

# To The Question about the Etiology of Mental Illness



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## Mini Review

The article is devoted the problem of psychiatry - the search for a new paradigm in the context of diagnostics of disorders in neuron-glia networks of the brain; the ways and prospects of development of this direction using a new research method, the variance of the amplitude-frequency characteristics of the alpha rhythm of the EEG.

**Keywords:** A new paradigm of psychiatry; Information of the disease; A new diagnostic method - DAFCAR

**Abbreviations:** DAFCAR: Dispersion of Amplitude-Frequency Characteristics of the alpha rhythm EEG; NGNB: Neuron-Glia Network of the brain

## Introduction

The main problem of psychiatry, as a result, she still cannot become full-fledged science, is the absence of a proven etiologic factor in mental illness. In ancient times, in internal medicine adopted a scheme according to which the basis of any disease must lay the "material substrate" organic change in the structure of the body which disrupts its function. As a result of this organic disorder of the stomach ceased to allocate the gastric juice, the heart - to move blood through the vessels, the kidneys is to excrete urine. In any case, during Pathologo-anatomical dissection, we found clear morphological changes that are pathognomonic to the existing diagnosis of the disease, which was confirmed histologically.

In the case of mental illness occurred conflict - the disease is, and the "material substrate," no. There is a fairly large group of brain diseases organic nature, which can be set in the usual scheme - vascular, metabolic and degenerative processes, tumors, trauma. However, it is impossible any morphological changes to explain schizophrenia. It was trying to apply a genetic disorder(not sure what)and dopamine poisoning, and expansion of the ventricles and vascular pathology - all of this was unconvincing. One gets the impression that the reason for these failures is a systematic error in the approaches to understanding the causes of mental illness that, perhaps, psychopathology has nothing to do with the scheme of pathogenesis of internal diseases.

In the Journal World Psychiatry [1] talked about the Research project domains criteria (RDoC), launched by the U.S.

national Institute of mental health (NIMH). It was proposed in 2008 in order to "develop for research purposes new types of classification of mental disorders based on intensity and other clinical characteristics of observable behavior and neurobiological indicators". This means that we need a paradigm shift - the key ideas underlying the construction of the concept of mental illness, based on categorical notions of diagnosis. The old approach to classification of mental diseases was to go from the syndrome to the diagnostic memory (DSM/ICD), and from diagnosis to treatment. However, we found that diagnoses based on syndromes (DSM/ICD) that is not associated with abnormalities in neural mechanisms. RDoC is different from studies of syndromes using a dimensional approach. Instead start with the diagnoses based on the clinical picture, and then connect them with the internal mechanisms, RDoC begins with a dysfunctional mechanisms, moving them to clinical symptoms. With this goal in selected functional domains: a group of negative symptoms, a group of positive symptoms, cognitive symptoms, group symptoms of social processes, the system activating and modulating symptoms.

However, even this new dimensional approach will give only half effect if we do not cling to RDoC with the study of the functional state of the neuron-glia network. In 2010, the Board of the Dutch society of psychiatry appealed to key professors and heads of mental health services with a request to formulate the "agenda" for scientific research in psychiatry [2]. The Board stressed that both fundamental and applied research is extremely important for the development of

psychiatry as a medical discipline and to improve the quality of assistance to the PA to the clients. The first step was gathering ideas about research in psychiatry from the “key” professors, and this was done through individual interviews. Harvested the crop of ideas were subsequently discussed with the management of the society and shrinks the heads of agencies. Further discussion was made at the annual spring Congress of Dutch psychiatrists in March 2011 (Amsterdam).

The main items for discussion were the following:

- a. Explore not disorder, and the dimension (dimensional approach)
- b. The transition from a monodisciplinary to a multidisciplinary research
- c. Need (not only) studies of certain age groups, but (primarily) research phase of development and research throughout life
- d. Ensuring cooperation between the University psychiatric science and practical mental health services.
- e. A study of the implementation of research results into practice and to develop guidelines for implementing research results into the practice of mental health services

However, all these good wishes will be hardly realized, until we radically change the paradigm of psychopathology in the understanding of what constitutes a “material substrate” in mental illness. For several rooms in this journal published an article about the new method of study is the dispersion of amplitude-frequency characteristics of the alpha rhythm [3-10]. On a large statistical material shows that in many cases, endogenous mental diseases, we have no morphologic changes in cerebral tissues, but are significantly expressed functional disorders in NGNB, manifested, for example, the phenomenon of hypofrontality-ness.

It is quite natural to hypothesize that mental illnesses are diseases of information, in which the “material substrate” is the functional-informational disorganization NGNB. In this case, there is no need of organic changes in cells and tissues. Enough of some kind of imbalance in their functional interaction, which leads to an inability of the neural network to adequately, processes the afferent information. A similar phenomenon is possible only in the information interactions. Remember the famous story of Lewis Carroll’s “Jabberwocky” Twasbrillig, and the slithytoves Did gyre and gimble in the wabe; All mimsy were the borogoves,

And the momerathsoutgrabe. Absolute “semantic mess” stylistically when properly constructed sentence. In the information field for the understanding of the meaning of the phenomenon is important not morphological integrity of its elements, and their functional correlations.

In a number of articles on the violation of information dysfunctions related to the disruption of the NGNB, especially in the frontal lobes, was consistently held the idea that, diagnosing this functional disruption, we can establish the identity of the disease to a specific diagnostic group psychopathology. But it is, ultimately, not important for the treatment. It is important to establish the topical form of violation and the degree of its severity, e.g., mild of hypofrontality with personality disorder (F60) can be dispensed with psychotherapeutic action, and expressed hypofrontality in schizophrenia requires the application of neuroleptics. But it is - at the present time, when the phenomenon DAFCAR practitioners is not known. If, under the control of this technique, find the solution of the dispersion changes to the NGNB, it is possible to treat functional information failures in NGNB will be using physiotherapy techniques.

### Conclusion

A. Psychiatry requires a paradigm shift, which could be based on the idea of psychopathology as information about diseases, etiological factor which is functionally information damage NGNB

B. The search for the causes of psychopathology should be based on finding functional disorders in NGNB, one of the markers which is DAFCAR

C. Application of the method DAFCAR will bring psychiatry into the category of dimensional Sciences and open the way to finding effective treatments for mental illness, and come to an understanding of the mystery of the brain.

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