

Private Speech: Cornerstone of Vygotsky's Theory of the

Development of Higher Psychological Processes

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## **Abstract**

This chapter draws attention to the crucial role of “private” speech in Vygotsky’s (1934/1962; 1930-1935/1978; 1934/1987) theory of the development of higher psychological processes.

Private speech, or speaking aloud to oneself, is a phenomenon of child development that Vygotsky interpreted as the critical transitional process between speaking with others and thinking for oneself. Unfortunately, few psychologists or other professionals familiar with Vygotsky’s theory of psychological development fully appreciate the significance of private speech to his theory. Discussion centers on two of Vygotsky’s core concepts—the convergence of speaking and thinking, and internalization—and how these concepts together provide an account of the early social emergence and the later individual mastery of higher psychological processes. Focus then shifts to how these concepts are reflected or expressed in the phenomenon of private speech. Particular attention is paid to the dialogical character of private speech, and the development of lengthy oral private-speech narratives used for planning and problem-solving by oneself. Then discussion turns to discourse analysis, its importance to the study of private speech, and its role in the empirical verification of Vygotsky’s theoretical claims. Finally, private speech research conducted in the West is briefly reviewed. It is argued that the absence of discourse or conversational analysis in most of these studies dilutes and distorts our understanding of Vygotsky’s conception of private speech development. The chapter concludes with a discussion of private speech’s unique position at the intersection of cognitive, linguistic, social, psychological, cultural, and historical analysis, and the unfulfilled potential of private speech research.

## **Introduction**

This chapter aims to draw attention to the crucial role of “private” speech in Vygotsky’s (1934/1962; 1930-1935/1978; 1934/1987) theory of the development of higher psychological processes. Private speech, or speaking aloud to oneself, is a phenomenon of child development that Vygotsky interpreted as the critical transitional process—the pivotal stage—between speaking with others and thinking for oneself. Unfortunately, few psychologists or other professionals familiar with Vygotsky’s theory of psychological development fully appreciate the significance of private speech to his theory. Moreover, most studies of private speech that have been conducted in countries in the West have ignored the essentially conversational character of this special form of speech activity, as evidenced by the almost complete absence of discourse or conversational analysis.

To convey the significance that Vygotsky attached to private speech, this chapter begins with an exploration of two of Vygotsky’s core concepts-- the convergence of speaking and thinking, and internalization. Discussion centers on how these concepts together provide an account of the early social emergence and the later individual mastery of higher psychological processes. The convergence of speaking and thinking and the formation and development of “word meaning” are discussed in the context of a child’s participation and gradual induction into the social and intellectual process of conversing with adults. Internalization is considered in terms of a child’s taking personal ownership of the social process of speaking and thinking. Focus then shifts to how these concepts are reflected or expressed in the phenomenon of private speech. Particular attention is paid to the dialogical character of private speech, and the development of lengthy oral private-speech narratives used for planning and problem-solving by oneself. Then discussion turns to discourse analysis, its importance to the study of private speech, and its role in the empirical verification of Vygotsky’s theoretical claims.

Finally, private speech research conducted in the West is briefly reviewed. It is argued that the absence of discourse analysis in most of these studies dilutes and distorts our understanding of Vygotsky's conception of private speech development. Several reasons for the exclusion of discourse analysis are suggested. A common problem is the failure to obtain speech data that are sufficiently rich and robust, and that capture the interactive, turn-taking structure of private speech conversations and narratives. Another reason is the methodological complexity of discourse analysis and the intensity of time and labor involved in its application to data. Misinterpretation of Vygotsky's theory may also be a factor. Whatever the reasons, the consequent adoption of more traditional linguistic analyses—those that tacitly ignore the conversational connections among utterances—has led private speech researchers in the West to unwittingly dismiss the collective, social-interactive character of speech and thinking that is essential to Vygotsky's theory. The chapter concludes with a discussion of private speech's unique position at the intersection of cognitive, linguistic, social, psychological, cultural, and historical analysis, and the unfulfilled potential of private speech research.

### **Vygotsky's Theory of the Development of Higher Psychological Processes**

As a Marxist psychologist, Vygotsky (1930-1935/1978, p.7) considered individual development to be rooted in society, culture, and history. His decision to focus on speech activity as the critical link between individual development and social history was a stroke of genius. Vygotsky recognized in human speech communication the special combination of qualities needed to explain the development of higher thought processes in children. For instance, the words and grammar of a language are tools invented in ancient times and handed down to us through countless generations. So is the human voice, with its capacity for producing articulate speech sounds. Spoken words and sentences are also material objects that have the capacity to serve as vehicles for conveying concepts and ideas. In the context of communication, speaking is

a social and cultural activity in which participants maintain eye contact, alternate listening and speaking turns, and observe cultural conventions about sharing information. Conversing also requires participants to engage in various cognitive activities, such as listening and speaking. Communicating through speech necessarily involves higher psychological functions when conversation is aimed at solving a difficult problem or formulating and executing a plan of action. As if this were not enough, Vygotsky also recognized that a child could transfer to her own individual activity the social, cultural, and cognitive functions of speech that arise in conversation with others. By conversing with herself instead of another person, a child creates the conditions enabling her to coordinate speaking and listening roles, and to imagine and adopt another person's perspective. Thus, individual development of higher psychological functions could plausibly be explained in terms of a child's appropriation of the social process of thinking collectively by means of talking collectively.

### **Convergence of speaking and thinking**

One of Vygotsky's core concepts regarding the social roots of higher psychological functions is the convergence of speaking and thinking. According to Vygotsky, there is a very early stage in child development in which thinking and verbalizing are distinctly separate activities. This initial period of pre-verbal intelligence and pre-intellectual verbalization occurs in infancy and persists until an infant formulates her first words. "The most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge" (Vygotsky, 1930-1935/1978, p.24). Uttering a word and performing a symbolic intellectual act become one and the same psychological function. To be more accurate, the unity of word and intellect is a socially organized psychological function, since words are only meaningful in the context of speech

communication with others. Vygotsky (1934/1987, p.49) conceived of this convergence as a “unity of generalization and social interaction, a unity of thinking and communication.” The significance of this convergence to a child’s development is that speaking becomes intelligent, and thinking becomes verbal. Vygotsky (1934/1962, p.7; 1934/1987, pp.244-245) called this wedding of word and thinking “word meaning.”

Word meaning is not fixed and static. It is best described as a relation or movement between thinking and communicating in words (Vygotsky, 1934/1987, p.250). Thinking, which for the young child begins as practical intelligence, is an “internal” activity—a neurological process—conducted inside the child’s head, whereas communicating in words is a social activity—an interpersonal process—that is “external” to the child and historically precedes her. Although together they form a unity, “the inner, meaningful, semantic aspect of speech is associated with different laws of movement than its external, auditory aspect” (p.250).

According to Vygotsky (1934/1987, p.251), word meaning is initially an unconscious fusion of word and thought. For word meanings to develop and become fully comprehended, a child must consciously differentiate the semantic aspect from the vocal aspect at each step (Vygotsky, 1934/1987, p.253). For example, a child must initially pay attention to the opposing movements between the structure and function of a word. From a structural perspective, speech development proceeds from single words to complete sentences—that is, from part to whole. But from a functional perspective, development proceeds from complete thoughts (as contained in a whole sentence) to differentiated speech functions (i.e., parts of speech, or function words)—that is, from whole to part. These opposing movements between form and function require a child’s active involvement in the formation and restructuring of word meaning. “The structure of speech does not simply mirror the structure of thought. Thought undergoes many changes as it turns into speech. It does not merely find expression in speech; it finds its reality and form. The semantic

and the phonetic developmental processes are essentially one, precisely because of their reverse directions” (Vygotsky, 1934/1962, p.126).

Word meaning develops further as a child takes increasingly into consideration different layers of context. Soon after word meaning is formed amid the tension between the phonetic and semantic aspects of a spoken word, grammatical context is brought to bear, such that word meaning is revised as a result of the push and pull between syntactic structures and the logical structures of thought that correspond to these syntactic forms. Eventually, the child takes the discourse context into account, further qualifying her word meaning by her attempts to relate sentences uttered sequentially in conversation to the corresponding “topical” information in her conscious awareness, information Vygotsky (1934/1987, p.250-252) referred to as the “psychological” subject or predicate. Although Vygotsky did not have access to the analytical concepts and procedures that have recently been developed in the field of discourse analysis (see Stubbs, 1983), he clearly was thinking along “conversational” lines when he wrote about the lack of correspondence that can arise in different social situations between grammatical and psychological subjects and predicates.

Initially, development of a child’s word meaning occurs in the familiar mode of speech activity that Vygotsky (1934/1987, pp.75-76) called “interpersonal,” or “external” speech. This is speech that is conducted in collaboration with others. Interpersonal speech is physically and mentally “externalized” because, when the child speaks, the word physically issues from the child’s mouth and travels outward to another person’s ear, and is mentally intended for the other person to hear. Interpersonal speech constitutes one of several “planes” of speech activity in which thought and word are combined to produce word meaning.

In the context of interpersonal speech with adults, it is important to note that as soon as a child utters her first word, adults begin to induct her into the world of conversation by

interpreting her word meaning for her. Adults typically respond to a child's one-word utterance as a turn at talk that expresses a message and an intention (Dore, 1979, p.349). This multi-faceted response helps the child to define her word meaning in terms of its particular communicative functions in the shared activity and the shared topic of conversation, while it also helps her to define her social role as a participant and contributing member of the group.

As she becomes more proficient with word meanings and grammar, a child becomes capable of participating more fully in activities and conversations that involve higher psychological functions, such as planning and problem-solving. Being able to participate in discussions aimed at planning solutions to problems requires a good deal of facility with words, clauses, and sentences, as well as sophisticated use of various types of conversational exchanges with others, such as question/answer/comment exchanges. Descriptions, evaluations, mental simulations, and hypotheses verbalized by group members in the course of activity have to be coherently organized through conversation.

For a young child to individually master such a complex linguistic and intellectual task as planning with words, she must develop sufficient verbal skill to negotiate not only her own role, but the roles of all the other participants as well. The mastery of others' conversational roles in addition to one's own is necessary whenever the development of a topic of conversation (such as a complex idea or activity) requires many turns at talk. Psychologically, an essential component of this mastery of conversation is the cognitive skill of mentally switching roles between that of speaker and listener—that is, a child must be able to imagine another person's perspective in order to adopt that point of view in conversation. Ironically, this uniquely human ability to coordinate listening with speaking—a requirement for communicative competence—cannot be learned from interpersonal speech alone. Participation in interpersonal speech limits a child either to the act of speaking during her turn at talk, or to the act of listening to others talk during



her turn to listen. In interpersonal speech, there is no possibility of listening to one's own utterance and experiencing one's own words as listeners do. For that to occur, a child needs to radically transform her individual speech activity.

### **Internalization of speaking and thinking**

Vygotsky (1934/1987, p.257) proposed that there is another form of speech activity besides interpersonal speech that enables a child to carry forward the process of developing word meaning—namely, “intra-personal,” or “internal” speech. This is speech that a child conducts with herself, by herself, and for herself. Intra-personal speech, also called “inner” speech, is physically and mentally “internalized” because the word is physically uttered subvocally and passes directly to the inner ear, never leaving the child's mouth, and is mentally intended as communication to herself. Speaking to oneself is a natural activity that derives its structure from interpersonal speech but serves the personal purpose of self-accompaniment, self-communion, and ultimately self-regulation and thinking. Intra-personal speech constitutes a second plane of speech activity in which thought and word are brought into relation.

From a conversational perspective, interpersonal speech emphasizes the movement from thought to word, or the role of the speaker, while inner speech emphasizes the reciprocal movement from word to thought, or the role of the listener. The picture of a “mature” speaker that Vygotsky's theory provides is one in which vocalized interpersonal speech is used for speaking, while “silent,” subvocalized inner speech is used for listening and understanding. The obvious implication is that conversational turn-taking routinely involves alternation between these two modes of speech activity.

Vygotsky (1930-1935/1978, pp.56-57) defined the developmental transformation of an interpersonal process into an intra-personal process as “internalization.” In its general form, internalization involves the internal reconstruction of an originally external operation or process.

Because of internalization, every function in a child's development appears twice: first, between the child and other people, and later, within the child. Cultural forms of behavior enter a child's individual activity as interpersonal functions, and are later reformulated by the child as intra-personal functions (Vygotsky, 1930-1935/1978, p.57).

The mastering of nature with tools (externally directed activity) and the mastering of individual behavior with linguistic signs (internally directed activity) are mutually linked processes for Vygotsky (1930-1935/1978). Word meanings that are used as tools in interpersonal speech communication fundamentally change all psychological operations in an individual when they are also used as signs in communications directed at oneself. In fact, Vygotsky (1930-1935/1978, p.55) reserved the term higher psychological process to refer to this uniquely human combination of tool and sign use in psychological activity.

In the case of speech, talking is transformed into an intra-personal activity when a child starts talking to herself, either in the form of a full-blown dialogue complete with alternating voices, or in the form of a personal narrative. When a child's speech activity is transformed and expanded to include not only her own conversational initiations but also the verbal responses elicited from imagined others, she experiences her own utterances as a speaker and as a listener. In fact, in inner speech the emphasis or focus is on hearing words rather than speaking them. The linguistic or behavioral response to an utterance takes center stage in inner speech, while the initiating utterance merely sets the stage. From the point of view of conversational competence, Vygotsky's theory of inner speech activity provides a plausible explanation for the development of such uniquely human psychological processes as listening, understanding, and conversational perspective-taking.

To summarize, practical intelligence and verbalization operate independently of each another in infants, but the unity of these processes in children and adults is the very essence of

higher psychological functioning. Communicative activity organizes words and practical thinking into a new psychological entity: word meaning. Word meaning is a form that combines symbolic and social activity. For Vygotsky, symbolic object-related activity acquires meaning only within a system of social communication: “The path from object to child and from child to object passes through another person” (Vygotsky, 1930-1935/1978, p.30). With the gradual development of pragmatic skills with words, grammar, and discourse, a child's symbolic activity becomes socially and conversationally organized into an even more potent psychological tool: the “planning function of speech” (Vygotsky, 1930-1935/1978, p.28). To plan the solution to a problem-solving task all by herself, a child must first become aware of each participant's conversational role in the activity, and then master each role. Only a radical transformation of speech activity can bring this about.

Internalization is the process whereby psychological functions or operations that were initially carried out interpersonally and collaboratively are appropriated by a child and incorporated and reconstructed intra-personally. By means of internalization, social forms of behavior are assimilated and accommodated within individual activity. Whereas the convergence of speaking and thinking allows a young child to think and behave intelligently because of her participation in a social process, the internalization of speaking and thinking permits her to think and act intelligently all by herself because she takes the fruits of collaboration, applies them to herself, and makes them her own. Internalization, therefore, is the true starting point for individuation, according to Vygotsky (1934/1962, p.133).

### **Significance of Private Speech to Vygotsky's Theory**

To observers, private speech, or talking aloud to oneself, is a peculiar form of speech activity because it is not interpersonal, and therefore almost incomprehensible to anyone but the child herself. This speech activity appears soon after a child begins to talk and disappears soon

after she reaches school age. Piaget (1955), the first researcher to record and analyze vocalized speech to oneself, noted that the coefficient of this speech begins to rise at about age 3, reaches roughly fifty percent by age 6-7, and declines to almost zero by age 8. He interpreted this private form of speech (formerly called “egocentric” speech) as just one more manifestation of the profound egocentrism that permeates young children's thinking. Developmentally, it is doomed to extinction as egocentric thinking is supplanted by socialized thinking.

Vygotsky (1934/1987, pp.257-266) offered a radically different explanation for the existence of this phenomenon, one that is almost diametrically opposite to that of Piaget. Vygotsky regarded private speech as the transitional stage or intermediate plane of activity linking interpersonal speech to the development of inner speech (Vygotsky, 1934/1987, p.71). Mentally, private speech is internal speech because communicatively it is intended for oneself, but physically it is external speech because it is uttered aloud. Initially, this hybrid speech form has the fully expanded and syntactically complete structure of interpersonal speech, but as the child becomes aware of the personal function of this speech, she subsequently transforms and streamlines it into the highly abbreviated and syntactically fragmented form of inner speech. Eventually, the remaining vocalized portion is inhibited neurologically, completing the transformation of private speech into subvocalized inner speech. For Vygotsky, it is this transitory position in development that accounts for the observed rise and fall of private speech. Private speech appears on the stage because it is useful for thinking, and then disappears from the stage because it develops into a covert speech form by means of which a child can think silently to herself.

Private speech is of paramount importance to Vygotsky’s theory of the development of higher psychological processes not only because it is the theoretical link between the interpersonal and personal forms of speaking and thinking, but because it is also the physical

link. With respect to the development of inner speech, the physical transformation of private speech provides empirically observable clues as to the nature and character of inner speech. By studying which aspects of private speech disappear during development and which continue to be voiced, researchers can identify what is essential to inner speech (Vygotsky, 1934/1987, p.258). With respect to the development of interpersonal speech, Vygotsky (1934/1987, pp.69-78) demonstrated empirically that the main reason a child talks aloud to herself is for intra-personal thinking. For instance, the children in his experiments tended to engage in much more private speech when there was some difficulty or impediment included in the task, suggesting that private speech plays a role in solving problems. Also, the content of children's private speech utterances often focused on the goal-directed aspects of their activity. Furthermore, private speech was more likely to occur when there was another person present in the experiment, indicating that children perceive of speech as a means for solving problems: "The child begins to converse with himself as he previously conversed with others . . . he begins to think aloud in situations that require it" (Vygotsky, 1934/1987, p.75). Programmatic research conducted in the West supports Vygotsky's claims (see Berk, 1992, 1994, for reviews).

Piaget (1955, p.33) was the first to note that young children playing together often engage in "collective monologue," in which they alternate speaking turns as in a true dialogue, but each child is actually engaging in private speech during his or her turn at talk. Vygotsky claimed that collective monologue occurs because psychologically children have not sufficiently differentiated the personal purpose of private speech from the social purpose of interpersonal speech. Consequently, private speech tends to occur only in "social" problem-solving situations, in contexts where a child perceives (or is under the illusion) others are listening (Vygotsky, 1934/1987, p.266). With development, however, a child becomes aware of private speech's role

as a tool for furthering her own individual thinking. Then, when confronted with a problem to solve and no one to turn to for help, she immediately switches over to private speech.

Cognitively, private speech serves different functions at different stages in development. Initially, a young child uses private speech impulsively to play with words, express or discharge simple emotions, and accompany her activities. But as her skills with interpersonal speech begin to develop and she becomes more adept at describing, monitoring, and guiding activity, she transfers these cognitive and linguistic skills to her private speech. With further development, the planning functions of speech begin to take root. This transition from impulsive to planful private speech is a gradual process that is also accompanied by changes in conscious awareness. By taking on the different perspectives of the interlocutors she has incorporated into her private speech dialogues, a child uses alternating turns at talk to systematically switch perspectives and thereby experience and explore the cognitive, linguistic, and social relationships that connect one utterance—and one mind—to another. Conscious awareness of these relationships leads, in turn, to an understanding of the basic activities underlying conversation, as well as the universal and interchangeable qualities of the minds that engage in it. Conscious awareness also causes a child to physically modify her private speech-- to hone it for the purpose of conducting her own individualized thinking. She reduces it down to the essentials, dropping out uninformative words and abbreviating syntactic structures that are usually made explicit when conversing with others. The end result is that private speech is reduced to sentence fragments—psychological predicates—the essence of inner speech (1934/1987, p.267).

At the same time as the syntactic structures are becoming more abbreviated and fragmented, the dialogical structures of private speech are becoming more elaborated and expansive (Feigenbaum, 1992). For example, there is evidence that children as young as two years of age produce multiple-utterance monologues at bedtime that “reenvoice” aspects of face-

to-face conversations previously held with parents (Dore, 1989). Over time, these monologues develop from simple expository accounts of particular events into lengthy and embellished oral narratives (Bruner & Lucariello, 1989). Narration is a form of expression that is conducive to carrying out planning and problem-solving tasks by oneself. Evidence obtained from eight-year-olds working alone on a complex problem-solving activity indicates that they formulate and implement plans by narrating extensively to themselves, producing on average upwards of 14 utterances per narrative. (Feigenbaum, 1992).

In addition to functional and structural developments, Vygotsky (1930-1935/1978, p.28) claimed there is a gradual transition in the timing of private speech with respect to action. Early in development, private speech utterances tend to lag behind the actions to which they refer; consequently, they are only useful in describing what has already been done. But as private speech shifts to an earlier position in activity so that utterances begin to accompany and then precede the action to which they refer, private speech becomes capable of serving a planning function. Thinking can be consciously and deliberately invoked in advance of taking action.

The confluence of all these properties—functional, structural, and temporal—makes private speech a unique and powerful psychological tool. Private speech can be used to plan and solve problems by oneself. It is also a prism through which a child can view and comprehend the cognitive, linguistic, social, and psychological intricacies of dialogue. As a child learns about her own private communicative activity through observation and experience, she raises her own consciousness regarding its function, and begins a process of transforming her private speech into a more efficient and useful narrative tool. With private speech, a child begins to find and develop her own perspective, her own communicative style, her own “voice” (see Bakhtin, 1986).

## **Discourse Analysis and the Study of Higher Psychological Processes**

To verify Vygotsky's (1934/1962; 1930-1935/1978; 1934/1987) claims about the development of the structures and functions of private speech, it is essential that discourse analysis be among the analytical tools that researchers use. Vygotsky devoted careful thought to the methods and units of analysis he employed in developing his theory of higher psychological processes. He recognized the pitfalls of analyzing psychological phenomena as objects instead of processes, and of choosing "elements" as opposed to "units" as the fundamental particles of analysis. By element, Vygotsky (1934/1962, p.3) was referring to a part that does not contain the integral properties of the phenomenon as a whole. For example, the analysis of water into its constituent elements of hydrogen and oxygen, he argued, precludes study of its essential properties—i.e., its wetness, its capacity to extinguish fire, etc. But analysis of water into its constituent units—i.e., water molecules—does permit study of its qualities. Similarly, Vygotsky sought the unit of analysis that is appropriate to the study of speaking and thinking, a unit capable of capturing their interaction at any point in development. His choice was word meaning.

As discussed earlier, word meaning is not fixed, but changes developmentally. One of the critical factors shaping the development of word meaning is context. Vygotsky (1934/1962) proposed that if one defines the "sense" of a word as the sum of all the psychological events aroused in one's consciousness by the use of the word, then context provides word meaning with "sense." A word meaning acquires its sense from the context in which it appears; in different contexts, it changes its sense. "This enrichment of words by the sense they gain from the context is the fundamental law of the dynamics of word meanings. A word in a context means both more



and less than the same word in isolation: more, because it acquires new content; less, because its meaning is limited and narrowed by the context” (Vygotsky, 1934/1962, p.146).

Because conversation plays a key organizing role in speech activity, it becomes a key contextual factor in the analysis of word meaning. For example, when determining the meaning of a child’s use of a word in a single utterance of private speech, it is critical to know whether the utterance is part of a conversational exchange (e.g., a question/answer/comment exchange) or conversationally isolated. And to make this determination, the analysis must draw upon all the properties of spoken language in context—syntax, semantics, pragmatics, intonation, content, conversation, ongoing activity, etc. Discourse analysis (see Stubbs, 1983) is a richly textured method that provides the necessary means to rigorously test Vygotsky’s (1934/1987) claims about interpersonal and private speech.

Labov and Fanshel (1977) developed an excellent example of discourse analysis designed as a series of systematic procedures for evaluating words in different contexts. In their analysis, the meaning of any single word or phrase can be examined in relation to the contextual layers surrounding it, which include the sentence, the conversation, the therapeutic session, the language spoken within the home, and the language spoken by the community at large. Their method paves the way for socio-historical and socio-cultural analyses of words in context. Another tool for studying the discourse structure of private speech is Dore’s (1977) set of procedures for analyzing conversational “moves,” used in conjunction with his categories for classifying utterance functions (Dore, 1979). His procedures enable researchers to determine if utterances are conversationally connected, and then to classify the conversational function(s) served by each utterance.

While the potential benefits of using discourse analysis are very great, so are the risks of not using it when studying private speech. By not construing private speech utterances as

dialogical or conversational, we risk distorting and diluting Vygotsky's conception of the social character of speaking and thinking, and along with it, his conception of all higher psychological processes.

### **Distortion of Vygotsky's Conception of Private Speech**

Unfortunately, most of the private speech research conducted in Western countries over the past 30 years has failed to include discourse analysis or conversational analysis of any kind. Of the approximately 60 private speech studies published in the psychological literature in the West since the appearance of the seminal studies by Kohlberg, Yaeger, and Hjertholm (1968), only 9 studies examined the discourse structure. Of these, 6 were intensive investigations of the nighttime soliloquies of a 2-year-old girl named Emily (see Nelson, 1989). Two of the remaining 3 studies (Ramirez, 1992; Smolucha, 1992) were exploratory dialogical analyses of private speech involving small samples of children. It is therefore sobering that, to date, the most successful empirical effort to document and analyze the development of the dialogical structure of private speech was conducted nearly ten years ago (Feigenbaum, 1990, 1992).

Several reasons can be cited for why discourse analysis has been almost completely omitted from this body of research. A persistent problem has been the failure to obtain private speech data that are sufficiently robust with regard to the interactive, turn-taking structure of private speech conversations and narratives. In fact, based on the small and impoverished samples of private speech generated in early studies (see Diaz, 1992 for review), some researchers were moved to comment that private speech may not even be a phenomenon worthy of investigation. These impoverished samples generally consisted of solitary sentences and one- and two-word utterances that do little to reveal the dialogical structure of private speech. Private speech is a phenomenon that is very sensitive to conditions, and as researchers became more adept at arranging the necessary conditions in experimental situations, greater quantities of

private speech were elicited for study. Richer data enabled investigators to focus on the issues that interested them.

The issue of primary interest to most private speech investigators continues to be the self-regulatory effects of private speech on performance. Programmatic studies (e.g., Berk, 1986; Berk & Garvin, 1984; Diaz & Lowe, 1987; Winsler, Carlton, & Barry, 2000; Winsler & Diaz, 1995) have begun to establish the particular social and task conditions under which children's spontaneous private speech utterances serve to regulate their task-relevant behavior (see Berk, 1992, 1994, for reviews). Specifying the precise conditions under which private speech helps children to control their own attention and stay on task is an important practical issue for educators, clinicians, and parents. One offshoot of this line of research has concentrated on children with learning and behavioral problems and compared their private speech to that of non-symptomatic children, mostly in classroom settings. The early evidence indicates that children with attention deficit hyperactivity disorder (ADHD) and those with learning disabilities (LD) appropriately produce task-relevant self-regulatory private speech when tasks are at their level of ability, but when tasks become very challenging, they are significantly delayed in their use of private speech compared to controls (Berk & Landau, 1993, 2001; Berk & Potts, 1991; Winsler, 1998).

While these studies provide strong support for the universality of the development of the self-regulatory functions of private speech, they shed very little light on the dialogical structures and functions that bind utterances of private speech together into long oral "texts." Investigation into the social, intellectual, and linguistic connections between utterances in a stream of private speech is absolutely essential to evaluating the core concepts of Vygotsky's theory. Berk (1992) suggests that the "verbal command-behavioral compliance" format used in research on self-regulating private speech implicitly regards the utterance-behavior relationship as a social,

dialogical structure. Granting this, it is nonetheless true that the utterance-utterance relationship that is fundamental to understanding the development of private-speech dialogues, monologues, and narratives remains obscured through lack of research.

Another reason for the absence of discourse analysis in private speech research is the methodological complexity of discourse analysis and the intensity of time and labor involved in its application to data. For instance, conversational analysis requires a set of steps for determining if a single utterance is conversationally linked to other utterances, or is conversationally isolated. Using Dore's (1977) analysis, for example, one begins by determining the "literal meaning" of the proposition contained in an utterance (e.g., "This piece of track is curved"). Second, the "conventional illocutionary force," or the typical meaning of the proposition in the context of conversation, is determined (e.g., the proposition asserts particular information about an object). Third, any "implied conversational functions" are determined, based on relations with other utterances in the same sequence (e.g., Is the utterance an answer to a question, a comment, or perhaps a nonsequitur?). Similarly, any other implied conversational functions, such as those based on intonational stress or on relations to ongoing activity, to objects, etc., is determined (e.g., How is the meaning qualified if the speaker were searching for a straight piece of track?). After working through this procedure, a decision can be made as to whether or not the utterance was part of a conversational sequence, and what function(s) it served. This procedure is repeated for each successive utterance.

Misinterpretation of Vygotsky's theory may also be a factor in the omission of discourse analysis from studies of private speech. In Western countries in particular, there is deep-seated resistance to the notion that speech can shape, direct, and make demands upon thought. Despite the sensible appeal of the Sapir-Whorf hypothesis, which asserts that language and words play a defining role in conceptual thinking, most people (lay and professional alike) are more

comfortable with the notion that thoughts take primacy over words, and that words are merely a means for expressing thoughts. This resistance to conceiving of speaking and thinking as a dialectical process—as a two-way relationship—may pose a barrier to understanding Vygotsky’s theory. In addition, some researchers may not accept Vygotsky’s premise that children are socialized from birth, and that individuation occurs gradually in development as a function of increasing internalization. The philosophy of individualism that is so strongly promulgated in the West runs counter to this concept, and must certainly lead to misinterpretation of Vygotsky’s ideas.

Whether the reason is lack of adequate data, a narrowly defined research interest, avoidance of complicated and labor-intensive analysis, misinterpretation, or some other factor, the omission of discourse analysis from investigations of private speech has produced serious consequences. One consequence is the de-facto adoption of traditional or conventional linguistic analyses. These tools limit analysis of speech data to sentential boundaries. They tacitly ignore the conversational connections among sentences; every sentence is analyzed in isolation from every other. Adoption of these tools can easily lead private speech researchers to unwittingly dismiss the collective, social-interactive character of intra-personal speech to oneself. The result of using inappropriate tools is a distorted and diluted understanding of Vygotsky’s theory of private speech and higher psychological processes.

## **Conclusion**

I have attempted to highlight what I consider to be the key concepts running through Vygotsky’s (1934/1962; 1930-1935/1978; 1934/1987) theory. These concepts help to explain the peculiar childhood phenomenon of talking aloud to oneself, or private speech, that Vygotsky placed at the center of his theory of psychological development. Although Vygotsky never articulated the role played by conversation in the development of word meaning, it is pregnant in

his work. By construing private and inner speech as forms of conversational activity, it becomes possible to directly address and investigate the development of cognitive perspective-taking, which I submit is at the root of any “theory of mind.” I have also tried to convey the unique position of private speech as a focal point for many developmental processes—cognitive, linguistic, communicative, social, psychological, cultural, and historical—and how its myriad qualities pose a challenge to researchers, who must invent techniques, procedures, and analyses capable of capturing and tracking these dynamic, fluid qualities over time.

At present, there are barriers to the investigation of private speech that we must overcome. Some of the impediments are technical, such as learning how to arrange our experiments so children will display all the qualities of private speech in sufficiently large quantities. Other impediments are practical, such as the adoption of easier (but less informative) linguistic analyses instead of more informative (but also more time-consuming and labor-intensive) analytic procedures. The commitment of time, effort, and resources to researching one particular aspect of private speech functioning—to the exclusion of other private speech functions, structures, and transitions—is an organizational or strategic problem that researchers must resolve. But perhaps the most difficult barrier we face is ideological. In some key respects, Vygotsky’s theory challenges our deeply held beliefs about the character of human thought and the process by which it develops. To overcome our own resistance, we must suspend our disbelief and be willing to entertain two simple notions: that our individuality derives from our early socialization, and that our ability to think individually is the offspring of human speech communication.

Looking to the future, Vygotsky’s theory holds a great deal of promise for scientific advancement. It offers an integrated approach to the study of human psychological development, one in which diverse processes and disciplines can find common ground. It provides a

framework for addressing a wide range of problems in cognitive development, from learning words and grammar, forming primitive and scientific concepts, to learning to think dialogically. From a linguistic perspective, his theory offers a unique approach to studies of phonetics, vocabulary development, acquisition of syntactic and semantic structures, and the relations between structure and function in language development. Communication occupies a crucial place in Vygotsky's theory, and could inform the theory further through a wide range of investigations from comparative studies of animal and human communication to the social processes involved in face-to-face talk. Psychological processes are a major focus, of course, and encompass perception, attention, memory, cognition, education, activity, language, internalization, and their countless interrelationships. His theory also draws cultural and historical processes into its orbit, which condition, shape, organize, and add content to the development of all the processes mentioned above. This list of disciplines or problems united by Vygotsky's theory is by no means exhaustive.

His theory also brings clarity and definition to some of the more intractable and fascinating phenomena in human psychology: the development of self-awareness, introspection, volition, free will, and other conscious mental activities. Vygotsky's emphasis on processes as opposed to objects allowed him to conceive of these phenomena as activities that could be elicited in the course of an experiment. Using his methods of analysis in conjunction with findings generated by his theory, there is reason to believe that the elusive qualities of consciousness and volitional action will eventually succumb to scientific manipulation and explanation.

In conclusion, we owe it to ourselves to find out if Vygotsky's theory is correct. For if it is, we have at our disposal a powerful instrument for understanding and influencing human development.

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