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Brief Account of my Impressions from the SOBP & APA 2013 and View of Current Crises in Psychiatry

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The major theme that came up in these meetings this year was related to diagnosis, the launching of the DSM5 and the establishment of the RDoC program that made a lot of debate in the meetings and outside, in many blogs and publications [1].

Some innovative directions seem promising for the future of psychiatry [2], imaging the most basic machinery of neuronal connectivity at the synaptic axonal levels, his bottom up discoveries of the "Connectom" promises to reveal the "connectomopathis" underlying mental disorders. This work goes together with another exciting innovation that of the "Clarity" and, is relevant to future study of neuronal wiring abnormalities in mental disorders [3]. Optogenetics is promising future technology for controlling brain activity and thus has the potential of "correcting" damaged wiring and faulty synchronization among neuronal ensembles [4].

The RDoC [5] effort to cover multiple domains of pathologies related to mental disorders (from gene molecular levels to whole-brain and social levels) together with the efforts of mapping out Connectopathies for psychiatric disturbances are all excellent necessary bottom-up efforts. However, a top-down rational, or theoretical framework which will make sense, and direct the accumulating investigational bottom-up discoveries was found to be missing.

Such rational, theoretical framework can readily become available using what we have already begun to know about the brain as a complex and dynamic system; I have formulated it under the general term of "NeuroAnalysis" and made it accessible to clinicians as "Clinical Brain profiling" a testable hypothetical phenomenology-to-brain-disturbance translator [6].

The assumption of "NeuroAnalysis" is that being Emergent Properties the mental dysfunctions of "consciousness," "mood," "personality" and "mental organizations" are all associated with vast, wide-spread, whole-brain disturbances and perturbations.

These fall into three major domains of brain organizations, that of 1) basic developmental connectomics, 2) plasticity and adaptability and 3) fast connectivity balance, these are associated with 1) personality disorders, 2) mood and anxiety alterations and 3) psychosis and schizophrenia spectrum phenomenology, respectively.

In patients with personality disorders, the altered disturbed Default Mode Network (DMN) were predicted, i.e., the DMN will have abnormal, biased small-world organization caused by related abnormal experience-dependent plasticity.

Mood alterations and anxiety are predicted to emerge from altered "Optimization Dynamics". Optimization in this case is a dynamic adaptive capacity of the "Bayesian Brain" to reduce "Free Energy". Free energy is an entropy measurement reduced by an optimal plastic adaptive brain. Thus plasticity and changeability are critical to stabilize mood and reduce anxiety, a deduction that concords with the knowledge of plasticity-induction by antidepressant medications. In summary, mood disturbances as emergent properties are explained by Deoptimization Dynamics due to hampered plasticity.

Psychosis is caused by altered perturbed and biased neuronal connectivity ranging from disconnection dynamics to over-connectivity and bottom-up top-down connectivity imbalances.

The assessment of these parameters is available for clinicians at the CBP webpage [7] and explained by the literature [8] and the web-manual for CBP.

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