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ON THE ESSENCE OF THE MIND AND THE OBJECT OF PSYCHOLOGY

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Many of the problems connected with the scientific clarification of the essence of the mind and the object of psychology have long been in contention among interested circles. A discussion of these problems has taken place in the past few years in the pages of many Bulgarian and, in particular, Soviet magazines. Many conferences, meetings, and sessions dedicated to these problems have been held.

Psychology has gained much from all these activities; for, many of the problems of this discipline were solved in the course of these discussions.

In spite of these successes, the author of this article does not think that discussion of these questions has reached a stage where they are of interest only to the conscientious historian of this science.

It must be emphasized that the final, scientific clarification of the problems of psychology cannot be attained at once and that a long and continuous process is still necessary. There are substantial, objective reasons for this prognosis.

First. Historically, psychology has developed on the basis of nonscientific idealistic philosophy. Only scientific Marxist-Leninist philosophy can supply the necessary methodological premise for the correct formulation and solution of the problems of psychology. But the full reconstitution of psychology on a Marxist basis requires patient and experimental study.

Second. The old psychology achieved many successes during its development. But it only laid the foundation. The complete naturalistic-scientific formulation of this

science became possible only after the appearance of the theory of higher nervous activity, which is connected with the work of the two great Russian scientists, I.M. Sechenov and I.P. Pavlov.

* * *

In order to determine the object of psychology, it is necessary to make a precise determination of the problems with which it deals, the point of view from which it approaches them, and the interrelations between psychology and the related sciences. One must perform an historical review of the fund of practical and theoretical material as well as an analysis of the prospects for further study and the systematization of future scientific data.

From its inception, psychology has been a constantly changing science; at the same time, it has always been the science of the human mind. The entire problem, therefore, reduces itself to the clarification of what the human mind represents, the place it occupies in natural and social reality, and the nature of the objective laws of the spiritual life of man.

These problems cannot be discussed, however, in separation from their historical development. We should not neglect the history of general psychology or of the special problems of psychology in considering the contemporary problems of psychology, if we wish to discuss these problems scientifically. In discussing the general problems of psychology, e.g., the essence of the mind, its laws, the subject of psychology, etc., the application of the historical approach is decisive in determining the scientific or nonscientific character of the whole of psychology, its development or stagnation. Thus, the historical approach is relevant to every problem in psychology.

One of the tasks of psychology must therefore be the further exploration and elaboration of the history of psychology. This task, in turn, demands a scientific, Marxist clarification of the history of psychology and of all the important and basic schools and trends in that science. This would create the foundation for the liquidation of the idealistic and metaphysical superstitions which, although unnoticed, still make their presence felt in the attempts to solve the problems of the essence of

the mind and the object of psychology. This undertaking would constitute a new stage in the development of psychology. But by itself, it would not be sufficient.

The human mind does not only have its explanation or its "logic," but also its application or relation to, and interaction with, many other phenomena. More precisely, this means that the study of the human mind cannot be undertaken apart from the development of society with its material and spiritual conditions, or apart from the natural environment as it is influenced by social reality. The concept of the differentiation and isolation of the mind, which represents another metaphysical superstition inherited from the old idealistic psychology, must be uprooted. A scientific understanding of the human mind is possible only if the mind is studied in its direct and natural relation to practice.

Thus, another important task of psychology consists in the elimination of its abstract-formalistic character, in the strengthening of its natural connection with practice and the production activities of millions of people. In solving this task, psychology will widen the scope of the problems with which it deals. Consequently, its subject will become much richer and more perfect and all-embracing. The scientific understanding and definition of the mind will reflect more fully, more precisely, and more adequately the real human mind. This, in turn, will constitute a solid foundation for the accelerated development of psychology in the course of the construction of communist society.

The requirement of approaching the mind from a theoretical historical and practical standpoint will further the solution of the ancient and difficult problem of psychology: the nature of the mind.

* * *

Pavlov's theory on the higher nervous activity, which was formulated during the first three to four decades of this century, offers a substantial premise for the reconstitution of psychology on solid and certain natural-scientific bases. This theory represents a new stage in the development of natural science; at the same time, it also constitutes a logical conclusion of the search of psychology for a scientific definition of the essence of the mind.

Thus, the emergence and development of Marxist philosophy and, later, the theory of I.P. Pavlov, put an end to the old illusions of psychology about the human mind. The struggle, which had continued for over two thousand years and passed through different stages of development, was fully resolved. Numerous concepts, some more or less unscientific and reactionary, others supporting the scientific development of psychology, are now only of historical interest. This does not mean, however, that every problem in psychology has been completely resolved or that further arguments and discussions are not possible. The theoretical struggle today is being waged within the framework of scientific psychology; and it derives from Marxist and Pavlovian positions. Thus, the task is to eliminate any negative influence from the past, i.e., to make impossible the re-appearance of any traces of the old psychology. This is entirely possible and necessary.

It must be pointed out, however, that it is primarily the realistic tradition of the old psychology that exercises an influence on the contemporary definition of the essence of the mind and the object of psychology. This tradition has a rich history and has displayed varied forms. The mechanical, vulgar-materialistic tradition is much poorer in this respect. It has had a much smaller effect on history and does not, at present, represent any kind of serious threat.

In the last analysis, we will be able to withstand any kind of pessimism and scepticism in regard to the prospect of the establishment and growth of psychology as a science.

* * *

The basic shortcoming of pre-Pavlovian psychology was its inability to conceive of the human mind simultaneously as a natural and social-historical phenomenon. It did not regard the mind as a reflection of external reality and did not study the mind objectively. All the incorrect approaches and solutions to the remaining secondary problems, as well as the character of psychology as a whole, arose from these conceptions.

It is known that the incorrect concept of the human mind as an independent soul - a temporary inhabitant in the human body -- was later adopted and furthered by the special representatives of psychology and philosophy.

Present-day scientific psychology, however, has firmly and exactly defined the nature of the mind. It has derived its definition from the scientifically established fact that the mind of the monkey is the indirect, phylogenetic source of the human mind. The animal mind undergoes a qualitative change by turning into a human mind possessing a new structure governed by new laws different from those of the animal. In the animal, the mind is completely merged with the organism's vital activity, with its simple existence as a biological fact; thus, the mind of the animal does not have any other source, expression, or other meaning than the biological. But in the human being, the working vital activity differentiates the mind from its direct biological nature. It is transformed into conscious human activity, whose origin, actions and significance are social. The mind of the animal functions only in terms of biological adaptation, i.e., adjustment of the animal organism to the environment. But the mind of the human being possesses something surpassing these functions: its social character.

The social character of the human mind consists in its active, purposeful and conscious resistance to external social-natural reality.

In comparing the activity of the animal with that of the human being, Marx pointed out several features that distinguish one from the other. Thus, the activity of the animal consists in "producing only what it immediately 'needs'. Under the power of direct physical need, it produces itself," and its product is "directly connected with its physical organism." By contrast, the activity of man consists in producing "universally," even, and sometimes especially, when "he is free from physical needs," Man "reproduces the whole of nature," and "freely opposes his product." These unique features of human activity, emphasized by Marx, distinguish man from the animals. The human mind is characterized as subjective creative activity which is governed by completely new principles and laws, with a completely new essence and specific new external activities unknown to any animal. As Marx put it, "the animal forms matter (i.e., acts - author's note) in accordance with the potentialities and needs of the species to which it belongs, while man is capable of producing in accordance with the potentialities of all species, applying this criteria to the object world. It is on the basis

of this capacity that man forms matter in accordance with the laws of beauty." (K. Marx, Ikonomichesko-filosofski pukopisi [Economic-philosophic manuscripts_7]). Therefore, Academician As. Kiselinchev was entirely correct when he stated years ago that the subjective, conscious element is nonexistent in the minds of the animals; consequently, their activity lacks experience and creativity and remains at a biological level which is identical with their existence.

For this reason the animal "always starts anew" (Pavlov) and vice versa. The characteristic, the essential, for the human mind is that it has an ideal, conscious, subjective moment, which is separate from the simple biological existence of the human being. The human being is socially motivated; the human mind expresses itself in social practice and social creativity. The human being, therefore, is never compelled and never "starts anew." The conscious side of the human mind allows for the creative human activity which takes place in the form of science and art, and human experience thus acquires the new quality of beauty. The adaptation of man to the social and natural environment takes place with the help of science and art. As a higher form of human adaptation it is saturated with the rainbow of beauty, i.e., it is accomplished "by the laws of beauty."

By failing to take into consideration these new aspects and laws which distinguish the human mind from the mind of the animal, psychology risks destruction as a science. Thus, it may decline to the level of a simple branch of biology, as was the case with Freudianism and behaviorism.

While the rejection, slighting, or underestimation of the conscious, subjective side of the human mind leads to the transformation of psychology in the direction of biologism, absolutism in regard to the conscious and subjective side leads to transformation of psychology in the direction of idealistic philosophy, i.e., theology and mysticism. The latter phenomenon occurred for hundreds of years in the old psychology and it is re-occurring today in some schools of contemporary bourgeois psychology.

Therefore, the object of psychology is not and cannot be consciousness alone, since a separate distinct science of consciousness cannot exist without departing from the Marxist-Leninist philosophy. Such a psychology would derive from the dualistic and, in general, idealistic premise that consciousness is a spiritual substance which exists independently of matter. And this would amount to

a new, refined form of the worn-out and incorrect principle of the old idealistic psychology that "psychology is the science of the soul, as opposed to physics, which is the science of matter," as Herald Höfding used to state.

One of the tasks of psychology is to establish the connection between the human mind and the ideology of a given period, the interaction and connection between the individual human consciousness and the social consciousness of the epoch. In dealing with this problem, contemporary psychology must closely adhere to historical materialism and cannot develop without using its basic premises.

It must be pointed out that, at present, there are grounds for the development of ideas which, in reality, reject the necessity of the existence of psychology as an independent science. In the past, similar ideas were preached under the guise of accepting the existence of many psychologies, of many different theories and systems. Today, the basis of this belief is the failure to understand the essence of the human mind, i.e., the tendency to understand the mind in a simplified and one-sided manner and the failure to regard it as a rich, varied, many-sided, and complicated entity. The danger of oversimplification in this case is very great, since the object of study itself is very complicated and was an incomprehensible mystery to science for thousands of years.

The incorrect understanding of this question is also based on the notion that society is completely separate from nature and that nature and society are irreconcilably opposed to each other.

Marx and Engels, in waging their struggle against such scribblers as Büchner, Focht, Moleshot and Düring, did much to elucidate the connection and unity between nature and society as well as the qualitative difference which exists between them. They insisted that labor be regarded as "an open book of the essential human forces," as "human psychology manifesting itself in a sensory manner." They asserted that it was through labor that "the human essence of nature, or the natural essence of man" become clear and understandable, i.e., the determination of the mind of nature or of the nature of mind. This was regarded by Marx as the real transformation of nature into human history -- the origin of essentially human society."

"History itself is a real part of the history of nature, i.e., nature is humanized. Consequently, natural science will comprise the science of man to the extent to which the science of man comprises natural science; it will be one science." (K. Marx and Fr. Engels, Works, Vol III, 1929, p 630)

In this instance, Marx primarily opposes the notion that there are two antagonistic sciences: one for man, another for nature, one for social reality, and another for natural reality.

It is clear from this notion that the problem is not whether psychology is a biological science or a social one, or whether the mind is a biological phenomenon or a social one. Nor does the solution lie in a graphic, simplified formulation of the character of psychology as a natural science in regard to one part of its contents and as a social science in regard to the rest. The solution of the entire problem lies in interpreting psychology as a science of the laws of the human mind, viewed as both a natural and a social phenomenon, i.e., as the transformation of the natural into the social; this is especially true if one has in mind a truly human society -- the communist structure. From this thought of Marx, it also follows that only under communism can the natural development of man coincide with his social-historic development; for, under communism, there will be no contradictions whatsoever between the existing, real human mind and its natural qualities.

* * *

However, psychology and philosophy are very closely interrelated. The mind has its conscious side, conditioned by society and acting in society. It expresses the relationship of man to his environment and is of cognitive importance. At the same time, it reflects material reality. In discussing the relation between the psychological and social aspects of human activity, there arises the essential problem of differentiating psychology from historical materialism and from biology, i.e., the determination of the boundaries and the direct connections between these three sciences. However, in discussing the mind in connection with its cognitive importance, i.e., the mind as an ideal reflection of objective, material reality,

there arises the problem of the boundary between psychology and gnoseology, on the one hand, and psychology and physiology on the other. To differentiate psychology from gnoseology and physiology, it is necessary to determine the boundaries and contents of its subject. In order to do this, one must establish the mutual relationships obtaining among the three sciences -- gnoseology, psychology, and physiology -- as well as the relationships obtaining among the basic notions with which they deal: subjective image, mind, higher nervous activity.

The Marxist-Leninist philosophy on reflection excludes the acceptance of the mind as a spirit or a soul, which exists independently of the material world and outside of its laws; rather, it regards the mind as a manifestation of a highly organized and special form of brain matter.

It is interesting to note, for example, that in fighting against Machism and positivism, Lenin decisively rejected the attempts to subordinate the physical to the psychical. Basing his work on the conditions already determined by Marxism, Lenin placed particular emphasis on the absolute contrast between matter and consciousness, object and image. The Machist, positivist identification of the psychical with the physical within the frame of gnoseology is, in fact, an identification of the cognitive function of the mind (idea, image) with the object.

While pointing out the absolute contrast between the ideal and the material in the context of the solution of the basic problem of dialectic-materialist philosophy -- the primacy of matter and the derivative character of consciousness --, Lenin considered it necessary to issue the following important warning: "The contrast between matter and consciousness is, of course, of absolute import only within the framework of the basic gnoseologic question of what should be recognized as primary and what should be accepted as secondary. Beyond these limits the relativity of the given contrast is obvious." (V.I. Lenin, Works, Vol 14, Edition of the Bulgarian Communist Party, 1951, page 148) In another place, in connection with Y. Ditsgen's confusion between the material and the ideal within the framework of gnoseology, between materialism and idealism, Lenin again raises the question of the gnoseologic contrast of matter and mind, materialism and idealism. Lenin again warns that this contrast should not be exaggerated or made into a metaphysical opposition.

For gnoseology, the idea, the image, consciousness, reflection -- in a word, the ideal -- are outside the sphere of the material. How, then, can psychology deal with the mind, when the latter is undoubtedly connected with the ideal? In general, the transition from gnoseology to psychology has always been the "road-block" in the history of philosophy, as well as in the history of psychology.

How then, does the Pavlovian psychology and, in particular, Pavlov's theory of the higher nervous activity, solve this problem?

The first serious blow struck by science against the old idealistic concept of the human mind was I.M. Sechenov's book "Reflexes of the Cerebrum" (1863). Sechenov proved experimentally the material origin and the reflectional character of what had until then been considered to be a spiritual essence. He argued that all forms of the mind may be understood by the common denominator of the reflectional processes, that complex psychological phenomena should not be separated from the reality of the human organism and the material processes of the brain. This idea, which Sechenov expressed in a very general way, was later analyzed concretely in Pavlov's theory on the higher nervous activity.

Pavlov's most important scientific discovery consists in the fact that he once and for all destroyed the old idea of the human soul as something supernatural, and "reduced" mental activity to a higher nervous activity. Pavlov proved that mental activity, in its origin, is not and cannot be other than a form of higher nervous activity.

What is the meaning, then, of Pavlov's identification of the psychological, with the physiological, and what is the significance of Pavlov's theory of scientific psychology?

Before Sechenov and, especially, before, Pavlov, psychology lacked a correct philosophical foundation and did not have at its disposal correct natural-scientific material on the activity of the brain. It is significant that in the fields of philosophy and natural science as great a philosopher as Kant had predicted that "the empirical science of the soul will never reach the high level of the natural sciences." And the German idealist Schelling

argued that "the spirit will remain forever an island which cannot be reached from the field of matter without a leap." Pavlov's theory eliminated the unbridgeable gap between the soul and matter -- the point of departure for all metaphysical theories in psychology. Pavlov proved that the science of the mind can reach the high level of natural science and that one can move from the field of matter to the field of the "spirit" without the leap referred to by Schelling. After Sechenov and Pavlov, psychology entered a new field which until then had been jealously guarded by the psychologists who, according to Pavlov, seemed to prefer mysticism.

Of course, the object studied by the physiology of the higher nervous activity is not the simple, ordinary physiological function of the brain cover; rather, it consists of higher physiological activity which is at the same time mental. (See As. Kiselinchev, The Marxist-Leninist Theory of Reflection and I.P. Pavlov's Theory of the Higher Nervous Activity 1954.) If we oppose the mental to the material "in an exaggerated and absolute way" (Lenin), we affirm the absolute contrast between matter and consciousness which, in the framework of gnoseology, determines the trend toward materialism and idealism. This view precludes the possibility of understanding mind as a higher nervous activity. This seems at first glance to be equivalent to the elimination of the mind and the merging of psychology with physiology; or at least, taken by itself, it seems to constitute a tendency towards the elimination of the mind. But this is true only if we analyze things superficially. If we analyze the human mind from all sides, and not exclusively or primarily as a reflection of objective reality, i.e., not only as a sum of ideas or as knowledge, it is not contrasted to matter absolutely but only relatively. Apart from the solution of the basic philosophic problem, it is very important for psychology as well as gnoseology to determine the nature of this relativity.

It is self-evident that the human higher nervous activity offers active resistance to the entire natural and social environment. But at the same time, it is in material unity with the environment. First, it adequately reflects this reality; second, it represents the external as internally assimilated, or "the transformation of the energy of external sensation into a fact of knowledge" (Lenin); and third, as human higher nervous activity, it is a manifestation of the higher unity of the human with the whole of reality. The relativity of the contrast between matter and conscious-

ness in the context of psychology is obvious. The same is true of the physiology of the higher nervous activity, e.g., the mind of the animals. In biology, the unity of the organism and its environment is known. Here, the objection might be raised that biology and physiology of the higher nervous activity do not deal with such concepts as consciousness, that the latter is not a subject of study in these sciences, and that psychology, to the extent that it refers to, and is a science of, human consciousness, turns into gnoseology. This objection, raised under one form or another, consciously or unconsciously, has no validity whatsoever and must be rejected as unfounded. Consciousness cannot only be studied by gnoseology or, more generally, by philosophy, but also by other sciences. If it were true that no other science but gnoseology could study consciousness, we should then have to accept the theory that consciousness, the idea, the soul, the mental constitute an independent substance. In such a case, even if we explicitly rejected dualism and idealism, consciousness would remain an independent substance. In the old pre-Pavlovian psychology and even in contemporary psychology, when discussing the question of the character of the mind, one comes across the saying that "consciousness never becomes matter." This concept is wrong and even absurd, because it manifests a total misunderstanding of the mind and consciousness of man. It implicitly assumes that consciousness is an independent substance which can never become material substance, since this "transition" implies its elimination as a substance.

Is the mind material or spiritual? For psychology, this question has no meaning and cannot have any meaning, because its formulation already presupposes a broadening of the boundaries of the application of the absolute contrast between matter and consciousness, which is a "radical error" (Lenin). Scientific psychology is based on the already established fact that mental activity is nothing else than the higher nervous activity of the cerebral hemispheres and that consciousness, the ideal, is a quality of the mental activity of man. Only in this sense can one understand the identification and the merging of the mind with the higher nervous activity and, in general, the characterization of the human mind as comprising the higher cerebral processes. In this respect, there is complete agreement between Engels and Pavlov. For example, Engels writes in "Dialectics of Nature" that each higher form of motion is connected, by

necessity, with the lower forms of motion. And here Engels reaches his famous dialectical conclusion: "...the existence of...side forms does not exhaust the essence of the main form in each individual case." Further on, he explains: "No doubt we will some day experimentally 'reduce' thinking to the molecular and chemical motions of the brain; but does this exhaust the essence of thinking?" (Dialectics of Nature, Edition of the Bulgarian Communist Party, 1950, page 251). The same thought was expressed by Pavlov in 1933 in his open letter to the French psychiatrist Prof. Pierre Jeané, and in his article "The Feelings of Mastery and the Ultraparadoxical Phase." Here Pavlov wonders how scientifically oriented people can be annoyed by experiments aimed at a physiological explanation of mental phenomena. These experiments were attacked as "mechanical" in order to demonstrate the obvious futility of relating subjective experiences with mechanics. Pavlov decisively opposed such views, and his answer was in full accord with the spirit of Engels: "At present, the characterization of mental phenomena as mechanical in the literal meaning of the word (author's italics) is, of course, unthinkable, since this can hardly be done for all physiological phenomena and, to a smaller degree, for chemical and even for physical phenomena. A truly mechanical interpretation remains an ideal of natural-scientific research which the study of reality as a whole, including human reality, is slowly approximating and will continue to approximate for a long time." (I.P. Pavlov, Twenty-Year Experience...1951, page 462). In analyzing thinking as a form of the motion of matter, both Engels and Pavlov believed that the ideal and the task of natural science should be the breaking down of thinking i.e., of the mind, into more and more simple processes -- to the stage of mechanics. This is not equivalent to mechanics. It is not opposed to dialectical materialism, because the mind preserves its essence as a higher form of motion without being exhausted by the lower forms of motion of matter (Engels). At the same time, the subjective and human experiences are not denied or eliminated but only explained, and these explanations constitute stages in the attempt of science to explain the most simple, the mechanical (Pavlov). But this natural-scientific explanation does not at all eliminate the social and cognitive meaning and essence of the human mind.

For this reason, psychology cannot be reduced to the physiology of the higher nervous activity; nor can it be

eliminated or assimilated by general biology. Much less can it be reduced to sociology or gnoseology, since this would give an absolute status to only one of the properties of the mind: the social or cognitive property of the mind.

The following question has been raised in connection with the properties of the mind: what are the definitions of perception as mental activity, i.e., as consciousness?

First, perception is a property of highly organized, nerve brain matter, by essence related to but not identical with the reflective property of matter as a whole; second, perception is a subjective image of objective things, a subjective reflection of object reality; third, perception is a direct relation of consciousness with the external world and constitutes a connection between man and external reality rather than a barrier; and fourth, perception is the transformation of the energy of external sensation into a fact of consciousness.

There is no doubt that the first definition of perception as a property of highly-organized nerve brain matter is the most general, correct definition. Both the Marxist philosophy and natural science, i.e., physiology and psychology, are derived from this definition. However, in defining perception as a subjective image of objective things, Lenin gives a philosophical-gnoseologic definition of the mind, opposing it in absolute terms to matter. If psychology adheres only to this definition of the mind, and refuses to leave its boundaries for fear of falling into idealism, psychology will inevitably become gnoseology and lose its specific character as an independent science. This is why Lenin on many occasions defined perception as a direct connection between consciousness and the external world, a connection which is not and cannot be ideal, but has a material character. This connection is realized through the higher nervous activity of man, representing "a transformation of the energy of external sensation into a fact of consciousness." These definitions of Lenin transcend the limits of gnoseology and belong to the psychology and physiology of the higher nervous activity.

Sechenov expresses the same opinion as Lenin in somewhat different words: "Perception constitutes one of the primary means of self-preservation; on the other hand, it also con-

stitutes a means of communicating with the object world, one of the essential foundations for the mental development of animals and humans. In its first aspect, perception belongs entirely to the field of physiology; the other aspect of perception connects our science (physiology / author's note_/) with psychology." (I.M. Sechenov, Izbraniye Proizvedeniya, Vol I, 1952, p 582)

The property of perception which makes it a means for the self-preservation of the organism is referred by Sechenov entirely to physiology, since this property is exclusively of biological or vital significance. The other property of perception which makes it a "tool for the communication of man with the natural world" (Sechenov) or a "direct connection between consciousness and the external world" (Lenin), constitutes a subject of study for psychology or, as Sechenov points out, "connects physiology with psychology."

It is clear that both Lenin and Sechenov insist that psychology study the mind of man outside the boundaries of gnoseology, outside the boundaries of the absolute contrast between matter and consciousness.

To attribute equal status to matter and mind is nothing else than dualism and idealism, a concealed form of accepting the soul as a substance and rejecting the primacy of matter and the secondary or derivative status of consciousness. For example, Alfred Binet, a dualist in psychology and an idealist in philosophy writes: "The idealists say that thought creates the world. The materialists answer that brain matter creates the world. We take an intermediate position between these two extreme views which are equally wrong and exaggerated. Weighing both notions, we do not find any argument in favor of cognition which would not be offset by an argument in favor of the object. If we were forced to arrive at a final conclusion, we would say: "Consciousness and matter are equal." (See Alfred Binet, Soul and Body, 1910, p. 187) It is significant that in this instance A. Binet transfers dualism and idealism from psychology to philosophy, while many contemporary authors do the opposite, transferring dualism and idealism from gnoseology to psychology by broadening the absolute contrast between matter and consciousness. In both cases however, the essence of the theory is the same. Pavlov's value lies in the fact that he eliminated

dualism, parallelism, and idealism in psychology. Here, we must mention the correct evaluation of the German Marxist philosopher Alfred Kozing: "Pavlov really shows that the world does not consist of two contrasting principles or component parts, but that it constitutes a unity whose basis is matter. The contrast between the mental and the physical has only a relative importance; to posit an absolute contrast means to destroy the unity of the world."

Psychology thus merely presupposes the gnoseological position on the primacy of matter and the secondary and derivate status of consciousness; it begins from this premise and only makes use of it as a methodological tool. In reality, its object of study is the human mind, viewed as a conditional-reflectional higher nervous activity with its indivisible higher properties and aspects: the subjective, the conscious, the social, the cognitive. Every attempt to reduce the object of psychology to the exclusive study of the social and conscious aspects of the mind is erroneous and in full contradiction to the scientific facts of psychology as well as to the materialistic theory of I.P. Pavlov. In the history of psychology, there is a long tradition of theories which attempt to reduce the mind to its conscious aspects. In contemporary scientific psychology, these attempts constitute a manifestation of openly idealistic concepts of the soul.

The first to oppose these ideas was Sechenov, who decisively rejected any thought of exhausting the definition of the mind through its conscious aspects. Sechenov thoroughly and polemically criticized the dualistic ideas of the old idealistic psychology, i.e., that the mental is only that which is conscious, that it makes its appearance in consciousness and ends with a transition to the unconscious state. As Sechenov points out, this idea, which "has found such roots in the minds of the people that it has even passed into the spoken language of the educated people," contradicts the experimentally established facts.

In the reduction of the mental to the conscious, according to Sechenov, the "intermediate link" -- the mind -- is separated from its natural beginning and end and is set into opposition to them, as spirit against matter.

The old psychology jealously guarded "the intermediate link," conceived by natural science as a nonmaterial soul;

it allowed physiology to study only the beginning and final moments -- as elementary mental forms. Sechenov expressed the thought (which he also supported with experimental data) that natural science should also study the "intermediate link" -- the mental element in the narrow sense of the word-- which "is not an independent phenomenon as thought before, but an integral part of the process." (See I.M. Sechenov, Komy i Kak Rasrabotuiivat Psikhologiyu) The further elaboration of this problem in Pavlov's theory confirmed these ideas of Sechenov. The object of contemporary scientific psychology cannot be confined to the mental qua conscious, or, in Sechenov's words, to the intermediate element of unified activity. It is necessary to sharply condemn such a separation of the intermediate link of the mind from its natural beginning and end; this separation represents an abnormal, artificial phenomenon in psychology and may damage its entire further development. By contrast, the natural, practical broadening of the object of psychology, achieved by Sechenov and Pavlov, must be regarded as a progressive stage in the development of psychology.

As a result of this development, it became possible to understand and explain the actual connection between the human mind and society, between psychology and historical materialism.

In connection with the broadening of the object of psychology, which now embraces the entire mental process, psychology must lean heavily upon physiology. Before Sechenov and Pavlov, psychology and physiology were artificially separated, since the mind was regarded as a unique object of psychology which could not be studied by physiology. In the past, the interaction between psychology and physiology was either based on the dualistic principle of the contrast between soul and body or was founded on vulgar-materialistic mechanical theories in which the mind was reduced to a simple reflectional process.

At one time, Wundt, unable to discriminate between the object of psychology and the object of physiology, introduced the new term "physiological psychology." As the objects of this science Wundt lists those vital processes which have an external as well as an internal moment, a physiological as well as a mental side, and which "therefore cannot be fully explained either by psychology alone or by physiology alone." According to Wundt perception represents, on the one hand, only a psychological fact and, on the other hand, only a physiological act. It, therefore,

must be studied by physiological psychology as the science which is on the border line between the two sciences of psychology and physiology. Later, Wundt himself became convinced of the incorrectness of the idea that physiological psychology could serve as a mechanical synthesis of psychology and physiology. As a result of this unsuccessful attempt to cover up for dualism, Wundt became an open idealist, and replaced the old term "physiological psychology" with a new concept, "experimental psychology," defining the mind as a "mental being and becoming" which serves as a prototype of the notion "being and becoming in general." He replaced the dualistic concept of the mind as a substance with the open idealistic concept of "actual mental being."

The Marxist, Pavlovian psychology decisively overcame the dualism of the old idealistic psychology and, at the same time, solved the problem of the relationship between psychology and physiology. It derives its notion of the relationship between these two sciences from the Marxist-Leninist premise of the relativity of the contrast of matter and mind outside of the boundaries of gnoseology and from the Pavlovian position that mental activity is, by origin, nothing else than a higher nervous activity.

Sechenov and Pavlov were ardent defenders of the idea that scientific physiology should study mental life and the human soul. Moreover, they realized that psychology could not become a real science without the help of physiology, that "physiology holds in its hands the key to the truly scientific analysis of mental phenomena." (I.M. Sechenov, Izbraniye Proizvedeniya, Vol I, p. 195)

In the course of his long career, Ivan Petrovich Pavlov frequently discussed, clarified, and particularized the problem of the connection between the "mental" and the "physiological," between psychology and physiology. He frequently expressed the thought that what the psychologists call association is nothing else than a temporary nervous connection, a conditioned reflex, that the two phenomena refer to the same thing, and that, consequently, mental and physiological phenomena should not be separated and contrasted in an absolute manner. Pavlov thus suggests that all phenomena in the subjective world of man be analyzed on the basis of objective physiological data, that they be merged in other instances, and that the identification of these phenomena become an urgent task for both psychology and physiology. In the course of studying the

objective, physiological analysis of the human mind, from the very beginning Pavlov visualized the tough struggle he would have to wage against idealism and dualism in the form of animism and parallelism; for these tendencies were deeply rooted in science and in the general thinking of the educated people. He correctly referred to these questions as the military problems of science, stating that it was necessary for him to wage a war against such dualists as the gestalt psychologist Koehler. Pavlov was fully aware of the fact that the physiologists and psychologists deal with one and the same thing and that the interaction and cooperation between psychology and physiology must continue in the future -- until subjective phenomena could be fully explained through the system of physiological mechanism. This constitutes "a legal marriage of physiology with psychology, or their merging into one." (Pavlovskiye Sreduy, Vol II, p. 661)

This is why Pavlov fought against Koehler, a "provoking animist" who could not imagine that the soul "could be held in the hand" and that "the laws of its activity could be clarified" by the use of dogs in laboratories; against Scherington, the physiologist who is still not convinced that the mind has any relation to the nervous-cerebral activity and who divides existence into a sinful body and a permanently alive, never-dying spirit; against the American psychologist Woodworth who limits the object of psychology to the description of subjective phenomena; and against Edward Thorndike who in 1899 had the honor of taking the first step in the history of the conditioned reflex towards the objective study of the behavior of the animals but who, 20 years later, apologized for his radical views, attributing them to his youth.

The rapprochement between psychology and physiology, or the realization of the "marriage between the physiology of the higher nervous activity and psychology," does not and cannot represent the destruction of psychology; it does not and cannot represent the elimination of mind or of the subjective in the human mind.

Pavlov accepted "psychology as a formulation of the phenomena of our subjective world" as an "entirely legitimate phenomenon" and pointed out that it would be unreasonable to reject it; but he was quick to add that the psychological analysis of subjective phenomena has proven

to be "insufficient in view of its centuries-long, fruitless attempts to analyze and systematize the higher nervous activity."

Thus, psychology experienced a tremendous enrichment of its contents as a result of the theory of the higher nervous activity, which placed it on solid scientific grounds. It is no longer an abstract, formalistic science; nor is it philosophy, sociology, or gnoseology. It is a science which is based on the analysis of the human mind, conceived of as higher nervous activity and, at the same time, as cognitive, social, and subjective activity. No other science has studied the human mind from this point of view, and this fact constitutes adequate grounds for granting psychology the right to an independent existence, without fearing that psychology will turn into gnoseology, sociology, or physiology. To be sure, psychology is closely related to these sciences. These connections are of twofold significance for psychology. On the one hand, psychology can enrich itself and develop by using the factual and theoretical achievements of these sciences; on the other hand, there is the constant danger that psychology may be assimilated by these sciences. For the time being there is a particularly great danger of the assimilation of psychology by gnoseology or physiology. Accordingly, the psychologists must be alert and ready at all times to fight against any incorrect tendencies and inclinations.

This will guarantee the further, correct development of psychology.