EDITORIAL

Editorial Note On Behavioral Neuroscience

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Behavioral neuroscience as a scientific discipline emerged from a variety of scientific and philosophical traditions in the 18th and 19th centuries. In philosophy, people like René Descartes proposed physical models to explain animal as well as human behavior. Descartes suggested that the pineal gland, a midline unpaired structure in the brain of many organisms, was the point of contact between mind and body. Neuroscience is the study of the brain and its functions. Although we often think of behavior as somewhat separate from our body, the two are closely related. In fact, the brain is what causes us to behave in certain ways, and behavioral neuroscience is a bridge in understanding the relationship.

Learning and memory are two major topics of behavioral neuroscience. Learning and memory include finding out just why fatigue affects learning as well as understanding why people experience permanent memory loss, which is currently a large focus within the field. Dementia is a disease that causes people to forget important information about themselves and their surroundings. It is progressive, so it starts out slowly and continues to get worse with time. It is hard to imagine that you could eventually forget your children, your home address, or even your own name. Unfortunately, however, this is what occurs within the brain of a person suffering from dementia. Researchers in the field of behavioral neuroscience hope to find out how dementia develops and how it might be prevented in the future. Behavioral neuroscience also has paradigmatic and methodological similarities to neuropsychology, which relies heavily on the study of the behavior of humans with nervous system dysfunction.

Research studies in the field of behavioral sciences give us the tools to address an array of issues that our society faces by advancing our ability to assess, understand, predict, improve, and control human behaviour. Behavioural Neuroscientists' research has improved our understanding of a range of topics, including but not limited to the neurobiology of addiction, aging, sleep, trauma, anxiety, autism spectrum disorder, bipolar disorder, epilepsy, and immune system disorders.

For instance, advanced behavioural neuroscience technology has gathered significant therapeutic data on the neurobiology of addiction. Brain imaging studies from drug-addicted individuals show physical changes in areas of the brain that are critical for judgment, decision making, learning and memory, and behavioral control. Brain imaging techniques such as MRI, fMRI, MRS, PET, and SPECT have identified a reduction in the communication between the brain's striatum (impulse) and the prefrontal cortex (self-control) in the presence of drugs or other stimuli. Further insight into the behavioral neuroscience behind these widespread conditions and disorders can aid in the development of more efficient and effective treatment.

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