

Vygotsky's plural discourse on the human mind¹

Jussi Silvonen

‘To define a problem of investigation means not only to determine its specific subject matter, not only to find a question that needs to be clarified, but, first and foremost, to become cognitively aware of the theoretical task.’ A.N. Leont’ev, 1935 (Leont’ev, 1995)

Louis Althusser claims in his papers on Marx and Freud that both of them established a new science, different from classical modern science (Althusser, 1996). Both were, according to Althusser, critics of the Cartesian philosophy of consciousness. Althusser points out that to make a move to a new science requires an epistemological break with the old one. This break is never an easy one and does not happen in the first steps of the new theory. On the contrary: ‘The youth of a science is its maturity: before that age it is old, having the age of the prejudices on which it lives’ (Althusser, 1996, 19). New science starts with concepts borrowed from the old theories, and because of this the demarcation line between the old and the new science is within the new theory. New science achieves its youth in its old days.

In this article, I ask if we can learn something by reading the classics of the cultural-historical tradition, like Althusser,² as texts of epistemic contradictions and transformations. This was actually also Vygotsky’s approach to science, which should be understood ‘dialectically in its movement, i.e. from the perspective of its dynamics, growth, development,

¹ The first version of this paper was presented at the first ISCAR Congress in Seville, September 2005. After that, several persons read the paper. I would especially like to thank Ines Langemeyer (University of Bochum), Holbrook Mahn (University of New Mexico), Tiina Kontinen and Jonna Kangasoja (University of Helsinki), and Mikale Leiman (University of Joensuu) for their comments. I would also like to thank Tiina Tonttila for comments and Greg Watson for the final language check.

² The concept of epistemological break dates back to Bachelard’s and Canguilhem’s studies (Bachelard, 1987; Canguilhem, 1979) and has been widely used in French post-structuralism (Bourdieu, 1988; Foucault, 1991a).

evolution.’ (Vygotsky, 1997b, 292). For Vygotsky, the concept of development does not include ‘just evolutionary but also revolutionary changes, regression, gaps, zigzags, and conflicts.’ (Vygotsky, 1997c, 221).

How does Vygotsky’s theory relate to modern science in general and, in particular, to modern psychology? Nowadays, it is widely claimed that Vygotsky’s theory represents a transition from ‘classical’ to ‘non-classical’ psychology (Asmolov, 1998; El’konin, 2001; Robbins & Stetsenko, 2002; Zinchenko, 2001). How does this transition to a non-classical, (or ‘organic psychology’) really occur? How are the possible ruptures in Vygotsky’s work related to our current disputes about the continuity and discontinuity between key figures in Vygotsky’s school? I shall focus here on two questions; how is the transition from old to new apparent in Vygotsky’s work and how are the shifts in his work related to our current discussions. I attempt to follow the *problematique* of Vygotsky’s work, the change and development of his scientific language, methodological orientation, explanatory models and his ‘nomenclatura and terminology’ (Vygotsky, 1997b, 281), and relate these to the development of Vygotsky’s conception of semiotic mediation.

I shall make distinctions regarding Vygotsky’s theory into three phases: a socio-behaviourist phase of young Vygotsky, the founding phase of cultural-historical psychology (CHP1) and the late Vygotsky’s work (CHP2)³. In making these distinctions, I am using the idea of epistemological breaks in the sense Michel Foucault uses it. Foucault states in his *Archaeology of Knowledge* that Althusser’s concept of epistemological break simplifies things by the assumption that there is one point where the break happens. According to Foucault, there are several thresholds of discontinuity in the development of science. The first is the

³ For the periodization of Vygotsky’s work see (Bozhovich, 1977; Keiler, 2002; Kozulin, 1990a; Langford, 2005; Minick, 1987; Veresov, 1999, 2005; J.V. Wertsch, 1985). It could be possible to divide the first phase into several sub-periods, as Keiler and Langford do, but for my analytic needs here it is not necessary.

threshold of positive discourse, a moment in which the discourse achieves its individuality and autonomy; the second is the threshold of epistemology where the rules and norms for the verification of knowledge are articulated; the third is the threshold of science, a phase of establishing rules and laws for the formation of propositions and the last is the threshold of formalization, after which the ways and strategies for legitimation of the discourse are formed (Foucault, 1991a, 186-189).

In the case of Vygotsky, we will see how thematic continuity on one plane is related in a very complicated way to discontinuities on other planes of the development of his theoretical apparatus. The recognition of this dialectic of categories also helps us to understand the broader history of cultural-historical tradition, which is full of twists and turns, far from a simple linear progress from one generation to another.⁴

Socio-behaviourism and the problem of consciousness

The first phase of Vygotsky's thinking, which I call here socio-behaviourism⁵, includes his pre-cultural-historical works till 1927, from early writings and first books *Psychology of Art* (Vygotsky, 1971) and *Educational psychology* (Vygotsky, 1997) to his essay on the crisis of psychology (Vygotsky, 1997b). During this period, Vygotsky defines consciousness as the object of his studies (positive discourse), but does this in such a socio-behaviourist explanatory framework (epistemological barrier) that it obviously contradicts his aim to develop a genuine cultural psychology.

According to Vygotsky, consciousness cannot be neglected without distorting the research object of psychology. In this respect, he makes a critical note on his contemporary

⁴ For example the model of three generations of activity theory (Engeström 1996) represents, in my reading, a missing reflection on the conceptual movements in Vygotsky's work.

⁵ The similarity between Mead and Vygotsky is obvious, but Kozulin's claim 'that Vygotsky is simply a Russian version of Mead' (Kozulin 1986, 265) can be adequately applied only to this first period of Vygotsky's thinking.

behaviourism. 'The question of the psychological nature of consciousness is persistently and deliberately avoided in our scientific literature. Attempts are made even to take no notice of it, as if it does not exist for the new psychology. --- By ignoring the problem of consciousness psychology has deprived itself of access to the study of some rather complex problems of human behaviour. It is forced to restrict itself to explaining no more than the most elementary connections between a living being and the world.' (Vygotsky, 1997a, 63; 1999a, 256). To understand human activity we have to accept the consciousness as a phenomenon in its own right, having its basis in social interaction between human beings, and especially in speech.

Vygotsky conceptualizes here both interaction and speech in terms of special *reaction-reflexes*, which he also calls reversible reflexes. These are reflexes to irritants that in turn can be created by man. 'A word that is heard is the irritant, and a word that is pronounced is a reflex producing the same irritant. The reflex is reversible here, since an irritant can become a reaction, and vice versa.' (Vygotsky, 1997a, 77). In Vygotsky's conception, these reversible reflexes constitute the foundation for social behaviour and serve for the collective co-ordination of activity. Reflexes coming from other people have a special role, because 'they make me comparable to another, and make my actions identical with one another. *Indeed, in the broad sense, we can say that the source of social behaviour and consciousness lays in speech.*' (Vygotsky, 1997a, 77. Emphasis added). Thus, according to Vygotsky, consciousness is a real issue in human psychology, so we cannot exclude it from our scientific vocabulary.

Simultaneously, Vygotsky emphasizes the objectiveness of his approach and make clear the necessity of an objective psychology: 'Scientific psychology ---must materialize {the facts of consciousness}, translate what objectively exists into an objective language, and once and for all unmask and bury the fictions, phantasmagoria, etc.' (Vygotsky, 1997a, 67). Here Vygotsky understands the human personality as 'fully determined by the social environment' and claims, 'personal experience is formed and organized as a copy of the organization of the various

elements in the environment.’ (Vygotsky, 1997g, 157-158). Consequently, the problem of mind is ’resolved without any waste of energy’ and, furthermore, the consciousness is ’wholly reduced to the transmitting mechanisms of reflexes operating according to general laws’.

Vygotsky concludes that we do not need to assume any other processes except reflexes and reactions to explain the whole mechanism of the human mind (Vygotsky, 1997a, 73). The Cartesian problematic is resolved here by neglecting the active psyche, or to use the expression of Merlin Donald, the consciousness is explained by explaining it away (Donald, 1991).

Here the theoretical context of Vygotsky’s discourse is explicitly behaviourism (Pavlovian reflex-theory, reactology, reflexology and American behaviourism). He is committed to behaviorism, to its concepts and to the attempt to create an objective psychology. This is clearly reflected in the titles of his presentations from this period - *The methods of reflexological and psychological investigation* (Vygotsky, 1997e) and *Consciousness as a Problem for the Psychology of Behavior* (Vygotsky, 1997a). Yet, he wants to make consciousness a central object of psychology, which obviously contradicts his behaviourist vocabulary. The explanatory categories and the definition of the subject matter of research are seemingly not in balance. This ’resistance of the object’ (Holzkamp 2006) results later as a reformulation of the explanatory concepts. The behaviourist vocabulary forms an epistemological barrier, which has to be overcome in making theoretical steps forward possible. As a reflection on this problem Vygotsky consequently claimed in 1926 that Marxist psychology can ’only to a certain point’ (Vygotsky, 1997i, 81) follow the path of American behaviourism and Russian reflexology. Vygotsky’s theoretical point of reference now changes from behaviourism to *Gestaltpsychologie*. He optimistically claims that the objective, immanent driving forces of psychological science act ’in the same direction as the Marxist reform of psychology.’ (Vygotsky, 1997i, 81). Vygotsky's analysis of the methodological

crisis of 'international psychology' is a transitional work from socio-behaviourism to cultural-historical framework.

In his essay on the crisis of psychology, Vygotsky concludes that the only positive solution for the crisis can be in the construction of 'psychological materialism' (Vygotsky, 1997b, 332), which continues the Feuerbachian line in psychology.⁶ What is needed is a methodology for a genuine psychological materialism. 'Whether psychology is possible as a science is, above all, a methodological problem.' (Vygotsky, 1997b, 328). Vygotsky finds the model for the new methodology – the functional-genetic method – in Marx's *Das Kapital*.⁷ Marx starts his analysis of the capitalist mode of production from the commodity form of goods and derives from this form all the general laws guiding the market economy. The 'genetic germ' opens up all the mysteries of the whole special mode of production. Vygotsky declares that this is also how psychology has to proceed. It has to find the 'germ', the historical point from which an understanding of the development of the psyche becomes possible. 'He who can decipher the meaning of the cell of psychology, *the mechanism of one reaction*, has found the key to all psychology.' (Vygotsky, 1997b, 320. Emphasis added).

The last sentence above clearly shows a contradiction in the Crisis essay. On the one hand, Vygotsky is talking about 'the mechanism of one *reaction*', staying in the old vocabulary of socio-behaviourism. On the other hand, simultaneously, he makes an essential and definitive move in his methodology, by inventing the historical-genetic mode of explanation. Now genesis, emergence, and development are the central focus of his theory. The idea of

⁶ Keiler (1999) is an excellent introduction on the influence of Feuerbach on Vygotsky's thinking.
⁷ Vygotsky's reading of Marx was ahead of his contemporary Marxists. See the criticism on contemporary Marxism in Crisis (pp. 313-314). His reconstruction of Marx's method foreshadows the Marx renaissance in 1960s and 1970s (Althusser 1970; Ilyenkov, 1982; Mamardashvili, 1987; Reichelt 1973; Rosdolsky, 1972; Zeleny 1973).

development as mediated activity will then be explicated in the historical theory of higher mental functions.

Cultural-historical theory I – instrumentalism

Here Vygotsky is interested in the *differentia specifica* of the human mind, in its culturally mediated nature and in humans' capacity to master their own activities. The question now arises, as to how this self-directed activity is possible, and what is the function of the sign in it? Vygotsky's first answer is that the sign is a tool, an instrument of human behaviour. He developed this argument around 1928 and it is very clearly present in his article *The Problem of the Cultural Development of (the) Child* as well as in some other parallel papers (Vygotski, 1929; Vygotski, 1929a, 1929b; Vygotsky, 1989a; Vygotsky, 1997c). Vygotsky illustrates the idea of a mediated act(ivity) with a triangular figure which nicely clarifies his first, *instrumental* interpretation of signs.

Figure one about here (Vygotski, 1929, 420)

I shall make two remarks on this triangle. First, with this model Vygotsky breaks away from behaviourism and presents a mediational, – or maybe one could even say, the first really mediational – cultural model of the human mind. Second, the conception of sign is presented here only in a meaning of a tool-like, instrumental sign. There is some ambivalence, even incongruousness in this conception.

I shall offer a brief clarification for the first point. Vygotsky makes an analogy between tools and psychological instruments, which he also calls artificial psychological tools. By their nature, they are social and not organic devices. They are 'directed toward the mastery of (mental) processes – one's own or someone else's – *just as technical devices* are directed toward the mastery of processes of nature.' (Vygotsky, 1997d, 85. Emphasis added).

The sign as a tool reorganises the whole structure of psychological functions. It forms a structural centre, which determines the composition of the functions and the relative importance of each separate process. 'The inclusion in any process of a sign remodels the whole structure of psychological operations,' just as the inclusion of a tool reorganises the whole structure of a work process. (Vygotski, 1929, 421).

In this model, mediation is understood as a being-in-the-world. Thus, mediation does not mean a division between man and the external world, but – on the contrary – it indicates an analysis of an agent's being in the world. Mediation activity is a process by which an individual adapts the human essence and thus becomes socialized.⁸ In this sense, Vygotsky says that psychology must reconquer the right to examine the individual 'as a social microcosm --- as an expression or measure of the society.' (Vygotsky, 1997b, 317). This is a non-individualistic approach towards the social being of an individual person.

Let us take a closer look at the second point. Vygotsky does not give a qualitatively new role for psychological tools, they are just like any other tools. 'We should not conceive of artificial (instrumental) acts as supernatural or meta-natural acts in accordance with some new, special laws'. Artificial acts are natural, as well. They can, without exception, to the very end, be decomposed and reduced to natural ones, just like any machine (or technical tool) can, without exception, be 'decomposed into a system of natural forces and processes.' (Vygotsky, 1997d, 86). The higher forms of behaviour 'have no more means and data at their disposal than those which were shown by the lower forms of that same activity.' (Vygotski, 1929, 418).

⁸ Engeström seems to miss this point. 'In the early work of the cultural-historical school, led by Vygotsky, the unit of analysis was object-oriented action mediated by cultural tools and signs (see Vygotsky, 1978, p. 40). Mediation by other human beings and social relations was not theoretically integrated into the triangular model of action.' (Engeström & Miettinen 1999, 4). Signs are carriers of 'the others' (El'konin 2001) and respectively sign mediation is always societal mediation per se.

This instrumental argument of the nature of signs is also very explicitly made in the *Essay of the History of Behavior*. Vygotsky and Luria are using in this text the concept of *re-arming* to describe the cultural mechanism of development. While developing, the child not only grows and matures, but also receives a number of new skills and new forms of behaviour. In the process of development, ‘the child not only matures, but is *re-armed*. It is this "re-arming" that accounts for a great deal of the development and changes we can observe as we follow the transition from child to civilized adult.’ (Luria & Vygotsky, 1992, 110). These behavioural devices, acquired by the child in the process of cultural development, ‘alter the fundamental psychological functions of the child, *arm them with new weapons* and develop them.’ (Luria & Vygotsky, 1992, 117. Emphasis added). Vygotsky states in *Concrete Human Psychology* in 1929: ‘The essence of intelligence lies in tools’ (Vygotsky, 1989a). By talking about re-arming, about the weapons of development, he very clearly emphasizes the instrumental interpretation of the tool-like function of signs.

Vygotsky conceptualised in the first phase of his cultural-historical theory sign mediation in terms of psychological tools as instruments. This was also the conceptual background to Vygotsky’s experimental methodology. The method of double stimulation (Luria & Vygotsky, 1992; Sakharov, 1994; Vygotsky, 1987) is influenced by the assumption that secondary signs included in the psychological operations are instruments or tools for the acting individual. Internalization, according to this interpretation, is a direct process of moving the external sign-tools into internal ones. Leontyev, in his 1931 major study of memory, makes this point clear; ‘Only through a kind of process of "ingrowth" are they converted into internal symbols’ and, in this way into higher psychological functions (Leontyev, 1981, 363).

The concept of the psychological tool is a transitional phenomenon (Keiler 1999; 2002); by using it, Vygotsky makes a breakthrough from socio-behaviourism into mediational, thus

cultural analysis. His understanding of the function of sign, however, changes radically in the next step of the development of his theory, as we will see.

Cultural-historical theory II – semiotics

In his late works, Vygotsky re-evaluates the concept of personality (already in 1930 Vygotsky, 1997f), includes the idea of experiencing subject in his theoretical framework (Vygotsky, 1994, 1998) and finally reformulates the concept of sign (Vygotsky, 1987, 1997h). The concept of the zone of proximal development as a specification of socio-genetic law appears only in this last phase of his thinking (Chaiklin, 2003). On the methodological plane, we can see a transition from the instrumental method to semiotic analysis. I will concentrate here on changes in his concept of sign.

The fact that two conceptions of sign, instrumental and semiotic, are in this phase present simultaneously, side by side, in Vygotsky's work makes it extremely difficult to reconstruct his argumentation. It seems to me, however, that semiotic interpretation takes the dominant role in Vygotsky's late works. Consequently, I claim here that only the transition from the instrumental to the semiotic sign concept completes the shift from socio-behaviourism to mature cultural-historical psychology.

In the *History of the Development of Higher Mental Functions* (Vygotsky, 1997c) Vygotsky gives another figure for mediated activity. In this picture, he simply devises mediated activity in two groups: one mediated by tools, another mediated by the sign.

Figure 2 about here

Vygotsky emphasises that, 'The central fact of our psychology is the fact of mediation' (Vygotsky, 1997h, 138). Now, the concept of psychological tools is missing, the higher functions are defined as something qualitatively new which one cannot reduce to lower ones, and the mediation is analysed from the point of view of sign-mediated social interactions.

Sign and meaning

If the lower forms of activity are characterised by the immediacy of psychological processes, *the higher psychological functions are characterized by sign-mediation*. The consequence of this idea of mediation is that all methodological approaches relying on the postulate of immediacy (or on the 'postulate of directness', Leont'ev, 1978, 47) are unable to explain the specific nature of human actions. This is also the reason why the theoretical analysis of the very nature of mediation is so important for Vygotsky. It is clear for him that the sign mediation 'is the most important distinguishing characteristic of all higher mental functions.' (L. S. Vygotsky, 1999b, 41), and that higher psychological functions have to be defined as '*a qualitatively new mental formation* that develops according to completely special laws and is subject to completely different patterns' compared with the lower ones (Vygotsky, 1998, 34. Emphasis added). The use of signs results in a completely new and specific structure of behaviour in man, a structure that breaks with the traditions of natural behaviour and creates new forms of cultural-psychological activity. (L. S. Vygotsky, 1999b, 47).

Between 1932-33 Vygotsky re-evaluated the concepts of meaning and sign. In a seminar of his research group, he stated that the social nature of sign was not understood correctly in the earlier works of the group. '(Introduction: the importance of sign; its social meaning.) In older works we ignored that the sign has a meaning. --- We proceeded from the principle of the constancy of meaning, we discounted meaning. --- Whereas before our task was to demonstrate what 'the knot' and logical memory have in common, now our task is to demonstrate the difference that exists between them.' (Vygotsky, 1997h, 134). There is no sign without meaning. 'The formation of meaning is the main function of sign. Meaning is everywhere where there is a sign --- *meaning* is inherent in the sign.' (Vygotsky, 1997h, 134, 136). Here the focus of analysis moves from the sign being an instrument to the sign as being a meaning container.

By the formation of higher psychological functions, a new form of activity – free activity – will emerge. Free action is independent of immediate needs and of stimulus from the environment. Free action is proactive, directed to the future. The possibility of free action is dependent on the use of signs (Vygotsky, 1999b, 64-65).

Including symbolic functions in the psychological operation creates conditions for a connection of elements between the present and future, which creates ‘*a completely new psychological field for action*’ (Vygotsky, 1999b, 35. Emphasis added) that leads to the formation of intention and of a target action planned in advance. This new relation of action to personality, which arises due to the word and leads to the mastery of action is manifested in free action, controlled and directed by the word. ‘If the act, independent of the word, stands at the beginning of development, then at its end stands the word becoming the act. The word, which makes the action of man free.’ (Vygotsky, 1999b, 67-68).⁹

According to Vygotsky, speech is the medium by which we learn to master our behaviour and which makes us free of the immediate influence (stimulus) of the environment. ‘The word subordinates motor reactions to itself; this is the source of *the power of the word over behaviour*.’ (Vygotsky, 1998, 169. Emphasis added).

The analysis of sign-meaning unity leads to the concept of word meaning, which then becomes a central category in *Thinking and Speech*¹⁰. This leads to the idea of the semantic and systemic nature of mind. ‘Consciousness as a whole has a semantic structure’, this is why ‘semiotic analysis is the only adequate method for the study of the systemic and semantic structure of consciousness.’ (Vygotsky, 1997h, 137). Consequently the method of cultural psychology ‘must be that of semantic analysis. Our method must rely on the analysis of the

⁹ See Jones (2002) for a more detailed analysis of the free action in Vygotsky.

¹⁰ Jim Wertsch claims that there are two different conceptions of word meaning side by side in *Thought and language* (chapter 5 versus chapter 6) (Wertsch, 1996).

meaningful aspect of speech; it must be a method for studying verbal meaning.’ (Vygotsky 1987, 47).¹¹

Vygotsky claims that the primary function of speech is communication, social interaction. Communication requires signs and meanings. This leads us back to the question of internalisation and to the relations between the sign, meaning and interaction.

Sign, the zone of proximal development and the dialogical mind

On the plane of ontogenesis ‘*social relations, real relations of people*, stand behind all the higher functions and their relations.’ (Vygotsky, 1997c, 106 – emphasis added). Vygotsky formulates this as the famous socio-genetic law, according to which ‘every function in the cultural development of the child appears on the stage twice, in two planes, first, the social, then the psychological, first between people as an intermental category, then within the child as an intramental category.’ (Vygotsky 1977c, 106). The key to psychological development lays in social interaction. Even the child’s relation to the physical objects ‘passes through another persons’ (Vygotsky, 1978, 30). Vygotsky reformulates on the psychological plane Marx's sixth Thesis on Feuerbach about the human essence as ‘the ensemble of the social relations’ (Marx 1984)¹² by saying that ‘the mental nature of man represents the totality of social relations *internalized* and made into functions of the individual.’ (Vygotsky, 1997c, 106).

In his diaries, D. B. El’konin sees the sign mediation as a key category in Vygotsky’s thinking. For El’konin, however, mediation is a problem, too. He talks about the riddle of symbolic mediation. He is asking a seemingly simple question: ‘Why is a sign, in contrast to a

¹¹ Kozulin translates: ‘Clearly, then, the method to follow --- is semantic analysis – the study of the development, the functioning, and the structure of {word meaning}, which contains thought and speech interrelated.’ (L. Vygotsky, 1989b, 6).

¹² On more detailed analysis of the meaning of Marx’s F-thesis, see Labica (1998).

tool, directed 'inwardly' and, most importantly, how does it organize behaviour? If you look at it in natural terms, there is nothing in a sign that could do this.' (El'konin, 2001, 10).

Elkonin gives the following answer. The 'sign' is introduced by another person, it initiates the behaviour of one person through another person. The sign is, so to say, an introduction of another person into the organization of a person's behaviour. In this respect it is possible to understand a sign as a kind of social gift. A gift serves as a reminder of the giver. 'That is why a sign is social, and that is why it organizes behaviour. --- The main significance of the sign is social, i.e., the organization of one's own behaviour through another.--- Sign is efficacious because it is, so to speak, a mark of another's active presence in one's behaviour.' (El'konin, 2001, 11).

This remark of Elkonin opens up new questions, and directions for the inquiry. The first is the dialogical nature of the mind. If the other is present in the meaning of a sign, then we can understand the human mind as dialogical sign activity, and the individual as a 'social microcosm, as a type, as an expression or measure of the society.' (Vygotsky, 1997b, 317). This leads us beyond the individual—society dichotomy to a conception of the sociotativity of the individual. Another essential consequence of Elkonin's remark is a semiotic understanding of the zone of proximal development. With the ZPD, there is mediation only if there are meanings (Kozulin, 1990b). In the last phase of Vygotsky's theory, meaning construction, symbolic mediation becomes a key to the interactions going on in the ZPD.

Zinchenko also expresses the dramatic nature of development in the zone of proximal development. 'In a first approximation, the process of development in cultural-historical psychology may be described as a drama played out over the balance between real and ideal forms, their transformation, and their conversions back and forth from one to the other. The actor, and sometimes the dramaturge, is the subject of development. The stage is his life in the world, or the world is his life.' (Zinchenko, 2001, 34).

Some conclusions

According to Ratner, ‘a great strength of Vygotsky's psychological system is its logical consistency.’ (Ratner, 1998, xiv). However, if we only emphasize the logical consistency, we might lose insight from the development of Vygotsky's concepts. Instead of trying to postulate a supposed consistency in Vygotsky, the focus of this paper has been on the dynamics of the development of his concepts (see also Yaroshevsky & Gurgenzidze, 1997, 368).

We can now summarize the results of our analysis of the development of Vygotsky's cultural-historical psychology and semiotic conceptions of the sign-speech system (see table one below).

Table one: The development of Vygotsky's theory of signs as semiotic mediators (CHP = cultural-historical psychology, EB = epistemological break)					
	Socio-behaviourism	Mediated activity, EB one	Early CHP	Semiotic Mediation, EB 2 ?	Late CHP
Explanatory concepts	Speech as a system of social reflexes		Signs as instruments, psychological tools		Signs as meanings in human drama
Methodology of inquiry	Analytical-objective method		Instrumental method of double stimulation		Semiotic analysis of the systemic and semantic structure of consciousness

Vygotsky's explanatory concepts move from a socio-behaviourist ‘speech-as-reflex’ conception to a cultural historical idea of mediated activity. This move represents a break with the old ‘classical’ explanatory model and through this break Vygotsky opens up a way to a new scientific approach to the psyche of human beings. This can be conceptualised as a transition from classical to non-classical psychology, as Asmolov and others do (Asmolov, 1998; El'konin, 2001), or as a break with ‘modern’ science. In Althusserian terms, we could say that there definitely is an epistemological break between these two phases in Vygotsky's

thinking. Foucault, however, reminds us that the break does not happen at one single point. The socio-behaviourist phase can be understood as the beginning, as the positive discourse of consciousness, which transforms to the genuine theory of higher psychological function through several epistemological shifts and breaks. The first break between the socio-behaviourism and the cultural-historical theory is obvious (Langford, 2005; Veresov, 1999). What remains to be explained is the meaning of the transition from instrumental sign conception to semiotic understanding about sign mediation. Is there another break, the final move to the mature theory of higher psychological functions? In Althusser's terms: does the cultural-historical psychology reach its youth only in Vygotsky's late semiotic conception of signs?

Different answers to these questions implicate different understanding about recent development of the cultural-historical theory. If we place the emphasis on the first break only, it is natural to see the two last phases in Vygotsky's thinking, so to speak, as two sides of the same coin. This is how Vygotsky has been read especially in the CHAT-tradition (see Engeström & Miettinen 1999). If we place the emphasis on the second break, there are two epistemologically different modes of psychological inquiry. Zinchenko makes this point clear; 'it is time for us to realize that today we are dealing with *two scientific paradigms*: cultural-historical psychology and the psychological theory of activity.' (Zinchenko, 1995, 40. Emphasis added.).

If we take even a most superficial look at the historical moment after Vygotsky's premature, we easily realise the diverse ways his work was read already at the time. The obituaries, written by Leont'ev and Luria in 1934 are most telling in this respect.

Luria emphasises the speech-mediated, semiotic nature of higher psychological functions:

‘Vygotsky analyzed the origin of such complex mental functions as logical memory, active attention, will, speech, thought; being one of the first psychologists in his country to introduce the ‘developmental’ method into the experimental study of these problems. His attention was drawn to the fact that speech plays the most important part in the development of complex behavior; *it is speech that creates new functions interconnected through their meaning.*’ (Luria, 1935, 238. Emphasis added.)

Leont'ev makes a move towards the activity approach, which will become his endeavour for the next decades.

‘Interpretation of the mediated structure of human psychological processes and mental phenomena in general *as human activity* was for Vygotsky the cornerstone, *the foundation, of the entire psychological theory he developed* - the theory of sociohistorical (“cultural” as opposed to “natural”) development of the human mind.’ (Leont’ev, 1997, 43. Emphasis added.)

In Vygotsky’s methodology, there is a strong emphasis on the systemic nature of mediation. In his systemic and relational approach activity is mediated by tools, signs, symbolic systems and by other people. Vygotsky’s clue is always to relate these mediators to each other, because they function as a systemic whole, as a ‘psychological system’ which ‘includes the complex combination of symbolic and practical activity’ (Vygotsky 1999b, 61). From the methodological point of view one cannot separate signs, tools and social interaction from each other. This can be presented by slightly modifying Vygotsky’s original figure of the modes of mediation.

Figure 3 about here

It is clear that Vygotsky's own research interest was in semiotic mediation and joint activity, but he always emphasised the systemic approach and the need to relate all different forms of mediation to each other.

From this point of view, the cultural-historical tradition can be seen as a network of theories that have different research interests with partly compatible, partly competing interpretations of the basic nature of mediation (Hydén 1988). It is important to note that every research interest opens up different *problematiques*.¹³ The concept of object-oriented activity, developed after Vygotsky in activity theory, offers a good example. Object-orientation brings to cultural-historical theory an element what was missing in Vygotsky's writings, and opens up new directions for research. The interpretation of the concept of the object can, however, be different inside the mediational framework of analysis. It can be more instrumental or more semiotic. The debate between these interpretations is one of the basic components in the development of the cultural-historical theory itself.

In my reading, there is a really distinct semiotic phase in Vygotsky's thinking. However, his conception of sign mediation remains, in many respects, open to different interpretations. In this respect, we can see Vygotsky as a founder of discursivity in the sense Foucault interprets this word: 'Founders of discursivity are unique in that they are not just the authors of their own works. They have produced something else: the possibilities and the rules for the formation of other texts. They have established an endless possibility of discourse.' (Foucault, 1991b, 114).

¹³ This actual multi-voicedness of cultural-historical tradition was nicely reflected already in 1973 in Yrjö-Paavo's and Jarkko's *Human educability and educational politics* (Häyrynen & Hautamäki 1973). For current variations in theoretical discussion, see Podolsky's and Daniels' contributions in this volume.

References:

- Althusser, L. 1970. *Reading Capital*. London, New Left Books
- Althusser, L. 1996. *Writing on Psychoanalysis* (O. C. Corpet & F. Matheron, Trans.). New York: Columbia University Press.
- Asmolov, A. 1998. *Vygotsky Today: On the Verge of Non-Classical Psychology*. Commack: Nova Science Publishers.
- Bachelard, G. 1987. *Die Bildung des wissenschaftlichen Geistes. Beitrag zu einer Psychoanalyse der objektiven Erkenntnis*. Frankfurt/Main: Suhrkamp.
- Bourdieu, P. 1988. *Homo Academicus* (P. Collier, Trans.). Cambridge: Polity Press.
- Bozhovich, L. I. 1977. The Concept of the Cultural-Historical Development of the Mind and Its Prospects. *Soviet Psychology*, 16 (1), 5-22.
- Canguilhem, G. 1979. *Wissenschaftsgeschichte und Epistemologie*. Frankfurt/Main: Suhrkamp.
- Chaiklin, S. 2003. The zone of proximal development in Vygotsky's analysis of learning and instruction. In A. Kozulin, B. Gindis, V. S. Ageyev & S. M. Miller (Eds.), *Vygotsky's Educational Theory in Cultural Context* (pp. 39-64). Cambridge: Cambridge University Press.
- Donald, M. 1991. *Origins of the Modern Mind. Three Stages in the Evolution of Culture and Cognition*. Cambridge - MA: Harvard University Press.
- El'konin, B. D. 2001. L.S. Vygotsky and D.B. El'konin. Symbolic Mediation and Joint Action. *Journal of Russian and East European Psychology*, 39 (4), 9-20.
- Engeström, Y. 1996 Developmental work research as educational research. *Nordisk pedagogik*, 16 (3), 131-143
- Engeström, Y. & Miettinen, R. 1999. Introduction. In: Engeström, Y. & Miettinen, R. & Punamäki, R-L. (Eds.) *Perspectives on Activity Theory*. (pp. 1-16). Cambridge, Cambridge University Press
- Foucault, M. 1991a. *The archaeology of knowledge* (A. M. Sheridan Smith, Trans.). London: Routledge.
- Foucault, M. 1991b. What Is an Author? In P. Rabinow (Ed.), *The Foucault Reader* (pp. 101-120). London: Penguin Books.
- Holzkamp, K. 2006. *Wissenschaft als Handlung. Schriften III*. (Original work 1968) Hamburg, Argument
- Hydén, L-C. (1988) *The Conceptual Structure of Soviet Psychology in Vygotskij's, Leontjev's and Rubinstejn's theories*. Stockholm, Stockholms Universitet
- Häyrynen, Y-P. & Hautamäki, J. 1973. *Human educability and educational politics [in Finnish]*. Helsinki: Weilin+Göös
- Ilyenkov, E. V. 1982. *The Dialectics of the Abstract and the Concrete in Marx's Capital* (S. Syrovatkin, Trans.). Moscow: Progress.
- Jones, P. E. 2002 "The Word Becoming a Deed:" The Dialectic of "Free Action" in Vygotsky's Tool and Sign in the Development of the Child. *Teoksessa: Robbins, D. & Stetsenko,*

- A. (ed.) *Voices within Vygotsky's Non-Classical Psychology*. (ss. 143-160) New York: Nova Science
- Keiler, P. 1999. *Feuerbach, Wygotski & Co. Studien zur Grundlegung einer Psychologie des gesellschaftlichen Menschen*. Dritte, erweiterte Auflage. Hamburg, Argument
- Keiler, P. 2002. *Lev Vygotskij - ein Leben für die Psychologie*. Weinheim: Beltz.
- Kozulin, A. 1986. The Concept of Activity in Soviet Psychology. *Vygotsky, His Diciples and Critics*. *American Psychologist*, 41 (3), 264-274
- Kozulin, A. 1990a. *Vygotsky's Psychology. A Biography of Ideas*. New York, Harvester Wheatsheaf
- Kozulin, A. 1990b. Mediation: Psychological Activity and Psychological Tools. *International Journal of Cognitive Education & Mediated Learning*, 1 (2), 151-159.
- Labica, G. 1998. *Karl Marx. Thesen über Feuerbach*. Hamburg, Argument
- Langford, P. E. 2005. *Vygotsky's Developmental and Educational Psychology*. Hove: Psychology Press.
- Leont'ev, A. N. 1978. *Activity, Consciousness, and Personality* (M. J. Hall, Trans.). Englewood Cliffs - NJ: Prentice Hall.
- Leont'ev, A. N. 1995. The Assimilation of Scientific Concepts by Schoolchildren. (Orig. 1935) *Journal of Russian and East European Psychology*, 33 (6), 12-38.
- Leont'ev, A. N. 1997. L. S. Vygotsky: In Memoriam. (Orig. 1934) *Journal of Russian and East European Psychology*, 35 (2), 42-47
- Leontyev, A. N. 1981. The Development of Higher Forms of Memory. (Orig. 1931) In A. N. Leontyev, *Problems of the Development of the Mind* (pp. 327-365). Moscow: Progress.
- Luria, A. R. 1935. L.S. Vygotsky. Character and Personality: an International Psychological Quarterly, 3, 238-240.
- Luria, A. R., & Vygotsky, L. S. 1992. *Ape, Primitive Man and Child. Essays in the History of Behavior* (E. Rossiter, Trans.). New York: Harvester Wheatsheaf.
- Mamardashvili, M. 1987. Analysis of Consciousness in the Works of Marx. *Studies in Soviet Thought*, 32, 101-120.
- Marx, K. 1984. *Theses on Feuerbach*. In L. S. Feuer (Ed.), *K. Marx & F. Engels: Basic Writings on Politics and Philosophy* (pp. 283-286). ip: Fontana.
- Minick, N. 1987. The Development of Vygotsky's Thought: An Introduction. In R. W. Rieber & A. S. Carton (Eds.), *Collected Works of L.S. Vygotsky. Volume 1: Problems of General Psychology* (pp. 17-36). New York: Plenum Press.
- Ratner, C. 1998. Prologue. In R. W. Rieber (Ed.), *The Collected Works of L.S. Vygotsky. Volume 5: Child Psychology* (pp. v-xv). New York: Plenum Press.
- Reichelt, H. 1973. *Zur logischen Struktur des Kapitalbegriffs bei Karl Marx*. Frankfurt/Main, Europäische Verlagsanstalt.
- Robbins, Dorothy & Stetsenko, Anna (ed.) 2002 *Voices within Vygotsky's Non-Classical Psychology*. New York, Nova Science
- Rosdolsky, R. 1972. *Zur Entstehungsgeschichte des Marxschen 'Kapital'*. Der Rohentwurf des Kapitals 1857-1858. Frankfurt/Main: Europäische Verlagsanstalt.

- Sakharov, L. 1994. Methods for investigating concepts. In R. Van der Veer & J. Valsiner (Eds.), *The Vygotsky Reader* (pp. 73-98). Oxford: Blackwell.
- Veresov, N. 1999. *Undiscovered Vygotsky. Etudes on the pre-history of cultural-historical psychology*. Frankfurt am Main: Peter Lang.
- Veresov, N. 2005. Marxist and non-Marxist aspects of the cultural-historical psychology of L.S. Vygotsky. *Outlines*, 7(1), 31-49.
- Vygotski, L. S. 1929. The Problem of the Cultural Development of Child. *The Pedagogical Seminary and Journal of Genetic Psychology*, 36(3), 415-432.
- Vygotsky, L. S. 1971. *The Psychology of Art*. (Orig. 1925/1965) Cambridge: The M.I.T. Press.
- Vygotsky, L.S. 1978. *Mind in Society. The Development of Higher Psychological Processes*. Edited by M. Cole, V. John-Steiner, S. Scribner & E. Souberman. Cambridge, Massachusetts, Harvard University Press
- Vygotsky, L. S. 1987. *Thinking and Speech* (N. Minick, Trans.). (Orig. 1934) In R. W. Rieber & A. S. Carton (Eds.), *The Collected Works of L.S. Vygotsky. Volume 1: Problems of General Psychology* (pp. 37-285). New York: Plenum Press.
- Vygotsky, L. S. 1989a. *Concrete Human Psychology*. (Orig. 1929) *Soviet Psychology*, 27(2), 53-77.
- Vygotsky, L. 1989b. *Thought and Language* (A. Kozulin, Trans.). (Orig. 1934) Cambridge - MA: The MIT Press.
- Vygotsky, L. S. 1994. The problem of the environment. (Orig. 1935) In R. Van der Veer & J. Valsiner (Eds.), *The Vygotsky Reader* (pp. 338-354). Oxford: Blackwell.
- Vygotsky, L. S. 1997. *Educational Psychology* (R. Silverman, Trans.). (Orig. 1926) Boca Raton: St. Lucie Press.
- Vygotsky, L. S. 1997a. *Consciousness as a Problem for the Psychology of Behavior*. (Orig. 1925) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 63-79). New York: Plenum Press.
- Vygotsky, L. S. 1997b. *The Historical Meaning of the Crisis in Psychology: A Methodological Investigation*. (Orig. 1927) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 233-343). New York: Plenum Press.
- Vygotsky, L. S. 1997c. *The History of the Development of Higher Mental Functions* (M. J. Hall, Trans.). (Orig. 1931) In R. W. Rieber (Ed.), *The Collected Works of L.S. Vygotsky. Volume 4: The History of the Development of Higher mental Functions* (pp. 1-251). New York: Plenum Press.
- Vygotsky, L. S. 1997d. *The Instrumental Method in Psychology* (R. Van der Veer, Trans.). (Orig. 1930) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 85-90). New York: Plenum Press.
- Vygotsky, L. S. 1997e. *The Methods of Reflexological and Psychological Investigations*. (Orig. 1926) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 35-49). New York: Plenum Press.

- Vygotsky, L. S. 1997f. On Psychological Systems (R. Van der Veer, Trans.). (Orig. 1930) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 91-108). New York: Plenum Press.
- Vygotsky, L. S. 1997g. Preface to Thorndike. (Orig. 1926) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 147-161). New York: Plenum Press.
- Vygotsky, L. S. 1997h. The Problem of Consciousness. (Orig. 1933) In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3: Problems of the Theory and History of Psychology* (pp. 129-138). New York: Plenum Press.
- Vygotsky, L.S. 1997i. Apropos Koffka's article on self-observation (instead of preface) (Orig. 1926). In Vygotsky, L.S. *The Collected Works of L.S. Vygotsky. Volume 3. Problems of the Theory and History of Psychology*. Translated and with an Introduction by R. van der Veer. Editors R.W. Rieber & J. Wollock. (pp. 81-83) New York, Plenum Press
- Vygotsky, L. S. 1998. Pedology of the Adolescent. (Orig. 1930-31) In R. W. Rieber (Ed.), *The Collected Works of L.S. Vygotsky. Volume 5: Child Psychology* (pp. 3-184). New York: Plenum Press.
- Vygotsky, L. S. 1999a. Consciousness as a Problem in the Psychology of Behavior. (Orig. 1925) In N. Veresov (Ed.), *Undiscovered Vygotsky. Etudes on the pre-history of cultural-historical psychology* (pp. 251-281). Frankfurt/Main: Peter Lang.
- Vygotsky, L. S. 1999b. Tool and Sign in the Development of the Child (M. J. Hall, Trans.). (Orig. 1930) In R. W. Rieber (Ed.), *The Collected Works of L.S. Vygotsky. Volume 6: Scientific Legacy* (pp. 1-68). New York: Plenum Press.
- Wertsch, J. V. 1985. *Vygotsky and the Social Formation of Mind*. Cambridge MA: Harvard University Press.
- Wertsch, J. V. 1996. Vygotsky: The Ambivalent Enlightenmet Rationalist. In M. Cole & J. V. Wertsch (Eds.), *Contemporary Implications of Vygotsky and Luria* (pp. 39-62). Clark University Press: Worcester - MA.
- Wygotski, L. S. 1929a. Die genetischen Wurzeln des Denkens und der Sprache. Unter dem Banner des Marxismus, 3(3), 450-470.
- Wygotski, L. S. 1929b. Die genetischen Wurzeln des Denkens und der Sprache. Unter dem Banner des Marxismus, 3(4), 607-624.
- Yaroshevsky, M. G., & Gurgenidze, G. S. (1997). Epilogue. In R. W. Rieber & J. Wollock (Eds.), *The Collected Works of L.S. Vygotsky. Volume 3. Problems of the Theory and History of Psychology*. (pp. 345-369). New York: Plenum Press.
- Zeleny, J. 1973. *Die Wissenschaftslogik und 'Das Kapital'*. Frankfurt/Main, Europäische Verlagsanstalt
- Zinchenko, V. P. 1995. Cultural-historical psychology and the psychological theory of activity: retrospect and prospect. In J. V. Wertsch, P. Del Río & A. Alvarez (Eds.), *Sociocultural Studies of Mind* (pp. 37-55). Cambridge: Cambridge University Press.
- Zinchenko, V. P. 2001. From Classical to Organic Psychology. *Journal of Russian and East European Psychology*, 39(1), 32-77.

Figures

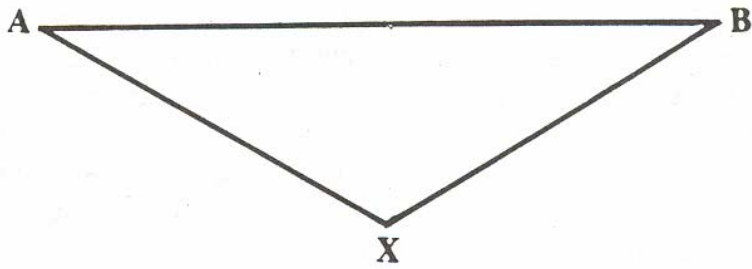


Figure 1 Mediated act (Vygotsky 1997e, 86)

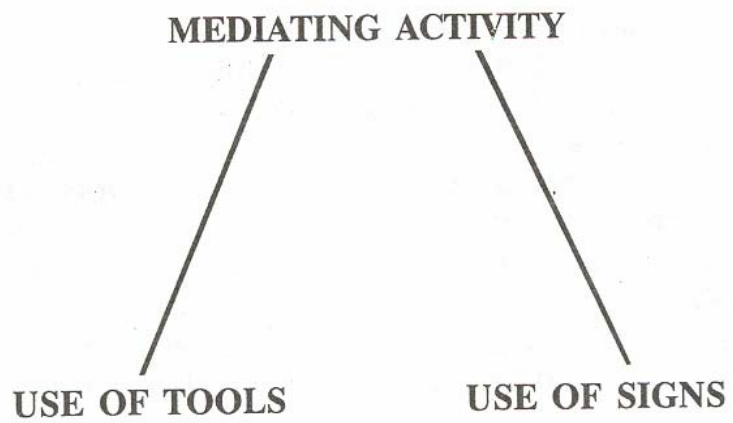


Figure 2 Forms of mediated activity (Vygotsky 1997d, 62)

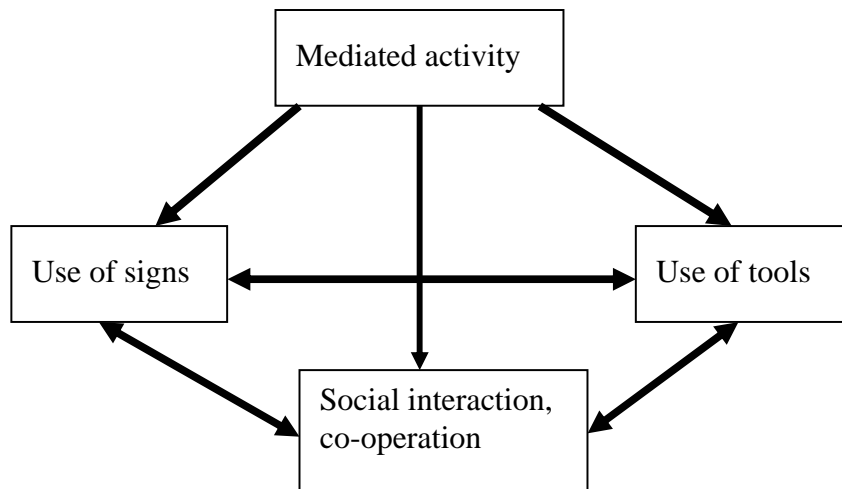


Figure 3 Systemic conception of mediation