For a specialist from the communication discipline, studying with Alexander Luria, who had been a colleague of Lev Vygotsky in the 1920's, provided insights into the Soviet psychologist's ideas about mediation and mind and how writing fits into those ideas. According to Luria, Vygotsky was a methodologist who worried about what kinds of methods could be brought to bear upon theory in a relevant way. The early work of Vygotsky and Luria centered on the concept of artifact mediation which develops in human beings the capacity to "control themselves from the outside." Vygotsky believed that written speech is difficult for the school child because: (1) writing involves an abstraction process; (2) it lacks expression and all aspects of speech that are reflected in sound; (3) written speech is a speech monologue, a conversation with a piece of paper; and (4) written speech requires that children do voluntarily, with effort, what they did effortlessly as younger children. A basic mediation triangle which appears often in Vygotsky's writing provides a device for coming to grips with the literature applying his ideas to college writing. The triangle illustrates that children experience the world in two distinctive ways once they acquire language: directly through their sensory contact with the physical environment and indirectly through language. The largest number of Vygotsky-inspired approaches to writing instruction focus on the "world" side of the mediational triage, but there are also researchers/teachers who pursue the other approaches. (Two figures are included.) (NH)
Vygotsky and Writing: Reflections From a Distant Discipline

Michael Cole
Communication Department & Laboratory of Comparative Human Cognition
University of California, San Diego

Paper delivered at the Conference on College Composition and Communication. San Diego. April 2, 1993. Preparation of this paper was facilitated by a grant from the A. Mellon Foundation. My special thanks to Peg Syverson for her generous help in discussions about the issues presented here.
I am grateful for the opportunity you have given me to foray beyond the borders of my disciplinary territory. I am an inveterate disciplinary border crosser, and I almost always find such excursions interesting. It is quite another for me to make it interesting for you, however. For one thing, I am a psychologist and in my experience it is pretty rare for a psychologist to have anything of great use to say to people working in the humanities and education. The problem is not lessened by the fact that I have spent most of my time thinking about literacy among people living in the third world and schoolchildren, not well-educated young adults.

On the other hand, the problem is perhaps lessened somewhat by the fact that I am a professor of communication, and a concern with college composition is certainly legitimate within that discipline. And, I have been engaged for some years in a project that heavily involves undergraduates in the process of writing. So I have some sympathy for what it means to be concerned about composition among university students.

My assigned topic is "Vygotsky and writing." I know, because I began calling for help from my colleagues in writing programs around the country for help as soon as I saw what sort of an assignment I had foolishly agreed to take on, that is not the first time that the topic of Vygotsky and education has been addressed at CCCC meetings. Vygotskian ideas are also well represented in a fairly sizeable number of articles in journals
relevant to the CCCC. And a Vygotskian perspective underpins a number of influential monographs on the development and instruction of writing, beginning with quite young children and extending to adulthood. (For recent summaries that provide excellent access to the work see Cazden, 1993; Dyson and Freedman, 1991).

It would be foolhardy for me to attempt a Solomonic summary of your ongoing discussion. Rather, I will play to my strengths and try to explain one psychologist’s understanding of Vygotsky’s ideas about mediation and mind, and how writing fits into it.

**Encountering Vygotsky**

As many of you know, Lev Vygotsky was a Soviet psychologist whose professional career extended only a decade, from 1924 until his death from tuberculosis in 1934. As a young man Vygotsky wrote on the aesthetics of literary works ranging from fables and short stories to tragic plays and epics, but he is not generally known as a literary critic or as a psychologist of aesthetics. Rather, he is best known for his work in the area of psychological development in children, and especially for his ideas about the relation between language and thought in development. From 1934 until the late 1950's Vygotsky's writings were banned in the USSR and even when several key works were published following the death of Stalin, they appeared in so few numbers as to be virtually inaccessible to Soviet scholars. Although an abridged version of his monograph on language and thought appeared in English in 1962, it was not until the late
1970's that Vygotsky began to attract widespread attention among psychologists.

At present his major published monograph, *Language and Thought* has been translated into English three times and a growing number of Vygotsky's writings are becoming available. I think it no exaggeration to say that Vygotsky has become an academic fad, giving rise to what some call a "neo-Vygotskian" movement in psychological and educational circles and to all of the simplifications and questionable appropriations that accompany intellectual fads.

My own introduction to Vygotsky's ideas occurred in 1962 when I spent a year in Moscow as a post doctoral student with Alexander Luria. In the 1960's Luria considered himself a neuropsychologist but he still considered himself a student of Vygotsky's. He felt it his responsibility to revive his mentor's memory and to make of him a world-recognized innovator in psychological sciences (Luria, 1977). He tried to impress upon me the importance of the fact that he, along with Alexei Leontiev, had been colleagues of Vygotsky in the 1920's and early 1930's. Collectively they had created what they called the "cultural historical" school of psychology. I was not easy to impress. I had a difficult time figuring out what that earlier enterprise had been all about. Although I had taken an obligatory course in the history of psychology, I could not get too excited about old fashioned ideas that had been current half a century earlier in the infancy of scientific psychology. Moreover, I was kept very
busy running my experiments and attending Luria's laboratory meetings where the focus seemed to be on developing neurophysiological methods for diagnosing people with brain tumors. It took many years before I began to understand the links between that work, Vygotsky, and cultural historical psychology.

When I left Moscow, Luria made sure to give me intellectual errands which I felt it a personal obligation to carry out; he had given unsparingly of his time, even if I could not well appreciate most of his central intellectual interests. In the years that followed, I edited a number of works by Soviet psychologists including a set of essays by Vygotsky which came to be called Mind in Society, and Luria's own autobiography. It was in the course of struggling to understand these works that I came to have a genuine appreciation for what Vygotsky and his colleagues had been trying to accomplish have a century earlier.

It is also relevant that during this period I had embarked upon a program of research in West Africa that began with an effort to improve elementary education through psychological research. This research helped to convince me of the fundamental role of culture in the construction of human nature, a conviction that continues to have few adherents in modern psychological theorizing. It was also in the context of cross-cultural studies of development and education that I began to engage in research on literacy. Eventually I became, as Luria had wanted me to become, a cultural-historical psychologist, albeit one of a distinctly American sort.
As I understand it, Vygotsky was not primarily an experimentalist. Luria said that his mentor's idea of an experiment is what we might call a pilot study, observations pour voir. Vygotsky was, rather what Russians call a methodologist, a scientist who worried about what kinds of methods could be brought to bear upon theory in a relevant way. He was unhappy with both the state of psychological theory and the methods psychologists used to evaluate theories. A cultural-historical theory, he argued, needed an appropriate methodology for its implementation.

Luria, who introduced me to Vygotsky's ideas, was by no means a theoretical illiterate, but his special talent was as an experimentalist who could bring theory to bear on an astonishing range of human behaviors. He generalized the pilot observations that he and Vygotsky made into fullblown research programs, often with important practical outcomes.

Also relevant are the contributions of A.N. Leontiev. I came to know the ideas of Leontiev only in recent years. It was Leontiev who emphasized that one must always take into account the historically fashioned forms of activity within which human beings develop.

The Core Concept: Mediation

I take the core of all cultural-historical approaches to human nature to be the idea that humans' unique psychological characteristics arise from the fact that their activity is mediated by cultural tools (the generic name for such tools is
artifact). Artifact mediation fundamentally changes the structure of human behavior vis a vis other animals, allowing them to coordinate with each other and the world around them indirectly, creating a uniquely human morphology of action. The inclusion of artifacts in goal-directed action brings about more than a new means for humans to control their interactions with others, however. It also brings about greater self-control. As Luria liked to comment, owing to artifact mediation, human beings develop the capacity to "control themselves from the outside."

An early example of the methodology that Vygotsky and Luria used to study mediated mental activity was a pilot study carried out with a Parkinsonian patient who had difficulty walking across the floor. The harder he tried, the more difficulty the man experienced. But he could walk up stairs, a presumably more complex motor task. How was this possible?

The explanation offered by Vygotsky and Luria was that the mental effort of concentrating on the stairs forced this person to mediate his efforts to walk in a new way, perhaps by counting to himself "first stair, second stair, third stair" and so on. In their view, his "direct" "unmediated" movements were reorganized by the use of the cultural tools of enumeration. Or as they liked to express the idea, the deficit in elementary psychological functions (walking) could be overcome by creating a new functional system using still-existing higher psychological functions (counting). They confirmed this point when they placed squares of paper on the floor and asked the patient step on each
one in sequence; this time the patient could walk on the level floor (the movie, Silences, illustrates this principle at work in a different pathological context). Luria and other students of Vygotsky later extended this work to the treatment of soldiers who experienced severe brain trauma.

A particularly telling example of the way in which they understood the idea of cultural mediation is contained in Luria's book called Man With a Shattered World, about a person who had completed higher education but then lost part of his brain to a shell fragment. He also lost the ability to read and write. Luria demonstrated that by reorganizing the relation between elementary and higher psychological functions, both reading and writing could be restored; the soldier's diary compiled over many years records in painful detail the difficult process of remediation involved. Similar programs of research inspired by cultural-historical principles were mounted to help retarded children who had difficulty mediating their activity via language and twins whose language development was delayed owing to the special communicative situation of their socialization.

Vygotsky and Luria used the same principle of mediation in their work with young children which they referred to as the "pre-history" of written language. In these studies they asked children to carry out a memory task that was too difficult for them to accomplish directly "from memory." They provided tools in the form of pencils and papers which they suggested that the children might use, even though they were too young to know how
to write. They then studied how children "invented writing" as a way to solve the problems they had been posed.

Perhaps I have said enough for you to appreciate my difficulty in approaching my assigned topic. Brain damage and mental retardation are not, let's presume, significant problems with respect to writing among college students, the focus of our concern here. Nor are we dealing with the embryonic forms of writing in young children. Yet these were the arenas in which Vygotsky did his theorizing and Luria carried out his more thorough, generalizing, research. To be relevant to college composition it is necessary to find ways to move beyond the general principles of cultural-historical psychology and the hints given in the early published writings in order to create the necessary conceptual bridge.

A focus on development

Vygotsky liked to repeat the aphorism that to understand behavior means to understand the history of behavior. Accordingly I see little hope that we can apply his ideas to college composition unless we dip at least briefly into the question of human development and its cultural organization.

To elaborate on a remark that I made above, the basic assumptions of cultural-historical psychology is that the human mind is acquired through the active appropriation of the cultural store of the past, embodied as material objects, rituals, beliefs, and modes of interaction for purposes of mediating goal
directed activity in the present. This process of appropriation begins at birth in the transactions of children in their families and changes as a constituent part of children's overall biobio-social-cultural development. This ontogenetic process is itself conditioned by the particular culture and historical era in which the person lives.

As children acquire their native language(s) rich new resources become available for gaining access to, and participating in, the process of enculturation. It is during this period of first language acquisition, according to Vygotsky, that "thinking becomes verbal" and "language becomes conceptual." This new quality of mind arises because thought becomes interwoven with the accumulated (artifactual) knowledge of the past, e.g. it becomes infused with culture. This new form of thinking and communicating remain with people for the rest of their lives. It is a universal achievement, attained by all normal people in all of the world's cultures.

Several years later, when children begin the transition to adulthood that we refer to as adolescence, a new transformation in the relation between language and thought occurs. The essence of this change, according to Vygotsky, is that children become capable of forming "true concepts," by which he had in mind something like closed semantic domains with logical relations among all the terms.

[FIGURE 1]

Figure 1 shows Vygotsky's hypothesized ontogenetic sequence
A scary object
(dog growls at child)

An elusive object
(child chases dog)

A barking object
(dog barks)

A fighting object
(dog fights with cat)

A soothing object
(child pets dog)

(a)

Animate vs. Nonanimate

Animals vs. Plants

Domesticated animals vs. Wild animals

Horse vs. Dog vs. Cat

Collie vs. Poodle

"Lassie" vs. "Curly"

(b)

Figure 1: (a) For the younger child, word meaning is dominated by the contexts of action in which the words have played a role. (b) As children acquire the formal con-
of the ways in which children organized the meaning of words. At the top of the figure are the earliest, undifferentiated, synesthetic word meanings. In the middle are "complexive" word meanings, which are organized in terms of syntagmatic relations. At the bottom of the figure is the structure of word meaning corresponding to true concepts which arise during adolescence.

In light of discussions to come, it is important to emphasize a little noted fact. Vygotsky did not believe that the earlier, genetically prior forms of concepts simply disappear and are replaced by later, true concepts. Rather, he believed that old forms continue to "dwell alongside" the newer, higher forms and that they reappear under a variety of circumstances. Adult thinking, he wrote, is often carried out at the level of complexes, and sometimes "sinks to even more primitive levels." (1987, p. 160).

It is also important to keep in mind that Vygotsky believed that when we add the mediation of activity through print to the story of human development, we are no longer talking about a form of mediation that is universal. In some societies, and in some historical periods, cultures have arisen that have created elaborate systems of graphic communication to mediate their lives together. Ancient Sumeria was one such place, China was another. All industrialized societies in the modern world fit into this broad historical stream. In such societies, sometime during mid to late childhood, adults arrange for children to spend many hours over several years acquiring the ability to read, write,
and calculate numbers. This instruction takes place in large
groups of children of about the same age, under the supervision
of 1 or 2 adults who are not kin. The interactions in such
settings are usually quite formal. Children raise their hand to
speak. The teacher does most of the talking and almost all of the
question asking. Children talk to each other only under
restricted circumstances. For our purposes here, the major thing
to note about all such settings is that the interactions are
heavily mediated by print.

In proposing these developmental patterns, Vygotsky had in
mind the cultural circumstances of the kind that he considered
normal and ideal for his own time and place, circumstances in
which children began attending school at the age of 6-7 to
undergo deliberate instruction in a manner that mediated their
learning through writing systems. He believed that instruction is
central to the productive inclusion in children's thought
processes of the scientific concepts that underpin the school
curriculum. The role of writing in the ontogeny of this stage-
transformation, vis a vis schooling, is currently widely debated.

Why written speech is hard to learn

School is not the only place where children encounter print. Even in parts of the United States not renowned for producing
great scholarship, children come to school with some rough and
ready ideas about print that derive from their early experiences
at home and in their communities, a process it is currently
fashionable to refer to as "emergent literacy." What sets school
apart in this respect is that school is the place where print is almost exclusively the object of activity rather than a tool for achieving child goals.¹

Why, Vygotsky asked, "is written speech so difficult for the schoolchild?" (1934/1987, p. 202). His answer had several parts which I will summarize quickly because they have been often discussed by participants in these meetings. First, he believed that writing involves a double abstraction process. The first kind of abstraction involves the material realization of written language vis à vis oral language. He had this to say on the subject:

Even the most minimal level of development of written language requires a high degree of abstraction. Written speech lacks intonation and expression. It lacks all the aspects of speech that are reflected in sound. Written speech is speech in thought, in representations. It lacks the most basic feature of oral speech; it lacks material sound (p. 202).

The second kind of abstraction involves the social context. [Written speech] is speech without an interlocutor... speech monologue. It is a conversation with a white

¹ Vygotsky, following Janet and many other contemporary psychological thinkers in Western Europe and the United States, proposed that the acquisition of literacy/schooling made possible a higher, more logical mode of thinking owing to the way in which writing changes the subject's resources for systematic thought. Written speech, he wrote, "forces the child to act more intellectually."
Vygotsky argued that a second factor impeding the acquisition of written speech is that when instruction in written speech is introduced to children they are not conscious of language. In order to acquire written language, he argued, spoken language must first arise as an object of thought. Recent commentators on this issue refer to this requirement as the attainment of "metalinguistic" abilities associated with the acquisition of literacy. Vygotsky believed, and many contemporary developmentalists agree, that metalinguistic abilities are only beginning to develop at the age of 5-7 years of age when children enter school and instruction in writing begins.

The third impediment to acquiring written language emphasized by Vygotsky is that written language requires that children do voluntarily, with effort, what they did unconsciously and effortlessly as younger children. The social world and mediation becomes central to the acquisition of written language in a special way because that world is the source of motives for writing that might potentially have the right mediational qualities to promote acquisition.

When we come to consider the question of why written speech is so difficult for the college student the impediments that Vygotsky attributed to the mental characteristics of children just entering middle childhood do not apply in a uniform way. College students, we assume, have more or less mastered the
narrowly technical aspects of the writing process and they are, in many circumstances and to varying degrees, able to apprehend the abstractions involved. They have acquired not only metalinguistic knowledge but the ability in some contexts to think about their own thought processes (called metacognitive knowledge) in a sophisticated way. They are in a position to appreciate why writing is an important ability to master and even when they are not intrinsically motivated, they have developed a good deal of self control which should aid them in sticking to the task. Initially, in fact, this account makes the difficulty that many college students (and professors!) manifest in writing something of a mystery. What could be the source of the problem?

First, we should not rush to judgment on adolescent and adults abilities to deal with the abstractions involved in the transition to written speech. To say, as Vygotsky does, that written speech is thought in representations gets at part of the problem: remember that those representations are only partially domesticated; they are still fused with affect, they often appear as complex images experienced as a simultaneous whole that must be broken apart and reassembled in the sequential flow of writing. The second kind of abstraction, the abstraction from audience, also remains a difficulty.

Nor is the issue of motivation fully resolved. To be sure, college students know, in general, why they need to write effectively, but this knowledge remains abstract except for the motive of pleasing the teacher and obtaining a good grade.
Finally, we should keep in mind that when we speak of college composition we are generally referring to forms of writing which deal with concepts that are parts of complex systems of ideas they are only beginning to master.

On balance, then, the problems of teaching composition at the college level share many key features with the problems of acquiring written speech at the elementary school level, assuming we displace them slightly to account both for the increased cognitive and linguistic abilities of college students vis-à-vis children and the increased complexity of the contents with which they are asked to deal.

Surveying the evidence

As a heuristic device for coming to grips with the literature applying Vygotsky's ideas to college writing, I found myself ordering the various approaches in terms of the basic mediational triangle which appears often in his writing (Figure 2). This simple schema represents the fact that human beings are constituted by a dual relationship to the world, one "direct," the other "indirect" (e.g., mediated). Consciousness arises from the synthesis of ever-present dis coordinations between these two forms of interaction.

Researchers who adopt what is often referred to as a "cognitive" approach to writing place their emphasis on the left hand side of the triangle, the subject. Although the point could
Language Acquisition

Figure 2: Children experience the world in two distinctive ways once they acquire language: directly through their sensory contact with the physical environment (world 1) and indirectly (symbolically) through language (world 2).
be argued, I would place the work of Linda Flower (1989) in this corner of the mediational triangle. Although this work accords more importance to the social world than the earlier approach of Flower and Hayes (1981) it continues focuses on "how context cues cognition, which in turn mediates and interprets the particular world that context provides." A quite different way of emphasizing the cognitive processes of the individual is contained in Peter Elbow's suggestion that writing which is not audience-contingent may be especially effective. Finally, all approaches which attempt to promote writing by the exercise of metacognitive skills fall within this group.

Perhaps the largest number of Vygotsky-inspired approaches to writing instruction focus on the "world" side of the mediational triangle. I take this approach to be motivated directly by the cultural-historical emphasis on the social-communicative nature of mediated activity and the effort to overcome the problems that arise when writing is reduced to a conversation with a white piece of paper (or a blue computer screen). Representative scholars pursuing this line of approach at the college level include Arthur Applebee and Kenneth Bruffee, among many others. An emphasis on writing-as-communication leads naturally to the use of collaborative groups and the importance of communities of writers as a source of both motivation and conceptual structuration. This same emphasis leads naturally to ways in which to realize the latent dialogical potential of writing, and hence to the ideas of Mikhail Bakhtin that will be
I realize that I have been simplifying by assigning different approaches to the subject or object apexes of the mediational triangle. In reality, all three approaches acknowledge, even if they do not foreground, each of the essential elements in the mediational triangle. But the simplification becomes especially problematic when it comes to identifying approaches that focus on the mediational instruments themselves because such instruments so clearly exist in relationship to subject and object. Nonetheless, there are a number of approaches to writing that acknowledge some debt to Vygotsky while focusing primarily on the role of mediational structures in the writing process.

One group of studies that I would assign to this category attempts to provide structured media of various kinds as technological scaffolds for writing. An example of this approach is found in the work of Carol Sue Englert and her colleagues (e.g. Englert and Raphael, 1989). These researchers have designed a system of "think sheets" which act as concrete reminders of appropriate strategies to use at different phases of the text production process (e.g. planning, organizing, editing). A number of such approaches are making use of the potential of computers, most recently in the form of hypercard stacks, to provide flexible scaffolding devices (I have in mind here programs such as those designed by Scardamalia and Bereiter, Salomon, and others).
An interesting property of research that focuses on modifying the mediator as a means of enhancing writing instruction is that sooner or later it leads the researcher to come to grips with the nature of the mediational process itself, and hence to an approach that encompasses all three points of the mediational triangle. Englert and Mariage (1992) for example, title their recent paper "Shared understandings: Structuring the writing experience through dialogue." Let's one think that cognitive processes are somehow missing from this formula, note that they speak of their text-structuring instructional aids as "cognitive strategy" instructional tools. Similarly, Scardamalia and Bereiter, while continuing to use psychological-sounding terms like "knowledge building" and "knowledge reproduction" strategies, speak of the computer programs they have designed to enhance writing as "technologies for knowledge-building discourse." Many examples of this kind could be given.

Before ending my all-too-cursory account of contemporary work employing Vygotsky-like ideas to writing instruction I need to add an additional dimension to the task that is not captured, even crudely, by the mediational triangle representation. The triangular schema represents the structure of mediation but it says very little about the activity which is being mediated. And as not only Vygotsky, but all of those who use his ideas are well aware, the nature of this activity is essential to understand. After all, it is the activity that gives rise to the goals which motivate students' actions.
Here, as several commentators have noted, Vygotsky's ideas are very much of a piece with those of John Dewey. Vygotsky, like Dewey, emphasized the importance of authentic activity as the basis of good pedagogy. Speaking of young children, he wrote, in terms that Dewey would certainly approve of, that "writing should be 'cultivated' and not 'imposed.'"

It would be foolish of me to attempt to review all of the attempts by members of this organization to implement this injunction in their research and teaching. As an outsider reading this literature, I am impressed by the incredible amount of energy and intelligence that has gone into organizing pedagogical contexts that afford the kind of activity that Vygotsky has urged as an essential condition for the acquisition of written speech. This is certainly what Bruffee and Applebee have done at the college level and many others are doing at all levels of the curriculum. It is the approach that I try to follow in my own teaching. However, I think it would be a mistake to be dogmatic about the conditions which make possible the right conditions for writing acquisition.

As I understand it, what we are striving for in all forms of literacy instruction is the right dynamic balance between the three points of the mediational triangle. This balance does not require that we give equal attention to each aspect of the process in every minute of instruction. Rather, it should be achieved in the curriculum as a whole, over time. It seems natural and proper to me that at certain points in the
instructional process we might concentrate on textual analysis, on the development of rhetorical strategies, or on self-conscious awareness of the strategies that our students use. Nor do we want to reduce all writing to a particular form—narrative writing, didactic writing, or any of another of genres with their associated personal and social goals.

It is here that we face our greatest challenge. By and large we as teachers are expected to fulfill our pedagogical goals efficiently, which too often means in a production line-like fashion. The pressure of time and numbers degrades our ability to create the necessary properties of activity with our students, tempting us into the search for technological or bureaucratic fixes.

What we are asking of our students is that they master some of the most complex communicative functions that humankind has yet evolved. Neither we nor our students are likely to be great poets, but what was true of T.S. Elliot is true of everyone who takes pencil to paper in the effort to express their ideas in writing:

[In trying to learn to use words]...every attempt Is a wholly new start, and a different kind of failure Because one has only learnt to get the better of words For the thing one no longer has to say, or the way in which One is not longer disposed to say it. And so each new venture Is a new beginning, a raid on the inarticulate With shabby equipment always deteriorating In the general mess of imprecision of feeling, Undisciplined squads of emotion. (Elliot, 1954, p.22)

Writing is difficult work. Almost as difficult as trying to teach it.
References


