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INTELLECTUAL ORIGINS OF WRITTEN SPEECH DEVELOPMENT: A CULTURAL-HISTORICAL ANALYSIS¹

The article presents the development of written speech as an important step in intellectual development, namely the development of abstract thinking. The author argues that the optimal period for written speech instruction is the preschool age. The first part discusses the main thesis of cultural-historical psychology developed by Vygotsky. The dynamic and structural aspects of cultural consciousness are presented. The second part concerns word meaning as the basis for analyzing the problem. Word meaning is described as a three-dimensional structure, composed of the objective, the systemic and the subjective dimensions. The development of written speech depends on the appropriate development of the objective dimension, which is the level of actual development of the intellect of the preschool child. Written speech instruction stimulates the development of the systemic dimension which is the zone of proximal development of preschool child consciousness. Thus the development of written speech is presented as an effect of the mutual relation between word meaning as the basic consciousness unit and the specific higher mental function in the social environment.

Introduction

The first gesture, the first spoken word, and the first written word are the three milestones during the initial years of human cultural development. They all share a common foundation, namely, they are all meaningful. Their meaningfulness is twofold. Firstly, the three watershed events are indicators of internal mental processes, which – as will be demonstrated below – are based on the structure of word / sign meaning. Secondly, they are meaningful for the overall development of the mind, since they delineate borders between different quality levels within the internal mental organization².

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² The problem whether Vygotsky concerned consciousness as a homogenous or heterogenous system is widely discussed nowadays especially by Wertsch and Tulviste (Wertsch, 1996). However, in this article the reconstruction of Vygotsky's thought is based on the concept of heterogeneity of human consciousness, the notion that has a long tradition in Polish psychology, especially in the works of Obuchowski (1970, 1993), and is continued in contemporary studies in Poznań (Czub, 1998, 2000; Dziurla, 2000).

This article demonstrates a relationship obtaining between the two planes, i.e. between the psychological unit – a generalization – and that of a specific mental function. An analytical approach of this type is made possible by the cultural-historical perspective, the forerunner of which was an eminent psychologist of the 20th century, Lev S. Vygotsky whose fundamental concepts constitute the basic texture of the present article and the starting point for developing its main thread of reasoning.

The present article addresses the issue of the optimum period for teaching written speech. We are interested in the question of what moment in the development of the child's consciousness is the most effective for such instruction. As mentioned above, defining that moment is based on analyzing word meaning. Following Vygotsky, word meaning is taken to be a *generalization*. It can be presented as a three-element structure whereby each of the elements concerns a different aspect of the generalization. Each aspect may be presented as a meaning dimension. Thus, the following dimensions can be identified: (1) the objective dimension, which concerns the way in which an object is structured in meaning, (2) the systemic dimension, which defines the nature of relationships between meanings, and (3) the subjective dimension, concerning the possibilities of creating superordinate meanings.

Drawing on Vygotsky's assumption that word meaning is subject to the process of development, the developmental process may be described as a sequence of periods during which different dimensions of word meaning are predominant. Viewed from this perspective, the period during which the object dimension predominates is the optimal one for developing written speech. This is because teaching written speech is based on well-developed object representation, which in turn constitutes a prerequisite for developing relationships between concepts, whereas discovering those relationships is stimulated by script use. Thus, in the preschool age the objective dimension opens the zone of proximal development for written speech.

Vygotsky's concept of cultural consciousness

The structure of cultural consciousness

Consciousness, a phenomenon which was the central idea of Vygotsky's research output, is the foundation of human functioning. Cultural-historical psychology views the concept of consciousness as a symbolic representation of objective reality, the functioning of which is demonstrated in the process of verbal thinking.

“If *sensation-receiving and thinking consciousness* (emphasis R.D.) involves various ways of reflecting reality, then those various ways also represent various types of consciousness” (Vygotsky, 1934/1982, p. 361)³.

³ Presented quotations comes from our direct translation of the Russian edition of *The collected works of Vygotsky* – see References). This decision comes from inadequacy of the English translation concerning many important terms (as for example differentiation between *смысл* <sense> and *значение* <meaning> – see also the commentary by Wertsch, 1981, p. 163) that introduces inconsistency to Vygotsky's concepts. However these terms that preserve consistency with the original text were adopted from the English version of the Collected Works (see References).

Sensory consciousness defines the animal way of reflecting objective reality in internal representation, whereas thinking consciousness demonstrates an intellectual way of reflecting objective reality, which results in the emergence of a type of consciousness, i.e. *cultural consciousness*, that is peculiar to one species only, to Homo sapiens. Cultural consciousness is a complex structure which comes into being through an interaction between two systems, i.e. the symbolic speech structure and the organization of functional systems of the central nervous system. The process occurs approximately in the second year of human ontogenesis and is associated with speech acquisition:

“... as speech develops, there also emerges for the first time something that in my view is the most important trait of human consciousness [...] namely *sense-based and systemic consciousness construction*” (emphasis R. D.; Vygotsky, 1932/1984, p. 362)⁴.

Mastering speech serves to diversify consciousness into specific mental functions, the internal structure of which is defined by the structure of the basic unit of speech, i.e. word meaning:

“... the change in the system of relations between specific functions is closely linked with word meaning, with the result that the meaning of words starts mediating mental processes” (Vygotsky, 1932/1984, p. 363).

Thus, the structure of mental functions is based on the structure of word meaning. It follows that Vygotsky views *word meaning as the basic unit of cultural consciousness*.

Drawing on Sapir’s findings, Vygotsky describes word meaning as a generalization (Vygotsky, 1934/1962, p. 6), as a phenomenon which always pertains to a specified class of objects and never to an individual object (Vygotsky, 1934/1962, p. 17). For Vygotsky, generalization or word meaning is an act of thinking, a specifically human mental process which is described more precisely as an act of verbal thinking. In contrast to those academic disciplines which are concerned with studying language structures, Vygotsky addresses the issue of speech analysis. As a result, he recognizes word meaning to be a dynamic, changeable phenomenon that develops successively, as well as a social phenomenon, which indicates the origins of that development. Vygotsky identifies four qualitatively different stages of word meaning development (*syncretic images, complexes, preconcepts, and proper concepts*) (e.g. Vygotsky, 1934/1962, 1931/1971), which should be approached as qualitatively different types of verbal thinking structures, i.e. forms of symbolic representation.

Each of the stages assumes a different word meaning structure, and hence a different course of the thinking process. Because, as Vygotsky believes, structure defines function, word meaning structure defines the possible type of thinking process, that is, its function:

⁴ In our opinion the Russian adjective *нѣўнѣї ай ѓ* translated here as sense-based is more adequate than the term, interpreted proposed by Minick (1987) because the latter lacks references to specificity of Vygotsky’s notion of sense (see Footnote 3).

“... thinking functions are dependent on the thought structure, for any thinking establishes relations between images representing fragments of reality in the consciousness. Thus, the way the reality is represented in the consciousness cannot be indifferent with respect to thinking operations” (Vygotsky, 1934/1962, p. 289).

Each thinking phase assumes a different thinking function. Each conceptual structure provides different possibilities of how the structure can operate. As Vygotsky continues:

“... the functions of thinking depends on the structure of thought itself; the nature of the operation that is available to a given intellect is dependent on the thought that functions” (Vygotsky, 1934/1962, p. 290).

If the broad sense of thinking as a cultural means of reflecting reality is adopted (Czub, 1998, p. 4), the developmental sequences of individual mental functions may be approached in terms of intellectual development, as a manifestation of the activity of the representations discussed above. This broad definition of thinking allows, for instance, the function of sense-based perception to be viewed as an intellectual act consisting in perception via a general category (Maruszewski, 1996, p. 50). This does not preclude the naturalness of the act of perception that is available to animals; despite thousands of years of cultural development we still do perceive natural stimuli, such as color, smell, movement, etc. However, we are able to perceive, say, the green color as a special case of a general phenomenon, which is the movement of specified elementary particles; the phenomenon is then perceived „through” a meaningful category. Hence, all the un-natural, i.e. cultural, forms of mental activity will be approached as specific forms of thinking. This allows the developmental sequence of the basic unit of thinking, i.e. word meaning, to be combined with the sequence of dominant mental functions. As a result, it can be demonstrated that the development of a mental function is associated with the *process of intellectualization*, that is, the type of change in the structure of that function which transfers its operational possibilities into the realm of symbolic, intellectual actions.

Since mental functions are subject to the process of intellectualization, they become forms of verbal thinking, whereas the sequence of the development of specific higher mental functions is a manifestation of progressing overall intellectualization, and an expression of the process of developing verbal thinking. In cognitive psychology, a similar operation has been conducted, namely specific sets of cognitive processes have been generalized in compliance with the information-processing principle (Maruszewski, 1996, p. 13).

Recognizing specific mental functions as special cases of the overall process of verbal thinking does not imply that their constituent specific processes are reduced to intellectual functions. On the contrary, this arrangement allows each specific process to be approached in a relationship with other different phenomena through a specified generalization structure, i.e. a given representation structure. This permits an exploration of those processes from the perspective of verbal thinking. Thus, the structure of cultural consciousness is based on the generalization structure, whose characteristic feature is that each natural mental function that is subject to cultural

development gets intellectualized, i.e. structured by relationships obtaining between generalizations, hence becoming independent of the natural structure of environmental stimuli.

The dynamics of cultural consciousness development

According to Vygotsky, the emergence of *a new developmental formation* serves as the foundation for dividing the development of verbal thinking into stages:

“In my view, the first question to be asked when exploring each developmental period [...] is what new developmental forms [...] emerge in that period, i.e. what it is that is formed at a given stage of development that was not there at earlier stage” (Vygotsky, 1933/1962, p. 340).

The concept of the new developmental formation is tied up with the process of intellectualizing specific mental functions that was discussed above. The function which is subject to that process at a given moment, i.e. which finds the optimal conditions for its own development, is referred to as the *dominant function*. The development of that function shapes relationships with the remaining functions both retrospectively and prospectively. Within historical-cultural psychology, it is the influence of the social environment that is the primary developmental factor, as stated in the following famous quotation:

“... any function that occurs in the child’s cultural development appears on the scene twice and on two planes: first on the social plane and then on the psychological plane. It first appears between individuals, as an intermental category, and then in the inner experience of the child as an intramental category” (Vygotsky, 1934/1962, p. 101).

Vygotsky emphasizes clearly that the emergence of the “intramental category” is dependent upon the opportunities that the child has to participate in a specified social situation. The period when the child is particularly susceptible to a specified kind of social influence is referred to as the *optimal period of development* (Vygotsky 1982, p. 253). Clearly, Vygotsky’s most crucial discovery is the evidence of the existence of an upper and lower limit of the optimal period, for it is within those limits that the influence of the social environment is of greatest importance for changes in the consciousness structure of the developing individual. The limits of the optimal period are defined by the ability to move beyond the level of the individual’s actual potential in a situation of social co-operation. Vygotsky incorporated this dynamic aspect of development into a psychological law that he discovered, and termed the law of the *zone of proximal development*.

While the law is most commonly associated with the schooling processes, it has a much broader meaning, as it concerns general conditions for the development of cultural consciousness. The zone of proximal development is defined by the difference between the actual level of the development of a specified function (the lower limit of the optimal period) and the level of the proximal development (the upper limit of the optimal period) (Brzezińska, 2000, p. 141). Acquiring new competence, i.e. moving from the actual level to the level of proximal development, is only possible if the developing subject co-operates with the more competent partner. Co-op-

eration in an area which extends beyond the individual's actual competence is possible owing to the process of *imitation*, since humans are capable of imitating much more than they are capable of understanding. This human property is, or rather should be, used in the schooling process, but it cannot be restricted merely to the one specific situation of social co-operation.

Effective influence on an individual's development is exercised in the "area of his/her lack-of-knowledge", i.e. the area which is situated beyond the individual's actual competence but can be reached with the aid of clues, pointers, etc. As stated by Vygotsky himself, effective influence must be directed at those functions that are still in the maturation stage; that is, oriented at the future of that function. However, the claim that the zone of proximal development constitutes the general law of development must be based on more substantial premises. Bearing this in mind, the different relations between three essential processes underlying the dynamics of changes in cultural consciousness need to be discussed. The three processes are: *conscious awareness*, *generalization* and *mastery*⁵, whereby it should be kept in mind that it is word meaning – generalization that is viewed as the basic unit of cultural consciousness.

For Vygotsky, the process of conscious awareness is not linked with a similar concept developed within psychoanalysis. It does not assume the existence of a different mental structure. Instead, it is assumed to be associated with the emergence of a different object of consciousness. Conscious awareness is a process whose object is the action of consciousness itself. Accordingly, Vygotsky distinguishes conscious actions, which refer to various objects, from the act of conscious awareness, which is a kind of intellectual insight, the object of which is the very "action" of consciousness. This special process of introspection, or gaining insight, concerns a given higher mental function; hence, the only possibility of representing its object is through generalization:

"... the transition to verbal introspection means merely that inner mental forms of activity start being generalized" (Vygotsky, 1934/1962, p. 220).

and

"By generalizing my own activity process, I gain the possibility of developing a different attitude towards the process. Stated simply, I am dealing as if with a separation of that process from the general activity of consciousness" (Vygotsky, 1934/1962, p. 220).

Setting the process apart from its background allows it to be subordinated to will, i.e. it permits the mastery of a given activity of consciousness. The relations between the three processes vary depending on the level of generalization, on a given structure of word meaning, that determines the scope of possible operations. Thus, the structure of word meaning regulates the possibility of conscious awareness of inner mental processes as well as the degree to which they can be controlled. Word mean-

⁵ The term *conscious awareness* is an English translation of Russian notion *ини çiriçe* that is related to *ини çiriçl* meaning consciousness and also relates to *çiriçl* which means both knowledge and science. Therefore, the Russian term denotes a process of self-knowledge or self-reflection which is closer to the notion of subject than in the English version and this is the problem the English reader should be aware of (cf. Vygotsky, 1987-1999, vol. 1, p. 388, Footnote 12).

ing gradability implies that consciousness itself is gradable as well. Consequently, the meaning of a new developmental formation may be extended, whereby the formation may be said to be a prerequisite for dividing consciousness development into stages and that we are dealing with a different form of consciousness on each of the occasions. New developmental formation is indeed a new type of consciousness structure. It is not merely associated with the emergence of a dominant function, it is primarily a new functional whole.

It follows from the above discussion that the zone of proximal development is associated with the process of conscious awareness, i.e. of generalizing internal content to the degree that is allowed by the developmental level of the word meaning structure. The possibility of imitating before understanding (see above), results from the properties of generalization. The actual level of development is linked with a specified level of generalization that is available to introspection, whereas the nearest future of meaning development concerns a higher-order generalization that allows the mastery of lower-order content by isolating it. Thus, there exists a representation of reality which permits acting in a specified area, but as there is no higher-order generalization through which the representation could be perceived, its action remains beyond the reaches of individual possibilities of conscious awareness.

Intellectual foundations of the development of written speech

Pondering on the appropriate place for teaching written speech on the overall map of the child's cultural development, Vygotsky states the following:

“The experience of kindergartens shows that they are the right place to start teaching reading and writing.” (Vygotsky, 1931/1971, p. 529)

Hence the preschool age is the optimal period for developing written speech. Why is the child the most sensitive to that specific type of social influence, i.e. to the teaching of that new function? To answer that question, a description of written speech must first be provided. The description will allow us to establish which intellectual abilities are required of the child for the use of written speech.

The structure and function of written speech

From the point of view of linguistics (Polański, 1995, p. 243) the structure of written speech is not substantially different from the structure of oral speech. In both cases, the structure of the utterance is subject to the same combinatory laws pertaining to a given linguistic structure. By contrast, written speech viewed as a higher mental function is materially different from oral speech. Vygotsky reduces the basic differences to just two processes: conscious awareness and mastery:

“The child acquires the signs of written speech and their usage consciously and wilfully, as opposed to the unconscious acquisition and use of speech phonics.” (Vygotsky, 1934/1962, p. 231).

The psychological structure of written speech is based on the process of conscious awareness of the structure of oral speech. It is a manifestation of abstracting

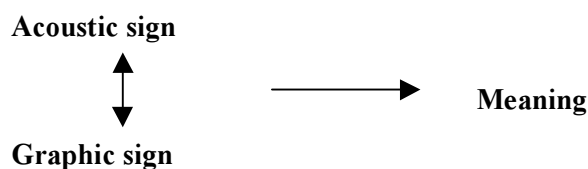


Figure 1. The separation of word meaning through the introduction of written speech signs (compiled by R.D.)

away from the actual dialogue situation, i.e. from the acoustic sign, and is largely “speech in thought” (Vygotsky, 1934/1962, p. 226). Thus, written speech is based on operations performed upon internal symbolic representation. Hence, it requires a well-developed system of relationships between concepts, i.e. a well formed *systemic dimension* of word meaning. The development of an internal representation of reality is based on an earlier stage in speech development, which is the appropriate level for developing oral speech. The “appropriate level” is reached when there emerges a well-developed object representation, within which reality is subjected to specific word meanings, whereby there is a specific object image, or – more specifically – a set of the specific features of the object being represented, “hidden” beneath each word. Signs get linked up with their designates in a natural manner.

The arbitrariness of the sign, which guarantees that it can be used at will, is still an unattainable concept at that stage. By introducing a different type of sign, written speech opens up possibilities of separating word meaning. In other words, the discovery of the arbitrariness of the sign results in conscious awareness of its meaning and separating that meaning (see. Fig. 1.).

Abstracting away from the actual dialogue situation opens up a possibility of using word meaning in various ways, when the goal of a given “utterance”, its recipient and intention must be stored in memory. Mastering written speech results in broadening the scope for inner intellectual activity. New meaning structures do not emerge based merely on a specific object representation. Instead, they emerge gradually as a result of operations performed on signs. The operations are determined by the laws of the linguistic system, the organization of which is helpful in ordering the structure of the child’s intellectual activities. Thinking is gradually liberated from the constraints of a specific situation and promoted to the level of empirical analysis, which is available within a higher, preconceptual structure of consciousness.

Factors determining the optimal period for the development of written speech

A sufficient maturity of thinking, defined by the structural framework of word meaning is the basic factor that allows written speech to develop. The biological factor is disregarded in the present article, as the discussion of that factor remains beyond the scope of the analysis. The presentation of the social factor will be restricted to the bare minimum that is necessary for preserving the coherence of the

present line of reasoning. Clearly, the overall consciousness development results from the interaction of all those factors (Brzezińska, 2000, pp. 109-113). However, this does not preclude discussing selected aspects of just one of the factors, to which the next section is devoted.

The structure of the unit of verbal thinking in the preschool age

At the preschool age, memory is the dominant mental function. This means that it is the function that changes under the influence of the intellectualization process, transforming from involuntary into voluntary memory. Changes in consciousness, centred around that transformation, occur because:

“... in every period, a central new developmental formation can be found. The formation as if guides the whole process of development and characterizes the child’s personality, which is now remodelled on a new basis. Around the basic or central new developmental formation there are groupings of all the partial new developmental formations which concern separate aspects of the child’s personality as well as those developmental processes that are connected with new developmental formations generated in earlier periods” (Vygotsky, 1934/1962, p. 259).

Thus, the memory function, which predominates at the preschool age, determines the dynamics and direction of the development of all other functions. Underlying this function is a complexive generalization structure⁶. The principal dimensions of the structure of complexive generalization apply to all stages in meaning development. The structure will be discussed briefly below.

Generalization can be analyzed in terms of three basic dimensions (Czub, 1998), i.e. objective, systemic and subjective.

- The objective dimension is defined by a certain principle of matching designates with a general category. The principles vary for each level of cultural consciousness development. In the period under study, object matching occurs as a result of objectively established similarity between objects. The set of object representations which consequently emerges determines the objective dimension of word meaning at the preschool age. Children of that age develop symbolic representations based on image properties of objects, the characteristic feature of which is the excessive number of relations between the objects constituting a general category.
- The systemic dimension is based on relationships between generalizations which take the form of generality relations, relations between a general concept⁷ and a specific concept. Generality relations are founded on the principle of concept equivalence. As Vygotsky put it, the principle determines the possibilities of moving along the trajectory of generality relations, thus permitting reality representation to be extended without recourse to object match-

⁶ The term *complexive structure* replaces here the notion *thinking in complexes* and the change has been accepted in the English translation of *The collected works of L. S. Vygotsky* (see References).

⁷ Vygotsky uses the terms *concept*, *meaning* and *generalization* interchangeably. Within the framework of the theory discussed in the present article the terms should thus be treated as synonyms.

ing. However, this is only possible on the last level of concept development. The development of the systemic dimension during the period under study is effected via the objective dimension, since the referent object must be called upon first in order to establish relations between concepts.

- The subjective dimension is linked with the concept of conscious awareness, i.e. with the possibility of generalizing existing representations. Conscious awareness is an act of generalizing one's own earlier generalizations. The act results in the mastery of the content that is generalized owing to its separation from the background of other content. In the developmental period under study, the act of generalizing one's own concepts only concerns the objective dimension, i.e. object image.

Thus, word meaning should be approached as a whole which comprises representation of a given fragment of reality, relationships between concepts and an intellectual act.

The child of preschool age can easily use objects, and that not merely through simple practical handling but also on an imagined plane, i.e. on the plane of object representation, which corresponds to word meaning at this level of development. Thus, s/he can perform operations on the object not just through its physical properties, but mainly through the meaning that the object has for the child. This opens up the sense field, mentioned by Vygotsky, i.e. the scope of personal meanings of the object. Because the sense field is connected with the image – related word meaning, the field of imagination consequently opens up for the child. Hence, stating that the child thinks with word images, i.e. makes comparisons, distinctions and inferences using entire complexes or sets of detailed images, also means that s/he performs operations on word meanings, that is on images themselves. However, owing to such operations, these are mainly performed in the course of pretend play, i.e. in an imagined situation,

“... the child operates on detached meanings, yet in a real situation” (Vygotski, 1933/1995, p. 81),

which permits the child to *function independently of the actual situation*, as the activity undertaken results from an intellectually developed action principle and then transferring it onto the plane of its actual realization.

The independence of the actual situation is a prerequisite for developing the written speech function, as the structure of that function requires maintaining a highly complex inner plan in the child's mind. The inner plan assumes the potential existence of the systemic dimension of word meaning, which also allows it to be incorporated in a higher structure later, i.e. it allows it to become conscious (conscious awareness). The possibility of performing operations on meaning in abstraction from a given object (which can be constituted by a single object, but also by a sequence of events, a specific activity, someone's emotional reaction, etc.) provides the foundations for teaching written speech, the structure of which requires conscious meaning recognition and the manipulation of meaning independently of objects, real situations and other people. Thus, spontaneity and involuntariness in activities of a specified kind precede their voluntary functioning of which the individual becomes conscious (e.g. Vygotsky, 1934/1982, p. 259).

Figure 2. Intellectual foundation of the development of written speech (compiled by R.D.)

Conclusion

The intellectual origins of the development of written speech are based on an objective dimension of word meaning, allowing the development of mainly the systemic dimension and, to a lesser extent, the subjective dimension (see Fig. 2.).

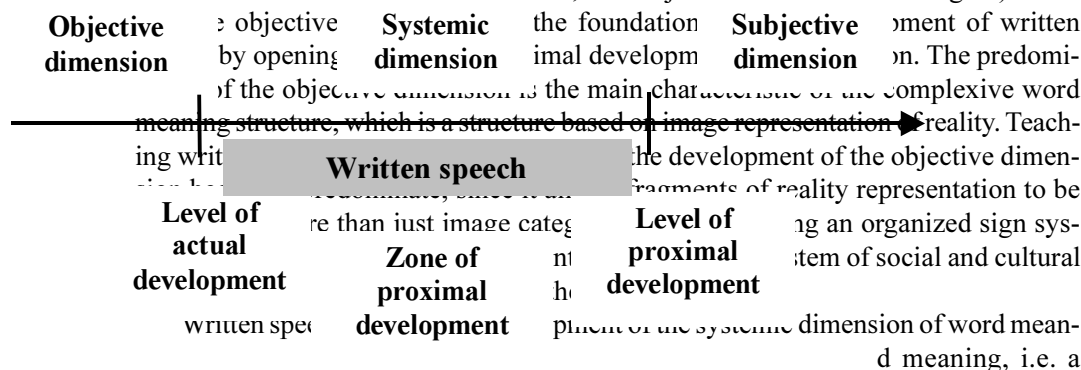


Fig. 2. Intellectual foundations of the development of written speech
(compiled by RD)

primary school student. Also, it serves to delineate civilizational borders between primitive and developed societies.

“When children learn to read, there is a major alternation in the entire form of thinking, and in the relationship of language to thinking. These developmental changes in the relationship may be observed on both a sociohistorical level and on an ontogenetic level” (Gallimore & Tharp, 1990, p. 193).

The subjective dimension of word meaning is associated with the act of conscious awareness of the linguistic sign, whereby the spoken word is isolated through mastery of the written word. As mentioned above, the act of conscious awareness

concerns generalizing the individual's own intellectual operations, since one must first possess something in order to become conscious of it (Vygotsky, 1934/1989, p. 248). Using oral speech, the child had an ownership of words, but s/he could not present this fact in his/her consciousness. After learning written speech, s/he becomes conscious of words and relationships between them. Because they become a part of consciousness, they also become subject to control and will:

“... in terms of its constituent functions, written speech is a different process from oral speech. It is the algebra of speech, the most difficult and the most complex form of intentional and conscious linguistic activity” (Vygotsky, 1934/1962, p. 248).

Thus, the structure of the basic unit of consciousness determines the foundation of the development of written speech, the developmental effects of which produce changes in the structure of the basic unit of consciousness at the next stage of development. The conversion of causes into effects is an expression of the dialectic principle of cultural consciousness development. According to Vygotsky, it applies to the development of every higher mental function.

(translated from Polish by Piotr Kwieciński and Rafał Dziurla)

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⁸ Wygotski = Polish transliteration of Vygotsky's name.

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