

Research Article

What is the Psyche? What are we Curing?

Reshetnikov Mikhail*

The East-European Psychoanalytic Institute, Rector, Russia

***Corresponding author:** Reshetnikov Mikhail, the East-European Psychoanalytic Institute (University), Rector, St. Petersburg, 197198, Russia. Tel: +78122352857; Email: veip@yandex.ru

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Abstract

In this paper traditional ideas of the relationship between psychic activity and brain activity are reconsidered, and the hypothesis of the brain as the biological interface which was suggested by the author earlier (in 2008) is developed. Approaches to research of psyche in psychology, physiology, psychotherapy, psychiatry and social sciences as well as their applications to treatment of patients with mental disorders, are analysed and summarized. The author considers two main models of mental disorders with clearer differentiation between organic (Brain-related) pathology and mental disorders as such which result from informational (Non-material) influences on psyche as a specific informational system rather than on brain. Differences between nervous and mental functioning of organism and personality are clarified and conscious activity is viewed as an acquired (programmed) function that is formed in social informational environment.

Introduction

This discovery had been on the surface for long time, and it is amazing that nobody had made one more step to combine his clinical experience, achievements of contemporary academic science in its approach to information psychological research in child development and experiences of human children raised by animal communities on the one hand with critical approaches on the other hand to contemporary state of psychology, physiology and psychiatry, crisis of which is to significant degree caused by their outdated perspective on the psyche.

Keywords: Biological interface; Brain; Information; Mental Disorders; Nerves; Psyche

History of the Problem

The problem of matter and mind and in narrower applied sense of relationship and connection between the brain and the psyche has been one of the most important mysterious and still unresolved problems for two thousand years. In this paper we will not refer to ideas of outstanding philosophers but will restrict ourselves with applied medico-psychological aspect of the problem. The undeniable idea that psychic phenomena are closely connected to activity of the brain had been formulated before Hippocrates; but he modified this concept and postulated an idea which persisted for centuries that the brain is a repository

of all psychic processes. It will be shown here that the difference between the two formulations which often stays unnoticed is crucial. Despite the immense progress of research in this area Hippocrates's hypothesis has dominated the field in physiology, psychiatry and psychology for two thousand years. The exception could be found only in some modalities of psychotherapy viewing the psyche as an epiphenomenon. Before addressing the issue of epiphenomenon let me remind you the main stages in development of contemporary scientific views. Theories Sechenov (2015) and Pavlov (1951) [1,2] led to development of two new areas of knowledge at the edge of psychology and physiology: physiology of Higher Nervous Activity (HNA) and psychophysiology. It should be mentioned that these two fields of knowledge after almost a century of attempts to explain any psychic activity by excitation and inhibition reactions, reflex activity, and electric activity of the brain and biochemical reactions restricted the area of their interests with very few exceptions with study of the brain structures that form the basis for psychic activity. Let us stress it once again not psychic structures as is where thought earlier but rather structures that form the basis for psychic activity.

However, all approaches to psychopathology in psychiatry and psychopharmacology are still based on established HNA theory which still considers psyche and brain structures and mechanisms identical directly addressing anatomical structure of the nervous system localization of functions in the brain cortex pathways

and biochemical reactions related to neurotransmitters. There are certain historical, methodological and ideological reasons for it. Hippocrates's ideas were developed and supported by works of Rene Descartes (1596-1659) who developed the idea of reflex; he wrote: "I am now dissecting heads of different animals to explain what imagination memory is etc" [3]. The same anatomical later physiological method in search for the psyche was chosen by outstanding scientists Paul Broca (1824-1880) and Carl Wernicke (1848-1905) who discovered nervous centres for speech; I.M. Sechenov (1829-1905) who suggested the idea of "Totally machine-like brain" and attempted to explain psychic activity by excitation and inhibition reactions in brain tissues; I.P. Pavlov (1849-1936) who developed a theory of reflex and higher nervous activity and maintained that reflex unites the physiological and the psychic and HNA is an equivalent of psychic activity [2,4]. The same method is chosen by contemporary scientists who explain normal and pathological psychic activity by neurotransmitters exchange in the synaptic cleft.

In accordance with the spirit of the time and super-popular ideas of primitive materialism they all were or still are united by the same idea that is their attempts to find material basis for psychic activity. In the last two centuries they have tried to find psyche in gyros, cortex, ventricles of the brain, subcortical brain, electric, wave and quantum activity of the brain and finally: "What a miracle! It has been found in the synaptic cleft!" It should be mentioned that at each time dominating hypotheses of psychic structures determined methods of therapy of mental disorders. Anatomical approach to "Psychic structures" stimulated ideas of lobotomy and callosum dissection the idea of electric activity resulted in thousand experiments with electroconvulsive treatment; biochemical theories which were historically new led to development of the whole new area in chemical industry that is psychopharmacology the main target of which is the synaptic cleft. In result contemporary therapy of mental disorders is mostly based on psychopharmacology which aims at correction of neurotransmitters exchange in the synaptic cleft and thus, allegedly impacts the psyche. But the question whether this "Most recent" methods of therapy actually lead to the patients' cure is still open because even the authors of these methods report 20-40% of placebo effect and side effects of most psychopharmacological medications include the whole list of psychopathology, intellectual deterioration and emotional dullness as well as disturbances in reproductive function, liver, kidneys, hormonal levels etc.

Substantiation of the Hypothesis

As a counterbalance to the abovementioned traditional ideas in 2008 the author developed a hypothesis of the brain as the biological interface [3-6]. According to this hypothesis a parallel is drawn between the brain and mechanics of the computer (Hardware) on the one hand and between psyche and programming (Software) on the other the process of teaching a child to speak his language

upbringing and education is considered a kind of programming. Let us stress that this programming is carried out as it is done in technical systems in a specific language. Psychic activity in this case is viewed as a kind of informational exchange and interaction which can evolve and function only in society [7] suggested the idea that a child from his first days of life immerses into "The Bath of language" which determines his psychic development). And physical and physiological phenomena are viewed as bodily symptoms of the soul life which provide only indirect information about somebody's thoughts, ideas and experiences as well as about psychic contents in general. These symptoms can merely indicate that something is going on with the subject but we can only guess what exactly. The situation can be compared with that of a man standing near the high impenetrable fence of a factory and trying to understand what is being produced there on the basis of vague noise that he hears.

The crucial idea of the hypothesis that I developed in 2008 was the following: with time the special role of the brain will be reconsidered and in new framework it will be assigned a more modest but nevertheless important role of a link between real and ideal or speaking in a contemporary language the brain is understood as the biological interface [3]. From that perspective, previously popular attempts to study thoughts and psychic activity by means of the EEG can be compared with measuring voltage and resistance of a TV set in attempt to know what is being broadcasted on a specific channel. Psychic activity can be knowable at least nowadays only by self-observation and reflection which for long time of development of psychology have been characterized as idealistic subjective and non-scientific methods but in the recent years the attitude to these methods of self-knowledge has started to change.

Academic Science on Information

Further development of the hypothesis was related to a very important notion that had for long time stayed unnoticed by psychologists, physiologists and psychiatrists and had not been taken into account in their theories and hypotheses. Contemporary academic science characterizes information as non-material factor and only its carriers (Biological, paper, electronic etc.) are material. However, non-material information acquires (Not has initially but acquires) a number of qualitative and quantitative characteristics. It can be neutral emotionally intense, scaring, truthful, fake etc., but all these characteristics appear only when there is a perceiving subject and different subjects can have different psychic reactions to the same information (Let us remember September 11, 2001, mourning in the US and joyful crowds in Livia). By itself information on a carrier does not exist in absence of a subject. Only alive beings (And human being to the highest degree) can be simultaneously subjects of perception, producers, carriers, keepers and verifiers of information. In process of evolution homo sapience gradually created more and more reliable systems of storing and

transmitting growing amount of information to future generations: from primitive forms of communication that can be found in animals to human speech from primitive indication of things, phenomena and actions to abstract concepts and generalizations from spoken language for knowledge transmission to writing from mythological constructs to scientific knowledge from clay tablets and papyrus to contemporary informational systems. Taking this into account we should admit that contemporary notion of evolution resulting from synthesis of two purely biological approaches classical Darwinism and population genetics should be significantly widened by including informational psychological aspects.

Established view of the brain as the repository of all psychic functions has led to many misperceptions that has entered the everyday language, and in science they resulted in well-known phenomenon of “Theory overload” (When everything beyond the dominating theory is rejected). There are common phrases such as “Something is wrong with his nerves”, although nerves are just transmitters or “It has come into my head” although things come to one’s mind rather than head etc. Generally speaking there is immense identification of the nervous and the psyche both at the level of laymen and at the level of scientific knowledge. At the same time contemporary human sciences completely neglect crucial differences between the nervous system and the psyche. There are a few of them but the most important is the following: healthy psyche is able to differentiate imaginary stimuli from real ones. Nervous system can react almost in the same way to them both. This is the basis for all suggestive and auto-suggestive techniques when for instance the idea that a hand is immersed into hot water immediately leads to increased temperature of palm skin or merely imagining running 100-meter race will increase the heartrate. But very few specialists with the exception of psychotherapists take into account that the same is true for development of psychosomatic pathology which often follows one’s individual system of symbolization (In our terms, “Inner psychic programming”). What one takes to his heart might result in cardio-pathology grudges he cannot “Swallow” will influence the act of swallowing in form of bulimia or anorexia being short of breath after receiving certain news might result in asthma attacks an event that one cannot withstand might lead to joint pains. In general individual system of symbolization of psychic traumata works like repetitive imperative suggestion (To be more precise, autosuggestion). One can agree with it or not but I think that even people who are far from psychotherapy and psychology have seen a person bent down by unbearable psychological burden (Which is also information).

The idea of the psyche influencing somatic functions formulated by J. Heinroth in 1818 was revolutionary and contradicted the idea of “Brain-based structures of the psyche” that is why it was not accepted by official science for long time (More than 100 years) and existed only at the laymen level. When medical doctors were trying in vain to determine an etiology of

a disease the patient or his relatives would easily conclude that he became ill “Because of grief” or “Because of unreciprocated love”. Gradual recognition of psychosomatic pathology should have refuted the idea, which had dominated medical science that psychic phenomena are identical to their material carriers such as brain and it’s physiological and biochemical processes in psychosomatic approach the latter become secondary in relation to psyche. However, this discovery seemed to stay unnoticed. In the XX century influence of the psyche on the soma was finally recognized but did not influence approaches to treatment of mental disorders that had been applied for two thousand years and still use chemical (Psychopharmacological) influence on somatic brain structures thus silently admitting that the psyche is just a derivate of brain structures. I would guess that the idea that the brain in relation to the psyche is just the soma albeit important kind of it will not be quickly recognized despite abundant clinical evidence supporting it. Without detailed explanations let us add that the idea of “Brain plasticity” will in time be transferred to psyche plasticity because tissue however highly organized cannot change itself on its own will higher level of regulation in tissue processes is required for this task.

Psychopathology and Psychopharmacology

Let us turn to psychopathology. It seems that we have not clearly discerned two very different kinds of it and two qualitatively different approaches to therapy of psychopathology. These are:

- Psychopathology as a result of organic damage of the brain: infectious processes, sclerotic change, oncological disease, etc. In such cases the brain as information carrier (“Hardware” in terms of computer metaphor) is damaged. In these cases it is easy to localize a damaged part of the brain based on external (Behavioral and psychic) manifestations and approaches of biological medicine are absolutely adequate: the brain should be treated by chemical substances or surgery, or radiation or laser, etc.
- Psychopathology that develops in result of informational damage of psyche itself that is a non-material factor (e.g., individually significant psychic trauma) has damaged another non-material factor (Normally functioning psyche) like a computer virus (Information) damages previously functional software. The most vivid example is “Massive poisoning” of students in a number of schools in Chechnya, allegedly by neuroparalytic gas in September-December 2005. When this phenomenon was thoroughly studied, it appeared to be massive psychic infection by false ideas which are often called “Informationally transmitted diseases” (More correct-mental disorders) generally speaking, interethnic conflicts develop in accordance with the same paranoid scenario (Volkan (2003)[8].

In contrast to the first case mental disorders in this second case can take various forms depending on individual specifics

of the subject from mild dysphasia to severe autism or persistent paranoia. Therapy should consist of informational influence on damaged psychic, rather than brain, structures. Chemical influence on "Hardware", in frames of computer metaphor (That is, brain tissues and biochemistry) will be inefficient in this case, as psychic contents will not change. Long-term use of psychotropic medications (Some of them are typically prescribed for at least 6 months or more) does not leave a possibility to objectively assess whether symptom reduction is a result of medication or the crisis has been overcome autonomously.

There is a number of detailed and valid classifications of psychopharmacological medications but they can be also divided into two groups: those that make psychic experience duller (In terms of our metaphor they decrease the brightness of the interface or the screen on which information is projected) or those that stimulate psychic activity and brightness of perception (Increased energy supply of all brain processes). However, they do not change the content of psychic sphere (Information as such). It is not a negative attitude towards psychopharmacology as it would be wrong to ignore its achievements. The author is not against it but just against its ungrounded prescription and long-term isolated and uncontrolled use. That is it should not be used without systematic control from psychiatrist and interaction with psychotherapist who will thoroughly monitor the effect of psychopharmacology and change in the patient's condition (In particular, side effects the list of which as it was mentioned earlier includes the whole spectrum of psychopathology). When individual suffers physically or mentally of course first of all he should receive anesthesia. However, in case of mental suffering, the main task for psychiatrists, psychotherapists and psychologists is to influence psychic sphere of their patients by psychic means. Some might find this strange but psychotherapy can learn something from specialists in antivirus programs. In contrast to different kinds of artificial intelligence in which programs and parameters are given and results of analysis and synthesis are relatively precise and easy to predict, human intelligence has the highest ability to self-development and is unpredictable and subjective in its perception of information decisions it takes are non-standard and variable. The second difference is that information damaging normally functioning psyche can come from outside like in case of computer viruses or generated by the psyche itself in form of false ideas, experiences, suspicions, etc., which become self-traumatizing factors.

Additional Arguments: Feral Children and Abandoned Children

Let us give a few more arguments supporting the theory discussed above. Studies of feral children (Who are known as Mowgli children) show that normal human psyche as well as bipedalism cannot be formed without early immersion in social environment (or, as it was mentioned earlier, without language programming of the child's brain by social environment). It leads

us to conclusion that the healthy brain is a necessary but not sufficient precondition of development and adequate functioning of the human psyche as language programming is still required. Due to the fact that instincts and reflexes are functional in feral children they should be understood as genetically determined in contrast to conscious activity which is an acquired function and can develop only in social informational environment. Let me add that feral children obtain behavioral programs and language (The system of informational exchange) from animal community in which they survived so this is one more proof of the ideas suggested here.

There are well-known cases in psychology when feral children could speak only the language of wolves or dogs or birds (This was the case of a child who was isolated from his severely disturbed parents and spent his early years surrounded by parrots). This confirms the author's hypothesis, according to which the process of upbringing and education is a version of programming and imprinting. Let me remind you that imprinting is defined as a psycho physiological mechanism by which behavioral patterns perceived by senses (Visual, audile, olfactory etc.) are rigidly fixed in memory with minimal exposure. This mechanism is typical for both humans and animals, but it functions only in the early childhood and of course stays out of awareness. Now let me stress some important characteristics of imprinting that have escaped attention of most researchers. Firstly, the infant unconsciously imprints and later copies behavioral patterns from his environment regardless of them being constructive or destructive. That is both positive and negative patterns can be copied including those from aggressive or depressive spectrum. Secondly, the fact that feral children are able not only to adjust to animal communities but to totally identify with them leads to the conclusion that newborn human individuals do not identify with a particular species. It means that identification with a species, adequate or false is developed on the basis of primary imprinting of immediate environment which takes care of the infant's survival.

As it was mentioned in literature about feral children [9,10] when they stayed in animal communities for long time they would reproduce behavior of their "Adopted parents" so that psychologist and specialists in rehabilitation could not change it. Such children would skillfully use all four extremities for movement they sniffed their meal before eating it and preferred raw meat which they used to eat when hunting for chicken and small rodents when thirsty, they would lick their lips and lap water rather than drink it; they disliked daylight; they could not recognize themselves in a mirror just like animals. They tended to run away from other people and from the fire and when facing danger, they would take threatening bodily positions and start roaring; they urinated and defecated like animals. Such behavior is understandable indeed. What should be specifically mentioned is their inability to laugh despite normal innervations and intact mimic muscles. There have been abundant studies of "Social smile" in infants and here we can make one more conclusion: an individual without society is not a smiling being

and will not respond to a smile (Can we imagine the world without it?). At the same time natural animal instincts are awakened in such an individual who are dormant in everyone and are ready to reactivate any time when cultural frame disappears. There are some confirmations to it. For instance, there was a well-known story of a girl who developed normally at first and then her severely disturbed parents made her live in a dog's kennel from 3 to 8 years of age and in result the child who had already acquired bipedalism and speech started using four extremities to move was barking, howling and tended to eat and drink in the manner of her "Adopted mother". Considering this idea (How easy it is to reactivate primitive behavioral patterns suppressed by culture) tendency towards "More tolerant" attitude to various manifestations of non-formal and deviant behavior which appeared in the beginning of the XX century needs to be thoroughly reviewed.

What interferes with New Approaches?

Theories addressing some psychic structures (Anatomical, physiological, physical or physical-chemical) are still very popular. There are at least two explanations to that. First, I am sure that many colleagues of mine after reading this material will feel an actual cognitive dissonance. These ideas contradict what we were taught, what we believed, what we based our scientific generalizations on what we used for our therapeutic approaches and strategies. The author also struggled with such dissonance. The second reason seems to be the tendency to standardize all kinds of psychiatric, psychotherapeutic and even psychological help. It results from uncritical application of principles of somatic medicine in which such an approach is undoubtedly true and adequate because variability of somatic pathology from perspective of it's an etiology, pathogenesis, clinical manifestations and methods of treatment is relatively low. In contrast to it mental suffering is characterized by high variability each case is individual and requires individual approach influencing damaged psychic structures. In addition, the main therapeutic instrument and factor is personality of psychotherapist or psychologist who thoroughly explores the patient's personality and uses his psyche to correct the patient's psyche. In that the most important component of therapy is not what the therapist or the patient does but what is going on between them.

On the main Question of Philosophy

From perspective of the theory discussed here the main question of philosophy is formulated in its traditional version: the matter is primary, and the subject is primary while the consciousness is secondary because consciousness develops only in society as informational (Non-material) structure. This structure cannot exist without subjects who transmit and receive information. In conclusion let me remind you that the term "The main philosophical question" was introduced by F. Engels in 1886 in his work Ludwig Feuerbach and the End of Classical German Philosophy. Some

thinkers of the past as well as contemporary specialists deny the importance of this question and consider it artificial and lacking any epistemic meaning and significance. However, we need to admit that importance of this question has increased significantly in informational epoch. Moreover, its formulation and solution influence a possibility to obtain adequate knowledge about the world. Outstanding thinkers such as Plato, Leibnitz, Hegel etc., maintained that the world of ideas exists independently from our consciousness and the world of things is just an incarnation of the world of ideas. Contemporary informational technologies require qualitatively new approaches to these problems because everyday reality convincingly shows that the world of ideas can be formed artificially by qualitatively changing the existing cultural codes. It means that it is possible to artificially create certain trends and vectors of development in the international community which are oriented towards elevated culture and scientific progress or which propel interethnic feud, terrorism or commodity fetishism and socialization of material success.

Conclusion: The Essence of the Discovery and the Theory

In contrast to all previous attempts to explain psychic activity by material structures (Brain tissues, electrical, wave or quantum activity, chemical reaction or neurotransmitter exchange in the synaptic cleft) it has been proved that the healthy brain is a necessary but not sufficient precondition for psychic functioning of personality. The brain and the psyche are two interconnected but principally different systems. The brain is material structure on which the psyche is based and the psyche as a specific version of informational processes in biological system is non-material. It has been proved that the brain is on the one hand the biological interface (Screen) on which information is projected, including knowledge about oneself and about external world as well as about contents of inner mental processes. On the other hand the brain is also an operational system and biological server in which information is accumulated; stored and reproduced that can be transmitted only through social environment and on the basis of language programming of the brain. Acquiring a new language forms an additional informational system of psyche which is confirmed by clinical observations in psychiatric practice when in acute phase of a mental disorder some bilingual patients lose ability to speak their mother tongue but can adequately communicate with their therapist in another language. It is well known that the first such case (Anna O.) was described by S. Freud in his work Studies of Hysteria (1895).

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