

le:

[Chapter Seven](#) | [Delgado Index](#) | [Chapter Nine](#)

Jose Delgado's "Physical Control of the Mind"

Working Hypothesis for the Experimental Study of the Mind

One of the most important consequences of recent scientific discoveries is the new attitude toward the course of human life. This attitude has modified our traditional acceptance of fatalistic determination by unknown factors related to heredity, body functions, and environment, and has intensified the search for knowledge and technology to direct our lives more intelligently. The genetic code is being unraveled, introducing the possibility that some time in the future, we may be able to influence heredity in order to avoid illnesses like Mongolism or in order to promote transmission of specific anatomical and functional characteristics. Neurophysiological investigation has established correlations between mental phenomena and physicochemical changes in the central nervous system, and specific electrical responses of different areas of the brain can be identified following sensory stimulation of the eye with patterns, shapes, or movements. Advances in other scientific areas have proved that mental functions and human behavior can be modified by surgery (frontal lobotomy), by electronics (brain stimulation), and by chemistry (drug administration), thus placing the mind within experimental reach.

The ability to influence mental activity by direct manipulation of cerebral structures is certainly novel in the history of man, and present objectives are not only to increase our under-

standing of the neurophysiological basis of mind but also to influence cerebral mechanisms by means of instrumental manipulation.

The working hypotheses may be summarized as follows: (1) There are basic mechanisms in the brain responsible for all mental activities, including perceptions, emotions, abstract thought, social relations, and the most refined artistic creations. (2) These mechanisms may be detected, analyzed, influenced, and sometimes substituted for by means of physical and chemical technology. This approach does not claim that love or thoughts are exclusively neurophysiological phenomena, but accepts the obvious fact that the central nervous system is absolutely necessary for any behavioral manifestation. It plans to study the mechanisms involved. (3) Predictable behavioral and mental responses may be induced by direct manipulation of the brain. (4) We can substitute intelligent and purposeful determination of neuronal functions for blind, automatic responses.

In any evaluation of experimental results, we should remember that there is always a congruence between the methodological approach and findings obtained, in the sense that if we study the brain with an oscilloscope, we can expect information about spike potentials and other electrical data but not about the chemical composition of the neurons. Psychological reactions and behavioral performance often escape neurophysiological methodology, and a coordinated interdisciplinary approach is needed. Music does not exist in a single note but is the product of a spatiotemporal sequence of many sounds. Mental activity does not emanate from the activity of single neurons but from the interaction of many neuronal fields. Rage, for example, is characterized by changes in electrochemical, autonomic, sensory, and motor functions which are overtly expressed in social relations. Some electrical manifestations of

rage have been recorded as discharges at the single neuronal level, but the phenomenon involves multilevel responses, and for its proper investigation the whole organism should be observed in a social setting.

The development of new methodology to explore and com-

municate with the depth of the brain while the experimental subject engages in spontaneous or evoked activities now enables the scientist to analyze and control basic neurological mechanisms of the mind and represents a unique means of understanding the material and functional bases of individual structure. The future should see collaboration between those investigators who formerly studied neuronal physiology while disregarding behavior and other scientists who have been interested in behavior while ignoring the brain.

[Chapter Seven](#) | [Delgado Index](#) | [Chapter Nine](#)