

## Metaneurobiology of Death

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There are two fundamental concerns of original scientific monography "*Metaneurobiology of death*" (author Prof. Niko Zurak, Zagreb: Medicinska naklada, 2016.). In the first place, it is the meaning of information in the functioning of the human brain and the function of visceral organs. The second is related to the time dimension and the chronobiology. Building on the fact of the scientific evidence of the existence of programmed cell death (cell suicide), the author postulates the existence of a genetic program of the death of the organism as a whole, human and animal. The claim that death is an active, physiological process, and that like all other physiological processes has its pathophysiology, is an extremely brave starting point of this scientific monography. Ideologically this sort of thinking builds on the concept of Sigmund Freud about the existence of Thanatos as the death instinct. As all instincts by definition are genetic programs, author is searching for the structure in the central nervous system, which is a substantial carrier of this program. This structure is the nucleus tractus solitarius (NTS) in the medulla oblongata. NTS functions as central processing unit of the autonomic nervous system. In NTS all internal organs and the brain itself are mapped, with the task to maintain equilibrium of the vital autonomic functions. Author took advantage of this fact to interpret the formation mechanism of syncope by reset of the NTS. For the daring premise that the genetic program of death is located in the NTS, with arguments author explains the pathogenesis of sudden infant death by premature activation of the mechanism of death due to disturbed habilitation barriers of the NTS.

For consistently based setting that NTS is the carrier of the genetic program of death author logically demystifies the existing paradigm of the anoxic ischemic death as a cause of sudden death in full consciousness, moving it in theoretically interesting place with coordinates of information and time. By anoxic-ischemic mechanism of death the fact that 100 billion neurons live minutes after the cessation of cardiac activity cannot be explained. Therefore, the author advocates neurocentric paradigm of death, whether natural or caused by force.

It is the original scientific work with extremely bold innovative approach to the neurobiology of dying. They are very impressive and original ideas in the deliberations on the issue of awareness and thus in the context of the enigmas of the relationship of mind and body (*mind-body* problem). Numerous color illustrations that facilitate understanding of some more complicated parts of the text contribute to the quality of this scientific work.

"*Metaneurobiology of death*" is an example of translational neuroscience where the holistic approach bridged the gap between basic neuroscience discoveries and practice of clinical neuroscience. Although the monography is intended for physicians, especially those in clinical neuroscience area, with its freshness in some thematic units that deal with the problem of death from philosophical psychological point of view, will certainly be interesting in the wider academic audience.

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