



Rewiring faulty circuits – The promise of Deep Brain Stimulation for Psychiatry

Thomas Eduard Schlaepfer

Abstract:

The introduction of Deep Brain Stimulation for treatment resistant disorders might very well lead to the most significant development in clinical psychiatry of the last forty years – possibly offering a rise of hope for patients to whom medicine had hitherto little to offer. Furthermore, translational research on neuromodulation will allow us to glean something about the underlying cause of patient's illnesses before figuring out a treatment that addresses the source of the problem. Major depression offers perhaps the best example of the rapid progress being made in understanding the biology of mental illness. Studies on the underlying neurobiology of major depression have typically focused on the description of biological differences between patients and healthy subjects such as alterations of monoaminergic or endocrine systems. Psychotropic drugs work by altering neurochemistry to a large extent in widespread regions of the brain, many of which may be unrelated to depression. A better understanding of defined dysfunctions in these networks will invariably lead to a better understanding of patients afflicted with depression and perhaps contribute to a de-stigmatization of psychiatric patients and the medical specialty treating them.

Biography:

Thomas Eduard Schlaepfer, MD is the Vice Chair of Psychiatry and Psychotherapy at the

University Hospital Bonn, Germany, where he is also Dean of Medical Education he holds a joint appointment as Associate Professor of Psychiatry and Mental Hygiene at the Johns Hopkins University, Baltimore. He is a fellow of the American College of Neuropsychopharmacology (ACNP) and chair of the Task Force on Brain Stimulation of the World Federation of Societies of Biological Psychiatry. He received his medical training at the University of Bern, Switzerland. He worked as Assistant Professor of the Department of Psychiatry and Behavioral Sciences at the Johns Hopkins University School of Medicine, Baltimore, Maryland. Since 1997, he has been Associate Professor of the same department, as well as the Department of Mental Hygiene at the Johns Hopkins University School of Medicine in Baltimore. He focused the research of his group on translational, functional neuroimaging and clinical effects of neuromodulation interventions (including repetitive transcranial magnetic stimulation, vagus nerve stimulation, magnetic seizure therapy and deep brain stimulation) for treatment resistant major depression. After the first human application in the year 2000 his group developed the clinical use of magnetic seizure therapy (MST) for depression and more recently the hypothesis-guided therapeutic use of deep brain stimulation of parts of the human reward system (Nucleus Accumbens and Medial Forebrain Bundle) in the same disorder.