CONSCIOUSNESS MODEL THAT PROVIDING MAXIMUM ACCURACY OF REALITY PREDICTION

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The proposed consciousness model based on D.I. Dubrovsky's "informational approach" to "Mind-Brain Problem", where we consider the reality through the prism of information about observed phenomena, which, in turn, is perceived by subjective reality through sensations, perceptions, feelings, etc., which, in turn, are information about the corresponding brain processes. Within this framework the following main principle of the Information Theory of Consciousness (ITS) is put forward: the brain discovers all possible causal relations in the external world and makes all possible inferences by them. In the report we argue that ITS: (1) base on the information laws of the predictive structure of the external world; (2) explain the structure and functioning of the brain functional systems and cellular ensembles; (3) ensures maximum accuracy of predictions and the anticipation of reality; (4) resolves emerging contradictions and (5) is an information theory of the brain's reflection of reality.

At the Seventh International Conference on Cognitive Science, K.V.Anokhin said "The problem is not that the existing neurophysiological theories are imperfect ... The correlative approaches used in them simply cannot answer questions about the nature of mind and subjective reality ... This requires a non-reductionist fundamental theory" [1].

Max Tegmark in his book [2] also write that between the external reality "External Reality" and "Internal Reality" there should be an intermediate "Consensus Reality", describing the external reality in physical terms and at the same time is reflected in the internal reality.

Following D.I. Dubrovsky [3], we will use an "informational approach" to the description of "Internal Reality" as a *subjective reality*. Herewith, the subjective reality is the reality of an individual's conscious states – sensations, perceptions, feelings, thoughts, intentions, desires, etc. At the same time, the phenomena of subjective reality are considered as information related to the corresponding brain process as its carrier.

What is the purpose of this information? Most precisely, it is defined in the "principle of the evolution of the living world", formulated by P.K. Anokhin: "There was one universal pattern in the adaptation of organisms to external conditions, which later developed rapidly throughout the evolution of the living world: a highly rapid reflection of the slowly unfolding events of the external world" [4]. Let us reveal this principle and formulate the principles of creating an information theory of consciousness. Within this framework of the information approach to the "Mind-Brain Problem", we get the following sequence of reality reflection: reality \Rightarrow information \Rightarrow subjective reality \Rightarrow brain where reality is described through information about observed phenomena, which are perceived by subjective reality through sensations, perceptions, feelings, etc., which in turn are information about the corresponding brain processes.

- Let us formulate the principles of the information theory of consciousness.
- (1) Following the "principle of the evolution of the living world", this information theory should anticipate the events of the outside world.

However, if the external world were accidental, then anticipation of it would be impossible. But our world is well structured. If there are any laws in the information structure of reality, then it is natural to assume that in the process of evolution there were developed such neurobiological mechanisms that would use these structures to produce the most accurate reflection of reality. Therefore, the following principle is necessary.

(2) The information theory of reflection should be based on the laws of the structure of the external world and describe simultaneously both the information structure of reality and neurophysiological and other mechanisms that ensure the reflection of this structure in terms of subjective reality.

The following laws of the information structure of reality will be given. The corresponding neurobiological mechanisms that use these structures were indicated by K.V. Anokhin in his report "Cognitome – hypernetwork model of the brain". These are KOGi (Cognitive Groups of Neurons), generalizing the ideas of the functional systems theory and D. Hebb's cellular ensembles [1]. We propose the following fundamental principle of the Information Theory of Consciousness (ITS), which is sufficient to explain the basic information processes:

THE PRINCIPLE OF unlimited inference: The brain detects all possible causal connections in the external world and makes all possible conclusions on them.

It turns out that this principle is sufficient to build an ITS, which [5-8] :

- 1. Explains the structure and functioning of KOGs of functional systems and D. Hebb's cellular ensembles.
- 2. Based on the following information laws of the structure of the external world.
- 3. Provides maximum accuracy of predictions and anticipations of reality.
- 4. Resolves emerging contradictions.

5. It is an information theory of reflection of reality by the brain.

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Simulation of MIND The fundamental working principle of MIND

MIND is a universal algorithm that uses the two ingredients 'Universal Energy' and 'Universal Knowledge' of 'Universal Cosmic Network'. Elementary Management of 'Universal Cosmic Network' is carried out by identifying a subnet (pattern recognition) and relating it to another (pattern substitution). In so doing MIND rejects (!!!???) the identified pattern and accepts the substituted pattern. Any Macro Management of 'Universal Cosmic Network' is carried out in terms of Elementary Managements. So, the fundamental working principle of MIND is 'pattern recognition and substitution'. This MIND is bestowed on all physical entities, be it a sentient and insentient. Every physical entity, including subatomic particles, thinks and makes its own logical decisions. Lower-level species do not make effective use of MIND. Evolved species make use of MIND at their own individual level. That is why we talk about 'my mind', 'your mind', 'his/her mind', leading to the notion of 'Subjective Mind'. It is not hard to see that a 'Subjective Mind' also works on the principle of pattern recognition and substitution, and so a thinking machine should also work on the same principle.

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