



Svetlana Masgutova Educational Institute

The Masgutova Neurosensorimotor Reflex Integration - MNRI® Method

SMEI LLC P.O. Box 1651, Melrose, FL 32666

Ivan Sechenov, Russian Physiologist, 1829-1905

Sechenov made many contributions to science. He produced papers with such far-ranging titles as “The Pneumatics of the Blood,” “The Fluorescence of Crystalline Lenses,” and “An Essay on the Working Movements of Man.” But it was his work in the area of physiology and nerve centers that had the greatest and most lasting impact. He had tremendous impact on the understanding of reflexes, the most notable of which was his Theory of Central Inhibition. While visiting Claude Bernard’s laboratory in 1862, Sechenov began a series of experiments on frogs, but instead of isolating specific nerve-muscles, he undertook an examination of the nervous system of the frog as a whole. These experiments allowed Sechenov to ultimately demonstrate that normal reflex action could be inhibited by stimulating areas on the spinal cord, brain stem, and higher areas in the brain. This was a breakthrough idea, because up until this point, the reflex had only been understood in terms of an action that occurred in response to a stimulus, never the absence of action (or inhibition). In 1863, Sechenov published the first article on his early findings, “*Additional Studies on Nerve Centers that Inhibit Reflected Motion*,” and later that year published his seminal essay, “*Reflexes of the Brain*” in which he put forward the bold statement that “All acts of conscious and unconscious life are reflexes by their origin.”

In Sechenov’s day, physiologists and psychologists remained firmly aligned to either the study of physiology or the study of psychology. Sechenov was among the first to propose an approach that bridged the divide between these two burgeoning fields of study. He believed that the reflex unit could be used as a measurable unit of study to advance a scientific understanding of human activity. Sechenov’s ideas were quite progressive and led to great debate among intellectuals of the day. In hindsight, Sechenov’s definition of psychology as “a science of the origins of psychical phenomena,” failed to anticipate the growth of the many branches of the field that now operate “outside the realm of physiological reductionism.” Nonetheless, his efforts ultimately helped to develop psychology as a scientific discipline in Russia. (Vucinich, *Science in Russian Culture*, p. 128)

In 1866, there was a move to censor Sechenov. This occurred at a time when Sechenov was most concerned with central nervous system physiology and at a time when he was training future scholars at the Medical and Surgical Academy. In 1866, court action was taken by a private but influential censor in an attempt to block further distribution of *Reflexes of the Brain* on the grounds that it “was an attempt to explain psychical functions of the brain by reducing these functions to muscular movements produced in response to external material stimuli; and that he was therefore treating all human acts, without exception, as purely mechanical processes. . . reducing even the most human endowments to the level of a machine devoid of consciousness and free will. A year after the court action was filed, the court ruled that no action could be taken against Sechenov, because his book did not transgress any law. Implicit in the court’s ruling was the essentially correct appraisal of Sechenov as a scholar who had not succumbed to the lures of antireligious philosophy and revolutionary ideology, but had instead presented his physiological studies as undiluted science.” (Vucinich, p. 120)

Sechenov’s work inspired generations of Russian scientists, earning him the title of *Father of Russian Neurophysiology*. Pavlov, Bernstein, Vygotsky, Luria, Leontyev and even Sherrington all referenced Sechenov for his many contributions. Among those most inspired by Sechenov, however, were Ivan Pavlov and Nikolai Bernstein. Nikolai Bernstein’s concept of the motor engram (the basis for today’s current understanding of motor programs) was inspired by Sechenov’s conceptualization self-regulation and feedback, as outlined in his book *The Physiology of the Nervous System*. For more in depth information regarding Sechenov please refer to the biography included in the [Scientific Underpinnings section](#).