



THE QUARTERLY NEWSLETTER OF THE  
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*COMPARATIVE*  
*HUMAN COGNITION*

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Center for Human Information Processing  
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# THE QUARTERLY NEWSLETTER OF THE LABORATORY OF COMPARATIVE HUMAN COGNITION

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# Introduction

## Inspired Explorations

Each of the three papers in this issue explores new, relatively uncharted waters in psychological research and theorizing. All three papers are inspired by Vygotsky and the cultural-historical school. Instead of trying to apply and refine Vygotsky's ideas in well-defined experimental studies, these papers perform preliminary thought experiments, formulating hybrids between Vygotsky and other theories. From such hybrids they elaborate novel metaphors, possible springboards for further research.

In the first of the three papers, Bonnie Litowitz suggests a hybrid between Vygotsky and Winnicott's version of psychoanalysis. Identification and resistance emerge as novel metaphors, possible conceptual extensions to the usual framework for dealing with internalization and zones of proximal development.

In the second paper, Michael Glassman suggests a hybrid between Vygotsky, Brent's ideas of collective development and Gruber's approach to creativity. What emerges is a three-step model of creativity, applicable in studies of change and innovation in workplaces and organizations.

Finally Aksel Mortensen suggests a hybrid between Vygotsky and Rommetveit's notion of intersubjectivity. Mortensen calls his novel metaphor the idiosyncratic closed room of a person. The metaphor is not necessarily remote from the notions of resistance and identity suggested by Litowitz. Both authors are trying to understand why internalization and learning do not always take place smoothly and harmoniously. There is also a connection between these ideas of resistance and conflict and Glassman's point about the origins of creativity in the multiple opposing voices internalized by an individual.

We invite the reader to join in a search for further connections and oppositions between and within these three inspired explorations.

Yrjo Engestrom  
Olga Vasquez

## Just Say No: Responsibility and Resistance

Bonnie E. Litowitz  
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Ever since Vygotsky (1978) we take it as axiomatic that all development appears twice or on two planes, first intersubjectively (i.e., between two people) and then, intrasubjectively (i.e., within one person). The process by which inter- becomes intra- is called internalization or interiorization: what was once external becomes internal; for example, other-regulation becomes self-regulation.

Since the zone of proximal development is the difference between what the learners can do on their own and that which they can do in collaboration with a more knowledgeable other, the zone defines the space or range where learning takes place and internalization describes the process of learning that takes place there. Examples illustrating how this learning process works require two persons, one more knowledgeable than the other; usually a mother and child, but also a teacher and a student or an expert and a novice. These two persons working as a dyad approach a task or problem organized (sometimes called "scaffolded") in steps by the knowledgeable partner. The novice is directed through the steps in such a way that s/he can ultimately take over the whole sequence.

At first the novice will be carried in the task, given just one part to carry out and guided with questions. Gradually, however, more and more of the steps will be turned over to the novice until the novice shares the same organizational plan as the once-more-knowledgeable partner (Bruner, 1978). In the end, the unequal members of the dyad become equal participants. The non-knower becomes knower as well, able to take over responsibility for solving problems and completing tasks. Several authors note that the movement from being carried in a task to becoming a full participant is capped by "taking responsibility" for a task. Neslon and Gruendel (1986) illustrate this point in a common occurrence in child development.

Getting dressed was relatively low for the younger children and high order for the older. It may be that, although both groups of children had had considerable experience with this routine, the 4-year-olds were *only beginning to take responsibility* for it themselves and thus to have to predict its details. To the extent that a person must plan ahead, the

script must become much more reliably established and automatic. The younger children presumably had not yet reached this point (Nelson & Gruendel, 1986, p. 36; italics added).

Kaye (1982) also notes the gradual process of taking responsibility:

While the infant *takes on a slowly increasing share of the responsibility for the interaction*, other parts of his role are performed for him, or the parents merely pretend he is performing them. In effect, then, he never really achieves autonomy until he has become a member of the system, taking over functions that had been performed by the parent (Kaye, 1982, p. 226; italics added).

Bruner (1983) describes the earlier appearance of reciprocity in interactions between caretaker and child, who enter into formats or routines “contain[ing] demarcated roles that eventually become reversible” (p. 120). The distinction, however, between the reciprocity of equal partnership and the reversibility of equal responsibility has not been clarified. I will return to it below.

This scenario of sociocultural learning rests on two important presuppositions and raises two interesting questions: (1) The more knowledgeable member of the dyad is always performing two functions: solving the specific problem and teaching the novice how to solve the problem. Is there an innate pedagogical impulse in us?<sup>1</sup> (2) A child wants gradually to take on more and more of the adult’s role in structuring tasks rather than just being carried or directed by an other in them. Is there an innate need to master problems and perform tasks in just the ways more knowledgeable others do?

The unspoken acceptance of these presuppositions leads to descriptions of perfectly orchestrated dyads, moving smoothly through the stages of adult-teaching and child-learning with few exceptions. The positive intent of both participants is only rarely questioned (cf: Henriques, Holloway, Urwin, Venn & Walkerdine, 1984 who confront the “voluntarism” of this approach); and similarly, the smooth efficiency is rarely doubted.<sup>2</sup> However, Goodnow (1987) is one writer who does so:

My disappointment with the picture usually presented is that once again the world is benign and relatively neutral. To be more specific, the standard picture is one of willing teachers on the one hand and eager learners on the other. Where are the parents who do not see their role as one of imparting information and encouraging understanding? Where are the children who do not wish to learn or perform

in the first place, or who regard as useless what the teaching adult is presenting (p. 15)?

When, as often happens, learning does not take place, we are left with two possible causes: either the adult did not create the right scaffold or the child was not able/did not choose to use the scaffolding provided. Such a child may be seen as deviant or even deficient in her or his ability to learn, requiring special structuring of tasks by an expert (e.g., a special educator). In the paper quoted above, Goodnow goes on to mention her own inability to learn how to type. Proficiency in such a skill would have identified her with a group of “girls who were expected not to do well academically” (Goodnow, 1987, p. 17). The cause of her inability was neither poor teaching methods nor lack of ability to use those methods. Rather she claims that “areas of knowledge and skill are differentially linked to one’s social identity, and that the linkings can help account for both acceptance and resistance to learning” (ibid.).

This example points out two elements missing from discussions of the zone of proximal development and the learning theory based on internalization: identification and resistance. What motivates the children to master tasks is not the mastery itself but the desire to be the adult and/or to be the one whom the adult wants her or him to be. Such desires constitute identification with another person as described initially by Freud (1917, 1923) and elaborated more recently by Lacan (1977; see Henriques, et al., 1984). Making the same point but from a sociological perspective Goodnow concludes:

A link to social identity seems essential also in any Vygotskian account of negotiations toward a transfer of skill or a shared definition of a task. The negotiations one is willing to work on are likely to be those with people one perceives as similar, wishes to be like, or wishes to impress (1987, p. 18).

One assumes that Vygotsky would concur as he concludes *Thought and Language* with the following challenge:

To understand another’s speech, it is not sufficient to understand his words—we must understand his thought. But even that is not enough—we must also know its motivation. No psychological analysis of an utterance is complete until that plane is reached (1986, p. 253).

The transfer of a skill or learning takes place through the process of internalization, exemplified in Vygotsky’s insights concerning egocentric and inner speech (1986). The language of an other becomes our own when we speak

to ourselves as others first spoke to us. Thus, as the child internalizes the language that structures the task, he becomes the one who speaks in that manner.<sup>3</sup> We know, following Vygotsky, that language as internalized social mediation changes not only the content but creates new processes and forms of thinking; indeed changes all high mental functioning (e.g., perception, memory). But not just cognitive structure is altered; psychosocial structure or *lichnost* (personality) becomes altered as well. We may say that as our inner speech is the internalized speech of others, our self is constituted by the internalized others who speak.

For this reason, however, we cannot assume a uniform internalized voice or only one way to transfer a skill. In an example of apprenticeship in skill learning, illustrating the zone of proximal development, Kaye observes:

The parental role...is [to] pose manageable subtasks one step at a time, and gradually pull that support away from [children] as their competence grows...When my father taught me to swim he backed away as I paddled toward him. I can remember crying that it was unfair — but 25 years later I did the same thing to my son...(1982, pp. 55-56).

Although Kaye offers this anecdote as an example of an innate pedagogical impulse, an identification with his own father and thus with how fathers behave is an alternate interpretation. I would argue that it is a preferable interpretation because there are so many counterexamples. What can we say about the father who pushes his son off into deep water with: "Swim! Your cousin Helene is a year younger than you and she already knows how to swim!" Was this father's goal to teach or to compete with his brother through their respective children? Yet children do learn via the sink or swim method, and there are undoubtedly a variety of preferred methods depending upon skill to be transferred as well as intercultural, intracultural and personal styles (Wertsch, Minick & Arns, 1984).

Ever since Bakhtin (1973, 1981) we take it as axiomatic that speech is heteroglossic or polyphonic; that is, speech is dialogic within itself. We are born into a language and internalize speech that has a history; it has its sources in many voices from many dialogues, making our speech in turn equally multiple. Bakhtin notes that "the ideological becoming of a human being...is the process of selectively assimilating the words of others" (1981, p. 341). Contradictions and conflicts arise among these internalized voices, not just inter-sociologically and ideologically, but also interpersonally. Speaking of the "intense interaction and struggle" within each utterance,

Bakhtin states: "The utterance so conceived is a considerably more complex and dynamic organism than it appears when construed simply as a thing that articulates the intention of the person uttering it, which is to see the utterance as a direct, single-voiced vehicle for expression" (1981, p. 354). Such a view makes every speech act not only indirect but contradictory and conflictual.

Since these multiple voices are the source of our subjectivity, we are fractured and split untrasubjectively, unable to speak with one voice (Lacan, 1977). In Goodnow's example above, the speech that structures learning how to type and the speech of the person who knows how to type, i.e., the one you will become if you internalize that knowledge, may contradict one another. And these contradictions do not yield so easily to sublation!

The zone of proximal development addresses how the child can alter her/his behavior by copying my behavior to become more like me. As such, its use can come perilously close to a description of learning as a neo-behavioristic shaping of behavior (viz: Nelson, 1986, p. 237). This is especially true when the adult's role is described as a series of carefully arranged steps, teaching skills (e.g., "raise the ante," "communicative ratchet," "extension"), and when the child's contribution as *tabula rasa* is to absorb the language and structure input from the adult.

I have noted elsewhere (Litowitz, 1988) that the zone of proximal development is an adultocentric view of the child's behavior. As Goodnow observes: "It is too exclusively concerned with what is being done by the dispensers of knowledge" (1987, p. 16). The child's perspective, I have suggested, can be captured by another spatial metaphor: Winnicott's potential space (1971). The potential space is the *area* that is neither what the child nor the mother knows. It is the range of the child's grandiosity and omnipotence. In that space the child sees her/himself as more capable than s/he really is. Like Vygotsky and the zone of proximal development, Winnicott connects the potential space to play, the use of symbols and creativity. Unlike Vygotsky, Winnicott notes its connection to fantasy and illusion. One could say that a child performing in the zone of proximal development with an adult feels her/himself to be accomplishing the task and that the adult's organization of the task (what Winnicott calls the "holding environment") permits that illusion or fantasy.

A child psychoanalyst once asked me how psycholinguists explain why young children continue speaking when so much of what they produce is phonologically,

grammatically and semantically in error: Don't they hear that they're wrong a lot of the time and don't they get discouraged? One answer is that the force of the innate preprogram of a universal grammar (LAD) will prevail and needs only minimal practice. Another is that errors are patterned and show rule acquisition; the child as little linguist must feel as positive about acquiring those rules as linguists are about positing them. Still another answer is that, by speaking, children feel like adults and hear themselves as more competent speakers. Children may tolerate their lack of structural competence as long as pragmatically they are using language as adults do, and thus using language to be adults. In fact, children do not feel incompetent unless adults interfere with their grandiose fantasy of enhanced performance.

Does the adult create the potential for that illusion through a pedagogical impulse or because s/he also has a fantasy? I think the latter: s/he believes that the child can be/is becoming just like her/him. Thus, identification defined as the process of *making similar* or *being like* (L. *idem* same) goes in both directions, from child to adult as well as from adult to child. The role of parental fantasies is seldom noted (but see Kaye, 1982, pp. 189-203). The use of fantasy in creating goals for activities is inexplicably underappreciated in Vygotsky's theory of learning since it was Marx (in *Capital*) who claimed that the difference between the most talented bees and even inept architects is one of imagination and fantasy. So we might say that mothers are as grandiose and omnipotent in their expectations for their children as children are for themselves. One could even go further to state that fantasy will need to be better understood if the concept of a dyad is ever to transcend the personhood boundaries of its two separate participants. That is, only a distortion of reality (fantasy) allows one to treat another person as performing a function for oneself or as performing a function s/he is incapable of (cf: Kohut, 1971).

Some theorists have called attention to the child's contribution to the learning process by suggesting that the child may bring a different definition of the task to the dyadic process (e.g., Rogoff & Wertsch, 1984). It is important, they remind us, for adults to understand where the child is coming from so that they can more finely attune their assistance in the ZPD, making the interiorization process easier for the child and avoiding resistances or obstacles to a smooth transition of knowledge, inter- to intra-. However, redefinition of the task to include the learner's perspective should not only involve a reexamination of what we are asking the learner to do but whom we are asking the learner to be. One encounters the same

deficiency in discussions of language functions or pragmatics, which, following Austin, emphasize what one can do by means of language, neglecting who one can be through speech.

There are causes of resistance other than those based on contrasting definitions of the task or even conflicting identifications. Sometimes, I would suggest, resistance is an early or primitive form of identification. That is, the very process that motivates internalization of knowledge can be manifested as a resistance to cooperation in the smooth functioning of that process. For example, in a study of interactions between mothers and their preschool children, dyads were asked to engage in any free-play activity of their choice. In spite of her child's objections, one mother insisted on reading a story with her child (perhaps to impress the videotapers?).

This mother tried several different ways into book-reading as an activity: "we do this all the time;" "you know you love to read books." But the child always refused: saying "no;" turning away; refusing to sit still; grabbing the book from her mother, etc. The mother tried to establish a routine in which the child would be forced to participate: "Oh, look, a little dog. What's he doing?" Refusing to be carried in the activity, the child gave only absurd answers; for example, reducing the task beyond even picture descriptions, the mother asked how many eyes the dog had, to which the child responded, "five!" Such rejections of activities can signal early attempts to perform the adult's functions of choosing and structuring activities.

In another example, a 3+ year-old child with Downs Syndrome who is mainstreamed in a 2+ year-old nursery school class had learned over the course of the year how to participate with the other children in group action-songs at rug time. Checking the teacher's and other children's actions, he would follow the record's instructions to touch the floor and point to the door, touch your head and point to something red, and so forth. Wanting to enhance his performance (perhaps for the university team videotaping in the classroom?), a teacher took over his actions by holding his hands and dancing with him, twirling him to the music. He collapsed on the floor, totally dependent, so that she had to take over all direction of his actions, even holding him upright. His drop in performance from equal participation to being carried in the task was in response to the teacher's refusal to relinquish functions to him.

Once again we can look to language development for insights into these phenomena; specifically, the acquisi-

tion of negation. Pea (1980) demonstrated that the earliest expressions of negation by the child are refusal and rejection. (Self-prohibitive use of "no" is also relatively early; that is, using negation to oneself as others had used it previously to regulate one's behavior.) In contrast, commenting on the non-existence or disappearance of things or persons, and especially denying the truth of a proposition are later acquisitions. The earlier forms of negation are tied to interpersonal relationships (Spitz, 1957). In comparing the child's and mother's uses of the contexts of child-rearing practices, Pea demonstrates that the use of negation reflects negotiations in interpersonal relationships between self and other. Early forms of negation serve to separate self from other in a primitive way: I am not you; I refuse to participate. In contrast, denial places negation within a proposition which must be spoken by someone taking up a position within a dialogue, and is therefore negation *within* participation: I am like you; I am participating but I disagree with what you assert.

Just as the refusal to participate in scaffolded activities may be an early stage in the identification with-the-adult process, taking responsibility for an activity is an acceptance of identification which would permit the child to alter it by denial. In the following example, this exchange transpires midway in a study on the transfer from mother to 2;4-2;9 year-old child of a novel script involving a circus game (Lucariello, Kyratzis & Engel, 1986, p. 158). Transmission of scriptal knowledge was to be accomplished by repeated joint-action with the circus toys, noting at different points how the child was internalizing the mother's sequence of events, uses of objects, roles of persons such as ringmaster, lion tamer, and so forth.

- C: (Scoops the lions up off the floor and throws them into cage.) They not going to do tricks today.
- M: No tricks today! Oh, the children are going to be so disappointed!
- C: (Scoops lions out of cage and puts them into ring.) The which lion's performing.
- M: What kind of tricks will they do?
- C: No lion man!  
(Picks up tamer and puts it into ring with lions.)
- C: (Cracks the tamer's whip against floor of ring.)
- M: What do the lions do?
- C: He doesn't want to do the hoops today.  
(Throws the lions back in the cage.)  
He's going to sleep; he's resting.
- C: No one's performing today.

In this case the child demonstrates the internalization of event knowledge by staying within the framed activity, but he negates the mother's acts for framed objects, thereby taking over her role as the one who decides what happens and how objects will be used. Clearly, this child is not just learning script structure any more than children are *just* learning the forms and rules of negation in English.<sup>4</sup>

I have made a similar point about the acquisition of pronouns (Litowitz & Litowitz, 1983). The child's progress from personal name or "me" to "I" in self-reference signals a shift from the child as object for an other to her/his position as subject. Children are not simply learning the forms of expression and rules of use for the pronominal system in English; they are learning how to participate reciprocally and then reversibly in discourses with others. Pronoun acquisition concretely reflects Vygotsky's maxim that "all development consists in the fact that the development of a function goes from *me* to *I*" (1989, p. 64). Being able to establish oneself as an equal "I" is to accept a shift from reciprocity to reversibility, an important step towards responsibility.

In the following examples, the 3+ year-old child (mentioned above) takes responsibility for his actions and even takes on some of his teacher's functions. Following the above exchange when he collapsed with over-assistance, he joined in a game where everyone sits in a circle with their feet in the center. The teacher acts frightened, exclaiming: "Oh dear, there's a boa constrictor!" She instructs the children to act frightened, whereupon this little boy adds, "We'd better hide!" heightening the atmosphere of mock-terror that sets the scene for the actions to follow (Oh no, he's up to my toes; oh gee, he's up to my knees; oh my, he's up to my thighs...oh heck, he's up to my neck). In another game, all the children pretend to lie sleeping on the floor while the teacher steals into the rug area as a monster and scares them. After several repetitions, this little boy, pointing to himself, goes outside the rug area to imitate the teacher-as-monster. Thus, he takes over her role in the game, going from reciprocity (the scared one to her scarer) to reversibility (the scarer to her scared one) in their roles.<sup>5</sup>

The desire to move beyond participation to responsibility is in itself an act of resistance, a resistance to be dependent and controlled by another. The motivation cannot be mastery of the other's skill but to be the other *by means of* mastery of the skill. Language plays a crucial

role, not just as a social sign system (e.g., shared referent labels and denotative meanings) or as the means to do things (e.g., organize activities, regulate others and oneself), but as a means to be a human subject—that subject lying hidden in the syntax of “cogito ergo sum” who has been lost to linguistics and objectified as “experimental subject” in psychology.

## Notes

<sup>1</sup>We see this kind of behavior in any adult, even in children...it is a basic birthright of the human species [with] adaptive value, directly related neither to the individual's survival nor to reproduction. Instead, its *raison d'être* is education, bringing up the young” (Kaye, 1982, p. 68).

<sup>2</sup>The smoothness may have its roots in Hegelian (and Fichtean) dialectics, albeit reinterpreted by Marx, in which conflict and contradiction are cancelled out and overcome (*aufhebung*), always in a positive and progressive direction. The negation of the dialectical process, however, ignores the fact that there are different kinds of negation (Wilden, 1984; Pea, 1980).

<sup>3</sup>Kaye quotes Delgado: “We cannot be free from parents, teachers, and society because they are the extracerebral sources of our minds” (1982, p. 237).

<sup>4</sup>Certainly, issues of power and control are at work here but not in any simplistic sense (Verdonik, Flapan, Schmit & Weinstock, 1988; Henriques, et al., 1984).

<sup>5</sup>The role of turn-taking in reciprocal games such as peek-a-boo is obvious (Bruner, 1983). Here I wish to stress that step beyond which is responsibility.

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## Self, Other and Society: A Vygotskian View of Creativity

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What had been another Ford strength, his use of manpower, also turned sour. The early workers at Ford had been skilled artisans, tinkering with designs as they worked. A job at Ford's, as it was known, has been desirable because Henry Ford was at the cutting edge of technology, always trying to do things better, and men who cared about quality wanted to be a part of his operation. In the early days he had his pick of the best men in Detroit. But the mechanized line changed the work place. These new jobs demanded much less skill and offered much less satisfaction. The pressure to maximize production was relentless. Men who had prided themselves of their skills and had loved working with machines found themselves slaves to those machines, their skills unsummoned (Halberstam, 1986, pp. 83-84).

Creativity plays an important part in the relationship a person has to society and to himself. The use of any concept, in a creative fashion, puts thinking on the level of what Vygotsky (1987) would call the scientific concept. Integral to creativity are three inter-related factors which would generate and guide the process, production and

dissemination of creative thought, in the Vygotskian framework: the internal processes of the individual, the mentor-like status of the teacher (where teacher is both individual and community), and the history of the social structure of which the individual is a part. Underlying all of this is the dialectical relationship between self and self, self and other and self and social structure which allows the human to develop.

The ability to be creative is considered by some to be basic to the way the mind works. The production of new ideas has been presented as imperative for the happiness of an individual: the young Marx felt that labor should be creative and spontaneous if it was not to be dehumanizing (Agassi, 1978); and the above quotation from a book on the auto industry is a concrete example of how workers value the atmosphere that allows creativity and find repugnant the assembly line mentality that stymies it. The dissemination of ideas can be viewed as the last step of the creative process, necessary for the continuation, rather than degeneration of society. It is the ability, from T.S. Kuhn's world view, to not only see the anomalies of the present *Weltanschauung*, but to create and establish a new *Weltanschauung* in the scientific community.

Creativity starts at the individual level. It is probably a combination of inter-individual forces working in conjunction with intra-individual forces. The inter-individual forces could range from one special person, or a series of special people (John-Steiner, 1985) to the entire society as suggested by Leont'ev (1969). John-Steiner uses the term *apprenticeships* to describe the effect individuals have on other individuals. One of her examples is Mozart and the instruction he received from his father, Leopold, at a very early age. The father was completely devoted to the education of the child. It is suggested that the ease and fluency with which Mozart was able to compose in later years was a result of this very persistent training during his younger years. John-Steiner goes on to depict how the home experiences influenced the ability of the child to create in the lives of people like Noam Chomsky, Julian Huxley and Lillian Hellman.

Leont'ev also believed that children create from the way they function actively in the world and that the objectified world is mediated through an individual's relationship with people. But he shows a very different outside effect on the ability of people to become fluent in certain types of endeavors. Leont'ev hypothesized that people who grow up in a language system that requires them to distinguish between different sound complexes would have a greater affinity for tone and pitches, making

it almost impossible for them to be tone deaf. Leont'ev shows through his own experiments, and by citing other scientists, that the tonal quality of the language does effect the individual's basic abilities with music.

The separation here between individual teachers and general society or community in learning and mastery of a subject, which according to John-Steiner helps lead to creativity, is artificial. The child's development is based on relationships with those around him, but those around him are in turn effected by the general society. For instance, it is possible to assume that if Mozart had been born in a country which put less emphasis on musical accomplishment than Austria of the nineteenth century, he might not have achieved fluency no matter how energetic and devoted a teacher his father may have been. Leopold Mozart may not even have existed in the same form in another country. John-Steiner depicts how Chomsky was exposed to thinking about language at a very young age because of his father's work in medieval Hebrew grammar. How much of his development was the atmosphere created by his father, and how much of it was the emphasis the entire Hebrew culture puts on the nuances and intricacies of language?

It is probably not the inter-individual alone that is responsible for the creative process. Bibler (1983) offers a model of internal dialogue based on the dialectical notions of Hegel and the inner speech of Vygotsky. By internal dialogue Bibler seems to be saying that as humans we are constantly in a discussion with ourselves: that discussion, in which one point of view is constantly in dispute with another point of view, is what gives rise to creative thought.

This constant dialogue in the mind comes from Hegel's notion that text is constantly reversing back on itself inside the mind of the reader. This is attached to Vygotsky's notion that the inner speech is condensed, a fusion of predicate and subject. The subject and predicate, once inside the individual, a part of inner speech, become condensed to the point where there is no particular subject and no particular predicate. This causes the individual to create a single unit out of the externally separate subject and predicate, thus constantly reversing the subject and the predicate of any outer speech statement which has become an object of reflection in inner speech. There is always, in reflection on any subject, an opposition, a constant dialectic within the individual over the meaning of that subject.

According to Bibler this process transforms the idea of a static culture that is fed into the individual into a

dynamic culture "which is fused and condensed in the individual person." Activity is internalized and becomes a dialogue of opposing voices as the subject and predicate reverse back upon reflection. It is this dialectically functioning inner speech which allows culture to change as a result of the individual; for inner speech becomes not only an internalization of ideas, but a possibility for the externalization of new ideas.

An example of this type of reversal within inner speech manifesting itself in new ideas and consequently in a new orientation towards external activity might be found in the amazing developmental leaps of the physical sciences of the first part of this century. Newton's theory held for almost three centuries that time is constant throughout the cosmos. But if that idea is reversed in inner speech, "constant is time throughout the cosmos." This might have finally led to an idea, by Maxwell, that at first seemed utterly nonsensical; that clocks could slow down depending on where they were in the universe. This absurd new idea, which seems to go against all common sense, finally led Einstein to his theories of relativity. Maxwell took what was external and accepted in the culture (in essence the activity of every physicist up until that point), Newton's physics, and through some type of inner dialogue was able to create a new concept which, when expressed, led to a new orientation toward external activity. It is, of course, impossible to discern if this was the process that Maxwell went through. But it does boggle the imagination to think that all through history people have been able to come up with these inexplicable ideas that have changed the course of activity.

When Planck presented his results to the Berlin Physical Society that month, he was extremely modest, only half believing the full implications of his own theory.

Five years later, in 1905, Einstein (still an obscure physicist) carried the quantum theory to the next crucial step when he wrote down the theory of the photoelectric effect. Unlike Planck, who was a reluctant, almost timid revolutionary, and whose temperament was typical of a nineteenth-century physicist, Einstein struck out boldly in new directions with this theory. (Kaku & Trainer, 1987, pp. 43-44).

There must be something more to creativity, the creation of new ideas, the creation of new orientations towards activity through concepts than the inter-dialectical (the individual and society) and intra-dialectical processes (opposing voices within the individual). If not, people would constantly be creating new concepts, science would be in a state of constant revolution, the work

place would be in a state of constant flux. As Kuhn points out, however, true revolutionary science is rare. It took physics three centuries to move from Newtonian physics into the quantum era. Bibler seems to maintain that the dialectical relationship found within the mind is the result of reflection on ideas. John-Steiner emphasizes how many creative people have had special personal relationships that allowed students to absorb a special type of knowledge from their mentors and take that knowledge to a new level. The question is, what is it within the social system that allows for this type of reflection of absorbed knowledge in anticipation of externalizing a new concept?

Brent (1978) has taken Hegel's dialectical philosophy and applied it to what he calls the "organismic collective." The development of the whole organism (e.g., a social structure) is dependent upon its constituent parts (i.e., the individuals) and the development of the parts is dependent upon the organism as a whole. Taken in the context of the work place this means that the work place as a whole and the individual workers are in a dialectical relationship: each stage of development bears within it its own seeds for destruction—and the dialectical model for moving to a new stage.

Brent sees each developing organismic collective moving in what seems like diametrically opposed directions. On the one hand the organism is moving towards greater efficiency within its environment. In order to achieve this efficiency the more established individuals move to a higher and higher degree of specialization. At the same time, the organism is constantly aware of its need to adapt to a changing environment, to create new techniques for new circumstances.

In Brent's scheme there are actually layers in the organismic collective, each layer populated by a single cohort. The layer is defined by its degree of specialization and stability; the older the cohort the greater both the specialization and stability. The younger cohort's lack of specialization allows them greater freedom in determining novel means for meeting changing environmental conditions. The older cohort's efficiency and knowledge allows the younger cohort to have a stable base from which to venture.

Brent provides an excellent example in the way different cohorts in psychology use statistics. Members of the older cohorts do complicated statistical packages by hand, limiting the type of problems to which these statistical packages could be applied, but also supplying a strong knowledge of the processes by which these statis-

tics work. The younger cohorts in psychology have adapted their use of statistics to computers, allowing them to use statistics in ways that the older cohorts never dreamed possible. Yet, when a member of the younger cohort runs into a problem that can not be easily understood, s/he is dependent upon the knowledge base of the older cohort to put the answer in perspective.

This type of dialectical relationship adds an interesting twist to the Kuhnian position of science. An older cohort becomes entrenched in a research program and becomes so specialized in that program that they find it difficult to change. At the same time they are the only ones efficient and knowledgeable enough in the program to recognize and understand the true anomalies. It is, however, the younger scientists in the field who are willing, precisely because of their lack of specialization to the research program, to take these anomalies and create revolutionary science with them. This is a logical explanation for the older cohort of Planck's generation's unwillingness to take his anomaly any further than simple anomaly, while the younger scientists like Einstein were willing to use this new idea to revolutionize the field. The organismic collective of physics was dependent on both for the developmental advances into the quantum era. The developmental stage of quantum has now become the stage of the older cohort, serving as the knowledge base for the creations of the younger cohort (e.g., superstrings theory).

Brent's ideas go far past science and are applicable to everything that can be considered a collective organism, and that includes the work place. New ideas are the result of a dialectical relationship between cohorts, and if one of those cohorts is missing, or does not understand the relationship, rather than development there is destruction. If the older cohort is separated from the younger cohort, the specialization becomes useless and rigid and the adaptive/creative abilities becomes unfocused activity that adds nothing to the progress of the organism. Considering this, the companies and other work places which use wholesale replacement of cohorts in the name of progress might actually be hindering progress. It would benefit all people who have control over a work place to develop systems in which cohorts survive and communicate.

There is a connection here between this idea of the dependency cohorts have on each other and Vygotsky's (1987) view of the development of conceptual thinking within a particular society. In the Vygotskian framework the society or cultural group transmits the accepted concrete knowledge of that group to the individual. Vygotsky

leaves little doubt that this transmission is the result of the older cohort teaching the younger cohort. The individual is presented with a set of pseudo-concepts that provide a stable base for (creative) abstract thinking. The abstract thinking allows the individual to isolate these pseudo-concepts and take them in new directions. The cultural neophyte is dependent on the stable transmission of cultural pseudo-concepts to reach the "jumping-off" point for conceptual thinking. The cultural group is dependent on the ability of its individuals to reach the level of conceptual thinking in order for it to progress. This "macro-genetic" view of Vygotsky provides an interesting framework for Brent's ideas.

... "On what is your system built?"

"On Spinoza and Malthus."

"A peculiar combination. What do you preach?"

"Sex control in the broadest sense of the word."

"What's that supposed to be?"

"More sex and fewer children. The bedroom is the key to all social and individual problems."

"You seem to laugh at your own theory. My father is like that too."

He speaks seriously, he even screams, but to me it seems that he's fooling." (Singer, 1950, pp. 496-497)

The idea that the circumstances of the "organismic collective" must be correct in order for there to be focused, creative work would account for the fact that true creative work does not occur continuously within a community despite Bibler's idea that creative thought is a natural product of human reflection through an inner dialectic. The organism's ability to use the process of creativity is restricted by a cultural dialectic in which creative adaptations to changes in the environment (e.g., anomalies) are dependent on a secure knowledge base and a "mentor-like" relationship between cohorts. Still, these two ideas by themselves would suppose an inevitability to creative adaptation under the correct circumstances and a universality to creative adaptation within a particular cohort.

Gruber (1983) offers some excellent examples of how correct circumstances do not inevitably lead to certain creative adaptations. The Aztec civilization, which had rotary machines, roads for transport and active trading between cities did not take the seemingly inevitable step towards the use of wheeled vehicles; and ancient China, a war-like society which had invented gun powder for fireworks displays never created the gun. It seems logical to assume that something must be present in the society other than optimum conditions for creative adaptation to occur.

This "something more" is tied to the fact that creativity usually does not occur universally among a cohort at a

particular time. It is more like a process in which first a few, and then many, join in the revolution of a paradigm. But there is something special about those few, something that allows them to take their creative product and have some effect on the many and their relationship to the current paradigm.

Gruber (1983) mentions the Great Man (Person?) Theory of History (GMTH) and how, despite the notion that certain creative adaptations are inevitable, we tend to celebrate the individual who was considered to be at the cutting edge. Gruber uses the example of Charles Darwin to help show that creativity must somehow be the correct combination of individual and collective. Gruber points out that the germs of Darwin's ideas were there in his social environment. Keegan and Gruber (1983) trace one societal strand of thought from Jonathan Swift to Malthus, Godwin and Carlile and their public arguments over sexuality and its effect on the species. Erasmus Darwin, Charles' grandfather, was involved in the debate. This one dialogue is probably but part of a greater social atmosphere in which Darwin's ideas came to fruition. As Gruber points out, if it were simply the idea, creativity would be a very private act (Bibler's reflection on an idea?); and indeed at least four Englishmen did envision the idea of evolution through natural selection. What Darwin was able to do with his ideas was to disseminate them to the collective so that they had a general effect on the community.

Gruber uses the term "network of enterprise" to help determine what it is about an individual that allows his/her ideas to gain access to the larger community. Each person's life, according to Gruber, consists of activity in one or more enterprises. The individual is constantly working on these enterprises in the form of networks: problems to be solved arise naturally and are dealt with as new enterprises. What seems to separate at least some of "The Great People of History," like Darwin, is that they are able to create a single idea or project that unites all the enterprises together. This allows the individual to present creative thought as a focused alternative to the current paradigm. Instead of one great insight there is a personal history of several enterprises which have grown, through small discoveries and clarifications, over a period of time; and these small discoveries are tied together by a grand idea. Gruber is careful to point out that this grand idea, even if it exists, is not the reason for all creative production. But it may be this ability to coalesce different networks, and the different enterprises within those networks, into a communicable whole which allows for the dissemination of new ideas. This idea is in line with

Kockelman's (1975) notion of intersubjective validity: in order to communicate in any effective way with members of a certain paradigm, field or organization, a person must be able to coordinate their ideas in a way that the field can readily understand. If the person who is trying to communicate cannot do this s/he will have little, if any, effect on the status quo.

Higher excitations of the string create different forms of matter. From the point of view of the superstring theory, no force or particle is more fundamental than any other. They are all just different vibratory resonances of vibrating strings. Thus a single framework—the superstring theory—can in principle explain why the universe is populated with such a rich diversity of particles and atoms. (Kaku & Trainer, 1987, p. 6)

Marx seemed to be saying that there were two types of labor: one which is not creative and spontaneous and which he saw as dehumanizing and another that is creative and spontaneous which he saw as the natural condition of work for man. Creativity emerges from labor, whether it be scientific labor, artistic labor, factory labor, or subsistence labor. Not only is creative production humanizing, it is necessary for the progress and survival of the collective.

But creativity for an organismic collective is more than just a single function. It is actually three inter-related operations involving the process of creativity, the production of the creative idea, and the dissemination of the idea to the general community. It is not enough, therefore, to have workers capable of creative thought, and it is not enough to have a community that is geared towards creative adaptation; all three aspects of creativity must be working in unison.

Vygotsky's theory provides a framework for understanding and exploring the inter-relationships between the "strings" that lead to the creation of new ideas. His micro-analysis of the individual takes thinking from its disparate beginnings, to societally structured thinking (complexes), to the understanding of societally structured thinking (concepts). At the macro-analytic level Vygotsky's ideas take on a certain resonance in terms of the development of creativity discussed in this paper. Bibler (1985) expounded on the way an individual, once comfortable with his/her society's conceptual thinking, can expand ideas by reflecting upon them. These new reflections, new ideas, survive because the same social structures that pushed the individual to the conceptual stage of thinking act as a solid knowledge base for the individual, i.e., a proverbial "safety net" for critical thought. A scientist (or artist) who begins

to explore new ideas can continually return to his mentors (physically or spiritually) to confirm that he or she is developing thought rather than simply moving it. Just as Einstein must have been referred back to Newton and Planck, and Darwin to Malthus, the creative individual looks for legitimization of his/her process in historical antecedents. It is the older pedagogues who maintain this historical base for their young students.

Yet conceptual thinking does not move ahead solely on the basis of individual actors. Vygotsky implied that even when an individual reached the level of conceptual thinking, his or her thought was still delimited by the community's definition of conceptual thought. New conceptual thinking cannot become part of the community's thought process until it is accepted by the social structure. It is here that the history of the entire community plays a determining role. To combine Vygotsky's socio-historical outlook with Darwin's "descent with modification," an idea does not become a concept until the social structure reaches a point in time (as the result of internal and external forces) where the new thinking will be of benefit in terms of survival. An individual cannot legitimately move on to a new idea until the preceding idea, the "jumping off" point for his or her thinking, becomes part of the social structure.

The fact that these aspects of creativity are presented as discrete entities in this paper does not mean to imply that they occur in any linear manner. Creativity is the result of three operations, and that each of those operations can be functioning at different levels in different organizations. There are different types of creativity, and these types are based on the structure of the organization in which it occurs. What may seem like inconsequential movement (or not movement) to somebody outside the community may be an important adaptation for that community.

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## Culture and Microcosmos of Individuals: The Idiosyncratic Room of the Person

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*Evidence about psychological functioning in different cultures has occupied a central role in the thinking of scholars working in the socio-historical tradition since its inception as a distinctive school of psychological theory and research. Thus Michael Cole in 1986 began his Berlin lecture on "Cross-Cultural Research in the Socio-Historical Tradition" (Cole, 1988, p. 3).*

Psychological ways of functioning in different embedded cultures and subcultures is the ambitious topic of this paper. I will start with a mention of some cross-cultural paradoxes that arise from the neglect of context in the study of psychological functioning.

### Cross-Cultural Paradoxes

In 1987, four researchers (Griffin, Cole, Diaz, & King) at the Laboratory of Comparative Human Cognition wrote the book, *A Remediation Approach to Learning Disabilities*. This book is published in Russian, but not in English. I am very fond of my xerox copy of one of the latest drafts. It contains a deep and thoughtful analysis of reading difficulties and their remediation. The authors are motivated by their cross-cultural studies and the pedagogical paradoxes with which they were confronted in these studies.

In Section 1: *Paradoxes* (pp. 4-13) "Diagnosis of Cultural Differences" is mentioned as the first paradox. Liberian adults without any schooling did not manage the cognitive tests (e.g., arithmetic problems) very well, and it was evident too that the tasks were very strange to them. Instead of understanding the tasks as the psychologists did, they understood them in relation to their own previous experiences and converted them, so to speak, to quite another activity than the intended one. "The experimental technology revealed that subjects were not doing what was intended, *but failed to reveal the alternative system they were using*" (p. 5) (italics added).<sup>1</sup>

When I read this simple statement a number of corresponding frustrating situations experienced in test situations and remedial classrooms came to mind. Most distinctly, I remembered 10-year-old Michael, very intelligent, ambitious like his academic family, but unable to read a very easy text. Michael was determined to read, and to read fast, but every second word was read incorrectly.

When forced to spell, Michael revealed that he did not perceive the letters correctly and in the right order; I suspected that he knew the letters, but became aware that he did not after all when I saw hundreds of them in strange patterns. I found—like Cole and his colleagues in Liberia—that faced with the test Michael did not perform the intended task. Moreover, I was unable to determine the task he did perform.

Peg Griffin, a sociolinguist, found a corresponding version of this same problem in schools in the USA. She found that children whose home background and lan-

guage diverge from that of the mainstream children try to solve different tasks than those expected in tests and reading materials. "Objectively," it is the same task, but the special experiences of these children influence the stress they give certain elements of the task.

Sociolinguists and psychologists can see and understand the problems of using one-dimensional scoring systems for the language and cultural experiences of very different children. "But, they cannot specify what it is that the children with language and cultural differences do when faced with the test or task that does not much match their history" (ibid., p. 5).

Those observations are well-known. But perhaps it is difficult to face the fact that in reality nobody yet has really described what children with linguistic and cultural characteristics do *when they answer incorrectly*.

Another paradox: *Cognitive Consequences of Formal Schooling*. In the last 30 years a lot of research has addressed the question of what are the cognitive consequences of going to school? Rogoff (1981) has done an excellent survey of the research on this issue.

Research cited in this work indicated that age rather than schooling was a critical factor. This was particularly evident when individuals solved problems using strategies they use in their everyday life. The importance of school, on the other hand, is clear when tasks require solving for *their own sake*, independent of their connection with solving problems outside the world of school. In school a particular structure seems to be created which underlines the paradigmatic relations between words and readiness to solve problems for the sake of the very problems. The irksome concept of *transfer* which does not function in the direction from school to everyday life outside of the school, nor the other way, is difficult to get around.

Griffin, et al. are of the opinion that the question about the importance of the school is put in the wrong way. They suggest that other research designs must be set up to examine the cognitive affects of schooling. Until such research is carried out the problem remains "that cognitive psychology does not discover cognitive tasks in people's everyday activities" (Griffin, et al., p. 7). Perhaps cognitive psychology knows little about cognitive functions in people's everyday life.

A third paradox: *Definitions of Learning Disability*. When the problem of defining learning disability appears

as a paradox together with those earlier mentioned it is partly due to the number of official categorizations of learning disabilities that are problematic for many psychologists and educators. This is particularly true for the large group of gifted children with learning disabilities. Both in the USA and in Denmark, making the distinction among disabilities is difficult, partly due to the fact that funding and the resulting structures are too limited, having the effect that children in practice are divided in much fewer categories and kinds of special instruction than the current literature would have us believe.

"One source of the confusion is the widely used presumption that it is possible to move from behavioral deficits back to the psychological processes..." (ibid., p. 8). On the contrary, it often happens that a child with specific language difficulties (and consequent reading disability) is taught together with another child whose reading disabilities stem from special and cultural experiences in the home environment. It can be extremely difficult to distinguish the difficulties of these children from each other. Sylvia Farnham-Diggory (1978) states the real case quite frankly: "No one has any certainty about what is really wrong with these children (p. 5)" (ibid., p. 8).

I conclude my brief comments on Griffin, et al. with the following statements:

a. We do not know what children do when they do not answer questions or when they solve problems using alternative systems; especially this is difficult when working with children from linguistically and culturally different backgrounds.

b. We do not know the "cognitive tasks in people's everyday activities."

c. We do not know the problems of normally developed children with learning difficulties.

Research on these vital problems will progress only when the context in which the problems reside is taken into consideration and defined more precisely.

### Context as a Tool for Understanding

The use of the concept of context in psychology has increased exponentially through the last 5-10 years. Researchers such as the above-mentioned have contributed much to our understanding of the role of context on cognitive functioning. Elsewhere the concept is often

used in a diffuse and inexact way both by psychologists and linguists.

As a participant in an electronic mail discussion<sup>2</sup> on context as a psychological concept, I have become convinced that an understanding of *paradoxes* requires a greater understanding of differences in contexts of individuals and further understanding of the phenomena of learning and development.

A crucial point is a distinction between context as an outer phenomenon, which can be described "objectively" by an observer, and context as an inner phenomenon, which can only be described introspectively or phenomenologically by the individual participant in the situation. In test or pedagogical situations, it is obvious that the adult and the child may have such different experiences that breaking through the "wall of understanding" and acquiring insight into the thinking of the child may be difficult for even the most empathetic adult (this problem of intersubjectivity will be discussed later in this paper).

A scientific solution to this problem is to give children the same task in two different contexts, apparently a simple project, but in practice a very difficult one. Cole & Traupmann (1981) describe a longitudinal study where they examined the activities of children in school and in an after school club with the purpose of analyzing well-known cognitive functions when these appear outside laboratory situations. The researchers report the case of a boy who is very active and full of initiative in the club, but is very inactive in the class; he cannot read and consequently is also very weak in other subjects. While working in pairs on a baking lesson the underachieving boy, Archie, is paired with a restless, noisy partner who does not help much in the baking process. In the video of the baking activity Archie is seen trying to do the job. He is so motivated that he grabs the recipe from his partner several times and appears to be a reading person. In an inexplicable way, Archie finishes his cake at the same time as the other children without any help.

What was Archie actually doing when he did *not* read the recipe? Was his context the same in that situation as during reading in the classroom? The social context was different since nobody was there to hear him read. The physical context was different too, but was the phenomenological context different?

Was it the *same task* in the two situations? How did Archie manage to bake the cake? These simple questions cannot be answered satisfactorily even by the most ad-

vanced psychology of cognition and problem-solving. On the other hand, I believe that there is a considerable theoretical equivalence between Archie's problem and strategy for survival and, for instance, adult Liberian's (arithmetic-) problem and strategy for survival.<sup>3</sup>

In a later article (Newman, Griffin & Cole, 1984), the researchers try to progress further towards the solution of the problems. One of the experiences from the earlier study is formulated in this way: "The term 'same task' has been placed in quotes because the sense in which two tasks can ever be considered the 'same' is a central question. A cognitive task cannot be specified independent of its social context. Cognitive tasks are always social conditions" (p. 175).<sup>4</sup> Here is a clear differentiation of cognitive capacities and skills on the one hand and (the solution of) cognitive tasks on the other hand. In my view it is a correct perception that what an individual is able to do or can cope with in life, or can understand, is not necessarily what the individual unambiguously manifests in a test situation, since such "cognitive tasks are always social constructions," constructed by a researcher or a teacher, who constructs the task hoping for an intersubjective understanding, but without any guarantee for this understanding.

Newman, et al.'s (1984) experiment is inspired by theories about "problem isomorphs," which are *sets of problems* with a common abstract structure, but different concrete content (see Reed, Ernst, & Banerji, 1974; Gick & Holyoak, 1980).

One of the results of the new experiment, *Making the Same Task Happen in Different Settings*, is the following: when the children (4th grade) have tried to arrange pictures of movie-stars in as many pair-combinations as possible, some time later they are asked to carry out a similar experiment with different chemicals in numbered cups. A girl in one of the groups looks at her notes, naming aloud as they appear on the paper, the pair-combinations which the group created, and then saying, "We have finished." The teacher asks her, "How do you know that?" The girl answers by repeating the tested combinations, but now in a systematic order, 1-2, 1-3, 1-4, 2-3, etc.

One conclusion is that in the first case, the girl solved her own task, checking whether the group had tested all possible combinations of chemicals; in the second case the teacher is giving another task: "convince me, your teacher, in my terms that you have finished the task." According to the "scheme" of the teacher, the work is completed when the goal he formulated for solution of the task is



reached; the girl has to adjust to the teacher's terms. If she could not do that, the teacher had to conclude that she had failed the task.

Another conclusion in the article is that the traditional task of cognitive psychology to "identify knowledge and processes in the head of the subject" (p. 193), tends on the one hand to ignore the effect of the initial instructions and trials, and on the other hand to ignore the effect of isolation of the subject. Laboratory tradition also leads to ignoring the fact that the cognitive "schemata" are not only created "in the head of the subject," but also can be created in the interaction between the experimenter and the subject or between subjects.<sup>5</sup> "The ability to find the same task in everyday settings may also arise in interactions during which the expert turns the child's concrete actions into actions that have a new significance within the interaction" (ibid.).

Newman, et al. end the chapter with the exhortation: "Methods must be developed for bringing those teaching interactions into sharper focus, so as to begin to discover how tasks can move from the classroom to the everyday world" (ibid.). I am convinced that *teaching interactions* must be the central focus of educational psychology, just as the above-mentioned researchers believe, as do other Vygotsky-inspired researchers who contribute to the discipline.

### The Zone of Proximal Development

Certain American psychologists have created the word *Zo-ped* as abbreviation of "The Zone of Proximal Development," a concept which Vygotsky described in his last years.<sup>6</sup> As part of a critical examination of the theories on relations between development and learning, Vygotsky created this concept, relating it critically to the traditional standardized psychological testing.

Vygotsky defined the zone of proximal development as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

He stressed that the zone of proximal development defines the functions which are in the maturation process, functions which will become mature tomorrow, while today they are in an embryonic stage. These functions

should be named *buds or flowers* of development rather than *fruits* of development. A child's actual level of development describes the mental development retrospectively, while the zone of proximal development describes it prospectively.

In the past 12-15 years, the theory of the zone of proximal development has inspired many researchers and pedagogues outside the Soviet Union. One of them is Michael Cole, who has made rich contributions to the development of the theory along with—among others—James Wertsch, Barbara Rogoff, Yrjo Engestrom and Mariane Hedegaard.<sup>7</sup> All these researchers are contributing to understanding the relationship between learning, development, and teaching, realizing Vygotsky's concluding statement in the 1935 essay: "...extensive and highly diverse concrete research based on the concept of the zone of proximal development is necessary to resolve the issue" (ibid., p. 91).

Vygotsky's poetic description of the immature functions of the child as buds or flowers has, I think, inspired other poetic descriptions; the most beautiful I have encountered is Griffin & Cole's (1984) ... *a Zo-ped is a dialogue between the child and his future; it is not a dialogue between the child and an adult's past.*

In the foreword to *Children's Learning in the "Zone of Proximal Development"* (1984), the editors, Rogoff and Wertsch, write about the difficulties in translating from Russian, especially translating the key-word in this connection, *obuchenie*:

...obuchenie, which is here translated as instruction, has no precise equivalent in English. It covers the notion of teaching as well as the notion of learning...The important point is that obuchenie does not refer to one or the other aspect of the teaching-learning process in isolation. Rather, it recognizes both as parts of a whole (p. 3).

I would assert that "the dialogue between a child and its future" and the simultaneous dialogue between the child and a teacher create the *interaction of dialogues* containing the solution of the central psychological problem of teaching—and education in its entirety. But until now we have only become aware of the questions: "How do children learn to read?"—"Why do so many children not learn to read?"—"Why does the child not answer?" We are, however, formulating the questions more precisely and perhaps we are closer to finding answers to the problem.

## Zo-ped, Task-Context, Educational Paradoxes

My attempt to integrate conceptually these three complex problems (zo-ped, task-context, educational paradoxes) is especially inspired by Wertsch's (1984) concrete analysis of Vygotsky's theory of the Zo-ped.

These problems are closely related to one of the main problems in general psychology—*intersubjectivity*. Two central Scandinavian works, Rommetveit's, (1974), *On Message Structure*, especially the chapter, *On the Architecture of Intersubjectivity* (which Wertsch also refers to) and Moustgaard's, (1981), *Beskrivelse og Kommunikation* are gold-mines for understanding the Zo-ped not only because they both include Vygotsky's works in their analyses but also because the books have deep and central general-psychological analyses. Utilization of these analyses in developing the theory of the Zo-ped is a good project.

In his 1984 article, Wertsch ascertains that Vygotsky's formulation of the theory and his later use of it is so broad and vague that there is a great risk that others will use it loosely and arbitrarily. Consequently it loses all explanatory value, *if* the theoretical foundation is not elaborated—an elaboration to which he then makes an important contribution.

First of all, Vygotsky failed to explain the constitution of "problem solving under adult guidance or in collaboration with more capable peers" (p. 8). It is necessary to add some theoretical constructs: *situation definition, intersubjectivity, and semiotic mediation*.

1. Situation definition is the main construct. "A situation definition is the way in which a setting or context is represented—that is, defined—by those who are operating in that setting" (Wertsch, 1984). In a task situation, objects, events, and whole tasks are often represented in one manner by the adult and in a quite different manner by the child. Even if the two individuals are functioning in the same spatio-temporal context, they may work with two quite different tasks.

*Task analysis* is necessary. In a certain Zo-ped situation there will be correspondence between a child's situation definition and his or her actual level, but it is not certain that the adult definition corresponds to the child's potential level, perhaps rather to a viewpoint somewhere between the original intra-psychological situation definitions of the adult and the child. Respectively, the child may "move" towards that viewpoint during the communicative negotiations (pp. 12-13).

2. Intersubjectivity "exists between two interlocutors in a task setting when they share the same situation definition and know that they share the same situation definition" (p. 12). The negotiations towards an intersubjective understanding will usually mean that the child's situation definition is changed in the direction of the adult one. Wertsch maintains that these "negotiations" always are asymmetric, because the adult may for a while accept another situation definition en route to the potential level of the child, but he will insist on a situation definition acceptable for other adult members of the current culture. *The only genuine, lasting situation redefinition that takes place occurs on the part of the child* (p. 13).

3. Semiotic mediation. Wertsch emphasizes here Vygotsky's point, stating that "mediation by signs, especially linguistic signs, plays a fundamental role in his overall theoretical approach" (p. 13). He ascertains at the end of the article: "We also need to recognize that in the zone of proximal development more than one situation definition is involved. These points lead then to the issues of intersubjectivity and the negotiation of intersubjectivity through semiotic mediation" (p. 16).

This itemized discussion of Wertsch's theoretical constructions in no way does justice to his thorough elucidation. But I hope that I have shown that rich research is proceeding with the purpose of giving the Zo-ped theory the body and weight which it seems to deserve as a tool in the continued endeavor to find answers to the central psychological questions derived from the dialogue between children and their future.

### The Idiosyncratic Room

In his memoirs, titled *The Magic Lantern* (1988), Ingmar Bergman describes a dramatic situation he experienced as a 14-year-old. A girlfriend phones on a Sunday morning because her mother's friend is fighting and beating both women. Ingmar hurries over and gets involved immediately. The fight comes to an end, when the mother grabs a big knife. Bergman then writes, "What was happening around me was like bits of film loosely put together, partly incomprehensible, sometimes simply sad. I found to my surprise that my senses did indeed register the external reality, but the impulses never reached as far as my emotions. They inhabited a *closed room* and we were produced on command, but never rashly. My reality was so profoundly divided that it had lost consciousness" (p. 117). Bergman then recounts that forty years later he remembers everything: "I remember it all, and each individual item. But there are no emotions linked with

these impressions of my senses. Was I frightened, angry, embarrassed, curious or just hysterical? I don't know. Now that I have the key in my hand, I know that more than forty years were to go by before my emotions were released from that *closed room* where they had been imprisoned. I existed on the memory of feelings. I knew perfectly well how emotions should be reproduced, but the spontaneous expression of them was never spontaneous. There was always a micro-second between my intuitive experience and its emotional expression." (p. 118) (italics added).

This description of *closed rooms* in the mind, inside or side consciousness, came to mind when I considered the *idiosyncratic room* as that "place" where an individual may find himself left alone in privacy, unable to get in contact with other people.

Another literary description of the motion of a closed room is related in the following poem cited in the Danish journal, *Laesepaedagogen*:

I Cannot Read  
Ordblin, Norwegians say,  
"word blind," as if a fold  
of thick black cloth  
fell across my mind.  
Sounds I hear, letters I see,  
repel  
like angry magnets.

Listen to me!  
I try to remember  
what I am taught,  
think with such pain  
I'll do most anything  
to give the answer right,  
but find I've kicked  
my chair away, instead.  
Dyslexia, Greek for  
twisted symbols,  
wall of letters  
piled against me,  
reverse, evaporate,  
reappears as "l" or "r"  
in words I've never seen.

Alien in my native land  
with language perfect  
in my mouth,  
I taste the pleasure of it.

I open to a page,  
each letter a snowflake,

a different shape  
melting as my finger  
follows the line of words.  
I hear my classmates read  
them aloud,  
the sound of winter wind  
across my book.

Boe, (1989)

*Alien in my native land*...I cannot imagine a stronger, more sympathetic expression for despair at being closed up, being caught in a *closed room*. The author really knows children with reading difficulties. The formulations which I presented in the beginning of this paper are with these literary metaphors created again with a life, a body, a warm reality. As a psychologist I stated that "we don't know..." "we don't know..." but we do know that children are doing *something* when they don't answer, we know that in everyday activities cognitive functions are ongoing, and we know that children with learning difficulties experience problems.

We don't know *WHAT*, but we know *THAT*.

*Idiotes* is a Greek word and the original meaning is a private man with no public responsibilities. *Syncrasis* means a special collection or mix. Idiosyncrasy means peculiarity or eccentricity, or diagnosis in psychiatry.

Contrary to these meanings I will postulate the concept "*the idiosyncratic room*"<sup>8</sup> as a phenomenon in everybody's life. Benny Karpatschof has proposed that we can talk about *good* and *bad* rooms, a proposal I find constructive, provided that the bad rooms are not synonymous with the psychiatric idiosyncrasy. The condition of the room—its "temperature," its "lightness or darkness," its "abundance or emptiness"—I would summarize as *the ever shifting phenomenological context*.

For comparison I will draw Engestrom out of the footnote shadow (see note 2) and repeat: "...for me context is a general term indicating the meeting point between the individual and the society, between the 'micro' and the 'macro,' between frames given from above and life forms constructed from below. Moreover, I think that it only makes sense to talk about context if we conceive of it in terms of social distribution, interaction and collectivity."

I believe that the *ever shifting phenomenological context*, the "stream of consciousness" in the idiosyncratic room has an essential accordance with Engestrom's *gen-*

eral definition of the concept of context. Thereby I perceive a quality of understanding in the phenomenological, idiosyncratic (sketch of a) model, especially perhaps in the many cases where it is hard to establish "social distribution, interaction and collectivity."

I do not think that the educational paradoxes will disappear using the model, neither when they exist in the meeting of foreign cultures nor when they exist in the meeting of the school and the students from non-schooled cultures. But the negotiations towards intersubjective understanding in the Zo-ped could become more well-informed.

Could it be that the concept of the idiosyncratic room could contribute to more open channels into the many people who live with the feeling "Alien in my native land...?"

## Notes

<sup>1</sup>These studies are mentioned among others together with Luria's much earlier researches in Central Asia in Cole, M. (1988).

<sup>2</sup>The exciting, but for this paper too extensive, discussion went on in the winter of 1988-89 via an electronic-mail network; James Wertsch started with a statement: "...we must have some specific notion of context in mind....There is speech event context, institutional context, spatial context, historical context, etc., etc...."

Yrjo Engestrom continued: "...I have been interested in the following kinds of contexts: Barker's behavior settings, Lewin's fields, Goffman's frames, Becker's worlds (eg., art worlds), Lave's arenas and settings, Leont'ev's activity systems....it should be clear that for me context is a general term indicating the meeting point between the individual and the society, between the 'micro' and the 'macro,' between frames given from above and life forms constructed from below. Moreover, I think that it only makes sense to talk about context if we conceive of it in terms of social distribution, interaction and collectivity."

<sup>3</sup>I realize the rashness, when I postulate equality between two unclarified sets of problems, but I find it reasonable and fruitful as bases for hypotheses.

<sup>4</sup>Newman, et al. take the theoretical starting point that "...cognitive theories are weak in just those areas where they relate most closely to practice, namely to those 'everyday' cognitive tasks that are significant contexts in our lives" (p. 173), compared with point b, page 147.

<sup>5</sup>The authors are quite explicit when they consider the methodological problems "leaving the laboratory" with its 100 years of developed and refined methods, see for instance, p. 172.

<sup>6</sup>Initially described in the essay "Interaction Between Learning and Development," which was published in a posthumous work, *Mental development of children and the process of learning*, 1935 (see Vygotsky, 1978, p. 79).

<sup>7</sup>In Rogoff and Wertsch (pp. 4-5), there is an overview over the newest research, including a mention of Bruner, et al.'s nearly related concept *scaffolding*.

<sup>8</sup>See also Ausubel, et al. (1978, p. 49).

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## Review Article

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**Davydov, V. V. (1986).**  
*Problems of Developmental Teaching: The Experience of Theoretical and Experimental Psychological Research*  
*Moscow: Pedagogika*

In 1986, an important book by V. V. Davydov was published in Moscow.<sup>1</sup> The book addresses the theoretical foundations of an educational practice developed by D. El'konin and Davydov called "developmental teaching," that motivate specific programs of teaching described at the end of the book. Basic concepts of activity and developmental psychology are used together with a dialectical theory of knowledge to form this foundation. Davydov shows how the meaning of these basic concepts reflects particular developments in human history and that the meaning of these concepts has changed (and will change). Davydov then develops their implications for educational practice.

The main contributions of the book can be summarized as follows. First, following Vygotsky, Davydov argues that teaching plays an essential role in the mental

development of the child. That is, not only should formal instruction contribute to the acquisition of special abilities and knowledge but it should also contribute to children's general mental development. Good teaching develops a capacity for relating to problems in a theoretical way, and to reflect on one's thinking. Second, Davydov develops an extensive analysis of theoretical knowledge grounded in a materialist-dialectical philosophy. This concept contrasts with the concept of knowledge and thinking used by the cognitive and Piagetian traditions because it emphasizes that knowledge is constituted by the relations between the object of knowledge and other objects, rather than some essential properties or characteristics that define the object. Third, Davydov describes in theory and in practice how to use this theory of knowledge in specific teaching programs.

A persistent problem for non-German and non-Russian readers who are interested in a cultural-historical approach to educational psychology is to find substantial texts that explain the premises and results of this approach. The general theoretical questions discussed by Vygotsky, Leont'ev, and Luria have often been hard to relate to specific substantive problems in education. Some good texts have been available for the English reader,<sup>2</sup> but often these texts have been fragmentary, requiring that a reader synthesize these ideas from several sources. However, it is no longer necessary to try to track down these scattered texts. It is possible to start with three issues (8, 9, and 10) of *Soviet Education* (1988). These three issues contain a translation of the Introduction, Chapters 1, 2, 5, 6, Conclusion, and the Appendix of Davydov's book.

The entire book will be translated into English and published in 1991 by Paul M. Deutsch Press. The publisher was reluctant originally because parts had already been translated. Davydov has promised to rewrite the book, so it might be interesting to read the translations in *Soviet Education*, and then see what changes appear when the entire English translation is published.

In issue 8, you will find translations of the Introduction and Chapters 1 and 2. The Introduction provides a short overview that locates the work historically and theoretically as well as a summary of the book's contents. Chapter 1, "The Basic Concepts of Contemporary Psychology" discusses the concepts of mind, activity, and consciousness. Chapter 2, "Problems of the Child's Mental Development," analyses the children's mental development, including the role of upbringing and teaching. The chapter gives the foundations for understanding human activity and developmental periods from a cultural-his-

torical perspective. Davydov puts forward a theory of developmental periods based on El'konin's ideas. He shows how this development is related to changes in social activities (leading activities for the child). Social conditions determine the activities the child faces, as well as the activities the child has already acquired, thereby creating the characteristic of the different developmental periods. A "developmental" teacher should have knowledge about developmental periods and their characteristics and be able to use this knowledge together with knowledge about the subject area in planning the teaching.

Chapters 3 and 4 were not included in the *Soviet Education* translation, though they are essential for understanding what Davydov is trying to do, and represent one of Davydov's basic contributions. We were able to read these two chapters in a Danish translation of Davydov's book.<sup>3</sup> Chapter 3, "Theory of Empirical Thinking in Educational Psychology" analyses the problems of instructional traditions based on an empirical theory of knowledge. Chapter 4, "Foundations of a Dialectical-Materialist Theory of Thinking," presents the basic propositions of dialectical logic. Two kinds of human thought—rational-empirical thinking and theoretical thinking—are identified, analyzed, and their relation clarified. Practice is viewed as the basis for the development of thinking, with model use as an important tool for theoretical thinking. The role of ascending from the abstract to concrete in theoretical thinking is discussed.

In issue 9, you will find translations of Chapter 5 and part of Chapter 6. Chapter 5, "Learning Activity in the Younger School-Age Period," describes the concept of "learning activity" and specific issues that have to be addressed in forming learning activity for younger school children.

In issue 10, you will find translations of the rest of Chapter 6, the Conclusion and the Appendix. Chapter 6 "The Mental Development of Younger School Children in the Process of Learning Activity" is where Davydov brings together the theoretical material presented in the first five chapters. The first section provides a long discussion of how the general theory of learning activity can be applied to school subjects. He then provides detailed examples of concrete teaching experiments in Russian language, mathematics and fine arts. Finally, he gives a short discussion of how the teaching approach also contributes to the general mental development (substantive reflection, analysis, and planning) of the child.

The Conclusion consists of only a few pages and summarizes the main arguments of the book, along with a short comment about the use of computers in this approach. The Appendix, "From the History of General and Child Psychology" provides a short tutorial on some basic theoretical concepts from Vygotsky (formation of consciousness), Leont'ev (mind and activity), and Luria (voluntary action).

In sum, we can readily recommend this work. Davydov has done a good job of synthesizing the main ideas of his approach. And it is refreshing to see the general theoretical concepts of the sociohistorical tradition applied in Chapter 6 to specific, practical research studies in a serious way. We cannot evaluate the accuracy of the translation from Russian to English, but we found the English text easy to read and conceptually coherent (especially compared to the Danish translation). We would just warn readers that Davydov's ideas are sometimes presented in a condensed form. If you are already familiar with the basic ideas of the cultural-historical approach, then you will be happy to see the ideas collected coherently in one place. If you are a newcomer or want to use this text to introduce students to the ideas, then be prepared to put in some time to understand the complex of ideas that are contained in this text.

## Notes

<sup>1</sup>Davydov, V. V. (1986). *Problemy razvivaiushchego obucheniia: Opyt teoreticheskogo i eksperimental'nogo psikhologicheskogo issledovaniia*. Moscow: Pedagogika. [Problems of developmental teaching: The experience of theoretical and experimental psychological research]

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# CUMULATIVE INDEX

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### In the next issue:

The work of four scholars studying Chicano/Latino communities across the United States constitutes the theme of the next issue of the *Newsletter*: Literacy Issues in the Minority Setting. The contributors, Juan Guerra, Lucinda Pease-Alvarez, Martha Allexsaht-Snider, Ralph Cintron, propose a reconceptualization of literacy that expands the existing boundaries of literacy to incorporate alternative literacy practices. The authors present different cultural views of the reading process and of oral language that supports literacy development. The issue is edited by Olga Vasquez and commented by Concha Delgado-Gaitan.



### Errata

The M. Hedegaard reference in Sylvia Scribner's *Newsletter* article (April, 1990) should read as follows:

Hedegaard, M. (in press). The zone of proximal development as basis for instruction. In L. C. Moll, (Ed.), *Vygotsky and education*. New York: Cambridge University Press.



Random issues of the April, 1990 *Newsletter* are missing several pages of text due to a printing error. If you would like copies of the missing pages, contact Peggy Bengel at the address shown on the back page of this issue.

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