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letter from the editor

on our minds

Mankind will possess incalculable advantages and extraordinary control over human behavior when the scientific investigator will be able to subject his fellow men to the same external analysis he would employ for any natural object, and when the human mind will contemplate itself not from within but from without.

Ivan Petrovich Pavlov's observation, penned in 1910, was prescient. Still, he was far from the first to speculate about such "incalculable advantages"—from the practical, such as new medical treatments, to the more lofty concerns of why we are as we are. These questions may go back to the dawn of human self-awareness.



MAGNETIC RESONANCE imaging (shown) and other techniques can reveal much about structures of the brain, yet the nature of our minds remains elusive.

Weighing just three pounds and encompassing some 100 billion neurons, the brain is the most complex organ in the human body. It and the spinal cord supervise all physical operations. And yet it has proved to be a most elusive organ, hiding the inner workings of the mind, which defines and creates our unique personalities, intellect and consciousness.

During the 1990s—dubbed the “decade of the brain” by presidential decree—scientists unraveled more about the brain's intricate, interconnected cascade of electrical impulses and chemical processes than would even have seemed possible to many psychologists and neuroscientists just a few decades ago. These discoveries, which are proceeding at a rapid pace, could revolutionize treatments of various brain disorders. For example, researchers are trying to coax stem cells to regenerate areas of the brain damaged by stroke, injury or diseases such as Alzheimer's and Parkinson's. Advances in the understanding of brain structure, chemistry and function have placed this and other novel treatments within reach. Scientists have also mapped much of the elaborate geography of the brain and traced its sensory pathways. They have identified how the brain uses discrete systems for various types of learning and found where and how memories are stored. They have explained much about the nature of dreams, emotions and the conscious mind.

The latest developments in these areas and more are addressed in this special edition from *Scientific American*. *The Hidden Mind* brings together and updates firsthand reports from some of the finest minds exploring the brain today. We welcome you to join us as we continue the age-old quest to understand our minds and ourselves.

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