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A. V. Suvorov

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A. V. Suvorov

The Formation of Representation in Deaf-Blind Children

Editorial notes by Michael Cole and Sheila R. Cole

It is very rarely that an editor of a journal can have the pleasure of publishing a scientific miracle. The author of this article provides us with a unique perspective on the nature of human thought; it is as if Helen Keller had undergone a modern Soviet education in philosophy, psychology, and education and then written about the nature of human nature. Dr. Suvorov's training in the philosophy of Hegel (see the article by Bibler that follows this one) and the optimistic psychology of Vygotsky and his students produces a challenging view of the essence of thought and the paths of its development.

Dr. Suvorov's discussion of the concept I have translated as "representation" bears special consideration. The Russian word he uses is voobrazhenie. The dictionary translation of this term is very elusive. Two different terms are the most likely translations: perception and ideation. Literally, the term should be considered in three parts: vo-obraz-zhenie. We can "unpack" the word meaning, starting with obraz—image. Vo means "into," so we come up with a word that means "into-image." When the suffix zhenie is added, we get "imaging."

"Imaging" fails to connect with important parts of American cognitive psychology, so I have chosen the term representation in its stead. Representation also comes in two parts: present and re (to do it again). This unpacked version of "representation" captures nicely Suvorov's belief that the fundamental act of cognition is the "stepping back" from the world, which, when recombined with original sensation, yields...
thought. This idea of cognition as separation is the basis for a great range of contemporary theories of cognition and the basis of critical theory in a great variety of social science and humanities disciplines.

The fact that the Russian term has a meaning consisting of three parts—vo-obraz-zhenie—is an especially nice embodiment of Vygotsky’s insistence that human thought is irreducibly made up of three parts in which human consciousness consists of the continuous process of re-presentations reconciling the past and the future.

Michael Cole, Ed.

In the summer of 1983 I visited with Alexander Suvorov and his colleagues, thanks to the hospitality of the research staff of the Institute of Psychology, Academy of Pedagogical Sciences, especially of Vasilli V. Davidov, former Director of the Institute, and Felix Mikhailov, a philosopher who knows dactylic Russian and who serves as advisor and teacher to deaf-blind researchers at the Institute.

Dr. Suvorov is a 30-year-old man who was born blind and who had lost most of his hearing by the time he was 9 years old. Although he cannot hear normal conversation, he can hear music if it is played exceedingly loudly and he is wearing his hearing aid. He says he comes home from work at the Institute for the Blind-Deaf and likes to turn his record player on full blast and sit with his ear next to it and listen as a way of relaxing.

At the institute in Zagorsk Dr. Suvorov was made familiar with classical music. He can identify many classical pieces of music and is quite knowledgeable about them. A published poet, he is acquainted with the classics of English poetry as well as with the works of Russian poets.

Home is an apartment on the outskirts of Moscow, where Dr. Suvorov lives alone. He receives some help from his neighbors, a blind-deaf woman and her husband, who can both hear and see. Dr. Suvorov is fiercely independent; he cooks for himself and takes care of most of his other needs too, though not without mishaps. His co-workers help him get to work each
day, and to other places as well; but he dislikes being dependent, and he often makes his way to friends’ homes and to other places by himself.

Sheila R. Cole

It has been repeatedly stressed, and factually demonstrated as well, that study of psychological processes in deaf-blind children is not the study of an exceptional, particular case, but study of the general laws of the formation and development of the normal human mind, albeit under special conditions that are more under the control of the investigator than are the conditions of the formation and development of the mind of normal children. In a letter to me, E. V. Il'enkov wrote: “I am sure that the condition of being deaf and blind does not create a single problem, not the slightest one, that could not be a general problem as well. This condition only presents such problems in more acute form—nothing more.”

I personally have experienced what it means to work with the deaf-blind, first as a deaf-blind student at the Zagorsk Children’s Home for the Deaf-Blind. In the present article, I, now a research psychologist and disciple of A. I. Meshcheryakov, shall attempt to bring together my own experience, a theoretical analysis of the problems interesting me, and my practical work with the deaf and blind in order to shed some light on certain key aspects in the formation of mental representation.

Traditionally, the term representation is used to refer to “a mental function” or, more precisely, “a mental faculty,” in which the images of perception are transformed through recombination. Although the recombination of images is a key concept in the theory of representation, it has also been shown that imagination is a “stepping-back” from the tangible world of things, a “take-off,” as it were, from the direct impressions we receive through our sense organs. This is evident primarily in the form of invention, fantasizing; but as we endeavor to delve deeper into the problem, we find that this separation from the real world takes
place in the process of any form of remembering. This means that representation is not only a creative, constructive, productive process but also a reconstructive, reproductive process. Were we to go further and break down representation into "types" and "functions," we would inevitably encounter a vicious, infinite series, since we would find that there were as many of these types and functions as there were concrete forms of human activity and concrete "products of representation," i.e., images. In a word, we would inevitably arrive at a pluralist position of wretched empiricism in which it would be impossible to see the forest for the multitude of trees, or even a hedgehog for the multitude of needles. It is impossible to see how anything "new" could come from such an approach, to say nothing of the products of fantasy if it were reduced to no more than a combination of old elements. Indeed, were these elements never new themselves? In such a case what combination of "old somethings" did they represent? And what third "old something" was recombined in that second "old something"?

On the other hand, how is a separation or stepping-back from reality possible, a flight of fantasy beyond the old, beyond what already was or is?

An empirical investigation aimed at combining the facts of direct experience is clearly of no help to us here. We need a theory that will enable us to control the processes of the formation of a representation. In this perspective, I find more fruitful the theoretical tradition E. V. Il'enkov was continuing when he wrote:

The form of mental activity responsible for the "transformation" or incorporation of a purely physical fact "into an image or idea" is called representation or imagination. The activity of representation or imagination correlates visual perceptions with the real forms of things, with those very real forms that a person has to deal with in his real, objective life activity, in which he functions not as a "contemplative" being, but as a real, material body among other bodies that are just as real. [3. P. 216]
Il'enkov speaks of "embodiment" or incorporation of "visual impressions" "into an image or idea," i.e., vision, in the most ordinary sense of the word. In fact, however, he has in mind vision in the broad sense, this word embracing the entire immense sphere of imagination or representation: a vision of the world as it is, was, can, or must be.

In this approach, with which I agree, imagination or representation is the form of mental activity that is responsible for the creation of images of all possible situations, in the final analysis, an image of a situation such as the world as a whole, including its history—images of situations in which the subject is active. An image is the dialectical identity of the sequential schema of our acts and motives and the goals of these acts, i.e., ideas about their desirable or undesirable results, and the appearance or outer aspect of the object of these actions. All these—the acts themselves, their motives, and their object—coincide, fuse into an image, which is itself the result of this coincidence.

How is it possible for the image of our acts to coincide with the image of their object in such a way that we have not two, but one and the same image? A thorough study of the process of representation is necessary to answer this question fully; and I, of course, do not claim to be able to do that. Nevertheless, I shall attempt to illustrate my understanding of the question with a sad, but very instructive, example.

Consider a person who cannot see or hear. Ordinary oral speech is intact, but no intonation is possible in it since the person cannot hear himself. How will he communicate with people who can see and hear and who do not know such special means of communication as, for example, dactylic sign language?

One of the methods is for him to ask that ordinary, "visual" letters be written (or, more precisely, drawn very roughly) on his palm; he then follows the finger (or the end of a fountain pen, pencil, etc.) as it traces out the lines on his palm. The subject of his acts is the letters that are formed on his palm. The image of his act is the following of the moving object and
instantaneous reproduction in his imagination of the outlines of these movements. The image of the acts of his interlocutor (drawing the letters) is the image of the acts of the blind and deaf person (reproduction of the outlines of the movements of the interlocutor) and the image of the letters themselves. These are not three different images, but one and the same image occurring at the same site, on the person's palm. Spinoza was aware of this principle, which he formulated as follows: "The idea of any state to which a human body is brought by the action of external bodies must include both the nature of the human body and the nature of the external body. . . . the human soul perceives the nature of many other bodies together with the nature of its own body." [5. P. 421]

In other words, states in which the human body enters into interaction with any other body coincide with the states of that other body. Otherwise, the ideas of these states could not include, at the same time, the nature of both the human body and the external body, i.e., they would not be able to reflect the external world. But for such a reflection, the coincidence or identity of the nature of the human body with the nature of any other body is necessary. Thus, Spinoza formulated uniquely and very accurately the general principle, indeed the very essence, of any reflection. In this context, Marx's ideas about the universal object-oriented and activity-oriented essence of man are of special importance to us (see, for example, [1. Pp. 42, 93–94, 119, 121]).

According to these ideas, the development of representation in the child involves mastery of any concrete form of activity as a means of developing an increasingly precise and adequate image of the world. The capacity for such perception of the world is the capacity for representation. This picturing of the world and the way it comes about are the fundamental function of representation. It would be completely impossible to fulfill this function without a "stepping-back" from reality, without fantasy, without the creation of images of what is no longer, or what is not yet, of what does not happen to be here now, and what in general cannot be. L. S. Vygotsky had this to say: "Correct understanding of
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reality is impossible without a certain element of representation, without a stepping-back from reality, from those direct, concrete, unitary impressions by which reality is represented in the elementary acts of our cognition'’ [2. P. 453].

In this statement Vygotsky was expressing the thought, remarkable in its dialectical trenchancy, that without representation it is impossible to see the world in its true, real aspect. It is just this stepping-back from reality that enables us to form a subjective image that exhaustively includes the objective possibilities contained in the object and that nature has not yet realized in the form of real and present attributes of that object. Yet Vygotsky was adhering to the traditional conception of representation, which sees it merely, or mainly, as a stepping-back from reality, in contrast to thinking, which is a rapprochement to reality. Actually, both are part of representation: both a stepping-back from reality and a rapprochement to it, and the stepping-back is necessary for the rapprochement.

It is this general principle of reflection that governs representation, the "embodiment in an image" of the modes of our acts, of our dealings with the world: a unitary principle, which manifests itself in infinite variety in everything both great and small. This is the universal principle of any and all perception, and indeed not only perception but also thinking, i.e., the understanding of the essence of any human activity, including an understanding that every activity must be learned, that no one is born with an innate capacity for any activity.

If thinking and imagination, or representation, function according to the same principle, outlined here, what, then, are their specific features? What distinguishes one from the other? The fact that in the case of representation, the image of acts coincides with the image of their subject matter, whereas in thinking, the logic (law) of those same (or other) acts coincides with the logic (law) of transformation of the same (or other) subject matter of those acts. The specificity of these processes, purely and simply, is contained in their purposefulness.

The development of representation entails the development of
the ability to construct images of situations in which activity is taking place and which change under the influence of this activity. If we wish to study the process of formation of representation in deaf-blind children, we must study the entire psychological and pedagogical process of these children’s development in all its aspects, each of which in itself is worthy of a special investigation. Children’s ideas about themselves, about others, and about things around them, about their country, about the planet, stars, or the universe as a whole; about the history of their lives, about the culture and people around them as representatives of that culture, the history of the nation and humanity as a whole, or the history of the entire universe as the history of science and mankind’s discoveries—all these things are, of course, part of representation. A child’s moral attitude toward another person is impossible without an image of that person: this is also representation or imagination. The mastery of speech as a universal means of communication and, consequently, a means for knowing the world is also representation. An artistic, aesthetic relationship to the world is representation.

Representation, as one of the most important manifestations of mental activity, does not exhaust the whole of the mind. It is dangerous, even in the abstract, to regard representation as a mental activity isolated from all other forms of such activity. All the more so is it simply impossible for representation to develop alone, by itself, without, at the same time, the mind itself’s developing as a whole.

On the basis of an analysis of the then available empirical material on the problem of representation and ideation, Vygotsky came to the conclusion that

If we approach the question from a classificatory perspective, it would be wrong to see representation as a special function among other functions, as some unique, regularly recurring form of activity of the brain. Representation must be seen as a more complex form of mental activity that is a real union of several different functions in all their unique relations.
It would not be incorrect to use the term *psychological system*, by which we would have in mind a complex functional structure, to refer to such complex forms of activity that go beyond the confines of those processes we have been accustomed to calling "functions." Such a system is characterized by the interfunctional links and relationships prevailing within it. [2. P. 451]

The mind is not formed part by part; discrete parts of the mind do not exist as such. From the very beginning, the mind is formed as a whole. From the very first period in which the child begins to develop distinctly human characteristics, all mental capacities, too, are developing in embryo, undifferentiatedly.

An example would be the process of mastering a socially developed operation, for example, the use of a spoon. Even here thinking is already developing in embryonic form, since in using a spoon it is necessary to operate with its ideal, social purpose, i.e., in accordance with its logic. For this, the individual must be oriented toward the situation of the act as a whole. Let us imagine a chair with a child sitting on it, a table before him, a plate with porridge on the table, a spoon in the child's hand, and an adult using his hand to guide the hand of the child as it holds the spoon. To adapt to the obstinate spoon, the child must have an image of the entire situation of the act, an image of himself in the situation, an image of the adult as an ally in the struggle with the spoon, and a model image of the acts that must be mastered, bringing the material characteristics of his acts into accord with this model image, in brief, the child must have an image of these material characteristics. All this complex system of images can occur and develop directly only as part of the process of mastering the spoon.

But an activity can never be completely developed; no form of activity can be mastered to perfection so long as the entire system providing its images is not completely developed. A system of images begins to develop at the same time as the process of development of an activity, but subsequently the development of
the system of images must *move ahead of* the development of the activity. In other words, the image aspect of an activity must develop in advance of the development of the physical realization of the activity. For a habit to become firmly established, to become a firm ability, a complete and accurate *image* of this habit or skill must already be present. This necessary lead of the development of an image over the development of physical ability to carry out an activity, both accurately and flawlessly, clearly reflects the absolute necessity of a stepping-back from reality, so to speak, so as decisively to subordinate this reality to oneself and one’s activity.

Of course, in the process of development of representation, the auxiliary mechanisms making it possible, namely, memory and attention, are also developed. From the very outset, during the period when the child is acquiring his first human, social characteristics, the ultimate basis of formation of the personality—the capability for self-development, the capacity for reflection—also begins to develop. By reflection we mean here not only self-awareness but also *self-transformation*, i.e., transformation of the forms of his activity by the child himself, as the subject in the process of transforming the object of his activity. The mastery of the spoon, and of the instrumental logic of handling it, means to change oneself and the nature of one’s vital activity and to transform one’s vital activity in such a way that it is transformed from a biological, animal, vital activity to human, social activity. Indeed, to transform one’s vital activity means to transform oneself, for one’s vital activity is oneself.

A child may be aware of himself as a human being, as a personality, and relate to himself in human terms merely by having become aware of a friend or a close adult as a person and relating in human terms only to that person. The source of reflection, i.e., self-transformation, and self-development, manifested in self-awareness, lies in just this. In the system of images created
by a representation that nourishes the child’s vital activity, the image of a close adult is always central. The motives and goals of the child’s vital activity are reflected in this central image and coincide with the motives and goals of the close adult who helps the child in everything. This means that the child’s self-development must necessarily coincide with the development of this adult, i.e., the child’s goals must coincide with the goals of the person helping him and guiding him. When these goals diverge, we have undisputed evidence of the psychological and pedagogical defeat of the adult, of the fact that that adult has ceased to be a close and loved person. Of course, this coincidence of goals must not be understood too linearly.

Once an adult was bothering me very much in my work (he was a blind and deaf lad whose development had come to a halt early in life). Not being able to put up with it any longer, I said to him:

"Stop bothering me!"

His answer stunned me:

"You’re cursing. Enemy!"

Clearly, this lad’s image of good was the same as that of the children in the German fairy tale “The Pied Piper of Hamelin.” “You may, you may, you may! Today you may do everything!” But whoever says, “No, you may not,” i.e., scolds, that person is an enemy.

This image of good and bad is typical of children: good means “you may” and bad means “you may not.” I observed a similar conception of good and bad in many children in the children’s home [for the deaf-blind—Ed.].

Here is another case. One of my friends in the children’s home, who did not like to study, suddenly announced, for all to hear, that he wanted to study “all the way up to the university.” But I was the one who was to “blame” for this. He knew that I had graduated from the university, and he, too, wanted to graduate, “like Sasha.” Actually, I had not presented him with the goal of going to the university. This happened spontaneously, and I found out about it from others. To such a degree can a close adult be a standard and model in the eyes of a child.
The role of a close adult in the mental development of the child cannot be overestimated—not just during infancy and early childhood but throughout childhood. If we encounter negative attitudes in children toward study, there is no need to split hairs in a search for the reason, which in this particular case is quite evident. When a teacher tries to persuade a child that he should like an activity, instead of getting the child interested in the activity, ensuring, initially a partial, and then a complete, success (because nothing encourages a child more than success), when a teacher demands only unquestioning obedience instead of trying to achieve voluntary, happy cooperation, instead of earning that cooperation, therein may be found the reasons for a child's negative attitude toward study or, more accurately, toward the teachers who transform that study into a system of unpleasant duties, into something on the order of a punishment of the young criminal in advance, without any guilt. If a child rejects his teachers, this means that not one among them has been able to be a close adult for him, i.e., a person whom he could love, not fear, who did not censure and scold, yet did not conceal his displeasure when that was called for, and was always ready to help in any difficulty, including in rectifying mistakes; someone who for this reason the child had no interest at all in teasing by deliberately doing something naughty; someone with whom it was always very interesting to discuss things, for any reason; someone, finally, whom one simply wanted to measure up to, to be like, in everything. If there is such a close adult among teachers, it is impossible for an indiscriminately negative attitude toward all teachers to develop.

A close adult is also someone who mediates between a child and the activity the child must master through cooperation with that adult. The child's interest in the close adult must extend to the activity they have in common to such an extent that the activity will become interesting in itself for the child: the activity itself must become sufficient reason for carrying it out. The common activity must be paramount, and the close adult must become an irreplaceable companion and ally in the common task. This applies first and foremost to educational activity, but it is precisely
in educational activity that such a concordance of interests is most often lacking.

With one boy, Andrei, who was blind, I undertook a study of a reading primer for blind children, at the request of his teacher. As soon as we did something he thought had been assigned by the teacher, he would straightaway refuse to cooperate further. Of course, this work, especially reading, was very difficult for him: he had to learn to construct images on a tactile rather than a visual basis, and these images are very, very different. A. I. Meshcheryakov made a special study of a similar situation and concluded: ‘The newly created images have only one similarity to the images they have replaced; this similarity is limited to the correspondence of the image to the objects’ [4. P. 157]. This similarity is sufficient for full communication between people who can see and hear and the deaf and blind, but it is too slight for easy substitution of one type of image by another type, in this particular case, visual images by tactile images.

Andrei so obstinately protested against this work, which was very difficult for him and which he considered ‘above and beyond classroom duties,’ that he even tried to take my primer away, and in place of the primer gave me a game of chess. In the end I agreed to play so as to avoid quarreling with him. But within five minutes, the situation on the chess board had become such that I would have lost in another five minutes if Andrei had not been distracted by something.

Left alone, I began to wonder why Andrei was so strong in chess (he is one of the best chess players among all the children in the home), but was unable to manage the ill-fated primer at all. On the chess board he was able to orient himself excellently to the situation as a whole and make optimal moves based on an adequate image of the entire situation. But for normal reading, the same principle of holistic perception of a situation necessarily comes into play, only this time applied not to chess positions, but to a text. Evidently, the difference was that Andrei was interested in the game of chess: it was fun for him, whereas learning to read the primer was an extremely boring duty.
The lack of positive motivation, a vested interest, pure and simple, in the study process, also hampers the transfer of the same principle from one activity to another, and indeed is almost a greater impediment in this respect than the inability to apprehend something based on the sense of touch. As a result, the specific activity in which the child was not interested assumed an independence to the point of becoming autonomous relative to the other specific activity for which he was positively motivated, although both of these specific activities were realized in accordance with the same principle.

When I related the case of Andrei to the psychologist A. A. Melik-Pashaev, he gave me a description of eight learning games whose purpose was to activate a child's vocabulary. I had to leave for Moscow and was unable to try out the games with the children myself. Taking a Braille copy of the description for myself, I left the original with one of the teachers who had become interested in these games. On my next trip I found out that the children had rejected these games; they had categorically refused to play them. Evidently, the setup of these games, if not their very nature, reminded the children too much of the setup of a classroom lesson, which was boring enough as it was. The children's limited imagination and representation were, nevertheless, sufficient for this type of association. But when I unexpectedly, in individual contacts, set up games according to Melik-Pashaev's descriptions, the children began to play them with me, not having time to think about whether the game was like a classroom lesson or not. The game would develop imperceptibly out of our communicative situation; I did not say, "Let's play"; I simply began to play, and the children, not having time to decide whether they should refuse or not, were taking part in the games before they knew it.

A child will always learn under coercion, under threat of the rod, if we are unable to make the learning situation interesting in itself, a goal in itself, something to do for its own sake. Moreover, we must emphatically refrain from breaking down learning material into meaningless elements, for example, having children read and write disjointed syllables instead of whole words. It is better
to have them learn whole phrases and short texts. Herein, it seems to me, lies our mistake. Success is possible only when an entire situation or field of action as a whole is graphically present. Why, then, is this holistic principle violated in schoolwork? Why are individual elements, isolated from the situation as a whole, and hence meaningless, often given to pupils to learn? In schoolwork we often try to develop the image of a whole activity out of its parts, instead of specifying the details of performing an activity on the basis of the activity as a whole and the overall principle of its realization.

Representation, like the mind in general, forms and develops in the process of the child’s immediate activity. That activity must necessarily be motivated in some way; a child must have a vested interest in it. Of course, his resistance can be broken, on the pretext of teaching him responsibility, a sense of duty, understood as the ability to do, without a murmur, something that one does not want to do and that is simply unpleasant. But such self-discipline cannot be valuable in itself; it must be justified by a goal in whose achievement the child is strongly interested.

Representation is inseparable from emotions. Hence, in addition to by the holistic principle (first the image as a whole, and then the breakdown of this whole into parts), the formation of ideation is governed by the principle of emotionality. Any activity a child is mastering (and, as we have seen, an activity is first developed in terms of the image, and only later in terms of its actual realization) must bring the child at least satisfaction with the results and with the process itself, if not outright pleasure or gratification. Otherwise, "the principal of emotionality" works against us and, in the final analysis, against the child: the activity becomes abhorrent, and the image of the activity that is formed is one of an intolerably boring, irksome process, a torture; and if after this a child nonetheless masters the activity, the success will be at the cost of incredible, and totally unjustified, effort on the part of both him and his teacher.

As we know, a child’s play activity has a tremendously important role in his mental development in general, and especially in
the development of representation. According to the currently most generally accepted theory concerning periods of development, play is the dominant activity in the preschool stage of childhood. In our children's home we have as many children as there are stages of development; individual differences among our children are so great that no single system of "periodization" can be applied to them. Retardation of development is typical, for various reasons; and many children of school age and even adolescence have not developed most of the new mental structures proper to the preschool age. I do not think that this accounts for the difficulties they have with formal schoolwork or for their negative attitude toward it. But there can be no doubt that the children learn anything much more eagerly, easily, rapidly, and firmly in play than in a "classic" school lesson.

Play is always a goal in itself, i.e., it is important and interesting to the child for its own sake, and is its own motivation. In play a child can define to his own liking his own idea about some real situation, or real relationship in the "nonplay world"; he can do this without fear that his mistakes will be met with ridicule or sarcasm. At the same time, play not only gives the right to make a mistake but also offers the possibility of correcting the mistake without detriment to one's self-esteem. Indeed, one can always say that some rule of the game was not known, but that henceforth it will be observed. As a result, in play a child learns about the world much more accurately, profoundly, and rapidly than in school activity. It is no accident that in the incident I described earlier, Andrei's imagination and representation in chess were much farther ahead in their development than his representation in formal school activity. It is unfortunate that for him school activity is not a goal in itself, it is not important and interesting for its own sake, is not its own motivation. But in play all these things are the case. Why should this not be so in school learning as well?

For a child to develop himself, to himself become the vehicle of his own development, not be dragged along by an adult developing and teaching him—for this to happen, any activity in which a
child develops (or should develop) himself as a human being must be self-motivating. In this sense play may be considered a dominant activity in any period of a child’s development, not just in the preschool period. It is simply that in the different periods of a child’s development, play itself assumes different forms: it develops, its content becomes richer; and in the school-age period, this takes place through school learning. But school learning without play cannot be effective. Without play, study will always remain something alien and autonomous to the playful mainstream of mental development, something on the order of a quiet, swampy, and clogged tributary of a large river. A child’s self-development is not possible without play, and only play can ensure that his vision of the world can develop to the highest level possible.

Both the construction of the level of representation at hand and then the attempt to develop representation further can be carried out using any psychopedagogical process and any form of human activity. But the development of musical perception in deaf and hard-of-hearing children has advantages if we want to follow the development of representation from practically a zero point. Indeed, the musical form of representation is most often at just this zero level in these children.

After making some arrangements with the speech therapist at the children’s home, I took some phonograph records of music with which I was most familiar and began to listen to them with the children. We assembled some rather large groups of children, put on a record, and I sang along with the record, directing it at the same time with my hand. The children listened to the music (marches and waltzes for a wind orchestra) through their hearing aids (in the Zagorski Children’s Home there are children with residual vision or residual hearing; hence, some of the children had hearing aids), at the same time following my conducting and the vibrations of my voice, which they perceived through their hands placed on my neck, my head, my back, my chest—wherever there was a place for their hands and wherever the vibrations appeared strongest. We did not try to distinguish the separate elements of the musical
works, i.e., the separate musical phrases, in the first session. Most important was the general impression of the children after having listened to the music, and the pleasure they received from this. At the least signs of fatigue, the children were free to go, only those who asked for more remaining; but when even they began to tire, the session was terminated. The initial responses of the children were: "Interesting!"

Then some of the children began to imitate my movements as I was conducting, but my movements were rather complicated. I would beat the rhythm with my hand in the air and, depending on the loudness of the music, sometimes hold my hand over my head (when the music was at its loudest), sometimes horizontally (when the music was moderately loud), and sometimes near my chest or shoulder (when the music was least loud). I was able to conduct in this way only because I knew the music well. The children, on the other hand, in imitating my movements, would raise, extend, and flex their arms frequently out of place—for example, they would conduct with their hands over their heads when basses were playing, although they maintained the rhythm quite accurately. The marches were the easiest for the children. A few were able to catch the rhythm of a waltz independently, without my assistance.

Then we discovered that many of the children were beginning to sing to themselves. Of course, they still did not know any of the pieces of music in earnest, but they were able to maintain the general rhythm of a march accurately (only a march). In their view of things, the more rapid the music, the better. They would begin to sing, without opening their lips, which coarsened their voices considerably; even the very youngest boys were able to achieve almost a bass voice because of this. I did not criticize the children since I was afraid of frightening them away from these sessions; I merely asked them to open their lips a bit as they sang, but otherwise I basically followed the rhythm, which came out best of all, and praised them heartily for their efforts.

Soon afterward the children began to ask me to sing, since the record player was not always available. I always happily obliged, and asked them to chime in as well, following them
through my hearing aid and from the vibrations of their voices. Later I began to work on discriminating between the rhythms of a march and a waltz with some of the children. At first their identification of the music clearly bore no relation to anything they perceived, and instead followed the principle that if a march had previously been played, next would come a waltz, and vice versa. When I realized what they were doing, I began deliberately to trip them up. Nevertheless, no reliable discrimination was achieved. I then began to ask them not what had just been played, i.e., a march or a waltz, but how the music sounded—if it was rapid or slow. They coped with this problem much more confidently.

Finally, one boy in his rhythmic improvisations began to repeat accurately the general pattern of the middle portion of many of the marches, in which low and high tones alternated; the low tones would coincide with the beat of the large drums (without a kettle drum), and the high tones would be inserted just between two beats of the drum, with simultaneous bass sounds from the wind instruments. This middle part of the march, which for me was one of the most difficult, was perceptually discriminated by the children earlier than the other portions.

I experienced this myself when using various types of amplifying equipment. I began again to train my musical perception, which had been almost completely lost for over ten years, during which I was unable to hear almost anything without a hearing aid, but had not had one. Musical activities are of tremendous importance for audio work in general, particularly for familiarization with the musical structure of oral speech. I believe that a love of poetry and of the music of words can be formed only on the basis of the most ordinary music. The possibility for this exists in everyone, even those who are completely deaf, though there may be certain limitations: the vibration of the bones is totally adequate for perception of the dynamic rhythmic pattern of a piece of music, even without a melody. This pattern is fully admissible for an initial understanding of the musical aspect of poetic speech. In most cases our children did not see the difference between poetic speech and ordinary speech.
Once I showed Yurii one of my own poems and asked him what it was. He said, "A very long sentence." When Yurii (with my help) realized that this was a poem and I asked him how a poem differed from a story, he answered, "Stories are longer; poems are shorter." I tried to give him an idea of rhyme. (I wanted to avoid going directly into the problem of rhythm since I did not know how to deal with the problem of stress; also, I decided that it was better at first to present the external attributes of a rhymed verse, thus temporarily transforming verse into a kind of riddle.) But nothing came of this: Yurii got bored, and I, to avoid bothering him, put off rhymes until a better time. But, as I found out much later, some of the children had nonetheless understood the poems that had been put up on the children's wall newspaper; they even liked the poems, as the most understandable of anything that they were forced to read of this sort. The vocabulary of normal children's verses, even those for the very smallest children who can see and hear, is still much richer than the vocabulary of most of our children of young school age. We shall come back to the reason for this later.

One girl understood the verses as a peculiar kind of emotional speech. As a result, when she tried to write verse herself, she would come up with free verse, i.e., a kind of prose, but more emotional and rhythmic, though the rhythm is scarcely discernible. However, she had considerable trouble with accent, which is not so easy to notice in free verse in any case. Here is her free verse, with all the author's own accents retained.

Zdravstvui osen
Po doroge zolotaya osen
Idet zolotayaosen
Pokryta raznotsvetnym kovrom
Nasha zemlya.
S derev'ev padayut raznotsvetnye list'ya.
Pitsy v stai sobiryutsya.
Nayu yug oni uletayut.
Solntse svetit slabo.
Po doroge idet osen
Zolotaya zolotaya osen.
Greetings to autumn.
Golden autumn is along the road.
Golden autumn is with us.
Our earth is covered with a coat of many colors.
Leaves of many colors are falling from the trees.
The birds are gathering into flocks.
They are flying away to fly to the south.
The sun is shining faintly.
Autumn is on the way,
Golden golden autumn.

For us this free verse is an achievement. It became possible because this girl's teacher, whom she loved, wrote verse herself, was very sensitive to poetry, and was able to give the girl a true picture of verse and poetry in general, even if but a rough one. I know of no other case in which this has been achieved.

* * *

As soon as a child has mastered some form of speech, he is able to "stockpile" images of concrete forms of activity. This is an extremely important stage in the development of the ability to "step back" from reality, a stage at which the formation of the image of an activity begins to precede its actual performance (if this is necessary). This stepping-back from reality in verbal form is an extremely important condition for the development of cognition as an independent form of activity; by virtue of cognition, we are able to know not only what is taking place in our immediate proximity but also events, whether real or fantastic, in some far-off world. The great advance of stepping back from reality that speech makes possible enables us to undertake any journey in time and space accessible to our imagination. Indeed, books are the most important means of transport for such imaginary voyages. If a person has sufficient mastery of speech to communicate with others around him yet is unable to read, his imagination will remain at an extremely primitive level, as will his thought, since everything that I have said about the importance of speech for
imagination applies equally to the importance of speech for thinking, with the one qualification having to do with "the level of the image" and the "level of the concept" noted earlier. It is said that there is nothing swifter than thought. This is doubtless true, but it is equally true that there is nothing swifter than an image, i.e., an image and a thought journey at the same speed. It cannot be otherwise, since an image and a thought are inseparable from one another.

Nor do we need to dwell on the tremendous importance of such journeys in imagination and thought for full human development. We blind and deaf who have had a normal development owe that development primarily to such journeys, made almost exclusively with the aid of books. What books, especially literature and popular scientific books, provide becomes the content of role-playing, which in myself took shape in personal form, and then evolved further as an endless story that I composed (almost without writing it down) every free minute of my time over the course of almost twenty years, from my early childhood until I entered the university. This story was most like an endless fantastic novel. I spun the plot of this novel out of literally everything, not only what was of interest to me but even—and this is especially important—what was boring, unpleasant, and tiresome. By including a horribly boring lesson, the production of pins, the pureness of the snow, scrubbing the floors in the children’s home, and other such things into the plot of my tale, I made boring things interesting to myself. I have noted that the most developed of our children also try to embellish in the same way everything that is boring to them. For example, Yura once told me that he was going off on a journey into space and had come to say goodbye to me. The space trip turned out to be to the pin-manufacturing shop.

But for books to perform effectively their priceless service as a time machine and high-speed spaceship, one must, of course know the language in which they are written. We can improve our language by reading books, and become literate in literature, flexible and expressive; but we cannot learn a language from the very beginning, from zero, through books. This must necessarily precede reading and, moreover, can take place only in speech communication with a close adult.
Language is first and foremost a means of communication with living people, a means of cooperation with them in any activity. Herein lies its principal function, and it serves this function from the very beginning of its development. The dogmatic counterposing of language and activity is completely absurd from a theoretical, and even a practical, point of view. Theoretically, it leads to two contradictory positions. In the one case, the word divorced from its meaning is deified, thus being completely deprived of any sense; and on the other hand, direct physical activity, the activity of the hands, and only the hands, is deified, and the development of language is regarded as a process that takes place without any special pedagogical effort. When one criticizes the theological interpretations of the phenomenon of Helen Keller, or positivist rummaging in the language of science, in place of inquiry into the essence of things or into the laws of nature and society, one can, in the heat of polemics, find oneself driven imperceptibly to the diametrically opposite extreme.

The counterposing of language to activity is just as absurd as the counterposing of any other means or tools to activity. It makes no difference that it is in the name of activity that activity is deprived of the means for its accomplishment. But language is just one of the media of activity, above all, of the activity of comprehensive cognition of the world through assimilation of all the riches of the culture of the people in it, of all mankind. Indeed, communication itself, of which language is traditionally regarded as the medium, is nothing more than an activity that regulates and organizes all other human activity.

Referring to the investigations of many other authors, Vygotsky categorically declared:

A tremendous step forward in the development of a child’s representation or imagination is accomplished in direct connection with the assimilation of speech . . . children retarded in speech development are extremely retarded in the development of imagination as well. Children whose speech development is distorted (let us say deaf children, who for this reason remain completely or partially dumb, deprived of speech communication) are also children with extremely impoverished,
meager, and sometimes positively rudimentary forms of imagi-
nation. [2. P. 446]

The same can just as well be said not only of the development of
imagination but of the mental development of children in general.
To cope with problems, communication has to be tuned to the
language of imagination. One of the most serious obstacles to
even beginning to resolve a problem is the language barrier.
Indeed, in what language must we and children together couch the
works of our imagination? What language should become the
means of our joint activity of representation? The "distorted
path" taken by the speech development of most deaf and blind
and deaf children is the learning of a gestural language.

From a very early age (minimum, four years) the children in
the children's home speak more through gestures than in Russian,
and indeed do so more willingly. For them the Russian language
is, so to speak, official—it is for lessons, for communication with
teachers, etc., while gestural language is for themselves, for
communicating with one another, for play, i.e., gestural language
is truly their own. Of course, the young children must be taught
the most elementary, so-called functional, gestures, which are
imitations of the simplest concrete acts. Without this, the transi-
tion to learning the Russian language is impossible, as A. I.
Meshcheryakov demonstrated. The first Russian words are pre-
sented with the fingers as gestural equivalents, gestures in the
child's perception, but not gestures in their essence. One may
ask, What direction does the development of functional gestures
more naturally take—toward the Russian language through ges-
tural equivalents (the first dactylic words), or toward a gestural
language? It seems that it is more natural for gestures to develop
into a gestural language rather than into any other language. Is it
impossible, then, to replace these insidious functional gestures
with something less insidious? In any case, specialists, research-
ers, and practitioners should think along this line.

It should be recalled that even children who can see and hear do
not master their native language at once. Reduced, abbreviated,
ordinary words or onomatopoeic sounds serve as a bridge to
mastery. An example is the word *button* in the book by K. I. Chukovskii entitled *From two to five*. [The Russian word for button is *pugovitsa*.] What metamorphosis must this word undergo before it begins to sound normal? "At first – *pu*; then – *puga* or *putsa*; then *pugiya,*" etc.[6]. Perhaps in its dactylic form the Russian language can also be learned in this way, i.e., through reduced forms of the first dactylic words. But this would mean to present words in their complete, final form straightaway, merely allowing the child to reduce them, but constantly reminding him of their full-fledged form. In what way does this differ from the unsuccessful practice of the first deaf-mute pedagogue in history, the American Howe, who pasted labels with names on objects? True, Howe moved on from the object and its tactile perception, whereas we begin with the use of an object with its functional end socially and historically fixed in it, i.e., we begin with an action with the object, in accordance with its social logic. But even having made this correction, it is hard to forgo the stage of functional gestures. Perhaps one should nevertheless take the risk? If it is successful, there is much to be gained. I myself do not insist on reduced forms of dactylic words as a bridge to the Russian language. Only one thing is important: functional gestures must necessarily be replaced by something else; the bridge to the Russian language must be built of other materials, which should be closer to the Russian language than to gestural language; and we must find those materials.

But however this methodological problem is solved, the methodological principle of a close adult must unfailingly be adhered to. In terms of the development of speech, this principle implies that the child must first and foremost develop an extremely urgent need to be understood by an adult. But to develop such a need in the child, the adult must be very close, the child's very best friend.

I am able to speak only in Russian, but the children prefer gestures. My friendship with Yura, which I mentioned earlier, began with our taking a deep liking to each other. I liked Yura most of all because of his curiosity, and Yura liked me, evidently,
because I joyfully gratified this curiosity as best I could. But at first it was very difficult for us to communicate. Yura was accustomed to gestures; true, his vocabulary was lean, but nonetheless sufficient for communication in Russian. Yura tried to teach me gestures, to make things easier. I did not object, because I did not want to frighten him away from me, but I was a very incompetent pupil. I quite genuinely forgot Yura's lessons, so it was not necessary to pretend. Yura decided that it was not worth giving up his friendship with me because of this minor vexation; and difficult though it was initially, we pursued our friendship exclusively through conversation in Russian. A year and a half have passed; and although I do not know Yura's language, I can speak with him about anything I want without any special difficulties. In my communication with him, as with others, I am not limited by his vocabulary, and am concerned solely with explaining (as many times as he forgets) every new word and idiomatic expression. I introduce this new linguistic material consciously and steadily when the occasion arises. Now Yura is using the same techniques of communication as I use with him, even to the point of adopting my favorite phrases. Here is a simple example: I have a very affectionate word for children and even for my more grown-up friends: lads [in Russian, malysh]. Yura liked this word, and for some time he has been calling me malysh as well. But if he had not reached out for me, there would have been no reason for him to learn the Russian language to communicate just with me, and he would not have tried to make himself as intelligible as possible to me. The same applies to all his other friends with whom he can communicate only in Russian. In any case, everything rests on the image of a close adult, i.e., the image of a standard, a model human being.

**References**