

## Psychiatric Neuroscience and Neuroscientific Psychiatry An Integrated heuristics of Clinical Practice.

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Neuroscientific formulations have become the cornerstone of many disciplines. The particle “neuro” is found in such diverse words as neuropsychology, neurolaw, neuroethics, neurohumanities, to name just a few. Along with terms like neuroenhancement and neurosociology (or social neuroscience) these expressions are implicit recognition of the pivotal role the nervous system plays in all human endeavours.

Neuroscience is probably an inclusive discipline that not only relies on empirical data derived from physiological and biochemical experimentation. It has become a heuristic or interpretive device for the construction of disciplinary attempts at integrating informations and knowledge gathered by means of different methodologies and in diverse contexts of interpretation.

One important fact in current formulations is, however, the different interpretation of neuroscientific data in clinical psychiatry and allied disciplines. Beyond the accumulation of empirical facts and the uncritical imposition of a mechanistic stance in the application of knowledge, the interesting issue in current developments is that the Conceptual Nervous System (CNS) that is constructed from data and information has changed.

The old interpretation was based on the assumption that the human nervous system is just a complex electrochemical machine responding to external stimuli and contributing to homeostatic balance in internal (bodily) and external (behavioral) activities. The reflex arc was at the center of classical neurophysiology until the middle of the XXth century. Complex behaviors, language, mentation, affect were interpreted in the context of the metaphor of the machine, so prevalent in positivistic thinking in biology

and medicine and epitomized in the orientations of Pavlovian psychiatry. Even when referring to “higher nervous activity”, neurophysiologists were convinced that the nervous system operates under rigid rules and that it was subject to limited morphological or physiological modifications across the life span. The ambitious Freudian proposal for a scientific psychology, not published during his proponent’s lifetime, was based on a mechanical nervous system.

The Conceptual Nervous System (CNS) of the XXIst century is a different construction. It permits reinterpretation of many observations, explanation of phenomena like the recovery of function after damage, and the realization that the nervous system is in continuous flux, in constant change and modification and that, instead of a machine, the best metaphor is closer to an autonomous living organism. Not only responds to environments, it contributes to shaping environments. It is an expression of genetic influences modulated by epigenetic forces. It shows plasticity and is capable of surprisingly higher rates of morphological recovery.

This reinterpretation of the nervous system provides a powerful heuristics for clinical practice. It is no longer an exclusive deterministic application of physiological and biochemical rationalities. Even the slightest of interventions involves a continuous exchange with environmental and social influences. It has become a truism to say with the philosopher Merleau-Ponty that reality is not the cause of perception but the consequence of a creative appropriation of the environment by a living nervous system. This was essential in the work and ideas of the anthropological medicine developed by Viktor von Weizsäcker and the Heidelberg School of Anthropological Medicine, appro-

priately represented in Chile by Alfred Prinz von Auersperg and his work at the Universidad de Concepcion in the 50s and 60s of the XXth century.

The traditional separation of “somatic”, “psychological” and “social” psychiatry can no longer be maintained under the old premises of a machine operating under strict scientific laws against a maleable environment composed by social and interpersonal forces.

The neuropsychiatric heuristics demand “neuro-cultural” theories, explanations that go beyond the causal determination of pure physiology. We have come to realise that neither a “brainless psychology” nor a “mindless physiology/biochemistry” are concordant with the facts or useful in clinical approaches to mental/behavioral disturbances.

Neuroscientific psychiatry and psychiatric neuroscience have a rightful place in research, treatment and prevention along with the discourses stemming from the social sciences or the interpretive/hermeneutic/phenomenological approaches. The heuristic value of the integrative view provided by the new Conceptual Nervous System derived from current neurosciences- and their related disciplines- must be seen in the possibilities it affords for new forms of thinking and intervention.

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