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# Methodological Thinking in Psychology: 60 Years Gone Astray?

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CHAPTER 12

# FORGOTTEN METHODOLOGY

## VYGOTSKY'S CASE[1]

**Nikolai Veresov**

The XXIst International Congress of Psychology in Paris was opened by Paul Fraisse, its President, with an address whose first sentence was:

> The field of psychology is in a state of crisis. The crisis is more than a paroxysm of growth, however, because it is theory that is really at stake. We are, in fact, in the midst of a scientific revolution and, in Kuhn's terminology, we are working our way toward a new paradigm. (XXIe Congress International de Psychology, 1978, p. 63)

Since 1978 not so much changes happened.

At the APA Annual Convention in New York in 1995 almost twenty years after the Paris Congress, David Bakan, among many others, made a strong statement that the crisis of psychology is not in the lack of psychologists or lack of literature being produced. It is in the poor development of understanding of human life, the science itself, and the relationship of the science to the world. In his paper, Bakan discusses three senses in which there has been loss—subject matter, method, and the mission (Bakan, 1996). Such claim indicates that the crisis is not historical, but rather methodological.

As Yurevich (2009) mentions:

> Even so, in spite of the circumstances that mitigate the sense of crisis much of the psychological community is highly sensitive to it, and not so much to

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> the symptoms mentioned above but to the lack of progress in overcoming them. Assessments of the general methodological status of psychology given by William James, Karl Bühler, and others over the past hundred years do not differ much from modern assessments of the crisis. Thus, any present-day psychologist would probably go along with James' contention that psychology is reminiscent of physics before Galileo: there is not a single universally recognized fact nor a single universally shared generalization (James, 1890). Lack of progress in overcoming the crisis puts into question the progress of psychological science in general (Yurevich, 2009, p. 2).[2]

Yet, it is very comfortable crisis, at least for psychologists. In contrast to physicians, experimental psychologists feel free from mind-crashing puzzles of how to interpret theoretically the data they obtain; as for psychological theoreticians—they are free to mix various concepts and principles in order to create "the theory" they like to create, as if they are building a house out of Lego blocks. For developed[3] sciences, for example, physics or biology, the crisis is extraordinary situation which requires the unification of efforts to overcome it as soon as possible. For psychology the permanent crisis is an ordinary state of affairs, which everybody in this science experiences as something normal. The situation looks like the classical anecdote about the patient who had a problem, but after visiting psychoanalyst he has the same problem, and now he is not worrying anymore, but is just proud of it. In some sense such situation in psychology is understandable, especially now, in the so-called post-postmodernist times, when every opinion is correct, every truth is the truth and at the same time it is not. What else could we expect in a situation when Culture was gradually reduced to Text, then to Discourse and finally to the Narrative, and the personality was reduced to the Agent and then to Recipient-Reagent? Psychology goes even further: as Tatsuya Sato has to note, one of the defining features of contemporary psychological methodology is to depict a person as a mixture of many relatively independent "variables." "Ironically speaking, human beings are viewed as if they were determined by precisely those many variables in which psychologists have interest" (Sato et al, 2007 p. 53).

More than ten years have passed since the New York Conference, and not everybody is so pessimistic about the future of our science. Thus, in his paper of 2007, Aaro Toomela presents his view on the possibilities of *methodological* breakthrough in psychology. As he claims, there are two ways for overcoming limitations of methods used in psychology. One is to invent new methods of research. The other way is to look back into the history of methodological thought and ask whether methodological principles applied in research long time ago and abandoned in the course of history disappeared due to purely non-scientific cultural reasons (Toomela, 2007, pp. 6–7). According to Toomela, "contemporary mainstream psychology follows the traditions of pre-World War II North American psychology. Con-

siderably more insightful methodological principles of German–Austrian psychology have moved into periphery of psychological thought" (Toomela, 2007, p. 18). I cannot completely share his opinion on the geographical division of the psychological mainstream (for example, North American psychology was, in some sense, the result of British philosophy of empiricism), but what I agree with is that history of psychology could bring some unexpected surprises to our science. On the other hand, such strong claim looks abstract without certain historical example. I discuss such an example in my paper. I took historical example of how insightful methodological principles have moved into periphery of psychological thought. So, my paper is a sort of historical-methodological case study; that is why it is entitled "The Vygotsky case."

## WHY VYGOTSKY?

I have at least two reasons to address to L.Vygotsky's scientific legacy—one historical, and second, methodological. The historical reason is that already in the middle of 1920s he made a deep historical and methodological survey of state of affairs in psychology in "Historical meaning of the crisis in psychology" (Vygotsky, 1982). Of course, every generation of psychologists has proclaimed a crisis in psychology or *of psychology*. But Vygotsky's case is something special; having discovered the historical meaning of the crisis, he proposed an alternative approach in methodology, known as cultural-historical theory. In some sense his cultural-historical theory was a sort of methodological proposition of how to overcome the crisis. It might be of interest to undertake a survey of, first, what methodological alternative Vygotsky proposed, and second, why it still remains partly forgotten and partly misunderstood.

My task is not to give a sort of description of the main traits of Vygotsky's psychological theory; I will focus on the items directly connected to the topic of this paper. There are at least two interconnected aspects in Vygotsky's which sound extremely crucial nowadays and make possible to speak on his theory as a really existing methodological alternative for contemporary psychology.

1. *Claim against empiricism and descriptive methods.* Thus, in his "Historical meaning of Crisis" he wrote:

> There is one fact that prevents all investigators from seeing the genuine state of affairs in psychology. This is the empirical character of its constructions. It must be torn off from psychology's constructions like a pellicle, like the skin of a fruit, in order to see them as they really are (Vygotsky, 1982, p. 377).[4]

Later on, in the beginning of 1930s, improving this critical position to empirical theorizing in psychology, he wrote: "Empirical character of such constructions leads to the situation when they lose any theoretical sustainability and eclectically include and assimilate allogenic elements" (Vygotsky, 1932, p. 12). For Vygotsky, the descriptive explanatory models and principles based on empirical methods of investigation should be replaced by explanatory models and principles.

2. *Claim of developmental analysis and qualitative research methods.* Instead of merely describing the stages of development, psychological theory should find the ways of how to explain development (including its sources, laws, conditions, moving forces, contradictions, and underlying mechanisms). Development is always very complex and contradictory process, but, first of all, it is a process of *qualitative* change.

Vygotsky's claim and basic principle was: "To understand the mental function means to restore both theoretically and experimentally the whole process of its development in phylo- and ontogenesis" (Luria & Vygotsky, 1992). Later on in my paper I shall discuss these matters with more details, yet here I cannot get rid of the temptation to give an historical example, which shows Vygotsky's approach in condensed form. In 1966 at the XVIII World Psychological Congress there was a short conversation between Jean Piaget and Piotr Galperin, former student and collaborative of Vygotsky.[5] After presenting their materials Piaget said "Dear Professor Galperin! I see the difference between our approaches. I investigate things how they are, whereas you investigate things how they could be." Galperin's reply was "Things as they are is just the private case of how they could be."

Unfortunately, some of Vygotsky's *methodological* findings (including the two I mentioned above) remain undiscovered in contemporary mainstream psychological discourse, and some of them remain misunderstood by Western and Russian Vygotskians. To make the point as clear as possible, I will concentrate on two items from Vygotsky—the one, which is unknown (general genetic law of cultural development), and the other one, which is well known (zone of proximal development).

## THE THEORY: SUBJECT MATTER AND THE GENERAL LAW

What Vygotsky proposed was a sort of methodological alternative to traditional psychology *in a sense of the subject matter and in a sense of method.* Let us make a short survey on the first of them.

Vygotsky's theory deals with higher mental functions in humans. In this respect it was an alternative to dominating methodological thinking in psychology, which entailed Wilhelm Wundt, that they could not be studied in experimental psychology. They could only be studied by historical analysis of various cultural products (folktales, customs, rituals and so on). Vygotsky proposed something different:

> Higher mental functions are not built on the top of elementary processes, like some kind of second storey, but they are new psychological systems comprising a complex nexus of elementary functions that, as part of a new system, begin themselves to act in accordance with new laws (Vygotsky, 1978, p.58)

For Vygotsky, the subject matter of the theory was "higher mental functions" not as they are, but in the very process of their development. *Cultural-historical theory was the theory of the origin and development of higher mental functions.*

> The one-sidedness and erroneousness of *the traditional view* (emphasis mine—NV) ...on higher mental functions consist primarily and mainly in an inability to look at these facts as facts of historical development, in the one-sided consideration of them as natural processes and formations, in merging and not distinguishing the natural and the cultural, the essential and the historical, the biological and the social in the mental development...; in short—in an incorrect basic understanding of the nature of the phenomena being studied...
>
> Putting it more simply, with this state of the matter, the very process of development of complex and higher forms of behavior remained unexplained and unrealized methodologically (Vygotsky, 1997, p. 2)

For Vygotsky, the fatal fault of traditional psychology (including empirical psychology, American behaviorism and Russian reflexology) was in decomposing of higher forms and structures into primarily elements, while ignoring the problem of *quality*, which is not reducible to quantitative differences (Vygotsky, 1997, p. 4).

But what exactly does the "development of higher mental functions" mean from qualitative perspective? What differentiates Vygotsky's approach from other developmental theories of that time?

> The concept "development of higher mental functions" and the subject of our research encompass two groups of phenomena that seem, at first glance, to be completely unrelated, but in fact represent two basic branches, two streams of development of higher forms of behavior inseparably connected, but never merging into one. These are, first, the processes of mastering external materials of cultural development and thinking: language, writing, arithmetic, drawing; second, the processes of development of special higher mental functions not delimited and not determined with any degree of precision and *in traditional psychology* termed voluntary attention, logical memory, for-

> mation of concepts, etc. Both this taken together also form that we...call the process of development of higher forms of the child's behavior" (Vygotsky, 1997, p. 14, emphasis mine)

I could call this "the principle of two streams" or the "principle of two processes." The second important item here is the *general law of the theory.* Since the subject matter of the theory is the process of development, correspondingly the general law was named "the general genetic law of cultural development of higher mental functions."

It makes sense to look on the formulation of the general law since the whole Vygotsky's theory is based on it, and to understand the law means to understand the theory. And conversely, any kind of misunderstanding of the law brings deep misunderstanding of the whole theory. Later in this paper I give an example of such fatal misunderstanding, yet here let us make a brief survey of the meaning of the law in a form given by Vygotsky:

> [...] any function in the child's cultural development appears on stage twice, that is, on two planes. It firstly appears on the social plane and then on a psychological plane. Firstly it appears among people as an inter-psychological category, and then within the child as an intra-psychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts and the development of volition. (Vygotsky, 1983, p. 145)

At first glance it looks very close to the famous socio-genetic principle developed by Pierre Janet. Even more, for many researchers it looks even obvious. Thus, Valsiner, expressing the wide-spread opinion, wrote that the Vygotsky's main contribution was in his consistent application of the basic socio-genetic principle, borrowed from Pierre Janet to issues of human development. Therefore, the general genetic law in cultural-historical theory "could be appropriately labeled the "Janet—Vygotsky law" (Valsiner, 2000, p. 40).

Yet, I think that such understanding is not completely relevant to the original meaning of Vygotsky's law. Some things here should be clearly identified. Let us try to make a step to such kind of identification. I undertook a detailed analysis of the formulation of the general genetic law in my previous publications (Veresov, 2005, 2006, 2007a,b), so here I just repeat it in brief with main emphasis to what is necessary for the topic of this paper.

At first glance, Vygotsky's formulation emphasizes the most important aspect—social origins of mind, as fundamental in cultural-historical approach to human development. But, an attentive and careful reader can easily see some discrepancies here. Actually, if every function appears first in the social relations between people on the social level, and then inside (within) the child, how then mental functions appear in the social relations, and in which form they exist? If they do appear in social relations, how then they change their location moving from social to individual? What is the transi-

tional mechanism? Or do they disappear from the social level and then appear by some mystical way again within the individual? Internalization can explain the transformation from the social level to individual, but cannot explain appearance of the function on the social level, within the relations.

The crucial point is that, according to Vygotsky:

> [...] every higher mental function, before becoming internal mental function was external because it was social before it became an internal, strictly mental function; it was formerly a social relation of two people. (Vygotsky, 1997, p. 105)

Social relation is not the "area", not the field, and not the "level" where mental function appears—the social relation itself becomes human individual function—herein lays the answer.

Second, if every higher mental function was a social relation between two or more people, does it mean that every social relation can become a mental function? There is clear notion of what type or relation can become a mental function. I mean particularly the word "category" (категория) Vygotsky uses in the formulation. The term "category" (which is repeated twice in the formulation of the general law) has definite meaning. In Russian pre-revolutionary theatre's vocabulary the word category meant "dramatic event, collision of characters on the stage." Vsevolod Meierhold (famous Russian theatre director) wrote that category is the event, which creates the whole drama.

Vygotsky was familiar with the language of Russian theatre and arts and had to use the word "category" to emphasize the character of the social relation, which become the individual function. The social relation he means is not an ordinary social relation between the two individuals. This is a social relation that it appears as a category, i.e., as emotionally colored and experiencing collision, the contradiction between the two people, the dramatical event two individuals. Being emotionally and mentally experienced as social drama (on the social plane) it later becomes the individual intra-psychological category.

Probably, the best example here might be the case of debate between two people. Imagine (or just remember) that one day you met a friend and had a debate, expressing opposite positions. Dramatical collision in a debate, experienced by the both participants, can lead to a sort of self-reflection. In a course of time, (for example on next morning) one of the participants remembers the event and what he has been done and said. It could happen like "I was wrong saying that, I made a mistake...I should not say such sharp words...I was so aggressive and did not pay enough attention to what he tried to say...How stupid I was yesterday..." We see here that the individual now experiences the same category intra-psychologically. In this type of internal category all the mental functions of the individual are in-

volved (memory—"I said something rough," with emotions—"How stupid my behavior was, what a shame," while thinking—"I have to think it over and never repeat such bad things," and volition—"I must stop it, I will never forget of what I have been done. I promise to myself to be patient...").

Such emotionally experienced collision brings radical changes to the individual's mind, and therefore it is a sort of act of development of mental functions—the individual becomes different, he feels "higher" and "above" his own behavior. Without internal drama, an internal category, such kind of mental changes are hardly possible. So, the term "category" is a key word here. Dramatical character of human development, development through contradictory events (acts of development)—this is Vygotsky's emphasis.

One could ask, nevertheless, why Vygotsky himself did not use the term "dramatical collision" or just "drama" openly. Probably, such interpretation of the general law is nothing else then a wild fantasy of Nikolai Veresov? Probably he is just attributing to Vygotsky what he actually did not mean. The only trusted evidence, the final and the best evidence must be the evidence of Vygotsky himself. So, on the same page and even in the same paragraph where Vygotsky formulates the general genetic law of cultural development, he specifies how the law is connected with the experimental method:

> From here comes, that one of the central principles of our work is experimental unfolding of higher mental process into the drama, which happened between the people. (Vygotsky, 1983, p. 145).

The requirement to experimental research is the necessity to restore the original form of any mental function, the form of social relation named by Vygotsky clearly and openly—the drama. What other evidence do we need? Every higher mental function originally exists as an inter-psychological category (dramatical social event in the relations of the two people) and after that it appears as an intra-psychological category. If the only way of objective analysis of the higher mental function is experimental reconstruction of the history of its development, we have to start from the experimental reconstruction of its original form—the drama between the people.

There is one more consideration on this topic. If we understand Vygotsky's "category" as dramatical collision, from this it logically follows that the experiencing (perezhivaniye) has to be the dynamical unit of analysis of consciousness, since development of consciousness, according to the law, is dynamical "living complex unity" of external and internal drama. If my understanding of the general law is correct, nothing but experiencing should be considered as such unit. Vygotsky made this logical conclusion:

> An actual dynamic unit of consciousness, i.e. the complete unit which consciousness consists of, will be experiencing (perezhivanie) (Vygotsky, 1983, p.383).

So, the principle is quite strict and clear. If an experimental study does not unfold the initial form of higher mental function (the dramatical event between two people), it hardly could be identified as genetical experiment, it does not belong to the experimental-genetical method. It seems that we have enough ground for such a strong expression. With this in mind let us turn to the analysis of experimental method of Vygotsky.

## THE METHOD: GENETICAL EXPERIMENT

Methodological requirements for the research method follow logically from the general law. Yet, there is one more methodological issue which should be taken into account. In order to find an objective scientific experimental method of study *of the development* of higher mental functions, Vygotsky principally rejected the way to study the functions which are already matured. The matured ones ("flowers of development") are closed for direct investigation and this circumstance requires different approach.[6] Even more, when functions become ingrown, i.e., when they "move within," an extremely complex transformation of all of a function's structure takes place, and their entire structure becomes indiscernible. Galperin describes this so, that when the functions are developed they "recede into the depths" and are covered by phenomena of a completely different appearance, structure, and nature" (Galperin, 1966, p. 26).[7]

Let us have a look how Vygotsky characterizes experimental-genetical method.

> The method we use may be called experimental-genetical method in the sense that it artificially elicits and creates a genetic process of mental development...The principal task of analysis is restoring the process to its initial stage, or, in other words, converting a thing into a process. This kind of experiment attempts to dissolve every congealed and petrified psychological form and convert it into a mowing flowing flood of separate instances[8] that replace one another. In short, the problem of such an analysis can be reduced to taking each higher form of behavior not as a thing, but as a process and putting it in motion so as to proceed not from a thing and its parts, but from a process to its separate instances.[9] (Vygotsky, 1997, p. 68)

What does it actually mean—"restoring the process to its initial stage"? This means the necessity to restore the initial, the original form of the function under study; this means to restore the social relation as primary form in which the mental function originally exists.

The requirement to experimental research is the necessity to restore the original form of any mental function, the form of social relation named drama.

I would like to take as an example the experimental study of Vygotsky from "The history of development of higher mental functions" (Vygotsky, 1997, Vol. 4). The aim of the experimental study was to observe *the process of transition* from direct operation to using a sign. A child was placed in a situation in which he was presented with a problem of remembering, comparing or selecting something. If the problem did not exceed the natural capacity of the child, he dealt with it directly, or with the ordinary method. But the situation in experiments was almost never like this. The problem confronting the child usually exceeded his capacity and seemed too difficult to solve with this kind of direct method. At the same time, beside the child, there usually were some objects which were completely neutral in relation to the whole situation (pieces of paper, wooden sticks, peas, shot, etc). In this case, under certain conditions, when the child was confronted by a problem he could not solve, experimenters could observe how the neutral stimuli stopped being neutral and were drawn into the behavioral process, *acquiring the function of sign* (Vygotsky, 1997, p. 85).

Explanation of the diagram reveals its transitional, dynamical aspect, rather than the structural one (Figure 1):

> In our diagram two arbitrary points, A and B are presented; a connection must be established between these points. The uniqueness of the experiment consists of the fact that there is no connection at present and we are investigating the nature of its formation. Stimulus A elicits a reaction that consists in finding stimulus X, which in turn acts on point B. Thus, the connection between points A and B is not direct, but mediated. This is what the uniqueness of all higher forms of behavior consist of. (Vygotsky, 1997, p. 80)

The processes of active searching and finding a sign, as well as transforming of the whole unit and *transition* from direct connection to indirect (mediated) connection were in the focus of Vygotsky's experimental studies of origins of mediating activity.

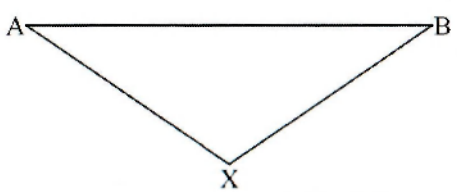


**FIGURE 1. General Scheme of Mediating (Vygotsky, 1997, p. 62).**

When the obstacle arises, the neutral stimulus acquires the function of a sign and from that time, the structure of the operation takes on an essentially different aspect[10] (Vygotsky, 1997, p. 85). Thus, the process of genesis of higher mental function was experimentally investigated. The process was restored from its initial stage—drama, collision, an obstacle—to its final form. "Traditional" structural analysis (analysis of mediated activity) in this case cannot serve as relevant research method. Genetical experiment includes the structural analysis as an aspect, but even a structure, the combination of components within the whole system is seen from developmental perspective. I would like to note that, describing experiments, Vygotsky insistently repeats again and again: "...there is no connection at present and we are investigating the nature of its formation"; "...the problem confronting the child usually exceeded his capacity..."; "...when the obstacle arises, the neutral stimulus acquires the function of a sign..." as if he was afraid of being misunderstood.

The general model of genetical method of analysis could be presented in the following general "two-step" model (Figure 2). The model presented in Figure 2 (act of development as "two-step" transition from the collision to sign creation and then to the use of sign) is a kind of basic principle applicable to various concrete research programs conducted by Vygotsky and his co-workers in late 1920s (including Vygotsky-Sakharov famous research in creating of artificial concepts (Sakharov, 1994/1930); even more, it underlies all his famous examples of the development of higher mental functions—appearance of the pointing gesture in child, the "knot for memory," drawing a lot, etc.

What is much more important is that this "two steps" model is methodologically connected with the issues I already discussed in this chapter:

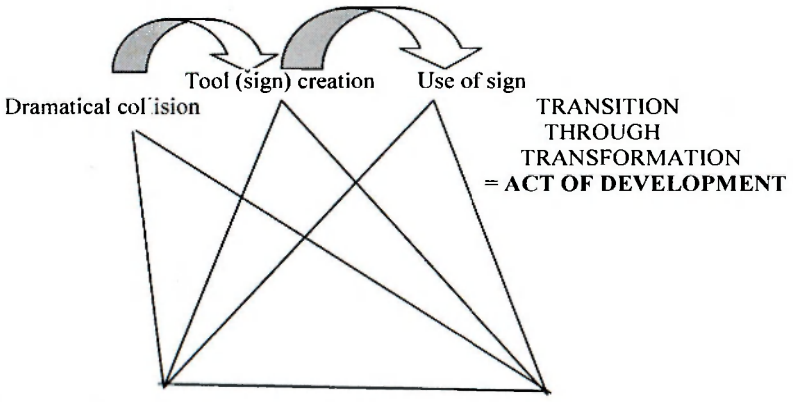


**FIGURE 2. General Model of Genetical Method.**

1. the subject-matter of the theory, since higher mental functions are social in origin, mediated by cultural signs in their structure and voluntary in their mode of functioning;
2. the general genetic law of development of higher mental functions; and,
3. the principle of "two streams."

So, Vygotsky's methodological alternative proposal to study higher mental functions and cognitive processes seems to be not only of historical interest, especially in respect to its emphasis *on development*, and in respect to the research method aimed on *qualitative analysis*, instead of quantitative descriptions. However it remains mostly unknown and unaccepted by the mainstream psychology, even by those scientific schools which identified themselves as developmental. Why then, despite obvious methodological potential, cultural-historical theory stays somewhere on the periphery? As I tried to show, Vygotsky's cultural-historical theory is exactly the case of how, in words of Aaro Toomela (2007, p. 7), "methodological principle applied in research long time ago abandoned in the course of history and disappeared." Sometimes, however, the problem is not just disappearance of ideas without scientific reasons. In other cases, ideas, superficially, are not forgotten. In such cases, ideas can be distorted or misunderstood instead. Such distortion characterizes the perception of several Vygotsky's ideas. The next section of the chapter discusses these items.

## VYGOTSKY AND VYGOTSKIANS: ADAPTATION AT THE COST OF LOSS?

There is relatively large scientific community identifying itself as Vygotskians.[11] No doubt, during last decades the Vygotskians undertook an enormous amount of efforts to include the cultural-historical theory into the world psychological discourse.[12] The results are impressive; the splash of the interest to Vygotsky and his approach is the best and obvious indication of the state of affairs.

Who if not Vygotskians are able to open his methodology to the world psychology? Closer inspections of the state of affairs reveals, however, confusion and incoherence among those who could be called "Vygotskians". Thus, Seth Chaiklin, the editor of "The theory and practice of cultural historical psychology" (2001) says:

> In this volume, we find chapters that are self-described as "sociocultural psychology"...,"sociocultural studies"..., "sociogenetic psychology"...."sociohistoricocultural"..., sociohistorical co-constructivist"..., "cultural-historical", or refer to "cultural-historical activity theory". One could say that that we are in danger of having as many labels as we have authors (Chaiklin, 2001, p. 24)

Such kind of strange situation with the multiplied labels shows indirectly the state of affairs inside "Vygotskian camp" nowadays; it reflects somehow its theoretical fuzziness and methodological uncertainty. In response to this challenge, Chaiklin provided the following explanation:

> Ultimately the concrete scientific practices and accomplishments that are encompassed by a label seem more important than the label itself. In this spirit, we could ignore the problem of multiple labels used to refer to the cultural-historical psychology, arguing that what matters is the content of the scientific work and not its label...The label often serves to identify a particular tradition of problems and key persons (Chaiklin, 2001, p. 25)

It is not my task to discuss the variations and differences inside the community.[13]. I simply use this "label-multiplication play" example as an indicator that not everything is clear in Vygotsky's theory even for Vygotskians. The only one thing which is clear is that in spite of differences in various wings of the community, the first key person for it is Lev Vygotsky. It is much more interesting to look on the tradition *of problems* in this community.

Looking from the historical angle, I should say that since *Mind in Society* was published in 1978, the target of Vygotskians was the recognition of Vygotsky's theory in world psychology, especially in Northern America. Actually, *Mind in society*, the small book of translated cocktail-like compilations from Vygotsky's was, as the Russians say, the "first swallow" in introducing of Vygotsky to Western readers.[14] That was, and still is, the great aim, but the strategy of introduction, from my point of view, was, and remains inappropriate. Vygotskians like to speak about "non-classical psychology" of Vygotsky (see, for example, Asmolov, 1998). What they mostly have been done is that non-classical Vygotsky was adapted and incorporated into classical traditional psychological theoretical stream. The price for this was its methodological simplification and theoretical fragmentation. In some sense, the cocktail—like compilations of various simplified theoretical fragments remains as the dominating style of the theorists in Vygotskian community. For someone it might look as an advantage, since Vygotsky is not a "holy cow," and his theory is not a museum exhibition. Every theory must develop in a course of time, but the point is what in the theory must be developed and how it must be done. Dealing with the texts of contemporary Vygotskians, I cannot get away from the impression that they are modernizing the oversimplified and fragmented *image* of the theory instead of the theory itself.

Several examples of such simplifications and fragmentations can be provided. It is not possible to go into all details here. So, I would like to draw the attention to two examples—one of simplification and second on fragmentation, one in respect to theory and its subject-matter and the other in respect to methodology. My first example will be about general genetic law

of development of higher mental functions and second will be about the concept of the zone of proximal development (ZPD).

## FIRST EXAMPLE: GENERAL GENETIC LAW AS A VICTIM OF SIMPLIFICATION

In *Mind in Society* (1978) the formulation of the general genetic law is given in the following way:

> ...every function in the child's...development appears twice: first, on the social level, and later, on the individual level; first between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher mental functions originate as actual relations between human individuals (Vygotsky, 1978, p. 57)

This formulation was quoted and repeated so many times that it gradually obtained a status of classical formulation for generations of researchers in Vygotskian community. Yet, this formulation is not Vygotskian, it rather belongs to translators of *Mind in Society.*

Where is simplification here? Comparing this with the formulation taken from Vygotsky that is presented above, one could see that what is missed is "category," collision, dramatical event between the individuals, which is the *key word* in Vygotsky's formulation and the core of the law. Stressing that the higher mental function does not first appear *in* social relation, but appears as a social relation, it says nothing about the nature of such social relation. Omitting the central concepts from the law definitely looks like simplification, if not to say more.

Second, it seems that words "on the stage" and "on two planes" Vygotsky uses are not metaphors, which might be omitted or ignored. Stage in Russian means "scene." the arena, literally the place in the theatre where actors play. Scene has two planes—the front plane (also called "the first plane") and the back plane (often called "the second plane"). According to theatre's traditions, main events of the performance should happen on the front plane of the scene (the same law we could find in visual arts). So, it means that on the stage of our development, the category appears twice—inter-psychologically (on the first, front plane) and then intra-psychologically (on the second internal individual plane). *Therefore there are no two levels in development, but there are two planes on ONE stage, two dimensions of one dramatical event.* Higher mental function is not something which is jumping from one level to another, appearing and disappearing without a trace, it appears and exists on the same scene; they all develop according to one and the same law.

What really disappears, or becomes unclear, here is the deep theoretical difference between the cultural-historical approach and neo-behaviorism

(or social constructivist theoretical constructions). Really, what is the difference between this simplified image of general genetic law and the principle of Janet?

Michael Cole and Vera John- Steiner, the editors of *Mind in Society*, say that the aim of the book is to change the "image of Vygotsky as a sort of early neo-behaviorist of cognitive development—an impression held by many of our colleagues" (Cole & John-Steiner, 1978, p. ix). Does the simplified formulation of Vygotsky's basic fundamental law really change such image?

On the contrary, due to this simplification, contemporary social behaviorists and social constructivists often consider Vygotsky as one of them.[15] I can understand their appreciation. Yet, at the same time, their answers to questions: What is original in Vygotsky from the theoretical standpoint? What really new does it bring? Where is the methodological novelty here? are not convincing at all. The references of Vygotskians on the items of "the social origin of mind" or to "sign mediation" (Cole, 1995, 1996; Wertsch, 1985, 1991) do not look convincing, since they were known long before Vygotsky (Veresov, 2005). Being isolated from the theoretical developmental context (general law of development) in which they only make sense in cultural-historical theory, these two ideas lose their explanatory force.

So, the given example shows how an adaptation of Vygotsky's theoretical heritage to the existing traditions in psychology goes through simplification at the cost of its explanatory potential. Such forced adaptations to inappropriate theoretical contexts may explain why many ideas "...have moved into periphery of psychological thought", abandoned and nearly forgotten (Toomela, 2007, p. 18).

One could say that this example does not reflect the whole picture and there is nothing more than just sad mistake of translation. Actually, since 1978 the correct and complete formulation of the general genetic law appeared twice—in 1982 (Vygotsky's *Collected Works in Russian*) and in 1997 (particularly in Volume 4 of Vygotsky's *Collected Works in English*). But the point is that even after that and until now, researchers (Vygotskians and non-Vygotskians) refer to the simplified formulation of 1978. Furthermore, the editors of both books did not provide any kind of scientific commentaries of why Vygotsky stressed the term "category" and what it could mean. Twenty six years passed and there is no even single article in attempt to find the correct explanation of Vygotsky's general genetic law. Nobody puts into question whether the formulation of 1978 is correct. Researchers continue to create and conduct their experimental programs on the basis of this simplified image, being sure that they are working in Vygotskian paradigm.

Rare attempts to provide a new and complete explanation of the general genetic law based on the original meanings of Vygotsky's terms (e.g., Veresov, 2005) remain ignored by leading theorists in modern Vygotskian community. Such resistance is understandable since Vygotsky's law strongly

contradicts their theoretical constructions. for example, in the "triangle of activity" of Engestrōm, which is the basic theoretical model of the so called "cultural-historical activity theory" (CHAT) there is no place at all for dramatical collision, i.e. for the initial form of existence of the higher mental functions, according to Vygotsky (cf., Engestrōm, 1987, 1990, 2008; Engestrōm, Miettinen, & Punamāki, 1999). The problem, therefore, is not only in erroneous translation; the problem is that the Vygotsky's law is a sort of "victim" of fatal theoretical and methodological simplification. What is really sad is that by doing this the Vygotkskian community marginalizes and encapsulates itself and loses developmental perspective of the whole approach, which has very high theoretical potential.

## SECOND EXAMPLE: ZONE OF PROXIMAL DEVELOPMENT AS A VICTIM OF FRAGMENTATION

In contrast to the general genetic law of development of higher mental functions which remains mostly unknown to the modern mainstream psychology (and even for those inside the Vygotskian community), the concept of a zone of proximal development (ZPD) is a sort of the "visit card" of Vygotsky. For example, G. Lefrancois writes:

> Three underlying themes unify Vygotsky's rather complex and far-reaching theory. The first one is the importance of culture, the second theme is the central role of language, and the third one is what Vygotsky calls the zone of proximal development. (Lefrancois, 1994)

First of all, ZPD was not the central concept in cultural-historical theory. Rather it was a sort of application of the theory and developmental research method to the concrete educational practices, particularly to the problem of the connections of learning and mental/intellectual development (Vygotsky, 1934/1987; Vygotsky, 1935). Even the definition of ZPD looks profoundly learning-practice oriented. This often-quoted definition of zone of proximal development presents it as

> ...the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers... The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the buds or flowers of development rather than the "fruits" of development. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively" (Vygotsky, 1978, pp. 86–87)

At first glance it really looks very practice-directed in respect to teaching-learning process, easy to understand and therefore attractive to researchers and practitioners in this area. Yet, even this simplicity does not prevent from its misunderstanding. For example, like this:

> Perhaps Vygotsky's most influential ideas are those related to zones of development. What a child can do alone and unassisted is a task that lies in what Vygotsky calls the zone of actual development (ZAD). When a teacher assigns a task and the students are able to do it, the task is within the ZAD. (Wilhelm, Baker & Dube, 2001)

Such a mixture of a distance and the levels of development could be considered as a sort of minor inaccuracy, but it generates some consequences, i.e. deep disappointment in the whole idea:

> We feel...that Vygotsky's ZPD presents a restricted view of learning processes and reduces the learner's role to one of passivity and dependence upon the adult (Lambert & Claydon, 2000, p.29)

This view, as the result of the mixture of and distance and levels misleads the reader and completely contradicts the whole Vygotsky's idea. For Vygotsky, ZPD deals not only with the learning process, it deals with development. Thus he wrote:

> Play creates a zone of proximal development of the child. In play the child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself. As in the focus of magnifying glass, play contains all developmental tendencies in a condensed form and in itself is a major source of development (Vygotsky, 1966, p. 101).

It is hard to imagine that the child in play is passive and dependent upon the adult.[16]

In connection to this it should be mentioned that the concept of scaffolding, introduced by Jerome Bruner in the 1970s, moves to the central place (Wood, Bruner, & Ross, 1976). Bruner proposed the notion of scaffolding:

> On the one hand the zone of proximal development has to do with achieving "consciousness and control." But consciousness and control come only after one has already got a function well and spontaneously mastered. So how could "good learning" be that which is in advance of development and, as it were, bound initially to be unconscious since unmastered? (Bruner, 1985, p. 24)

The resolution comes from the teacher offering a vicarious form of control:

> If the child is enabled to advance by being under the tutelage of an adult or a more competent peer, then the tutor or the aiding peer serves the learner as a vicarious form of consciousness *until such time as the learner is able* to master his own action through his own consciousness and control. When the child achieves that conscious control over a new function or conceptual system, it is then that he is able to use it as a tool. Up to that point, the tutor in effect performs the critical function of "scaffolding" the learning task to make it possible for the child, in Vygotsky's word, to internalize external knowledge and convert it into a tool for conscious control. (Bruner, 1985, pp. 24–25)

The teacher performs the task of enabling the child to gain that mastery by scaffolding it for her or him: breaking down the task into simpler, more accessible elements; keeping the child stimulated and motivated; and gradually withdrawing that adult support.

Yet, there is no clear definition of scaffolding; as Hammond notes, it "is sometimes used loosely to refer to rather different things" (Hammond, 2002, p. 2). Briefly, scaffolding represents the helpful interactions between adult and child that enable the child to do something beyond his or her independent efforts. A scaffold is a temporary framework that is put up for support and access to meaning and taken away as needed when the child secures control of success with a task (Balaban, 1995; Clay, 2005; Rodgers, 2004, and others). The attractiveness of scaffolding is that, as Hammond mentions, "teachers find the metaphor appealing as it resonates with their own intuitive conceptions of what it means to intervene successfully in students learning" (Hammond, 2002, p. 2). Furthermore, several instructional programs were developed on the basis of the notion of ZPD interpreted this way, such as reciprocal teaching and dynamic assessment (Palincsar, Ransom, & Derber, 1988; Rosenshine & Meister, 2007).

Researchers of scaffolding emphasize its strong historical connection with that of ZPD (Bordrova & Leong, 1998; Brown & Campione, 1994, 1996) viewing it as an application of ZPD to contemporary educational contexts (Hobsbaum, Peters, & Sylva, 1996) or as "a way of operationalizing Vygotsky's concept of working in the zone of proximal development" (Wells, 1999, p. 127). My task, however, is not to undertake an analysis of the interrelations between these two concepts,[17] but rather to show this as one of the examples of fragmentation of Vygotsky's theory.

There is a danger that a failure to understand the complexity of Vygotskian theory as a whole can lead to interpretation of the zone of proximal development as a domination over a child's initiative and active position as a learner. The criticism of the Vygotskian notion of the zone of proximal development by Lambert & Clyde (2000) is the best illustration of taking Vygotskian definitions of the ZPD out of the context of its theoretical assumptions.

These two examples could be considered as a kind of methodological query against the fragmentation of ZPD from the whole Vygotsky's theory. Again, who else, if not Vygotskian community is able to show the methodological limits of the concept of ZPD when it is artificially stripped from the whole theory. On the other hand, who else, if not Vygotskian community, is able to show its strong power and efficiency for the educational practices? Who else is expected to raise their voice against fragmentation of the theory which destroys its methodological unity?

What is the approach to the concept of ZPD inside the Vygotskian community? In order to find the answer I choose two papers, published in 1993 and 2003. The reasons of my selection of these two papers from hundreds published on this topic were that they both summarize and reflect the state of affairs with ZPD in Vygotskian community at different points of time and, second, they both deal with the methodological and theoretical aspects of ZPD. It might help, using S. Chaiklin's (2001) expression, to "identify a tradition of problems" in this particular case.

Jaan Valsiner and Renee van der Veer (1993) begin with the assertion that the concept of ZPD in which

> Vygotsky brought into the focus of attention of psychological discourse in early 1930s, and that has become widely known in contemporary psychological discourse... has been captivating the mind of many a contemporary researchers. (Valsiner & van der Veer, 1993, p. 37)

Furthermore, the methodological aspect of the matter is stressed by the authors:

> Psychology has had a long history of semantic transformation of its measurement-based descriptive concepts into causal concepts attributed to be "behind" these measurements (latent variables or traits). Vygotsky recognized that theoretical impasse well before he started to use the ZBR concept. (Valsiner & van der Veer, 1993, p. 39)

> ...the logic of development of Vygotsky's cultural-historical theory led to the need to conceptualize the developmental processes that operate in the domain of present-to-future transformation of the functioning structure of the psychological system. (ibid, p. 37)

Authors provide a nice illustration of the reasons of Vygotsky's methodological arguments against the measurement of intelligence by way of documenting the mental functions that have already finished their course of development. Using the comparison with a clinician who on the basis of observable symptoms can diagnose the underlying causes of a disease, he explained the need of mental testing to go beyond mere documentation of the observable symptoms to the explication of the underlying causal system. Indeed, the traditional definition of intelligence by way of what intel-

ligence tests measure would equal a physician's statement that the patient has influenza because the thermometer measures the body temperature to be above normal. (ibid, p. 39) They, therefore express a reasonable skepticism to scaffolding:

> Scaffolding assumes maturational emergence of abilities heterochronically—those abilities that are not yet matured cannot participate in the problem solving, and therefore the tutor must scaffold these aspects of action that rely upon these abilities. Here the teaching-learning does not proceed "ahead of development" (in Vygotsky's favorite words), but rather tries to fit in with the maturational schedule of established abilities... In sum, the scaffolding version of ZPD follows the individual-ecological reference frame—becausc (from the child's perspective) the social scaffolds that the tutor builds around the child's task-oriented actions are merely human additions to the task. It does not concentrate on having impact on those psychological functions that are not yet presently available, but might come into being in the near future. (ibid, pp. 50–51)

Accordingly, the restoration of the methodological context of ZPD in structured theoretical framework seems to be of the primary importance:

> Very few efforts have been made to construct theoretical frameworks that locate ZPD in a structured theoretical context. Furthermore, sometimes theoretical efforts in present-day psychology serve as convenient umbrella systems to allow the investigators to carry out a myriad of empirical studies without much innovation in the theoretical sphere (ibid, p. 51).

However, in 1993 the authors left this challenging task for the future. Ten years passed. In 2003, Chaiklin again began with the description of the current situation: ZPD "now appears in most developmental and educational textbooks, as well as some general psychology books. Within educational research, the concept is now used widely (or referred to) in studies about teaching and learning in many subject-matter areas" (Chaiklin, 2003, p. 40). He enumerates these areas—from reading, writing, mathematics and violin teaching to computer-mediated communication and psychotherapy. Despite that, the author says that there is an obvious lack of theoretical framework in discussions around ZPD:

> The zone of proximal development was introduced as a part of general analysis of child development. It is not a main or central concept in Vygotsky's theory of child development. Rather, its role is to point to an important place and moment in the process of child development. To understand its role, one must appreciate the theoretical perspective in which it appeared. That is, we need to understand what Vygotsky meant by zone of proximal development in general, if we are going to understand what he meant by zone of proximal development in particular. In this way, the reader can develop a generative

> understanding of the theoretical approach, which will be more valuable than a dictionary definition of the concept (Chaiklin, 2003, p. 45–46)

In Chaiklin's opinion, many issues remain to be discussed; among them (1) the historical context and methodological basis on which these ideas were developed; and (2) relations with Vygotsky's theory f the development of psychological functions (Chaiklin, 2003, p. 58)

So, the whole picture is that the concept of ZPD being stripped from the theoretical framework was gradually adapted to existing traditional educational practices and its strong methodological potential gradually disappears. We could even say that ZPD being included into various educational practices did not change them substantially (which was the original task and purpose for which it was created in the cultural-historical theory); on the contrary, existing traditional educational practices substantially changed the original theoretical and experimental content of ZPD.[18] The task of restoring of the lost connections between ZPD and the theory still remains unsolved.

It is not an easy task. It might look like a call for unnecessary and artificial complication of the concept of ZPD. Yet, it might look like this for those who mostly deal with simplified and adapted versions. Unlikely, among hundreds papers published, there is no even one research done showing better results of use of ZPD taken within Vygotsky's theoretical framework in contrast to simplified versions of ZPD stripped from the theoretical perspective. In my opinion, one of the main obstacles which prevent to undertake such kind of study is theoretical fuzziness which Vygotskian scientific community clearly demonstrates in this case. ZPD, therefore, remains a victim of fragmentation and simplification.

It seems that in this case it makes sense to come back to Vygotsky in order to find if not clear answer, but at least indirect hints, which somehow create zone of proximal development for researchers. The hint deals with the idea of development. Yet, there is one point in Vygotsky's definition of ZPD which seems to be unclear. On one hand, he defines ZPD as a distance between two levels of development.

> ...the zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the "buds" or "flowers" of development rather than the "fruits" of development (Vygotsky, 1935, p. 42).

On the other hand, he says:

> The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively (ibid.)

It would be logical to say that in contrast to the level of actual development, which characterizes the development retrospectively, the level of potential development is that characterizes the process prospectively, since the ZPD is a distance between these two levels. Why then Vygotsky speaks not about the levels, but about the actual level and a zone (distance)? In this case, the very concept of ZPD as a distance loses sense. Furthermore, being applied to learning process this Vygotsky's thought obtains practical significance:

> ...instruction is maximally productive when it occurs at a certain point in the zone of proximal development"(Vygotsky, 1934, p. 212)

It looks rather strange—why Vygotsky did not say that instruction is maximally productive when it occurs at the level of potential development? "Certain point in a zone of proximal development" is definitely not the level of potential development, since ZPD is the distance between two levels. This is not just an inaccuracy. In all texts about ZPD (Vygotsky, 1934, 1934/1998, 1935) he practically repeats the same, comparing the level of actual development not with the level of potential development, but with ZPD.

What actually means and *what is* this magical "certain point in development" existing somewhere between the levels in a zone of proximal development? How is it possible to detect it? Is it just a logical gap? If there is a logical gap in Vygotsky's considerations, this means that J. Bruner is absolutely right when speaking about hidden paradox in ZPD (Bruner, 1985). But what if there is no such gap and the simplicity of definition of ZPD is illusive? To find the answer let us turn to interconnected methodological principles of Vygotsky's theory which were discussed in previous sections of this chapter:

1. development of higher mental functions as the subject-matter of the theory;
2. the general genetic law of development of higher mental functions;
3. the "two streams" principle;
4. the method of genetical experiment ("two step" model).

If we approach the process of learning in ZPD from this theoretical framework, we could see quite easily, that it completely corresponds to the genetic experiment of Vygotsky described above in this chapter. At the beginning, the child is placed in a situation in which he was presented with a problem or the task which exceeded his capacity and directed to the "buds" of "flowers" of development. The child experiences this problem as a sort of collision, dramatic event (the category). *At a certain point* the child (with the help of adult or in cooperation with more competent peer) finds or creates an appropriate tool for the solution of this collision. In this very point "two streams" of development meet each other; on one hand, the child becomes

able to organize and master his behavior with the help of a new tool (for example, the sign)—and this is the first stream of development, and, at the same time, the radical change in development of his higher mental functions occurs—the bud gradually becomes the flower and then the fruit. The concrete solution of the task or problem, which is found with the help of adult or in cooperation with more competent peer (the level of potential development), is not the point of primary importance here; what really is important is what happens *at a certain point within the zone of proximal development.* As a result, learning process really becomes developmental, learning leads development, learning goes ahead of development, which is the core principle of ZPD. In such case there is no any logical gap in Vygotsky's considerations and this in example of how to approach to ZPD from the theoretical perspective of the whole Vygotsky's theory. ZPD is not just a definition, it is a concept and the concepts do not work alone. Their meaning could become clear only within the whole theory. The other stories happen with the concepts which are isolated and fragmented from their theoretical contexts. Unfortunately, the concept of ZPD is an example of the victim of such fragmentation. Simplification and fragmentation still dominates; Bruner's paradox of ZPD, which follows from simplified understanding of this concept, seems to be completely accepted by modern Vygotskian community. The adapted and fragmented ZPD dissolves in educational practices that remain non-developmental despite using the label of ZPD as a sort of methodologically empty label. It is not a surprise, therefore, that for many educators and researchers ZPD serves as a beautiful metaphor, rather than the scientific concept.

## CONCLUDING REMARKS

Human being is developing being and this is its fundamental characteristic. Human mind is the result of onto- , micro- and phylo-genetic cultural development, but it is also an instrument of development of human being. Vygotsky's "word in psychology" was not only opposed to "depth psychology" as contemporary Vygotskians like to say.

> Our word in psychology: away from superficial psychology—in consciousness, being and phenomenon are not equal. But we also oppose depth psychology. Our psychology is a *peak* psychology (does not determine the "depths" of the personality but its "peaks"). (Vygotsky, 1997, p. 138)

I cannot share the opinion of Roth and Lee that Vygotsky's legacy is neglected legacy (Roth & Lee, 2007). I would rather agree with the question of Elhammoumi (2001); lost or merely domesticated?

The title of this paper is "Forgotten Methodology: Vygotsky's Case." What is then forgotten and what is not? For many years, speaking of the cultural-historical theory the emphasis is made on three main aspects:

- social origins of mind;
- sign mediation; and
- zone of proximal development.

These ideas were "domesticated" and still considered to be a sort of "calling card" of Vygotsky's theory. Even more, all three are not originally Vygotsky's. At the same time, there is a number of *methodological* ideas in cultural-historical psychology which remain outside the discourse, or at least, on the periphery:

1. Emphasis on *development of higher mental functions as a system of qualitative changes*, which can be experimentally organized and investigated, which makes it possible to understand the underlying mechanisms of development rather than just to describe the functions which are already developed.
2. The idea of human development as a drama with emphasis to "category" (dramatical collision-event) and experiencing (peresivanie) as a dynamic unit of consciousness (according to general genetic law of cultural development of higher mental functions).
3. Vygotsky's *alternative to superficial psychology* with main emphasis to case studies where the observation and measuring are only narrow components of detecting developmental changes in subject under study.

It is not my topic to discuss why these methodological ideas are still neglected in the psychological community. Yet, one of the reasons seems to be obvious: in order to introduce Vygotsky's theory to world psychology the Western Vygotskians simplified and adapted the whole picture to the existing tradition. It is quite understandable when the task is to make the difficult theory recognizable. What is bad is that the price was too high and Vygotskian community keeps on doing it until now, with no attention that the world psychology is different and simplified and fragmented picture is not anymore relevant. Ten years passed since I published *Undiscovered Vygotsky* (Veresov, 1999). So, discovering undiscovered Vygotsky is still the task for future.

Is Vygotsky's legacy totally lost or it can provide a fresh approach in three senses in which there has been loss in psychology—subject matter, method, and the mission (Bakan, 1996)—that was the target of this Chapter.

## NOTES

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2. For more details see extensive discussion on Yurevich's article in Doria (2009) and Zittoun et al (2009)
3. I use the term "developed" in a sense of post-Galilean physics, according to Einstein & Infeld (1976). More on this see Mikhailov (2003, 2006)
4. All translations from Russian in this article are mine—Nikolai Veresov
5. In the early 1930s, young Galperin was an active participant of the Kharkov group led by Vygotsky and A. Leont'ev.
6. In this sense traditional classical quantitative methods are not valid and must be replaced by qualitative ones.
7. The swerving of voluntary mediated functions as a result of internalisation is discussed in A. Nazarov (2008)
8. Here Vygotsky uses the term "moments" in Russian original text that seems to be more exact.
9. Here the same—"separate moments."
10. ... takes on an essentially different appearance (vid) in original text - Nikolai Veresov
11. By "Vygotskians" I mostly mean Western representatives of this community. Discussion of the approaches taken by Soviet/Russian Vygotskians is beyond the scope of this Chapter.
12. Among many others two impressive books which summarise the current situation inside this community should be mentioned—*The Cambridge handbook of sociocultural psychology* (2007) and *The Cambridge Companion to Vygotsky* (2007).
13. For more details of discussion on differences inside the Vygotskian community see for example Matusov (2008)
14. In fact this book was not the first at that time. Awfully translated and terribly abbreviated version of *Thinking and speech* under the title *Thought and language* appeared in 1962 (Vygotsky, 1962). In this respect I completely agree with the opinion expressed by one of the reviewers that editors chose the best parts of the book and then translated the rest into English.
15. We could find in Internet a lot of statements like: "Vygotsky influenced modern constructivist thinking perhaps more than any other individual" (http://www.indiana.edu/~intell/vygotsky.html )
16. Brilliant analysis of destructive consequences of mixture of the levels and the zone (distance) in ZPD is made in Zuckerman (2007) and Hakkarainen & Bredikyte (2008)
17. This job have been brilliantly done by I. Verenikina (2004) and A. Stone (1998)
18. There are many other indications of such dissipation and this definitely requires special survey, which was partly made by I. Verenikina (2004).

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