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Genius Ideas and Genius Mistakes: Non-Material Nature of the Psyche, Part II

Mikhail Reshetnikov*

East European Psychoanalytical Institute, Russian Federation, Russia

Abstract

The author develops ideas, which he presented in his paper What is the Psyche? What are we Curing? and critically analyses works by Descartes, I.M. Sechenov and I.P. Pavlov, which determined our methods of studying the psyche and treating mental disorders for many centuries. Reflexes of the Brain by I.M. Sechenov and ideas of the second signal system and higher nervous activity by I.P. Pavlov are analysed in detail. The author proves that these ideas, which still influence development of psychology, psychiatry, psychotherapy and social sciences, are fallacious.

Keywords: Biological interface; Second signal system; Higher nervous activity; Brain; Non-material theory of the psyche; Reflex

Introduction

In my previous publication in Journal Anthropology [1], the idea of the brain as a biological interface between the ideal and the real was formulated, and the non-material theory of the psyche was proved. These ideas were developed and repeatedly presented to the scientific community during the last decade [2-8]. This theory is based on a key concept of contemporary academic science, the concept of information as a non-material factor [9], which does not exist without the subject. It was also proved in previous papers that scientists have not notices the substitution of notions for the last two thousand years: they were speaking about studying and treating the psyche, but in reality, they were studying and treating the brain and elaborating pseudo-physiological and pseudo-psychological terminology to describe "the brain mechanisms of mental processes". In contract to these outdated approaches, the author views the psyche as an informational structure, and mental activity as informational exchange and interaction, which are possible only if a child was from the earliest days of his life immersed into social (informational) environment as a kind of global network. In the first paper, however, critical review of Hippocrates's hypothesis of the brain as a repository of all mental processes and development of this idea by Descartes [10], I.M. Sechenov [11] and I.P. Pavlov [12], was only briefly outlined. Considering scientific meaning of these problems – or, rather, these genius fallacies – it would be advisable to review the investment of these authors into scientific ideas of the psyche in more detail.

As Descartes himself mentioned, he adhered to Hippocrates's hypothesis of the brain as a repository of all psychic functions and spent a few months dissecting heads of different animals in attempts to study memory, attention etc. Of course, he failed this task. However, he is a world-known genius, and there are certain grounds for it. This was the time, when scientists tended to give materialist (mostly, mechanical) explanations to their discoveries and observations. For instance, William Harvey, who discovered the system of blood vessels, compared them to well-known technical devices, pipes and pumps, and stated that human blood system follows the same mechanical principles. Descartes widens this principle and applies the mechanical concept of self-regulation of the organism to interaction of this organism with the external world, thus suggesting the mechanical concept of mental activity.

According to Descartes's concept, the organism interacts with the world *via* "a nervous machine", centre of which is situated, of course, in the brain. The brain is connected to different organs with "nervous pipes" and "cords", which stretch to open specific "valves" for nervous impulses flowing from the brain (exactly like the blood goes through the blood vessels). Let us repeat it: in Descartes's theory, the body is viewed as a machine functioning in accordance with laws of mechanics, and the brain controls all its movements. However, the human soul still exists in Descartes's system, and it has its own kind of activity, although this aspect of his theory has often been neglected. His main achievement is thought to be the description of the reflex arc, although he did not use the term "reflex" as such.

Before discussing an epic work by I.M. Sechenov Reflexes of the Brain (1863), which introduced the term "reflex" into international science, let us overview the historical period, in which this paper was written. In 1859, Charles Darwin published his unique work On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life, which made the majority of scientists in the world reconsider their scientific views. Moreover, it was thought then – although the opinion is to some degree mistaken – that it was impossible to be a scientist and not to be a Darwinist. In the last 160 years, the significance of this monography has not changed, despite the ongoing polemics about Darwinist theory. Some view it as a description of evolution of all living beings in our planet, while others understand it as a description of genetic similarity (or even "the single act of creation") and the most consistent classification of living beings. This unique scientific work became a revolutionary event, which the majority of scientists of the time interpreted as a victory of materialism over idealism. In 1861, extracts from Darwin's book and reviews of it were published in Russia, and their influence on the Russian scientific world was immense. Moreover, Darwin's theory was actively discussed not only by scientists but by all educated people, the Russian intelligentsia.

***Corresponding author:** Prof. Mikhail Reshetnikov, Meritorious Scientist, East European Psychoanalytical Institute, Russian Federation, Russia, Tel: + 79219131102; E-mail: veip@yandex.ru

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In this context, an editor of literary anthology Sovremennik (The Contemporary), a famous Russian poet N.A. Nekrasov asked his acquaintance, a young lecturer of the Medical Surgical Academy, a man with European education, I.M. Sechenov to write a review of the most important problems in natural sciences for the journal. The result was a treaty rather than a paper; it was called An Attempt to Introduce Physiological Basis into Mental Processes. However, the state censorship and Holy Synod (which at that time was the highest authority in the Orthodox Church) forbade to publish "the dangerous work", which was officially recognized as "an offense to the feelings of believers". Correspondence between the editorial board of the anthology, the censors and Holy Synod is much more extensive than the work itself and is an interesting reading on its own [13]. Finally, the paper was published in The Medical Bulletin and had a strictly scientific title The Reflexes of the Brain. This paper, rather interesting but deeply fallacious, was praised as "the beginning of epoch of objective psychology", "an efficient tool for analysing the most complicated mechanisms of the brain", "a sharp weapon of scientific polemics on acute problems of contemporary neurophysiology" etc. I intentionally omit the names of these reviewers, but it is still inappropriate to quote V.I. Lenin without referencing his works, so let me give the exact quote: "He, this scientific psychologist (I.M. Sechenov – M.R.), left aside philosophical theories of the soul and began the direct study of the material substrate of psychic phenomena, that is, the nervous processes" [14].

It should be mentioned that the paper, which starts with the phrase: "I suppose that you, my dear reader, must have already participated in discussions about the soul and its relation to the body", - is written with an obvious talent, not as a treaty but rather as an essay, that is, free expression of the author's ideas on the topic. It is noteworthy that in the beginning of the paper, after contrasting himself with various amateurs, the author admits that when a figure of authority expresses his opinion on the topic, it can easily "become a dogma", and the competent author "an idol". This is exactly what happened to his own work and to himself, although historical value of them both should by no means be underestimated.

Sechenov's text is full of statements that are not supported by any evidence, such as "it is generally said…", "thus…", "a reader should not think that…", "in this sense, …", "anyway…" etc. Let us review the main ideas of this work. "Let us enter, my dear reader, the world of phenomena that are born by activity of the brain. It is generally said that this world embraces mental life as a whole, and there are hardly people in our time who would not accept this idea, to more or less degree, as the truth" (hereinafter the italics is mine – M.R.) (11:32). "For us, physiologists, it is enough that the brain is an organ of the soul, that is, a kind of mechanism, which, when it is set into the motion by whatever reasons, leads to a number of external phenomena typical for mental activity" (11:32). "The reader can instantly understand that all characteristics manifested by activity of the brain, everything that we described by such words as ensoulment, passion, scorn, sadness, joy etc., is nothing else than a result of contraction of a group of muscles – which, as we all know, is a purely mechanical act" (11:33). "Thus, the brain, the organ of the soul, can under certain conditions (according to the concepts of our school) make predetermined movements, like any machine, like hands of the clock moving in a predetermined way because the weights make the wheels inside the clock turn" (11:37). Let us stop here. We will not try to criticize the brilliant author, as it is too easy to criticize a genius of the past from perspective of the present knowledge, but rather reconsider the main achievements of this work.

We should remember that Descartes still considered the soul an independent structure with activity of its own. In Sechenov's concept, however, life of the soul is totally reduced to mechanical hypothesis of inner activity of the brain, excitation and inhibition processes in nervous cells, which Sechenov had studied in his experiments on exiting frog's brain with the crystals of salt. It is admirable that in the end of the paper I.M. Secheniv admits: "Finally, I need to confess that I have constructed all these hypotheses without almost any knowledge of psychological literature" (11:116).

My outstanding compatriot I.P. Pavlov read Reflexes of the Brain in his early youth, when he studied in seminary in Ryazan, and this work, as he admitted, transformed his life. Based on ideas of I.M. Sechenov, I.P. Pavlov developed a theory of conditional reflexes, concepts of the first and the second signal systems and of higher nervous activity. He did not reconsider I.M. Sechenov's theory but made a number of steps in research of the nervous system, which will be described below.

Let us analyse what was going on after the historical work by I.M. Sechenov was published. In order not to be overwhelmed by the material, we will describe only the most prominent discoveries of physiologists, some of which were awarded by the Nobel Prize.

In 1897, Ch. Sherrington formulated the concept of synapses (while reviewing Descartes's ideas of continuous "nervous pipes"), but he received the Nobel Prize only in 1932, forty years later, for his achievements in studying the structure of the nervous system. In 1904 Ivan Petrovich Pavlov received the Nobel Prize in recognition of his work on the physiology of digestion, through which knowledge on vital aspects of the subject has been transformed and enlarged. In 1906, Camillo Golgi and Santiago Ramón y Cajal received the Nobel Prize for their description of structure and organization of neurons in different areas of the brain. In 1921, Otto Loewi discovered chemical nature of excitation transmitted *via* synapses and the role of acetylcholine; he received the Nobel Prize in 1936. In 1933, A.V. Kibzakov discovered the role of adrenalin in synaptic transmission. In 1935, V. Erspamer discovered "enteramin", which was later renamed to serotonin, and I. Page and B. Twarog in 1953 discovered serotonin in the brain; serotonin appeared to be neurotransmitter and was informally called "the good mood hormone" or "the happiness hormone".

It is noteworthy that more and more sophisticated methods were used to study the nervous system and the brain, but the role of the brain as a depository of all mental processes has never been questioned. Moreover, the abovementioned substitution of notions, when the nervous was identified with the psychic, has never been noticed at all! Therefore, researchers of psychic and psychopathological phenomena kept using pseudo-physiological terminology, as their attention shifted from excitation and inhibition in the brain and higher nervous activity to pseudo-biochemical interpretation of psychic processes ("chemistry of the psyche"), that is, to the exchange of neurotransmitters in the synaptic cleft.

In 1969, Lapin and Oxenkrag [15], making a start from the abovementioned metaphorical name of serotonin ("hormone of happiness"), carefully suggested that development of depression (the most widely spread psychopathology) might be related to the exchange (deficiency) of serotonin in the synaptic cleft. Immediately after this hypothesis was published, it was picked up by leading psychopharmacological companies, urgently proved in theoretical and experimental ways, and on its basis, a new ever-growing group of medicines was developed, which had intriguing fancy name "selective serotonin reuptake inhibitors".

It is strange but nobody has ever noticed that this extremely simplified approach to depressions has a tinge of cynicism and impiety. By prescribing psychopharmacological treatment for 6-8 months, or sometimes for the whole life (similarly to insulin for diabetics), medical doctors have implicitly informed the laymen that his depression was provoked not by loss of his child, or other relative, or financial or social status, or ideals and meaning of his life but resulted from disturbances in exchange of neurotransmitters. In the first article (1) I have described in detail how my doubts led me at first to the hypothesis of the biological interface and then to the non-material theory of the psyche.

In conclusion of this material, we should return to I.P. Pavlov and his idea of the second signal system, which was one of the main prerequisites of non-material theory of the psyche suggested by the author. Let us remember that I.P. Pavlov connected the first signal system, which is based on reflexive activity and mechanisms of the brain (common for humans and animals) with subcortex structures. And the second signal system was interpreted, in Pavlov's terms, as transformation of "signal of signals" (words) in associative fields of the cortex, which I.P. Pavlov described as "the higher nervous activity" (HNA).

In the beginning of his research, I.P. Pavlov adhered to strict physiological position and forbade his co-workers, under the threat of firing them, to psychologize his experiments on conditional reflexes and even to use such expressions as "the dog has realized\wanted\wished". But then the idea of unconditional reflexes was uncritically applied to the psyche as a whole. This change in Pavlov's attitude was clearly defined in his paper presented on the XIV International physiological congress in Rome on September 2, 1932. Let me give two quotes from this paper: "I am convinced that an important stage of human thought, when physiological and psychological, objective and subjective will come together, when a tormenting contradiction between the body and the mind will be resolved in a natural way" (12:491). "This activity of hemispheres and the subcortex, which I described in the most general terms and which supports normal complicated relationships between the organism and the external world, is reasonable to call not mental activity but rather higher nervous activity" (12:482). This is a great mistake of a great scientist: there is no more psyche in a reflex than in a light bulb with a sensor that reacts to any moving object. However, many scientists, who were influenced by I.P. Pavlov and his similarly talented followers, still try to look for material substrate of the psyche or its electric and wave-related equivalents in the cortex and hemispheres. Alas, the psyche cannot be found there, it is non-material.

Theory of I.P. Pavlov, which reflected the state of science of his time, has significantly influenced development of physiology, clinical psychiatry and academic psychology. In works of my reputable contemporaries, there are still quotes like the abovementioned and phrases like the following, which I quote here without mentioning the name of its author (who is a prominent and well-known specialist): "The brain can not only respond adequately to stimuli but also foresee the future, actively plan behaviour and implement these plans". But the brain is just a tissue, and it cannot foresee anything!

Let us stress it once again that I.P. Pavlov, although his theories should be critically reviewed, is an outstanding physiologist and one of geniuses of the XX century. As to his investment into clinical medicine and psychology, importance of which has been repeatedly stressed by his students and followers, let us see how he assessed implications of his theory for adjoining fields of knowledge and practice. In the end of his life, he stated it in rather modestly: "I am not a clinician, I have always been a physiologist, and it is too late now: I cannot become a clinician" – and he continues, that is why "in my current reflections, as well as in my former excurses in neuropathology and psychiatry, I do not dare to claim, when discussing such material, that I am competent from clinical perspective" (12:515). There is one more quote from Collected Works by I.P. Pavlov: "… I would like to warn against misunderstanding in relation to me. I do not deny psychology as understanding of individual's inner world" (12:104). I hope that our colleagues understand the difference between the idea of individual's inner world and the physiology of higher nervous activity.

Let us repeat it once again that mistakes of great scientists are great mistakes, and they need to be thoroughly studied and analysed. I.P. Pavlov cannot be blamed though: he anticipated in a brilliant way that there is a difference between nervous regulation of somatic functions and psychic activity, and he tried to explain the latter in terms of science of his time by formulating hypothesis of the HNA. Theory of information was developed in the end of 1940-s, and I.P. Pavlov, whose 170th anniversary will be celebrated by scientists all over the world in 2019, died in 1936. If theory of information had appeared earlier, I.P. Pavlov could have made completely different conclusions about the second signal system.

Afterword

Some colleagues, who read this material, assessed the non-material theory of the psyche as a discovery which will qualitatively change all our approaches to the psyche and psychopathology, and I am grateful to them for their appreciation. Others reacted with cognitive dissonance and promised to think it over but sounded rather sceptical; these ideas contradicted everything that they learnt, believed and used as basis for their scientific generalizations, experimental and therapeutic approaches and strategies. The third group of specialists refused to listen and to discuss this theory at all because "it contradicts the established views and authoritative opinions". It is surprising that young people in the audience, undergraduate and postgraduate students, react to this theory with asking "Oh, is it possible that someone holds a different view?" I am sure that adequate understanding of the new theory is a matter of time, although everyone can agree that however hard you try to dissemble the radio, you will never find the music in it!

General Conclusions

In these two papers it was proved that:

1. For two thousand years, scientists have not noticed the following substitution of notions: They were speaking about studying and treating the psyche while in reality they were studying the brain and treating it by means of lobotomy, the ECT and psychopharmacology, at the same time elaborating pseudo-physiological terminology to describe the brain-driven mechanisms of mental processes.
2. The brain and the psyche are two interrelated but principally different systems.
3. The brain and the nervous system are material, they regulate activity of inner organs, reflexive reactions and adaptive functions of the organism; at the same time, the brain is the biological interface, which maintains a connection between the real and the ideal.
4. The psyche is a non-material informational structure that develops in result of language programming of the brain in a social informational environment; it is the highest regulator of cognitive, emotional, behavioural and ideomotor acts, that is,

of social adjustment of personality in general, in accordance with requirements for language and culture in a specific society, which influence the development of the psyche.

5. Neuroses and other mental disorders resulting from individually important psychic traumata or "blows of the fate" (that is, more than 50% of contemporary psychopathology), when information (psychic trauma) damages the functioning of an informational system (the psyche), are not related to pathology of the brain.

6. Such mental disorders require qualitatively new clinical approaches and qualitatively different paradigm of therapy and rehabilitation targeting the psyche not the brain.

7. Contemporary academic science has not studied the psyche as an informational (ideal, non-material) structure yet, and such an approach would require changing paradigm of all human sciences.

References

1. Reshetnikov MM (2017) What is the psyche? What are we curing?. Journal of Anthropology 6: 3 11-15.
2. Reshetnikov MM (2003) Psihodinamika i psihoterapia depressij (Psychodynamics and psychotherapy of depressions). St. Petersburg: The East European Psychoanalytic Institute p: 328.
3. Reshetnikov MM (2006) Psihicheskaya travma (Psychic trauma). St. Petersburg: The East European Psychoanalytic Institute. 322. (2nd edition – Moscow Urait 2018).
4. Reshetnikov MM (2008) Psihicheskoe rastroistvo (Mental disorder). St. Petersburg: The East European Psychoanalytic Institute 272. (2nd edition – Moscow Urait 2017).
5. Reshetnikov MM (2011) Kriticheskij postmaterialism v psihologii i psihiatrii (Critical postmaterialism in psychology and psychiatry). Neurological Bulletin Kazan. T. XLIII 2: 66-69.
6. Reshetnikov MM (2012) Problem of relation between brain and mind in physiology, medicine and psychology. Journal of Psychiatry and Psychiatric Disorders 6: 313-316.
7. Reshetnikov MM (2018) Non-material nature of the psyche: Psychological review. American Psychological Association 125: 1035-1047.
8. Reshetnikov MM (2018) During two thousand years we were looking for the psyche in a wrong place (Ideas Live Their Own Life). IJCIAR 1: 82-87.
9. Wiener N (1968) Kibernetika ili upravlenie b svyaz v dzivitnih i mashine (Cybernetics or control and communication in the animal and the machine). Moscow: Sovetskoe radio p: 325.
10. Descartes R (1989) Sobranie sichineniy (Collected works): Russian translation. Moscow: Misl 1: 654.
11. Sechenov IM (1953) Refleksi golovnogo mozga (Reflexes of the brain). Moscow: Ministry of education of the USSR pp: 31-117.
12. Pavlov IP (1949) Sobranie sichineniy (Collected works). Volumes 1-5. – Moscow-Leningrad: Academy of sciences of the USSR 1: 104-349.
13. Terekhov PG, Sechenov IM (1957) I materialisticheskaya psihologiya (Sechenov I.M. and materialist psychology). Moscow: Academy of sciences of the USSR pp: 55-109.
14. Lenin VI (1967) Sobranie sichineniy (Collected works). The 4th edition, Volume 1 – Moscow: The state edition of the political literature p: 127.
15. Lapin IP, Oxenkrag GF (1969) Intensification of the central serotoninergic processes as a possible determinant of thymoleptic effect. Lancet pp: 132-136.