

# “Much Learning does Not Teach Understanding” (A Conversation with Vasili Davydov)\*

“A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement. He not only effects a change of form in the material on which he works, but he also realises a purpose of his own that gives the law to his modus operandi, and to which he must subordinate his will.”

Karl Marx, “Capital”

Professor Davydov, your books, articles and public statements suggest that present-day psychology needs new, drastically different methods and is therefore on the eve of a radical change of theory, and hence in practical application. Can you elaborate on that idea?

To begin with, I must say that contemporary psychology has split into a number of disciplines each having its own object of study. They are general psychology, psychophysiology, peer group, developmental and educational psychology, social, medical, the psychology of law, the psychology of labour, art, sport, and so on. In looking for answers to the questions put forth by life, psychologists are forging ahead with their investigations and have come up with a lot of valuable results. In a sense, such differentiation of psychological disciplines is useful as it gives deeper insights into the psychological laws of whatever happens to be the particular object of study. On the other hand, it results in the loss of something general that should unite all psychological studies. For a long time now the prevalent trend has been to allow not relative but complete autonomy to every branch of what used to be the one psychological tree: let everyone do his own job and forget about what the man next door is doing. And the connection between the psychology of art, peer group psychology, and psychology of labour, for example, is considered a problem of no particular interest, or else a task for another discipline.

The desire to immerse oneself in a narrow object of investigation has made the particular psychological disciplines essentially different in their tasks, methods, and analytical techniques – they “split the single body of psychology at the seams”, as Leontiev once said. The results obtained in related areas of psychology are sometimes impossible to discuss simply because the researchers speak different languages and think in different categories. This, in my view, is the affliction of contemporary psychology. It badly needs a single basis, a common foundation. In other words, it is necessary to develop a contemporary general theory of the human psyche that will provide a fundamental basis for all the disciplines that call themselves psychological. Many scientists are aware of that necessity and so, in spite of the burgeoning of concrete psychological studies, the ancient problem of what the psyche is in general sparks off discussions in our midst.

I must stress that over the centuries, philosophy and other sciences have accumulated vast experience in analysing that problem and have amassed enormous factual material on the manifestations of human psychic activity. Soviet psychological theory proceeds from the methodological principles of Marxist philosophy which provide guidelines for concrete

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studies. These are, above all the seminal propositions on the role of operational activities in the development of the human mind and the proposition that the psyche is a reflective phenomenon, a function of the brain. At the same time, in their preoccupation with current research, many of our psychologists have come to feel that the main problems connected with the nature of the psyche have been resolved and that one need no longer apply oneself to such fundamental problems, but should rather use the solutions obtained for the study of more specific tasks.

Of course, dialectical materialist philosophy has laid a monolithic foundation for psychological theory and has cleared away the idealistic debris obstructing the path of its builders, but such a theory must be constantly developed in accordance with the present situation in science.

Let me stress that Western (chiefly American) psychology is dominated by positivism, which is in principle ill-equipped to discuss fundamental problems of science. One of the tenets of positivism is that “science is its own philosophy”. On the theoretical plane, such a tenet is unacceptable for Soviet science. The trouble is that we, too, are not without sin: although we are aware of the snares of positivism and its wingless and utilitarian nature, in our practical research we sometimes succumb to this approach which has about it the appealing simplicity of common sense. In the preface to his book, *Activity. Consciousness. Personality*, Alexei Leontiev mentions the lamentable circumstance of “methodological carelessness” in concrete present-day psychological studies, even though it sometimes produces copious and important results.

I want to stress, however, that some contemporary psychologists echo the ideas of positivism for good reason. “One need not wrestle with profound problems of a general nature because, as history shows, they are insoluble. It is better to rule them out of concrete studies. One must study only the immediate facts and develop theories based only on facts, and not on philosophical categories.” It sounds attractive, doesn't it? Especially for someone who has drifted into psychology “from outside”, i.e., from the fields of technology, mathematics or physiology. There are many such specialists in our science already, and they are becoming more numerous with every year.

It is difficult to gear one's scientific work to a system of philosophical categories. For that one needs a special background and training, both in thought and in the conducting of scientific investigations – mainly in the posing of tasks, in choosing methods of tackling them, and in interpreting the data obtained. However, in the psychological realm one keeps running up against the sharp corners of such philosophical categories as “matter”, “object”, “subject”, “the ideal”, “goal setting”, “consciousness”, “activity”, “personality”, etc. In analysing any questions connected with the psyche, it is very important to apply these categories correctly, to know their history and their contemporary dialectical materialist content. Regrettably, psychology sometimes proceeds not so much from the philosophical meaning of these categories as from ideas of psychic phenomena that have grown out of the traditions of the empirical natural sciences – physics, chemistry and physiology. Researchers in these fields have considerable experience in dealing with psychic-related phenomena, namely, the neural and physiological prerequisites of psychic activity.

What approach do you suggest? Is it time to renounce the methods of psychological study that have been prevalent in the natural sciences for several centuries?

This is too serious a matter for sweeping answers. No one is suggesting that natural scientists should give up the study of various aspects of psychic phenomena. But it is important to be clearly aware of the degree of competence of a particular science in understanding and interpreting the inner nature of the psyche, the mind. The question is this: do the natural sciences possess a general method for studying and explaining the

essence of the animal and the human psyche? My answer is no, they do not possess such a method. Such a method is inherent only at the philosophical level of psychological knowledge which makes it possible to use the categories of relations between “object” and “subject”, “matter” and “consciousness”, and consequently revealing the specificity of the “psyche”, “consciousness”, “the soul”, and their genuine seat – the subject of activity.

You may well ask what are the unique features of these objects of study? The long history of philosophy and psychology (which is closely related to it) identifies that special trait as follows: human activity is *goal-oriented* activity, i.e., man possesses a special capacity for setting and achieving goals corresponding to particular needs. Karl Marx, considering labour activity as primary in relation to all other forms of human activity, wrote: “At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement. He not only effects a change of form in the material on which he works, but he also realises a purpose of his own that gives the law to his modus operandi, and to which he must subordinate his will.”

There is every ground for believing that the degree of development of the capacity for setting and achieving goals is the chief feature inherent in the life activity of creatures endowed with a psyche. Proceeding from the above mentioned philosophical categories, psychology can study and reveal the nature of the basic mechanism of the psyche – goal orientation; meanwhile no other natural science – neither physics, nor chemistry, nor physiology – has the means and methods for investigating and analysing that mechanism, because their own objects of study do not involve setting goals.

One of the main tasks of psychology consists in developing methods of investigating human activity, consciousness, and personality. Psychologists have notched up some impressive successes in the study of the processes of goal orientation, the building of sensuous and intellectual images, and the interconnection between the needs, tasks and actions of the person emerging within various forms of life activity. Of course, the specific nature of the object and method of psychology does not rule out its auxiliary use of the concrete procedures of the natural and applied sciences, for example, physiology and cybernetics.

Positivism is a bad theory for all the natural sciences, but it is simply disastrous for psychology, for positivism induces it to study the psyche in terms of the concepts of physics, chemistry and physiology and thus leads it away from revealing the essence of things fixed in such concepts as “activity”, “subject”, and “goal orientation”. That is why overcoming positivist trends and using the rich arsenal of philosophical categories and notions from the humanities is one of the current tasks for our psychology.

It is now clear that the view of the human psyche as presenting physical, chemical or physiological problems obscures rather than elucidates the basic questions of antiquity. The natural sciences approach, owing to the successes it has made possible in the study of inanimate objects, creates the illusion that the problems of psychology, too, can be tackled in terms, say, of biochemistry and physiology. It is suggested, for example, that properly scientific study of the laws of memory should consist in revealing the corresponding mechanisms of chemical reactions or electrical processes taking place in the brain. And since the brain is undoubtedly the seat of the psyche, it seems natural to study its structure and modes of functioning in hope of understanding the laws of the “elusive soul”.

Such a view of the human psyche was once hailed as an outstanding achievement of materialist thought, and in fact many scientists today adhere to this position. However, the history of cognition and praxis has made it clear that such an approach to the psyche is characteristic of metaphysical, mechanistic materialism leaning toward the natural

sciences and that it is by no means identical to a theory of the psyche based on the philosophical doctrine of dialectical and historical materialism. At the same time, the burgeoning of concrete psychological studies and the rapid growth of the many branches of psychology prevent some people from seeing that they are rooted in just this kind of mechanistic materialism which will ultimately prove fruitless.

What should one do in this situation? It would be very useful, among other things, to turn to the sources of psychology, a science which was born from the bosom of philosophy; but we must not try to go back – such things never happen in science – rather, we must approach the same questions from a new angle and at a higher level.

An anonymous writer of antiquity expressed an idea about the nature of the soul which to my mind pinpoints an essential aspect of the problem: “If you don’t know what you are searching for, then what is it you are searching for, and if you do know what you are searching for, why are you searching?” This paradoxical behaviour of animate creatures is a distinctive feature that no other body possesses. For an animate creature is characterised by searching, an inherently contradictory state. To search for what does not yet exist but is possible, although it is given to the subject as a goal, or ideal and not as reality, is the basic and central element in the life activity of every thinking creature, or subject, as we psychologists say.

The study of the mechanism of goal orientation within the sphere of search and the study of the laws whereby goals determine the modes and character of the subject’s activity – this is the object of psychology as a science. It must be said that today, cybernetics is close to that goal in claiming to analyse the behaviour of bodies and systems which have a semblance of search mechanism.

Aristotle, who is considered the father of psychology, wrote that “soul is an actuality or formulable essence of something that possesses a potentiality of being besouled.” In the light of that idea, the paradox of search consists in that it combines the possible and the real. Foresight as the basis of planning is the identification of the possible. In his real actions man who possesses a “soul” carries out what is capable of being carried out in reality. The construction of a possible future to predict the real activity of the subject is precisely what cannot be described or explained by the methods used in the natural sciences. It is not that they are weak in themselves – they are very powerful in their own sphere based on the type of determinism that explains phenomena and events by tracing the links between cause and effect. Due to these links, the state of an object in the past determines its present state. But man bases his actions on what may happen in the future – a future that doesn’t yet exist! In this case, the goal – an ideal image of the future, an image of what must be – determines the present and actual behaviour and state of the subject.

This profound uniqueness of activity prompted by goals, the image of a possible future, has been a stumbling block for the natural sciences. And until the new concept of determinism – determinism of goal – was worked out, the study of the psyche was dominated by the materialism of the natural sciences which was essentially unable to reveal and describe this original phenomenon of life. The concept of goal orientation was created in the history of the philosophical dialectic and formulated in the materialist dialectic which opened the way for concrete scientific study of the psyche – a properly psychological study carried out according to a method corresponding to its object.

One must stress the great contribution to the development of that method made by the humanities which grapple with the key problems of the personality, in particular, the problem of choice. Choice exists only where there are possibilities. And it is only when there is choice that one can talk about will. Without *will*, there is no *subject*, and it is only the *subject* that possesses “soul” and consciousness. In the absence of this approach to

reality and in the absence of these categories, one cannot get at the foundations of human activity, consciousness or personality.

How did the scientific approach you have explained arise? Is it recent or can you point out attempts to study the human psyche in a special way in the past?

After Aristotle, philosophy has seen many attempts to resolve the problem he posed in what must be called a dialectical tradition. Basically, it recognises the link between the future and the present. Hence, the goal orientation of man. True, for many centuries this dialectical approach developed within the mainstream of idealistic philosophy which was aware of the problem and elaborated it vigorously partly from ideological motives. As a result, it created a powerful conceptual apparatus for the theoretical study of the psychic processes. One must admit that idealistic philosophers, while they were wrong in the solution of the basic question of philosophy – the primacy of matter versus the primacy of the ideal – nevertheless elaborated profound concepts pertaining to the sphere of the ideal.

The psyche cannot be studied without such concepts. Thus, Descartes created a clear-cut theory of complete mechanical determination of the behaviour of animals, claiming that everything about it could be calculated and predicted. But he was immediately confronted with a paradox in analysing the behaviour of humans. It turned out that no matter how precisely the causal predetermination of behaviour was known, it was not sufficient to explain the universal character of man's daily activity. In any particular situation, a person can act one way or another; his actions do not lend themselves to prediction, nor are they derivable from past events alone. Thus, there was no place in the cause-and-effect network for the chain "universality – goal orientation – soul".

Building on Descartes' experience, Spinoza advanced a profound materialistic idea which many philosophers after him failed to understand. Only the materialist dialecticians, Marx and Engels, gave that idea its due. It consists in the following: thought, or as philosophers used to say, the soul, is a property of the thinking body. Hence our task is to study the mode in which such a body operates as distinct from the activities of a non-thinking body. The fundamental difference lies in the ability of a thinking body actively to project the trajectory of its movement in space in accordance with the shape of *another body – any* body. Hence the universality upon which Descartes was tripped up.

To explain Spinoza's idea, let me quote from a book by the well-known Soviet philosopher Ilyenkov entitled *Dialectical Logic*:

"The human hand can perform movements in the form of a circle, or a square, or any other intricate geometrical figure you fancy, so revealing that it was not designed *structurally* and *anatomically* in advance for any one of these 'actions', and *for that very reason* is capable of performing *any action*. In this it differs, say, from a pair of compasses, which describe circles much more accurately than the hand but cannot draw the outlines of triangles or squares. In other words, the action of a body that 'does not think' (if only in the form of spatial movement, in the form of the simplest and most obvious case) is determined by its *own inner construction*, by its 'nature', and is quite uncoordinated with the shape of the other bodies among which it moves. It therefore either disturbs the shapes of the other bodies or is itself broken in colliding with insuperable obstacles.

"Man, however, the thinking body, builds his movement on the shape of any other body. He does not wait until the insurmountable resistance of other bodies forces him to turn off from his path; the thinking body goes freely round any obstacle of the most complicated form."

This wonderful idea of Spinoza is one of the foundations of the dialectical materialist approach to the study of the psyche. That idea was taken up by Kant and Fichte, but on

an idealistic basis. Marx revived Spinoza's ideas, casting away their idealistic interpretations.

Don't you feel, Professor Davydov, that all these profound philosophical questions are only of relative interest to practical psychology, especially its concrete branches which, as you have said, are now burgeoning?

By no means! The need for a precise understanding of the nature of the psyche is prompted by earthly reasons. Here is a vivid example – and I will again quote from the work of Ilyenkov, this time from an article devoted to the successful experiment in educating the deaf, dumb, and blind students who graduated from Moscow University and are now on the staff of our Institute. Ilyenkov writes:

“Any animal forms the trajectory of its movement in accordance with the shape and position of external bodies, with the geometry of the environment. A person born deaf, dumb, and blind must be taught that. Here, one can discern the first stage in the solution of the task: to form the child's need and ability to move in space on its own initiative toward food, adjusting the direction in accordance with the shape and position of external bodies – the obstacles in its way. The ability to construct a trajectory in accord with the geometry of the external world, changing it every time there is a new “geometrical” situation, unexpected and unforeseen (and therefore incapable of being recorded by any genes) must be developed...

“It is perfectly clear that the need for food is congenital, while the need (and ability) to search for food by adjusting one's actions to external conditions is not innate. This searching is a very complex kind of activity that must be learned, and it contains the secret of the psyche in general. This is how it is done: the teat is removed from the child's lips by one millimetre, and if the child manages to overcome that minimal distance by its own movement, it is removed by a centimetre and so on. Then the teat is separated from the child's lips by an obstacle which it must bypass. And the procedure is pursued until the child learns to find the food in the most complex situation using its sense of smell and touch to construct its trajectory according to the shape and position of external bodies. It is only then that an adequate image, a subjective copy of these bodies, and the image of space in general appears in the child's mind. Once that is achieved the psyche has been born.”

Of course the shaping of the psyche in a deaf, dumb, and blind child is only a particularly vivid example. But psychology has been confronted with highly practical demands. Society expects a solution to some of the problems involved in the present-day scientific and technological revolution. Never before has psychology faced such an acute need for new knowledge about man which could be used to improve his activity, thinking, and mental capacities dramatically. Up till now, many achievements made in psychology laboratories existed independently, without exerting much impact on the practical side of our lives. So in the solution of theoretical questions, one could afford to make do with some illusions since the public interest was not usually affected by these studies. It is only in recent years that a fundamental need has arisen and, most important, a realistic proposition for improving various forms of human activity taking into account the achievements of psychology has become possible.

This is particularly apparent in three main spheres: labour, management and education. The connection between the above set of questions and management is obvious. Management is necessarily a forward-looking activity, a vivid example of goal orientation: at first an ideal image of the possible future is created and then that image is used to determine people's behaviour. Education is the concrete area in which I work and in which we are trying to apply our approach. It merits a separate discussion. Labour activity is man's main occupation and it provides perhaps the most vivid illustration of the theme we have taken up today.

Engels wrote that the division of intellectual and physical labour has existed since ancient times. All the functions of prediction and planning constituted intellectual labour, and this was one of the mechanisms that led to class privileges. This circumstance gave confidence to idealistic philosophers. The masses, as opposed to the powers that be, were mainly made to do physical labour which was devoid of the basic function of the social man – planning, foresight, programming and orientation toward the possible. What was left for the masses was “swinish immediacy”. The masses worked, lived, and were educated according to a scheme that was a surrogate for genuine human activity – they were mechanically trained to perform manual operations without being given any part in the intelligent, goal-setting component of labour.

It is characteristic that those thinkers who proceeded from idealistic premises about the primacy of the spiritual failed to see the wholeness of human activity, because it was indeed difficult to observe. It is only now, in socialist society, that the objective prerequisites are emerging for the fusion of these formerly divided components of human labour. Thus planning, which allows for the transformation of nature in accordance with an ideal image formed in advance, will be united with the execution of these plans. It is only in the context of existing socialism that conditions appear for blending physical and intellectual labour and for breaking down the barrier that has been erected between them.

Professor Davydov, could you give us some examples of how your approach is applied in school education? This question engages the minds of millions of parents, while the school system has been repeatedly criticised over the past decades.

It is true that there has been a lot of criticism, and much of it is justified. A reform in public education has been carried out, but it so happened that in drawing up the new curriculum, the aims of the reform were sometimes overlooked. It is true that schoolchildren today are given information which we in our time could only get from popular science journals, and only during our University years. But does the mass of facts communicated to pupils in class shape their ability to think? Of course not. Much learning does not teach understanding. Let me give you an often cited example. In the present system of teaching mathematics, children are trained to solve problems of various types. The teacher wants them to solve as many stereotyped problems as possible. And that is why one often hears the pupils say: “We haven’t solved problems like this before.” Traditional education is oriented toward developing empirical thinking alone. In empirical thinking, the particulars are learned first, then they are compared with one another, as a result of which the pupil gets an idea of the subject as a whole.

But psychology has demonstrated, and we are already applying this in our experimental study groups, that the approach should be the reverse: first of all one must impart the spirit of science, tell the pupils how a mathematical problem can be solved in general, and then the pupil should receive assistance in applying that general knowledge to concrete tasks. Our first-graders master the concepts of equality and inequality expressed in letters by the third month of school, while they are still unable to handle numbers. The mathematics course is based on the idea of relationship, from which emerges the concept of “value” and then its particular instance, “number”. To encourage schoolchildren toward a mode of theoretical thinking that makes it possible to go from the general picture to its details, to grasp the whole before its individual parts – this is the method of teaching that fosters the kind of thinking necessary for our times. Such education is based on the psychological ideas focused on the mechanisms of search, goal orientation and action, as I have said earlier.

This is the main thesis, and I could give you dozens of examples of its practical application: books, articles, and educational programmes have already been written. Let me give you just two examples. We have recently made a study of music education. We have found that neither knowledge of notes, nor good singing habits, nor the ability to

play scales are enough to teach the child music, within acceptable time limits, if by this one means music and not just “playing the piano”. What is the clue? It appears that the children must be given an understanding of rhythm, by hand and body, in a material way. The simplest musical instruments, such as the xylophone, acquire a miraculous quality in the hands of the teacher who understands what he wants from his children: the children’s understanding of music will increase by leaps and bounds.

Or take the teaching of foreign languages. A laboratory here recently staged an experiment to find out the capacity of schoolchildren for learning a foreign language depending on age. A large amount of material has been processed, and it has been discovered that training should begin only from the fifth year at school because before that, the child is allegedly unable to remember sufficiently long texts to glean an acceptable vocabulary from the words occurring in it. But if one were to pursue that logic, one would have to say that the child could only learn his native language toward the end of school, and even then only a smattering.

Such methods and their traditional “scientific” foundations ignore the specific psychic features of the child. He must be taught a foreign language as an object of communication and search, and as a goal-oriented activity. Then, if skillfully guided, these processes will enable the child to learn everything fully and in good time. To organise such teaching and development of children, the educator must be aware of modern psychology and its method of analysing human psychic activity.

Extensive application of modern psychological methods can help solve many practical tasks confronting the school.