

Vygotsky's "Thought" in Linguistic Meaning

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Abstract Central to Vygotsky's theory of language acquisition, the paper claims, is his complex notion of 'thought' straddling as it does mental events from pre-predicative thinking to the full social conceptuality of modern culture. In support of this reading the paper foregrounds two features in Vygotsky's theory, his social gradualism, characterized by his emphasis on historical cultural processes, and the prominence in his argument of mental resemblance relations in the development of the child's mastery of meaning. Vygotsky is shown to defend the position that there is an important link between nonverbal cognition and language, between perception and word. This, the paper argues, makes Vygotsky's enterprise compatible with a *semantics of imaginability*, a claim backed up by his observation that in language it is the imaginary apple rather than the real one that is decisive. As a *psychological system*, the imagination certainly plays a crucial role in one of Vygotsky's central concerns: concept formation from *syncretism* via endophasy towards mature conceptuality. The paper concludes with Vygotsky's view of linguistic meaning as *generalized reflection of reality* in contrast to definitional conceptions which sever the concept from its 'natural connections'.

Keywords: Nonverbal thought; ontogeny; phylogeny; social gradualism; concept formation; syncretism; endophasy; pseudoconcept; generalized reflection of reality; semantics of imaginability.

1. Introduction

Unlike the Fregean tradition up to hyperintensional semantics (Frege 1970 [1892]; Montague 1970; 1974; Duzi et al. 2010), which eliminated *imaginability* from sense as a remnant of a misleading *psychologism*, Vygotsky takes the opposite route by demonstrating the indispensable role *Vorstellung* plays in language learning. Unlike Wittgenstein (2005: §6), who accounts for *Vorstellung* only to liken its function to incidental tunes produced on the keyboard of the imagination, Vygotsky shows how verbal meaning emerges out of *imaginability*, in phylogenesis as in ontogenesis. And unlike the early Chomsky (1957), whose syntactic analysis takes meaning for granted, in Vygotsky grammar supervenes on meaning. At the centre of Vygotsky's language acquisition program is the umbrella notion of 'thought'.

'Thought' straddles a broad spectrum of human mental activity from pre-verbal thinking in hominids and children to full conceptuality in contemporary society. As such, 'thought' has a trajectory from nonverbal, mental realizations to verbal, semantic competence. In light of such a spectrum the paper asks 'What sort of theory of linguistic meaning can we derive from Vygotsky's genetic method of analysis?' In lieu of an answer to this question the paper will test this hypothesis. Vygotsky's theory of language acquisition allows for, though does not pursue, a solution to

Locke's paradox, that is, how to reconcile the hidden mental event of linguistic meaning with the public character of natural language. Such a reconciliation can be best achieved, I suggest, by a *semantics of imaginability*. To demonstrate this claim, I offer a critical, though necessarily selective, overview of Vygotsky's position, emphasizing *imaginability* and *resemblance relations*, Aristotle's *homoiomata*. I suggest that despite a number of grey areas in this respect, Vygotsky appears to me to have made a strong case for resemblance relations surviving in linguistic meaning at least in some minimal form. Otherwise his 'concept' would have to be taken as abstracted to ideality or formal emptiness, a reading that would seriously undermine Vygotsky's entire program. Given the limited space of this paper, I will not address the ongoing debates in the wake of Vygotsky's writings in psychology (ROTH AND LEE 2007; ROBBINS 2001; WERTSCH 1985; KOZULIN 1990; BAKHURST 1986) in education, (DAVYDOV 1995; Moll 1990), on Vygotsky's 'historical-dialectical monism' (LIU AND MATTHEWS 2005), or in activity theory and the theorization of cultural practices (SANNINO et al. 2009; COLE and GAJAMASCHKO 2009; ROTH AND LEE 2007). Instead, my focus will be strictly on the question of the transformation of nonverbal into verbal thought.

2. The social basis of language

For Vygotsky, our 'higher psychological functions', such as language competence, are fundamentally social. Their phylogenesis and ontogenesis are social in origin. Humans did not develop language as part of the evolution of their 'bio-type, but through the historical development as a social creature'. Collective human life is at the heart of Vygotsky's perspective on language, allowing for both 'working together' and 'individuation'(1987b: 192). In this picture, the dualism of nature versus nurture is eliminated by absorbing the former in the latter, such that inherited innateness is perfectly compatible with what is 'superorganic, conditioned, that is, social' (1987b: 154f.). Human culture *is* human nature. Far from being a 'natural form of behaviour', human thought is 'determined by a historical-cultural process'. As such, the relation between thinking and speaking is 'not a *prerequisite* for, but rather a product of, the historical development of human consciousness'. (1991: 210). Language is above all 'the social means of thought' (1991: 94). Importantly, Vygotsky's deeply anchored *social gradualism* distinguishes his work sharply from such other research paradigms as structuralism and analytical accounts.

So adamant is Vygotsky as to the social, evolutionary character of language that he distances himself also from Piaget's notion of 'socialized' speech, 'as though it had been something else before becoming social' (1991: 35). Instead, Vygotsky prefers the term *communicative*. When the child's communicative competence is impaired, as in the handicapped child, the inadequacy is explained by Vygotsky as an 'incongruence between his psychological structure and the structure of cultural forms' (1987b: 47). The child's 'intrapyschological' categories find it difficult to match their social, equivalent, 'interpsychological' structures (1987b: 11). This is so because a significant part of the child's evolving intrapsychological structure is 'the dependence of thought on affect' (1987b: 233). Hence Vygotsky regards the unity of affect and intellect as essential for the development of the 'dynamic reasoning system' and a 'cornerstone' in developmental research (1987b: 238f.). At the same time, he qualifies these observations by making the point that the 'dependence of thought on feeling' is not a one-sided affair. Nor, he says, are we dealing here with

‘an object’; rather, it is ‘a process’(1987b: 240). In the gradually inward movement, emotion ‘escapes peripheral control’(BRUNER 1987: 15).

Closely related to the relation of affect and thought is Vygotsky’s treatment of the will as one of the three fundamental problems his research, the other two being ‘the problem of thinking’ and ‘the problem of the *imagination*’ (1987a: 349; my italics). The will is ‘will to meaning’ in the sense that when a child’s associative mental scenarios are disrupted he or she is likely to change the imaginary world by ‘producing a meaningful rather than meaningless action’ and so accommodates and interpretively masters the disturbance (1987a: 356). Will as the will to meaning fails at both extremes of the spectrum of ‘maniacal excitement’ over ‘galloping ideas’ on the one hand and, on the other, ‘obsessive ideas’ from which the individual cannot free herself (1987a: 312). The water shed on the way to full linguistic maturity is whether thought remains ‘a slave to the passions, their servant’ or whether thought develops to be ‘their master’(1987b: 239).

3. The nonverbal ingredients of thought

When Vygotsky speaks of the heterogeneity of the ‘complex formation’ that is verbal thinking, this heterogeneity is to be sought partly in the character of language as a temporally unfolding sequence of expressions and partly in the sources from which language draws its ‘meaningful aspect’ (1987a: 320). Even if Vygotsky does not spell this out in full, the sources of ‘the concreteness of thought’ (1987b: 232) appear to involve such heterosemiotic readings of the world as olfactory, gustatory, tactile, visual and other nonverbal interpretations. This is most obvious in what Vygotsky calls the ‘pre-verbal growth’ of the ‘intellect’(1987a: 117). As language develops, it ‘involves the *filling* of what we say with meaning, the *extraction* of meaning from what we *see*, hear, and read’(1987a: 320; my italics). If sight, touch, smell and taste, as well as other perceptual modalities fill the arbitrary and so meaningless sounds of linguistic expressions, then *nonverbal thought* is pivotal to our description of how natural language works semantically and pragmatically. Following Vygotsky, we can neither say that thought can be identified with speech, as so many of our semantic theories do, nor that they are absolutely different from one another.

The presence of perception *in* language is highlighted by Vygotsky when he writes, ‘we can no longer separate the perception of the object as such from its meaning or sense’. Linguistic meaning results from a merging of nonverbal and verbal mental states. ‘It is here’, he says, ‘that the connection between perception and speech, the connection between perception and the word, arises’(1987a: 299f). If this is so, then the combination of perception and speech necessitates the *transformation* of the nonverbal into the verbal rather than the abandonment of the former. In other words, the nonverbal survives *in* the verbal. The question is in what form it can be argued to do so. Since perception itself cannot fulfil the role of meaning in language, we need to look at its mental transformation in and as *Vorstellung*, understood here as ‘mental modification of perception’(RUTHROF 2010a: 140). Though the ‘first form of intellectual activity’ in the child is ‘active, practical thinking’, this presupposes the very possibility of its generalizing transformation into an imagined world. Although ‘the child prefers the real apple to the imaginary one’, it is the imagined apple that will play the crucial role in linguistic meaning (VYGOTSKY 1987a: 63).

For Vygotsky, the imagination is ‘a psychological system’ anchored in the ‘unification of several functions in unique relationships’(1987a: 348). In particular, the ‘imagination is a necessary, integral aspect of realistic thinking’, so much so that ‘they two act as a unity’(1987a: 349). In this unity, it makes sense to think that language functions as an economizing matrix gradually imposed over nonverbal thought. Furthermore, the imagination is essential even for ordinary perception. ‘No accurate cognition of reality is possible’, observes Vygotsky, ‘without a certain element of imagination, a certain *flight* from the immediate, concrete, solitary impressions in which this reality is presented in the elementary act of consciousness’ (1987a: 349). This commits Vygotsky to a feed-back relation not only between perception, *Vorstellung* and conceptualization, Kant’s dialectic between *receptivity* and *spontaneity*, (CPR A50/B74) but also to the necessary interaction between *imaginability* and language. The former is an inextricable component of the latter, while language lends precision to *Vorstellung*. Vygotsky’s reasoning in favour of this interaction has considerable force: ‘A more profound penetration of reality’, he writes, ‘demands that consciousness attain a freer relationship to the elements of that reality, that consciousness depart from the external and apparent aspect of reality that is given directly in perception’(1987a: 349). What is important in the transformation of perception into *Vorstellung* and its so modified role in language is what Vygotsky calls the ‘perseveration of representation’, the tendency to follow the momentum of a once chosen sequence of *Vorstellungen* (1987a: 311f.). This tendency has the double effect of continuity and *directionality*. It is the latter that language has inherited from its semiotic precursor systems, and it is the goal directedness of our mental representations that make them productive rather than merely reproductive. As Vygotsky says, they are ‘goal determined’(1987a: 124). Pointing preceded speaking by a long shot; it reappears in language as its ‘indicative’ function.

4. The heterogeneity of the verbal

If ‘verbal thinking is a complex formation that is heterogeneous in nature’ (1987a: 320), and nonverbal thought emerges from a variety of heterosemiotic systems, then it should not come as a surprise that, as Vygotsky notes in ‘The Genetic Roots of Thought and Speech’, ‘progress in thought and progress in speech are not parallel’. Rather, both in phylogeny and ontogeny ‘their two growth curves cross and recross’ (1991: 68). Gradually, and as a result of this asymmetrical dialectic between the nonverbal and the verbal, ‘thought does not merely find expression in speech; it finds its *reality* and *form*’ (219; my italics). Both ‘reality’ and ‘form’ emphasize the public nature of language in the shape of linguistic *signifiers*. Yet ‘form’ also points us to the idea of ‘conceptual regulation’ which, though mental, also partakes of ‘publicness’, but in a different sense, a point to be taken up again towards the end of the paper.

Highlighting the heterogeneity of the verbal, Vygotsky argues that in language, ‘the semantic and phonetic developmental processes are essentially one, precisely because of their opposite directions’(1991: 220). This seemingly paradoxical statement alerts us to what one could call the *double helix* of the interaction between the movement of word absorbing nonverbal materials and the movement from nonverbal ‘meaningful complex’ to words that takes place as one integrated process. In light of this dynamic complexity in the process of language acquisition, Vygotsky feels encouraged to write that ‘words cannot be put on by thought like a ready-made garment’(1991: 219). Of course, in *habitual* speech, this genetic complexity is

replaced by an almost automated and almost instantaneous process, such that the word indeed appears to be a 'ready-made garment' for thought. As I will argue later, it is the 'linguistic linkage compulsion' that makes it so.

Vygotsky's argument in favour of the heterogeneity of the verbal is supported also by obvious differences between *Vorstellung* and grammar. Psychologically, they are not homogeneous, 'there is no direct correspondence between grammatical form and the sense unity it expresses' (1987a: 322). In spite of this, Vygotsky never loses sight of the parallels between thought and speech. 'Not only subject and predicate, but their grammatical gender, case, tense, degree, etc., have their psychological doubles' (1991: 221). Verbal heterogeneity, together with its parallels in nonverbal thought, makes Vygotsky's theory an attractive explanatory option. Although thought and speech develop 'along separate lines', they merge 'at a certain point' (1991: 93). The same would probably hold true for phylogeny, except that there the time scale involved must be vastly different.

Notions such as the 'psychological double' of signifiers, '*the independent grammar of thought*', and the '*syntax of word meanings*' open the door not only to a *semantics of imaginability*, but also to the tempting idea of a nonverbal *protosyntax* as a precursor to rudimentary linguistic sequencing in the evolution of natural language. (RUTHROF 2010b: 163). This line of thinking also finds support in Vygotsky's remark that 'the seeds of future reflection – an understanding of justification, proof, and so on – are already contained in the most primitive of children's quarrels' (1987b: 197). Both ontogenetically and phylogenetically we could speak then of *protosyntactic* precursors of verbal reasoning. If gender, case, tense, subject, and predicate are 'mirrored' psychologically, they must exist in both verbal and nonverbal forms, even if we take the view that we cannot separate our nonverbal realizations from their verbal regulation. Certainly, such 'mirroring', if that is what is happening, cannot start from the verbal; there must already be a preverbal experience of something that can be formed into a subject, a predicate, and so on. Otherwise, ostensive teaching would not work. The child will recognize something as a candidate of a linguistic subject in a simple sentence only if she has already grasped that something as an individuated object. Verbal sequences supervene on perceptual order. The syntax of language, then, can be viewed as a refinement of a nonverbal *protosyntax*.

5. Concept formation from syncretism to external speech

Vygotsky's experiments have shown 'how the use of the word acts as a means of forming the concept, how from syncretic images and connections, complexive thinking, and potential concepts, there arises that unique signifying structure that we may call a concept in the true sense of the word' (1987a: 166). According to Vygotsky, concept formation in the child proceeds in three stages. Stage one is characterized by the 'syncretic image', a roughly fused heap of objects which are gradually ordered in terms of a 'kinship' by 'impressions' and spatial 'distributions' until they are reduced to 'a single meaning' (1987a: 135). At an early stage of the child's development, 'word meaning is an incompletely defined, unformed, syncretic coupling of separate objects' fused into a mental singularity. Syncretism in this sense is characterized by 'insufficiency of objective connections' which are gradually corroborated in social 'practice'. As such, the child's 'syncretic merging of images' corresponds to the adult speaker's full conceptual control (1987a: 134).

Stage two of concept formation opens with the creation of ‘family names’, an empirical ‘complex collection’, ‘chained complex’, and a ‘familial unification of things’, typically resolved in the end by a ‘pseudoconcept’(1987a: 136ff.). The function of the pseudoconcept is the linking of ‘complexive and conceptual thinking’(1987a: 145). This is possible because the complex already ‘contains the kernel of the future concept that is germinating within it’. (1987a: 146) The nonverbal core of the unified complex, one could say, reappears transformed in conceptual *schematization* (RUTHROF 2011a). Yet as a mere ‘shadow of the concept’, the pseudoconcept can do no more than reproduce ‘its contours’ (1987a: 144), an idea reminiscent of Kant’s description of schematization as general ‘delineation’ (CPR A141/B180; RUTHROF 2011a). Thus Vygotsky views the pseudoconcept, as a transitional phase on the way to the ‘stable and constant word meanings’ of the adult speaker. As such, it is part of the ‘development of generalizations’ under the guidance of pedagogy (1987a: 143). In this process the child is ‘not free to construct his own complexes’. They are ‘ready-made’, the child finding them ‘in completed form’ as it begins to understand ‘unfamiliar speech’. The ‘form of generalization’ at work in the pseudoconcept, however, differs from that operative in the ‘true concept’. A series of objects are ‘generalized by a given word’; the child ‘learns the developed speech of the adults around him’. As Vygotsky insists, ‘Everything is contained in this statement’(1987a: 144f.). Stage three, lastly, at the point of the ‘maturation of the word itself’(1987a: 241), is the attainment of actual concepts. Although Vygotsky privileges the ‘scientific concept’, in the form of the ‘social science concept’, from what he has to say of concept development, we can nonetheless glean the following (1987a: 239).

Amongst the kinds of concepts Vygotsky distinguishes, the ‘preconcept’ of pre-school age, the ‘pseudoconcept’, the ‘spontaneous concept’, the ‘scientific concept’, and the ‘everyday concept’, it is the everyday concepts in the domains of ‘social life’ that are the most relevant to the semantics of natural language. Unfortunately he does not say very much about them (1987a: 240f.). Nevertheless, his statements about scientific concepts permit a number of extrapolations relevant to ‘everyday concepts’. Concepts are treated as ‘word meanings’ (1987a: 167; MINNICK 1987: 24) which function differently within the domains of everyday life and scientific thinking and according to the ‘measure of generality’ as the place they occupy in a conceptual system and according to ‘concept equivalence’ or the way concepts relate to one another (1987a: 227). The former ‘determines the set of possible operations of thought available for a given concept’, whereas the latter determines the ‘paths of movement from one concept to the next’ (1987a: 228; 233). Scientific concepts are grasped within the coordinates of their respective paradigm of generality rather than by the order of perception and *Vorstellung*. Nevertheless, Vygotsky observes a feedback relation between scientific concepts and their everyday equivalents in that the practice of the former produces an increase in general conceptual ‘performance’. (1987a: 168). In spite of this relation, Vygotsky insists on the following ‘key difference in the psychological nature’ of the two: scientific concepts are always part of a system, while everyday concepts are not (1987a: 234). This, I think, is a grave error in Vygotsky’s picture of concepts, as it is in Saussure’s *Cours*. It is a mistake to assume that the perceptual world and its modification in the *Vorstellungswelt* should be *non-systemic*. Nothing is more unlikely. The world coheres for us, as it does for animals, as a nonverbal system in which heterosemiotic readings together produce an intersemiotic system of multiple coordinates. It is against the socially reinforced background of that system that language evolved in the first place and against which

the child, according to Vygotsky's own description, acquires her concepts. Scientific paradigm dependent concepts cannot be taken as the master key for understanding concepts in general. The concepts of chemistry in no way illustrate how the olfactory concept of the scent of a jasmine blossom emerges and functions, though both are *systemic* rather than random.

Like concept formation, language acquisition in the broader sense occurs in three stages, from *egocentric speech*, through *inner speech* to *external speech*. Egocentric speech in Vygotsky is 'a primitive method of children's thinking out loud in a difficult situation' (1987b: 195) and as such 'fulfils an intellectual function' (1987b: 194). As a first step in the development of inner speech and as the first 'autonomous speech function', egocentric speech gradually turns into 'inner speech'. (1987b: 196) Compared to external speech, inner speech, or '*endophasy*', for Vygotsky is a '*distinct plane of verbal thought*' (1991: 224; 248) which appears as truncated, 'a dynamic, shifting, unstable thing, fluttering between word and thought' (1991: 249). Other traits of inner speech include a 'tendency towards predication', concomitant with the frequent omission of the subject of the sentence, which is typically taken for granted (1991: 236). With a condensation towards predication also comes 'decreasing vocalization' to the degree that 'inner speech is speech almost without words' (1991: 244). As syntax and word sound recede, meaning as the 'influx of sense' comes to the fore, so much so that Vygotsky describes it as 'thinking in pure meanings' (1991: 247; 249). While in external speech 'thought is embedded in words', in inner speech 'words die as they bring forth thought' (1991: 249).

What makes Vygotsky's elaboration of the three stages both in concept formation and speech forms important for our hypothesis is that it makes it highly unlikely that nonverbal thought, so powerfully present throughout the evolution of language in childhood, should suddenly dissolve into empty abstractions at the end of the process. When Vygotsky speaks of the attainment of the 'true concept' of which the word is the bearer (1987a: 145) we need to know what sort and degree of abstraction has been achieved? I will return to this question towards the end of the paper.

6. Linguistic meaning

What then does Vygotsky's *meaning* consist of? The semantic realization of language occurs as a mental process of '*filling*' word sounds with 'the *extraction of meaning* from what we *see*, hear, and read' (1987a: 320; my italics). This crucial passage identifies in a nutshell the essential features of what turns an *arbitrary*, empty *signifier* into a *motivated signified*. According to Vygotsky, the non-semantic sound of words and their combination in syntactic strings are *semantically activated* by our nonverbal resources of sight, hearing and, we should add, all other perceptual modalities and their modifications in and by *Vorstellung*. This is why Vygotsky can say that 'a word devoid of thought is a dead thing' (1991: 255). The distinction between word and thought remains sharp throughout his work. Recalling the situation of having seen 'a barefoot boy in a blue shirt running down the street', Vygotsky says that he conceived of this 'in one thought, but I put it into separate words' (1991: 251). This justifies his controversial insistence on the word as 'the most elementary form of the unity between thought and word', which 'cannot be further analysed' (1991: 212; cf., e.g., ROTH AND LEE 2007; WERTSCH 1985: 198).

Because nonverbal thought remains an active component of meaning, speech comprehension depends on whether we are able to *imagine* a portion of a 'world' as

a result of hearing the sounds of linguistic expressions. Vice versa, in order to convey our thoughts, verbal and nonverbal, we must find linguistic expressions that guide our speech partners to *imagine* the sort of 'world' we want to project. But the relationship between thought and word is by no means straightforward. 'Neither the external-verbal nor the semiotic-meaningful aspect of speech appears suddenly in its final form' (1987a: 320). They do not 'move in parallel', nor is either a 'copy of the other' (1987a: 320). Rather, they 'are the reverse of one another' (1987a: 321). This suggests a dialectically dynamic, chiasmic structure of word and *Vorstellung*. Initially, Vygotsky observes an opposition between words and their heterosemiotic contents of tactile, visual, olfactory and other origins, which gradually approach one another, cross over and move apart in the opposite direction, with adult speech characterized as an oppositional association of abstracted thought and word sound. If 'the meaning of the word is a generalization' (1987a: 238) and the evolution of verbal meaning is a 'generalization' of previous generalizations' (1987a: 229), then once more the nature and degree of abstraction involved becomes an urgent issue to address, as does the relation between Vygotsky's dynamic conception of meaning and the assumption of its immutability in definitional semantics.

Like Peirce, Vygotsky emphasizes the evolving character of meaning. Ontogenetically, 'the meaning of the child's word develops' (1987a: 322). Much the same can be said from a phylogenetic perspective. In either case, semantic development is to be associated with 'the intellectualization of the mental functions' (1987a: 324). In opposition to describing linguistic meaning by way of 'definition', Vygotsky points us away from the inevitable infinite regress inherent in definitional approaches and towards the *heterosemiotic* ground that makes word sounds semantic. 'A major deficiency of the method of definition', Vygotsky notes, 'is that the concept is torn from its natural connections' (1987a: 123). This remark contains a profound critique of an entire paradigm of semantics. Definitions only work if we already have semantic mastery over a significant portion of their 'as-structure', which begs the very question of meaning. So we should jettison semantic explications via verbal substitutions and instead argue for links between word sounds and nonverbal mental scenarios. 'A word', he says, 'acquires its sense from the context in which it appears; in different contexts it changes its sense. Meaning remains stable throughout the changes of sense' (1991: 245). The 'stability' of meaning in Vygotsky's sense of 'meaning' as provided in the dictionary is of course not semantic at all. Only in a metaphorical sense can the dictionary meaning be called 'a stone in the edifice of sense' (1991: 245). After all, without the 'filling' of linguistic expressions by nonverbal, mental materials it is nothing but a syntactic relation between two sound sequences. To be sure, there remains a tension in Vygotsky's account between the emergence of 'the connection between thought and word' and its consolidation in the adult native speaker where we are dealing with '*stable and constant word meanings*' (1987a:143; my italics). On the one hand, we cannot assume any semantic immutability because 'word meanings *develop*' (1991: 212), and because 'new word meanings' facilitate 'new paths from thought to word' (1991: 251) and also because 'there is no rigid correspondence between the units of thought and speech' (1991: 249). On the other hand, at the end of the long process of language acquisition, Vygotsky stabilizes meaning as 'a generalized reflection of reality' semantically informing 'the basic character of words' (1991: 255). This leaves us with the following issues still to be clarified.

One is how precisely nonverbal materials can be generalized to suit linguistic meaning; the other, how nonverbal mental states can be aligned with public

discourse. When Vygotsky speaks of the generalization that nonverbal materials undergo in the process of intellectualization, this must not be understood as a process of formalization, which would mean the elimination of nonverbal content from language. Instead, ‘the verbal character of thought is inherent to both imagination and realistic thinking’ and ‘both imagination and realistic thinking are often characterized by a high degree of affect and emotion’ (1987a: 348). Nonetheless, what is missing in Vygotsky is an argument in favour of the *kind of schematization* that we must stipulate nonverbal mental materials undergo to fit the bill of intellectualized verbal thought which he sees as the end point of language acquisition in the child.

As to Vygotsky’s formulation of ‘Locke’s dilemma’, that ‘direct communication between minds is impossible’ and that ‘communication can be achieved only in a roundabout way’, this points to a pivotal disagreement in the struggle over semantics in linguistics and the philosophy of language (1991: 252). Because of the simultaneous external and internal mediation of thought by signs, Vygotsky cannot but commit himself to ‘study the inner workings of thought and speech, hidden from direct observation’ (1991: 252; 254). Yet it is precisely because of the hidden nature of thought that an entire tradition from Frege to this day has rejected the Lockean path of mental resemblance relations and instead opted for externalist explanations. In opposition to semantic externalism and in support of Vygotsky’s position, a solution to Locke’s paradox can be found in an argument for the *indirectly public* nature of linguistic meaning. Accordingly, native speakers can be defined as persons that have been trained to activate *Vorstellung* within the strict constraints of the speech community under the rules of *sufficient semiosis* (RUTHROF 1997: 48f.) and the *linguistic linkage compulsion* (RUTHROF 2011c: 168). This allows us to argue the reconciliation of public signifiers with indirectly public signifiers in the social production of meaning without either having to defend semantic privacy or opt for an untenable externalism.

The non-reductive transformation of thought into its abstracted verbal form is implicated also when Vygotsky speaks of the ‘plane’ of ‘thought itself’ as the ‘last step in our analysis’ (1991: 249; 252). It is at this point that such diametrically opposed research enterprises as Vygotsky’s and Donald Davidson’s all of a sudden appear to meet one another. Toward the end of his career, Davidson surprises his readers by saying that ‘truth thus rests in the end on belief and, even more ultimately, on the *affective attitudes*’ (2005: 75; my italics). Similarly, towards the end of *Thought and Language*, Vygotsky writes that thought cannot be separated out from our ‘desires and needs, our interests and emotions’ since ‘behind every thought there is an *affective-volitional tendency*, which holds the answer to the last “why” in the analysis of thinking’ (1991: 252; my italics). Without grasping the affective motivation underlying the words of speakers we cannot fully understand their speech.

7. Conclusion

In spite of Vygotsky’s focus on the acquisition of language in childhood, the paper has gleaned from his *Collected Works* what appear to be essential features of linguistic meaning in the adult native speaker. I sum these up as follows.

- Linguistic meaning is a generalized nonverbal complex in the unification of thought and word sound.

- Thought consists of nonverbal materials and their abstraction in language.
- The combination of thought and word takes place in the minds of the speakers of a natural language.
- This mental event occurs under the guidance of the speech community and so is fundamentally social.
- Nonverbal materials include perceptual contents and their productive modifications in and as *Vorstellung*.
- Given their heterogeneous sources, such mental contents are *heterosemiotic*.
- As such they are homogenized into general concepts in linguistic meanings.
- In linguistic meaning, the initial dominance of nonverbal thought over words is reversed such that generalized verbal meanings govern those contents.

By offering ‘an ontogenetic progression from “unorganized heaps” to “complexes” and then to “concepts” on the basis of block-sorting’ (WERTSCH 1985: 100), Vygotsky leaves the door open to a *semantics of imaginability*. From such a perspective I propose the following amendments to Vygotsky’s theorization. Generalization cannot be formal. If it were, then we would have lost the very content he insists is essential to meaning. Nor can it be ideal in the way the early Husserl argued, since ideality can be demonstrated only by recourse to formal relations. Generalization, then, seems to be best conceived as a *schematization* on a scale from the rich retention of mental, iconic materials to their minimal resemblance, without however ever completely losing all traces of quasi-perceptual content.

Vygotsky’s concept as a socially guided, abstracting, regulatory mechanism and its result answers the questions of what is so regulated: nonverbal mental states, comprising olfactory, gustatory, tactile, aural, visual and other perceptual readings and their modifications in *Vorstellung*. He does not however specify how the concept accomplishes its regulatory task. I suggest that conceptual regulation is a process of ordering mental iconic materials in terms of *directionality, quality, quantity, and degree of schematization*. Given this kind of specification of the concept and in light of Vygotsky’s position on the role of nonverbal thought and its transformation in linguistic meaning, I suggest that my initial hypothesis concerning the compatibility of Vygotsky’s enterprise with a *semantics of imaginability* appears to be confirmed to a significant degree. Accordingly, his theorisation should be commensurate with the description of linguistic meaning as ‘the activation under the control of the speech community of arbitrary word sounds, or signifiers, by motivated signifieds made up of nonverbal, iconic, mental materials regulated as quasi-perceptual abstractions by concepts according to directionality, quality, quantity, and degree of schematization’. If so, natural language can be conceived as ‘a set of social instructions for *imagining*, and acting in, a world’.

This, at the same time, entails a solution to Locke’s paradox which Vygotsky has inherited, namely of how to reconcile hidden mental states and public speech. As native speakers, we have been trained to associate *Vorstellung* and word sound in a precise fashion according to the *linguistic linkage compulsion*. At the moment of comprehension of a word sound our mental states are not in free play but appear automated according to rigorous social standards. In addition, linguistic meaning occurs under the broader pedagogic umbrella of *sufficient semiosis*, which includes the phonetic, grammatical, generic, idiomatic and modal constraints that the speech community has evolved to secure effective communication. In *habitual* speech these

constraints are rigid, in the *interpretive* use of language they flex according to occasion and need. As a component of linguistic meaning, Vygotsky's abstracted, nonverbal thought, then, can be regarded as *indirectly public*.

Bibliography.

BAKHURST, David J. (1986) *Thought, Speech and the Genesis of Meaning*, in *Studies in Soviet Thought* 31, 2, pp. 103-129.

BRUNER, Jerome (1987) *Prologue to the English Edition*, in R.W. Rieber and A.S. Carton (eds.) *The Collected Works of L.S. Vygotsky*, New York, Plenum, pp. 1-16.

CHOMSKY, Noam (1957) *Syntactic Structures*, The Hague, Mouton.

COLE, M. and N. GAJAMASCHKO (2009) *The Concept of Development in Cultural Activity Theory: Vertical and Horizontal*, in A. SANNINO, H. DANIELS, and K. GUTIERREZ, *Learning and Expanding with Activity Theory*, Cambridge, Cambridge University Press,

DANIELS, Harry (2005) *An Introduction to Vygotsky*, New York, Routledge.

DANIELS, H., WERTSCH, J., and COLE, M. (2007) *The Cambridge Companion to Vygotsky*, Cambridge, Cambridge University Press.

DAVIDSON, Donald (2005) *Truth and Predication*, Cambridge, Mass., Harvard University Press.

DAVYDOV, V.V. (1995) *The Influence of L.S. Vygotsky on Educational Theory, Research, and Practice*, trans. S.T. KERR, in *Educational Researcher* 24, 3, pp. 12-21.

DUZI, Marie, Bjorn Jespersen and Pavel Materna (2010) *Procedural Semantics for Hyperintensional Logic: Foundations and Applications of Transparent Intensional Logic*, Dordrecht, Springer.

FREGE, Gottlob (1970 [1892]) *On Sense and Reference*, in P.Geach and M.Black (eds.) *Translations from the Philosophical Writings of Gottlob Frege*, Oxford, Basil Blackwell, pp. 56-78.

KANT, Immanuel (1956 [1781]) *Kritik der reinen Vernunft*, Hamburg, Felix Meiner.

KOZULIN, Alex (1990) *Vygotsky's Psychology: A Biography of Ideas*, Cambridge, Mass., Harvard University Press.

LIU, H. Charlotte and MATTHEWS, Robert (2005) *Vygotsky's Philosophy: Constructivism and Its Criticisms Examined*, in *International Education Journal* 6, 3, pp. 386-399.

MINNICK, Norris (1987) *The Development of Vygotsky's Thought: An Introduction*, in *The Collected Works of L.S. Vygotsky*, v.1, pp. 17-36.

MONTAGUE, Richard (1974) *English as a Formal Language*, in R.H Thomason (ed.) *Formal Philosophy*, New Haven, Yale University Press, pp.188-221.

MONTAGUE, Richard (1970) *Universal Grammar*, *Theoria* 36, pp. 373-398.

ROBBINS, D. (2001) *Vygotsky's Psychology-Philosophy: A Metaphor for Language Theory and Learning*, New York, Plenum.

ROTH, W.-M. and , LEE, Y.J. (2007) *Vygotsky's Neglected Legacy: Cultural-Historical Activity Theory*, in *Review of Educational Research* 77, pp. 186-232.

RUTHROF, Horst (2011c) *Semantics of Imaginability – Vorstellungssemantik: 3 Theses*, in *Review of Contemporary Philosophy* 10, pp. 165-183.

RUTHROF, Horst (2011b) *Language, Vorstellung, and Meaning as Use*, in *Linguistic and Philosophical Investigations* 10, pp. 60-92.

RUTHROF, Horst (2011a) *From Kant's Monogram to Conceptual Blending*, in *Philosophy Today* 55, 2, pp. 111-126.

RUTHROF, Horst (2010b) *Linguistic Arbitrariness and the 'Nebulous' World of Vorstellung in Saussure*, in *RIFL* 3, pp. 157-168.

RUTHROF, Horst (2010a) *How to get the Body Back into Language*, in *RIFL* 2, pp. 136-151.

RUTHROF, Horst (1997) *Semantics and the Body: Meaning from Frege to the Postmodern*. Toronto, University of Toronto Press.

SANNINO, A., DANIELS, H. and GUTTIERREZ, K. (eds.) (2009) *Learning and Expanding with Activity Theory*, Cambridge, Cambridge University Press.

VAN DER VEER, R. and VALSINGER, J. (1991) *Understanding Vygotsky: A Quest for Synthesis*, Oxford, Basil Blackwell.

VYGOTSKY, Lev S. (1991) *Thought and Language*, Cambridge, Mass., MIT Press.

VYGOTSKY, Lev S. (1987a) *The Collected Works of L.S. Vygotsky*, v.1, Problems of General Psychology, R.W. RIEBER and A.S. CARTON (eds.), New York and London, Plenum Press.

VYGOTSKY, Lev S. (1987b) *The Collected Works of L.S. Vygotsky*, v. 2, The Fundamentals of Defectology, R.W. RIEBER and A.S. CARTON (eds.), New York and London, Plenum Press.

WERTSCH, J.V. (1985) *Vygotsky and the Social Formation of Mind*, Cambridge, Mass., Harvard University Press.

WITTGENSTEIN, Ludwig (2005) *Philosophical Investigations*, trans. G.E.M. ANSCOMBE, (trans.), Oxford, Basil Blackwell.