Thoughts and Language. By L. S. Vygotsky. Edited and translated by Eugenia Hanfamann and Gertrude Vakar. Cambridge, Massachusetts: The M.I.T. Press, 1962. Pp. xxi, 168.

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Vygotsky in his *Thought and Language* confronts his readers with an evolutionary or phylogenetic theory. He proposes that speech and thought are independent, at least ontogenetically, having 'different genetic roots,' up to the point where the two meet and their interfunctional relations result in thought becoming verbal and speech rational. He asserts that as long as one cannot understand the interrelation of thought and word, one cannot answer any of the more specific questions in this area. Throughout the book he treats the mutual relations of thought and speech and the factors leading to convergence and divergence between them.

Vygotsky views the relation between language and thought in the perspective of theories of the phylogeny of intellectual development with particularly detailed attention given to the earlier work of Koehler and Yerkes. Bruner (1962) in his introduction to the 1962 MIT translation states that Vygotsky's position is 'very much in accord with the more modern work of physical anthropologists who have speculated on the use of the hand 'pebble tools' in shaping the evolution of *Australopithecus* and other hominids.'

Vygotsky points out flaws in William Stern's 'personalistic-genetic' theory. He says that Stern's basic flaw is his logical explanation of intentionality (i.e., in substituting an intellectualistic explanation for the genetic one). Since it is one of the roots of speech development, it then calls for a genetic explanation (i.e., how it came about in the evolutionary process). Because of Stern's personalistic frame of reference (i.e., sees language as rooted in personal teleology), Vygotsky argues the intentional tendency appears out of nowhere, it has no history, no derivation—the child suddenly discovers that speech has meanings. He points out that thought has a different genetic root from language by citing Koehler's and Buehler's experiments on chimpanzees and children which confirmed the independence of the rudimentary intellectual reactions from speech like rudimentary grasping and pointing among animals—the precursors of the child's first pointing or naming words.

The child's babbling, crying, even his first words, Vygotsky stated, are quite clearly stages of speech development that have nothing to do with the development of thinking and therefore are the pre-intellectual roots of speech development that have nothing to do with the development of thinking and therefore are the pre-intellectual roots of speech in a child's development. He sums up his conclusions as follows (1962:41):

'1. Thought and speech have different genetic roots.

'2. The two functions develop along different lines and independently of each other.

'3. There is no clear-cut and constant correlation between them.

'4. Anthropoids display an intellect somewhat like man's *in certain respects* (the embryonic use of tools) and a language somewhat like man's *in totally different respects* (the phonetic aspect of their speech, its release function, the beginnings of a social function).

'5. The close correspondence between thought and speech characteristic of man is absent in anthropoids.

'6. In the phylogeny of thought and speech, a prelinguistic phase in the development of thought and a preintellectual phase in the development of speech are clearly discernible.'

The most fascinating and novel sections of *Thought and Language* are the sections which discuss the functions of speech, particularly *inner speech.* While disagreeing with Watson's thesis, that the children's speech organization passes from overt to whispered and then to inner speech, Vygotsky believed him right that an intermediate link between overt and inner speech must be found.

This link, he believes, is the child's egocentric speech as described by Piaget (1932). Vygotsky attempts to disprove Piaget's contention of a negative relationship between egocentric and socialized speech through various experiments in which the opportunity for social intercourse was lessened, for example, through the placement of a normal child with a group of deaf youngsters. Under such conditions, where according to Vygotsky's interpretation of Piaget's views, egocentric speech should have increased, there was rather a marked decrease of egocentric speech. It seems, however, that Vygotsky misconstrued Piaget's concept of 'egocentrism' to mean a social behavior. Piaget says of 'egocentrism' (1962:3–4):

> 'I have used the term egocentrism to designate the initial inability to decenter, to shift the given cognitive perspective (*manque de decentration*). It might have been better to say simply 'centrism' but since the initial centering of perspective is always relative to one's own position and action, I said 'egocentrism' and point out that the unconscious egocentrism of thought to which I referred was quite unrelated to the common meaning of the term, hypertrophy of the consciousness of self. Cognitive egocentrism, as I have tried to make clear stems from a lack of differentiation between one's own point of view and the other possible ones, and not at all from an individualistism that precedes relations with others.'

If Piaget's 'egocentrism' then refers to an early stage of socialization one then would expect exactly the findings obtained by Vygotsky: with a decrease in opportunities for socialized behavior, there would be a decrease in the kind of socialized speech that is characteristic of the young child's egocentric 'socialized' speech.

Vygotsky charges further Piaget with having considered egocentric speech in purely negative terms, i.e., as a persistence of autistic features and as a failure to attain full socialization; with an increase in socialized speech, egocentric speech progressively disappears. Vygotsky challenges this thesis and maintains that egocentric speech, rather than disappearing in the course of ontogenesis, becomes transformed into inner speech.

The basic argument that Vygotsky presents is the importance of the role of egocentric speech in the activity of a child which in Piaget's hypothesis does not fulfill any realistically useful function in the child's behavior and simply disappears as the child approaches school age (or as socialized speech becomes increasingly prevalent).

Vygotsky and his collaborators, in an experiment where he added a series of frustrations and difficulties to children's activities, notes that in these difficult situations, the coefficient of egocentric speech almost doubled in comparison to Piaget's normal figure. In the same activities without impediments, the coefficient of egocentric talk was even

slightly lower than Piaget's. This proves that a disruption in the smooth flow of activity is an important stimulus for egocentric speech. Besides being a means of expression and of release of tension, egocentric speech soon becomes an instrument of thought in the proper sense–in seeking and planning the solution of a problem. Experiments showed highly complex changes in the interrelation of activity and egocentric talk, the latter takes a directing, planning function and raising the child's acts to the level of purposive behavior.

Contrary to Piaget's hypothesis that egocentric speech disappears during the onset of socialized speech, Vygotsky contends that data obtained strongly suggest the hypothesis that egocentric speech is a transitional stage in the evolution from vocal to inner speech. Proof of this is that when the older children in their experiments were faced with similar problem situations, they examined the situation in silence before giving a solution, but when asked what they were thinking about they gave answers quite close to the thinkaloud of the preschooler.

The similarities between the inner speech of adults, 'his thinking for himself', rather than social adaptation, and the child's egocentric speech leads Vygotsky (1962:18) and his collaborators to assume that when egocentric speech disappears from view it does not simply atrophy but 'goes underground' i.e., it turns into inner speech.

Vygotsky says that to Piaget the development of thought is a story of the gradual socialization of deeply intimate, personal, autistic mental states. Vygotsky proposes a contrary hypothesis (1962:19–20):

> 'The primary function of speech, in both children and adults is communication, social contact. The earliest speech of the child is therefore essentially social. At first it is global and multifunctional; later its functions become differentiated. At a certain age the social speech of the child is quite sharply divided into egocentric and communicative speech. . . . (From our point of view, the two forms are both social, though their functions differ). Egocentric speech emerges when the child transfers social, collaborative forms of behavior to the sphere of inner-personal psychic functions . . . Egocentric speech, splintered off from general social speech, in time leads to inner speech, which serves both autistic and logical thinking . . . Thus our schema of development–first social, then egocentric, then inner speech–contrasts both with traditional behaviorist schema–vocal speech, whisper, inner speech–and with Piaget's sequence–from non-verbal autistic thought through egocentric thought and speech to socialized speech and logical thinking.

The direction then of the development of thinking for Vygotsky is not from individual to the socialized but from the social to the individual.

One can hardly argue with Vygotsky concerning the central role of inner speech in the embodiment and articulation of thoughts and in the planning of action. In carrying out the specific functions of thinking and planning, there are three positive features of inner speech: (1) *Silence,* representation occurs without audible articulation. (2) *Condensation,* a plurality of meanings becomes embodied in one or a few forms and syntactic rules are 'disregarded,' and (3) *sense domination,* lexical values of words are subordinated to ideas aroused by words and to the interactions and multiform relations sustained by these ideas (i.e., domination of *signification* by *sense* or *denotation* by *connotation* in inner speech).

It is this characteristic of inner speech, that is the domination of sense over strict, circumscribed meaning, that enables one to understand how language can be a formative instrumentality in the shaping of the world to objects and in the guiding of behavior.

Vygotsky concludes that inner speech develops through a slow accumulation of functional and structural changes, that it branches off from the child's external speech simul-

taneously with the differentiation of the social and the egocentric functions of speech and finally that the speech structures mastered by the child become the basic structures of his thinking.

Thought development, therefore, is determined by language. i.e., by the linguistic tools of thought and by the socio-cultural experience of the child.

With the development of inner speech and of verbal thought therefore, the later stage is not a simple continuation of the earlier. The nature of the development itself changes from biological to socio-historical. Verbal thought is not an innate, natural form of behavior but is determined by a historical-cultural process and has specific properties and laws that cannot be found in the natural forms of thought and speech.

The problem of thought and language thus extends beyond the limits of natural science and becomes the focal problem of historical human psychology, i.e., of social psychology.

One of the two themes that pervades Vygotsky's *Thought and Language* then is the increasing use of speech for mediation of behavior even when the child is alone. This implies that language is an important device for social control so that socialization occurs not only in speech but through it in language mediated behavior as well.

The other theme that pervades his work, is that rational language consists of symbols (or words) for conceptual categories. Luria, Vygosky's number one disciple, probably expresses this function of the word in more concise language (1959B:12–13):

> 'The word has a basic function not only because it indicates a corresponding object in the external world, but also because it abstracts, isolates the necessary signal, generalizes perceived signals and relates them to certain categories; it is this systematization of direct experience that makes the role of the word in the formation of mental processes so exceptionally important . . . . The word, hanging on the experience of generations as this is incorporated in language, locks a complex system of connections in the child's cortex and becomes a tremendous tool, introducing forms of analysis and synthesis into the child's perception which he would be unable to develop by himself . . . This reorganization of perception–this transference of human consciousness from the stage of direct sensory experience to the stage of generalized, rational understanding–by no means exhausts the influence of the word in the formation of mental processes.'

To Vygotsky, the primary function of speech which is communication is not possible if language were studied through analysis of elements and dissociated from its intellectual function–that understanding between minds is impossible without some mediating expression. All the higher psychic functions he said are mediated processes, and signs are the basic means used to master and direct them. The mediating sign is incorporated in their structure as an indispensable, indeed the central part of the total process. In concept formation, that sign is the *word,* which at first plays the role of means in forming a concept and later becomes its symbol.

According to Bruner, Vygotsky's mediational point of view is what makes his work represent still another step forward in the growing effort to understand cognitive processes.

According to Carroll (1964:98)

> 'The important role of verbal mediators in behavior is so well attested that it can hardly be denied. It supplies a ready explanation, too, for many otherwise incomprehensible changes in behavior as a child matures. In his early years, the child's responses to his environment tend to be direct–the outcome of *immediate* connections that have been learned between stimuli (or classes

> of stimuli, for stimulus generalization occurs very early) and responses, either by classical or by operant conditioning. As the child attains concepts which he can retain and respond to internally, he is able to respond to the environment in an indirect, less immediate manner.'

Among American psychologists the most comprehensive model of this mediation theory otherwise known as the two-stage model was developed by Osgood (Harper 1964).

Vygotsky summarizes the importance of the unit analysis as a tool for investigating the relation of verbal thought to consciousness as a whole (1962:8):

> 'It demonstrates the existence of a dynamic system of meaning in which the affective and the intellectual unite. It shows that every idea contains a transmitted affective attitude toward the bit of reality to which it refers. It further permits us to trace the path from a person's needs and impulses to the specific direction taken by his thoughts, and the reverse path from his thoughts to his behavior and activity.'

In studying concept development, Vygotsky was critical of traditional methods one of which elicits mere reproduction of verbal knowledge and the other which is concerned with just the psychic processes leading to concept formation disregarding the role played by the symbol (the word). He favors the combination of both—the word and the perceptual material. His method focuses on the functional conditions of concept formation.

As a solution then to the first two methods mentioned above, he devised his block sorting techniques which were also used by Hanfmann and Kasanin whose monograph on the study of schizophrenic thinking is a classic (Osgood 1953).

To study the process of concept formation, he and his collaborators used the 'method of double stimulation' worked out by L. S. Sakharov—which tests the object as well as the symbol. Two sets of stimuli are presented to the subject, one set as objects of his activity, the other as signs which can serve to organize that activity. In the course of using these techniques, he found experimental evidence that meanings of words undergo evolution from syncretic images and complexes, to abstract categories.

From a teacher's point of view, Vygotsky's remarks concerning the role played by the adult in the language acquisition of the child are the most valuable. It gave me an insight into how concepts are formed in a child's mind, not through the interplay of associations, but through an intellectual operation in which all the elementary mental functions participate in a specific combination; how concept formation develops from complex formation to the formation of 'potential concepts' based on singling out certain common attributes.

Educators would certainly profit from Vygotsky's and Piaget's distinction and understanding of *spontaneous* or everyday concepts (i.e., child's ideas of reality developed mainly through his own mental efforts) and *non-spontaneous* concepts (i.e., ideas decisively influenced by adults), which are commonly treated as the same concepts and thereby handled unsystematically in formal instruction.

Vygotsky censures Piaget for considering that child spontaneous thought must be known by educators only as 'an enemy that must be fought successfully.' He believes (1962:85), on the contrary, that the development of the two concepts are related and that they constantly influence each other.

Since instruction, he said, is one of the principal sources of the schoolchild's concepts and is also a powerful force in directing their evolution; then it determines the fate of his total mental development. If so, he said, the results of the psychological study of the

children's concepts can be applied to the problems of teaching in a manner very different from that envisioned by Piaget.

Piaget in his 'Comments,' however, stated, that (1962:9):

> 'On the contrary I insisted that formal education could gain a great deal, much more than ordinary methods do at present, from a systematic utilization of the child's spontaneous mental development instead of inhibiting it as it often does.'

Vygotsky was highly optimistic of the major role instruction and imitation can play in artificially speeding up the process of child development. He believes in orienting instruction toward the future not the past (1962:104):

> 'Therefore the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the ripening functions.'

Piaget however, did not agree fully with Vygotsky's belief that instruction can have a strong effect when the corresponding functions in the child have not yet fully matured (1962:11):

> 'The interaction is more complex than Vygotsky believes. In some cases, what is transmitted by instruction is well assimilated by the child because it represents in fact an extension of some spontaneous constructions of his own. In such cases, his development is accelerated. But in other cases, the gifts of instruction are presented too soon or too late, or in a manner that precludes assimilation because it does not fit in with the child's spontaneous constructions. Then the child's action is impeded or even deflected into barrenness, as so often happens in the teaching of the exact sciences.'

Piaget seems to imply by his statements, the limitations that instruction or education are subjected to. He proposes, however, that formal education could gain a great deal, much more than ordinary methods do at present, from a systematic utilization of the child's spontaneous mental development—that schools endeavor to create situations that, while not 'spontaneous' in themselves, evoke spontaneous elaboration on the part of the child, if one manages both to spark his interest and to present the problem in such a way that it corresponds to the structures he had already formed himself.

In retrospect, it seems that contrary to Vygotsky's criticisms in his book against Piaget's ideas on child development (except for some misinterpretations on the part of the former on some of Piaget's terminology), they are generally in agreement regarding basic concepts about egocentric speech, inner speech, concept formation, role of instruction and ontogenesis. However, while Vygotsky shows great faith in the role of the adult, or of instruction in the development of the child, Piaget was more skeptical.

Vygotsky's contribution to psychology, primarily based on *Thought and Language*, is best seen in Bruner's summing up of the man and his work in his introduction (1962: ix–x):

> 'Vygotsky has indeed introduced an historical perspective into the understanding of how thought develops, and indeed what thought is. But what is interesting is that he has also proposed a mechanism whereby one becomes free of one's history. It is to Vygotsky that Soviet psychologists turn in examining the manner in which man fights free from the dominance of stimulus-response conditioning of the classical Pavlovian type. Vygotsky is the architect of the Second Signal System, proposed by Pavlov in reaction against the excessive rigidity of his earlier theories. It is the Second Signal System that provides the means whereby man creates a mediator between himself and the world of physical stimulation so that he can react in terms of his own symbolic conception of reality.'

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CORRECTIONS

Below are corrections to be made in recent issues of *TESOL Quarterly*:

VOLUME II, NUMBER 1 (March 1968), page 44, last line, first column. Replace *not* with *now*.

VOLUME II, NUMBER 2 (June 1968), page 109, first column. In the quotation from Albert H. Marchwardt, *Studies in Languages and Linguistics*, line 5 should read: ". . . academic life he had had three or four. . ."

VOLUME II, NUMBER 2 (June 1968), page 109, second column. In the quotation from Charles C. Fries, *American English Grammar*, the sentence beginning on line 8 should become two sentences and read: "We assume, therefore, that there can be no 'correctness' apart from usage and that the *true* forms of 'standard' English are those that are actually used in that particular dialect. Deviations from these usages are 'incorrect' only when used in the dialect to which they do not belong."

VOLUME II, NUMBER 2 (June 1968), page 110, second column. In the quotation from Charles C. Fries, "As We See It," delete from the last sentence the word *rather*.