

MEMORIAL SYMPOSIUM – PROF. HANS HELMUT KORNHUBER

HANS HELMUT KORNHUBER: NEUROLOGIST – ENGAGED CLINICIAN – NEUROPHYSIOLOGIST – SCIENTIST AND HUMANIST

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Prof. Hans Helmut Kornhuber

This lecture in memoriam of Hans Helmut Kornhuber, 1928-2009, Freiburg – Baltimore – Ulm, Chair of Neurology and founding Professor of Neurology of Ulm University is prepared for the “Memorial Symposium - Prof. Hans Helmut Kornhuber” on the 53rd International Neuropsychiatric Pula Congress. It is an attempt to bear in remembrance Hans Helmut Kornhuber’s scientific legacy. The aim is to give at least a survey of his immensely broad range of interests. Kornhuber was one of the last shining examples of what has been called “*Naturforscher und Arzt*” / “Researcher and Physician” in the 19th and early 20th century. Reviewing his scientific oeuvre includes: Kornhuber’s early interest in epistemology and brain function. His work on the sensory systems / perception, conducting many experiments at Baltimore with Mountcastle and his team on skin receptors / tactile sensibility, and also measuring the channel capacity of sensory systems and consciousness. The entire field of Neurology he knew in extenso, there were not many

clinicians engaged with such an intensity as Kornhuber with his always up to date and profound knowledge about new developments and therapies in neurology, and he conducted his own research into new therapies with particular emphasis on multiple sclerosis, stroke, dementia, movement disorders, etc. For Psychiatry as well he made important contributions, e.g. the glutamate theory. To Oto-Rhino-Laryngology he contributed a lot, e.g. hand book articles such as ‘Physiology and Clinic of the Vestibular System’. Kornhuber also discovered the eye muscle field in the cerebellum.

Kornhuber coined the term “preventive neurology” and did a lot for prevention, e. g. he taught school children measuring their parents’ blood pressure. He was always fighting for the integrity of the family. He extensively worked on addiction / substance abuse (cigarettes, alcohol, tranquilizers). His almost 5 years in a Russian prisoner of war camp made him appreciate how important human freedom is. He worked intensively in this field with many own contributions including the freedom of will. In the motor system he grossly enhanced our knowledge about motivation, intention, preparation and execution of volitional, self-initiated movements and actions along with their respective brain mechanisms, the Bereitschaftspotential. Kornhuber postulated already in 1973 that the information transfer does not travel from the supplementary motor area (SMA) directly to the primary motor cortex (M1) but rather via the basal ganglia, motor loop. His concept of readiness for movement together with the author of this commemorative lecture became the basis for all discussions about our willful actions and about the final question of freedom of will. It goes without saying that Kornhuber was an outstanding academic teacher and highly talented lecturer, and by the way the founder of the *Studium generale* at Ulm University.