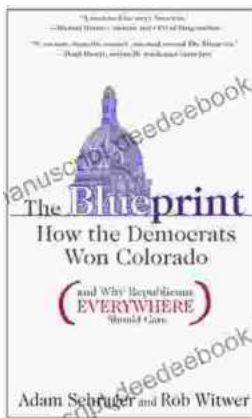


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