

Vygotsky and the
Social Formation of Mind

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CHAPTER 3

The Social Origins of Higher Mental Functions

One of the most fundamental assumptions that guided Vygotsky's attempt to reformulate psychology on Marxian foundations was that in order to understand the individual, one must first understand the social relations in which the individual exists. This assumption was outlined by Marx (1959) in his Sixth Thesis on Feuerbach and has been the focus of some current attempts to formulate a Marxist account of personality (compare Seve, 1978). The influence of Marx's claim on Vygotsky is manifested in the following statement: "To paraphrase a well-known position of Marx's, we could say that humans' psychological nature represents the aggregate of internalized social relations that have become functions for the individual and forms of the individual's structure. We do not want to say that this is the meaning of Marx's position, but we see in this position the fullest expression of that toward which the history of cultural development leads us" (Vygotsky, 1981b, p. 164).¹

On the basis of this Marxian axiom Vygotsky argued that "the social dimension of consciousness is primary in time and in fact. The individual dimension of consciousness is derivative and secondary" (1979, p. 30). This concept in turn led him to identify what he considered a major weakness in the psychology that existed at the time he was writing:

Formerly, psychologists tried to derive social behavior from individual behavior. They investigated individual responses observed in the laboratory and then studied them in the collective. They studied how the individual's responses change in the collective setting. Posing the question in such a way is, of course, quite legitimate; but genetically speaking, it deals with the second level in behavioral development. The first problem is to show how the individual response emerges from the forms of collective life. (1981b, pp. 164–165)

As Bruner (1962) has noted, Vygotsky bears an interesting resemblance to G. H. Mead (1924–25, 1934) in connection with this claim. There are important differences between the two theorists, but on this point they independently and simultaneously constructed similar ideas. The similarity can be seen by comparing Vygotsky's comments about the primacy of the social processes with Mead's claim that "the social act is a precondition of [consciousness]. The mechanism of the social act can be traced out without introducing into it the conception of consciousness as a separate element within that act; hence the social act, in its more elementary stages or forms, is possible without, or apart from, some form of consciousness" (1934, p. 18).

It is worthwhile considering Mead's point closely because in addition to reflecting the general parallel between his ideas and Vygotsky's, it explicitly raises an important issue inherent in Vygotsky's criticism of the individualistic bias in psychology: the claim that the principles that account for social processes are not reducible to those that account for psychological processes. In other words, both Vygotsky and Mead rejected individual psychological reductionism. In order to carry out such a critique, one must specify the nature of the social reality that is at issue. Mead did so primarily in his analysis of the social act, conversations of gestures, and the like. On the basis of his analysis of face-to-face social interaction, he devised a set of principles that apply to the interaction itself and that cannot be replaced by laws of individual psychology.

Vygotsky recognized social interaction of this type, but his commitment to Marxian theoretical foundations induced him to recognize another level of social phenomena as well, one that concerns processes typically studied by social theorists, sociologists, and economists. These processes are assumed to operate at the societal or social institutional level in accordance with a theory such as historical materialism. Like

many other theorists, Vygotsky did not deny that individuals, guided by their own mental processes, participate in social life at this level. However, he clearly assumed that this fact alone cannot explain the nature of social processes. Rather, they operate according to sociological and economic principles, particularly the principles of exchange value and commodification as outlined by Marx (1977) and Marxists (for example, Lukacs, 1971). In these cases socioeconomic forces are understood to operate independently of individual human plan or volition. I shall term the principles that govern phenomena at this level “societal” or “social institutional” principles.

Vygotsky said very little about the principles that deal with social institutional phenomena. At first glance this seems ironic, given that such phenomena are the primary focus of Marx’s writings and that Vygotsky wished to create a Marxist psychology. However, on further examination it becomes clear that other theories of social interaction and psychology had as much, if not more, of an impact on Vygotsky as Marx’s writings did. Consequently, much that Vygotsky had to say about the social origins of human consciousness is not necessarily grounded in the ideas of Marx or of any other social theorist.

The type of social processes on which Vygotsky places primary emphasis is what I shall term “interpsychological.”² In contrast to societal processes, interpsychological processes involve small groups (frequently dyads) of individuals engaged in concrete social interaction and are explainable in terms of small-group dynamics and communicative practices. Mead’s notion of the social act is concerned with this level of social process. As with societal processes, interpsychological processes are not reducible to individual psychological processes, which would constitute a form of individualistic psychological reductionism. Furthermore, interpsychological processes cannot be equated with societal processes. To do so would be to engage in a form of sociological reductionism.

When dealing with the social origins of higher mental processes, Vygotsky was mainly concerned with interpsychological functioning, as reflected in his formulation of the “general genetic law of cultural development”:

Any function in the child’s cultural development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an in-

trapsychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. We may consider this position as a law in the full sense of the word, but it goes without saying that internalization transforms the process itself and changes its structure and functions. Social relations or relations among people genetically underlie all higher functions and their relationships. (1981b, p. 163)

This law includes strong statements on two issues. First, it asserts that terms such as “voluntary attention,” “logical memory,” and “thinking” may be properly attributed to groups as well as to individuals. This unusual use of the terms is essential to Vygotsky’s analysis. The second, related point concerns the linkage between interpsychological and intrapsychological functioning. Instead of merely claiming that individuals somehow learn by participating in interpsychological functioning, Vygotsky’s formulation means that there is an inherent connection between the two planes of functioning. In certain instances he saw an isomorphism between the organization of processes on the two planes, and in all cases he argued that the form of interpsychological functioning has a powerful impact on the resulting form of intrapsychological functioning. The importance of the transition from interpsychological to intrapsychological functioning for Vygotsky is apparent in his statement that “we shall place this transition from a social influence outside the individual to a social influence within the individual at the center of our research and try to elucidate the most important moments from which it arises” (1960, p. 116).

Vygotsky’s concern with the general genetic law of cultural development is manifested throughout his writings. I shall examine only two of the many phenomena he analyzed in this connection: internalization and the “zone of proximal development.” When analyzing these and other phenomena, the underlying claim is always that in order to understand higher mental functioning on the intrapsychological plane, one must conduct a genetic analysis of its interpsychological precursors.

Internalization

Like other theorists, such as Piaget, Vygotsky viewed internalization as a process whereby certain aspects of patterns of activity that had been performed on an external plane come to be executed on an internal

plane. Unlike many other theorists, however, he defined external activity in terms of semiotically mediated social processes and argued that the properties of these processes provide the key to understanding the emergence of internal functioning. The close relationship that Vygotsky saw between internalization and the social origins of individual psychological processes is evident in the following passage, where he argues that higher mental functions necessarily appear initially in an external form because they are social processes:

It is necessary that everything internal in higher forms was external, that is, for others it was what it now is for oneself. Any higher mental function necessarily goes through an external stage in its development because it is initially a social function. This is the center of the whole problem of internal and external behavior . . . When we speak of a process, "external" means "social." Any higher mental function was external because it was social at some point before becoming an internal, truly mental function. (1981b, p. 162)

Vygotsky's focus on social processes induced him to examine the representational systems that are needed to participate in such processes—hence his emphasis on the internalization of *speech*. In contrast, Piaget's focus on the young child's interaction with physical reality led him to examine the representational systems required to manipulate objects. As a result he viewed internalization primarily in terms of schemata that reflect the regularities of an individual's physical action. Thus while both theorists addressed the issue of internalization, their different ideas about the origins of human mental processes led them to focus on quite different activities and representational means.

When contrasting the two positions on this issue, it is interesting to consider whether they are complementary or incompatible. I would argue here as I did earlier with regard to the natural and social lines of development that there is a degree of complementarity attributable to the relatively greater sophistication that Piaget brought to the study of very early stages of ontogenesis on the one hand and the relatively greater sophistication that Vygotsky brought to the study of sign-mediated higher mental functions on the other. Because Piaget carried out such detailed and insightful analyses of early sensorimotor intelligence, he was able to identify schemes that had been generalized, abstracted, and internalized by the final stages of the sensorimotor period. Of course he dealt with internalization associated with later

ontogenetic stages as well, but the essential point here is that for Piaget internalization occurs in connection with what Vygotsky viewed as the natural line of development.

In contrast, for Vygotsky the notion of internalization applied only to the development of higher mental functions and hence the social or cultural line of development. In this account internalization is a process involved in the transformation of social phenomena into psychological phenomena. Consequently, Vygotsky saw social reality as playing a primary role in determining the nature of internal intrapsychological functioning.

On the basis of Vygotsky's claim about the close relationship between inter- and intrapsychological forms of higher mental functions, it might be tempting to assume that he was proposing a "transfer model of internalization," whereby properties of social processes are simply transferred from the external, interpsychological plane to the internal, intrapsychological plane. If one considers certain of Vygotsky's statements out of context, it would seem that this is indeed what he had in mind. A closer examination of his writings, however, reveals that he clearly did not view internalized higher mental processes as simple copies of external, interpsychological processes. In formulating his general genetic law of cultural development, he stated that, "it goes without saying that internalization transforms the process itself and changes its structure and functions" (1981a, p. 163).

Zinchenko (1985) has noted that Vygotsky's approach rejects both the assumption that the structures of external and internal activity are identical and the assumption that they are unrelated. The first position makes the notion of internalization uninteresting and trivial, whereas the second makes it unresolvable. Instead of taking either position, Vygotsky argued that there is an inherent relationship between external and internal activity, but it is a *genetic* relationship in which the major issue is how internal mental processes are *created* as a result of the child's exposure to what Vygotsky called "mature cultural forms of behavior" (1981b, p. 151).

Leont'ev (1981) has examined this process in relation to the broader issue of consciousness:

Earlier approaches in psychology viewed consciousness as some sort of metapsychological plane of movement of mental processes. But consciousness is not given from the beginning and is not produced by nature: consciousness is a product of society: it is

produced. Therefore consciousness is not a postulate and is not a condition of psychology; rather, it is a problem for psychology—an object of concrete investigation.

Thus the process of internalization is not the *transferral* of an external activity to a preexisting, internal “plane of consciousness”: it is the process in which this internal plane is *formed*. (pp. 56–57)

There are important differences between Leont’ev’s and Vygotsky’s general theoretical frameworks, especially with regard to the emphasis given to semiotic mediation (compare Wertsch, 1981b; Kozulin, 1984). As Wertsch and Stone (1985) have noted, however, Leont’ev’s approach to internalization provides a means for extending and clarifying Vygotsky’s comments. Consider the latter’s analysis of the origins and development of nonverbal pointing:

At first the indicatory gesture is simply an unsuccessful grasping movement directed at an object and designating a forthcoming action. The child tries to grasp an object that is too far away. The child’s hands, reaching toward the object, stop and hover in midair . . . Here we have a child’s movements that do nothing more than objectively indicate an object.

When the mother comes to the aid of the child and comprehends the movement as an indicator, the situation changes in an essential way. The indicatory gesture becomes a gesture for others. In response to the child’s unsuccessful grasping movement, a response emerges not on the part of the object, but on the part of another human. Thus, other people introduce the primary sense into this unsuccessful grasping movement. And only afterward, owing to the fact they already have connected the unsuccessful grasping movement with the whole objective situation, do children themselves begin to use the movement as an indication. The functions of the movement itself have undergone a change here: from a movement directed toward an object it has become a movement directed toward another human being. The grasping is converted into an indication . . . this movement does not become a gesture for oneself except by first being an indication, that is, functioning objectively as an indication and gesture for others, being comprehended and understood by surrounding people as an indicator. Thus the child is the last to become conscious of the gesture. (1981b, pp. 160–161)

In this case the communicative significance of the behavior does not exist until it is created in adult–child interaction. The *combination* of

the child’s behavior and the adult’s response transforms a noncommunicative behavior into a sign on the interpsychological plane. The sign form is transformed from a general reaching and grasping movement to an indicatory gesture. Later, the child gains voluntary control on the intrapsychological plane over what had formerly existed only in social interaction.

Wertsch and Stone (1985) have argued that the emergence of this voluntary control is the general process involved in Vygotsky’s approach to internalization. More specifically, we have argued that internalization is the process of gaining control over external sign forms. In the example just outlined, the sign form is converted from a general reaching and grasping movement to a true indicatory gesture. Correspondingly, the object involved is transformed for the child from something that is represented as part of a nonsocial, noncommunicative setting to something indicated or requested in a social context.

Hence when one asks what it means to gain voluntary control over signs on the intrapsychological plane, one is asking about internalization as defined by Vygotsky and Leont’ev. According to Vygotsky, in the “most important type of internalization” children “master the rules in accordance with which external signs must be used” (1981b, pp. 184–185).

Thus when a child begins to master a sign form such as pointing in order to direct an adult’s attention to an object, the child has begun to develop an aspect of the internal plane of consciousness. This accomplishment is still very primitive and indeed is only the beginning in the formation of an aspect of internal, intrapsychological functioning. However, the fact that pointing begins to exist for the child as for the adult means that the child’s intrapsychological functioning has changed. Furthermore, subsequent progress on the interpsychological plane reflects additional development on the intrapsychological plane. In this way changes in interpsychological functioning are inherently linked to changes in intrapsychological functioning.

Although the veracity of Vygotsky’s account of the origins of pointing is open to question (compare Bates, 1976), it illustrates a general line of reasoning that is clearly valid for several other phenomena in his analysis. Wertsch and Stone (1985) have argued that in a Vygotskian approach structural properties of interpsychological functioning, such as its dialogical, question–answer organization, are part of the resulting internal, intrapsychological plane of functioning. This touches on a broader claim of Vygotsky’s about external and internal func-

tioning, namely, that because the external processes from which internal ones derive are necessarily social, internal processes reflect certain aspects of social structuring:

The very mechanism underlying higher mental functions is a copy from social interaction; all higher mental functions are internalized social relationships . . . Their composition, genetic structure, and means of action [forms of mediation]—in a word, their whole nature—is social. Even when we turn to mental [internal] processes, their nature remains quasi-social. In their own private sphere, human beings retain the functions of social interaction. (1981b, p. 164)

During the past few decades in the USSR, one of Vygotsky's followers by way of Khar'kov, P. Ya. Gal'perin, has produced several major works on internalization (for example, 1959, 1960, 1965, 1966, 1969, 1977). His approach does not correspond in all respects with Vygotsky's, especially with regard to the nature of the semiotic phenomena involved, but in several ways it represents an extension of the latter's ideas. Gal'perin's claims about the stages involved in the internalization process are particularly valuable. The stages include (1) making an external action maximally explicit; (2) transferring its representation to audible speech, first on the interpsychological plane and then on the intrapsychological plane; and (3) transferring it to inner speech.

Like Vygotsky and Leont'ev, Gal'perin has been interested in the changes an action undergoes as it advances through these stages—in particular, in how such actions become condensed or abbreviated. He has argued that “the abbreviation of an operation and its transfer to the position of a ‘provisionally performed’ operation does not mean the transition of this operation to the mental plane. On the mental plane the abbreviated operations are only presumed, not executed” (1969, p. 257). As I have noted (Wertsch, 1981b) this comment is consistent with the general point that the relationship between external and internal functioning is one involving genetic transformation rather than an identical replica.

The specifics of Vygotsky's account of internalization cannot be fully explicated until one goes into detail on his semiotic analysis. However, it should be clear by now that this account is grounded in four major points: (1) Internalization is not a process of copying external reality on a preexisting internal plane; rather, it is a process wherein an internal plane of consciousness is formed. (2) The external reality at issue is a

social interactional one. (3) The specific mechanism at issue is the mastery of external sign forms. And (4) the internal plane of consciousness takes on a “quasi-social” nature because of its origins.

The Zone of Proximal Development

It was in connection with the “zone of proximal development”³ that Vygotsky outlined some of his most concrete ideas about the relationship between interpsychological and intrapsychological functioning.

Vygotsky (1934a, 1978) introduced the notion of the zone of proximal development in an effort to deal with two practical problems in educational psychology: the assessment of children's intellectual abilities and the evaluation of instructional practices. With respect to the former, he believed that existing techniques of psychological testing focused too heavily on intrapsychological accomplishments and failed to address the issue of predicting future growth, a major concern to Soviet psychology even today. Indeed it has been identified by some members of the Vygotskian school as a point that distinguishes Soviet from American research. As Leont'ev noted in a discussion with U. Bronfenbrenner (1977) many years after Vygotsky's death, “American researchers are constantly seeking to discover how the child came to be what he is; we in the USSR are striving to discover not how the child came to be what he is, but how he can become what he not yet is” (p. 528).

Interest in the problem of how a child can become “what he not yet is” can be traced, in part, to Vygotsky's analysis of the zone of proximal development. One of his chief reasons for introducing this construct was that it allowed him to examine “those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the ‘buds’ or ‘flowers’ of development rather than the ‘fruits’ of development” (1978, p. 86). Not surprisingly, Vygotsky saw the “buds of development” in interpsychological functioning. Thus the zone of proximal development is a special case of his general concern with the genetic law of cultural development. It is the dynamic region of sensitivity in which the transition from interpsychological to intrapsychological functioning can be made.

Vygotsky defined the zone of proximal development as the distance between a child's “*actual developmental level as determined by independent problem solving*” and the higher level of “*potential development as deter-*

mined through problem solving under adult guidance or in collaboration with more capable peers" (ibid.) He argued that it is just as crucial, if not more so, to measure the level of potential development as it is to measure the level of actual development. In his view, however, existing practices were such that "in determining the mental age of a child with the help of tests we almost always are concerned with the actual level of development" (1956, p. 446).

In assessing a child's mental age, the importance of conducting a separate analysis of the potential level of development derives from the fact that it may vary independently of the actual level. Vygotsky illustrated this point as follows:

Imagine that we have examined two children and have determined that the mental age of both is seven years. This means that both children solve tasks accessible to seven-year-olds. However, when we attempt to push these children further in carrying out the tests, there turns out to be an essential difference between them. With the help of leading questions, examples, and demonstrations, one of them easily solves test items taken from two years above the child's level of [actual] development. The other solves test items that are only a half-year above, his or her level of [actual] development. (1956, pp. 446-447)

Given this set of circumstances Vygotsky proceeded to ask, "Is the mental development of these two children the same?" (ibid., p. 447). He argued that in an important sense they are not:

From the point of view of their independent activity they are equivalent, but from the point of view of their immediate potential development they are sharply different. That which the child turns out to be able to do with the help of an adult points us toward the zone of the child's proximal development. This means that with the help of this method, we can take stock not only of today's completed process of development, not only the cycles that are already concluded and done, not only the processes of maturation that are completed; we can also take stock of processes that are now in the state of coming into being, that are only ripening, or only developing. (Ibid., pp. 447-448)

Concern with assessing both the actual and the potential levels of development has characterized the work of several researchers in the Soviet Union (for example, T. A. Vlasova and M. S. Pevzner, 1971; Vlasova, 1972; T. V. Egorova, 1973), and it has begun to have an

impact on U.S. investigators concerned with assessment. A. Brown and her colleagues (Brown and French, 1979; Brown and Ferrara, 1985; Campione, Brown, Ferrara, and Bryant, 1984) have carried out several concrete analyses of the relationship between children's actual and potential levels of development.

In these studies adult experimenters provided standardized prompts to assess a child's potential level on some task after the actual level had been measured. For example, in one study Brown and R. Ferrara (1985) presented third and fifth graders with the task of identifying and continuing sequential patterns of letters, which involved several different types of sequences and levels of difficulty. Performance was assessed both on the interpsychological and the intrapsychological planes of functioning.

On the basis of the interpsychological functioning they devised an "index of speed of learning" for each child, based on the total number of standardized prompts required to reach a criterion of original learning of the letter sequences. While the experimenters found that grade level and IQ were significantly correlated with the index of speed of learning, much of the variance in this latter measure was left unexplained. Indeed, "a good third of the children had learning speeds not predictable from their IQ scores" (Brown and Ferrara, 1985, p. 228). That is, by using a measure based on interpsychological functioning, Brown and Ferrara identified an aspect of performance that could not be accounted for on the basis of a standard assessment of the subjects' intrapsychological functioning.

Brown and Ferrara reinstated an interpsychological procedure of providing standardized prompts after each child had spent an intermediate period working independently (that is, on the intrapsychological plane). During this third stage of the study subjects were asked to solve new sets of letter series completion tasks designed to assess their level of maintenance and transfer of learning. The children were divided into low and high transfer groups according to the number of prompts needed at this time. IQ was found to be significantly correlated with the performance measure—in this case the level of transfer—for over two-thirds of the children. However, the "static" intrapsychological measure of IQ once again failed to account for a significant amount of the variance in the performance of the interpsychological tasks; many of the children fit neither of the expected profiles of average IQ and poor transfer or high IQ and good transfer.

From their findings Brown and Ferrara conclude that measures of

interpsychological performance (basically, susceptibility to adults' prompts) provide a great deal of information about students' cognitive level that cannot be obtained from traditional intrapsychological measures:

Overall, the IQ of almost 50 percent of the children did not predict learning speed and/or degree of transfer. Thus, from this fairly wide range of "normal"-ability children (IQ range 88–150) a number of different learning profiles have emerged, including (1) slow learners, narrow transferrers, low IQ (*slow*); (2) fast learners, wide transferrers, high IQ (*fast*); (3) fast learners, narrow transferrers (*context-bound*); (4) slow learners, wide transferrers (*reflective*); and (5) fast learners, wide transferrers, low IQ (somewhat analogous to Budoff's *high scorers*). All of these profiles are hidden when one considers only the child's initial unaided performance. (1985, p. 293)

Studies like this are motivated by Vygotsky's claims about the usefulness of the zone of proximal development when analyzing intelligence testing procedures. The studies typically involve some assessment of individual children on the basis of a standard instrument such as an IQ test. This measure of intrapsychological functioning is then compared with the level of interpsychological functioning created when an adult experimenter provides a standard script of hints and other forms of assistance to the child. In several studies (for example, Ferrara, Brown, and Campione, 1983; Campione, Brown, Ferrara, and Bryant, 1984) Vygotsky's claims about the independence of the actual and potential levels of development have been borne out.

A second way in which Vygotsky argued that the zone of proximal development is a useful construct concerns processes of instruction. Here again, the general genetic law of cultural development underlies his discussion, but in addition he saw a specific relationship between development and instruction.⁴ In his view "instruction and development do not directly coincide, but represent two processes that exist in very complex interrelationships" (1934a, p. 222). On the one hand, "instruction creates the zone of proximal development" (*ibid.*, p. 450). But to say that a child can do more when collaborating with an adult does not mean that the level of potential development may be arbitrarily high. Rather, Vygotsky argued, the child can operate "only within certain limits that are strictly fixed by the state of the child's development and intellectual possibilities" (1934a, p. 219). Hence the zone of proximal development is jointly determined by the child's level of

development and the form of instruction involved; it is a property neither of the child nor of interpsychological functioning alone.

According to Vygotsky, instruction in the zone of proximal development "calls to life in the child, awakens and puts in motion an entire series of internal processes of development. These processes are at the time possible only in the sphere of interaction with those surrounding the child and in collaboration with companions, but in the internal course of development they eventually become the internal property of the child. (1956, p. 450)

When considering specific forms of instruction, Vygotsky focused on how interpsychological functioning can be structured such that it will maximize the growth of intrapsychological functioning: "*Instruction is good only when it proceeds ahead of development. Then it awakens and rouses to life an entire set of functions which are in the stage of maturing, which lie in the zone of proximal development.* It is in this way that instruction plays an extremely important role in development" (1934a, p. 222). In the West, research such as that of Olson (1970) and I. Sigel (1970, 1979, 1982; also Sigel and Cocking, 1977; Sigel and Saunders, 1979; Sigel and McGillicuddy-DeLisi, 1984) is motivated by similar claims.

The kind of instruction Vygotsky had in mind was not concerned with "specialized, technical skills such as typing or bicycle riding, that is, skills that have no essential impact on development" (1934, p. 222), but rather had as its goal "all-round development," such as instruction in formal, academic disciplines, each of which has a sphere "in which the impact of instruction on development is accomplished and fulfilled" (*ibid.*).

These and other comments by Vygotsky on the relationship between instruction and development concern school-age children. He recognized, however, that the same general dynamic occurs in other planes of development as well: "instruction and development do not meet for the first time at school age; rather, they are in fact connected with each other from the very first day of a child's life" (1956, p. 445). His approach to analyzing this interrelationship assumed that "we must understand, first, *the relationship that exists between instruction and development in general*, and then we must understand *the specific properties of this relationship during the school-age years*" (*ibid.*, p. 446).

Regardless of the child's age, Vygotsky emphasized that instruction is involved in the development "not of natural, but of historical characteristics of humans" (*ibid.*, p. 450). He viewed instruction as an

aspect of the social rather than the natural line of development and as giving rise to higher rather than elementary mental functioning.

Vygotsky's account of the zone of proximal development has spawned research both in the USSR (for example, Rubtsov, 1981) and in the West (for example, Rogoff and Wertsch, 1984). However, its formulation is wanting in several respects. Three problems must be addressed if the notion of the zone of proximal development is to be robust enough to continue generating useful research hypotheses.

The first problem is Vygotsky's concept of development. In formulating his argument on the relationship between instruction and development he briefly examined and rejected three views: (1) that the process of development is independent of instruction ("development or maturation is viewed as a precondition of learning but never the result of it" [1978, p. 80]); (2) that the process of learning in instruction⁵ *is* development; and (3) that approaches such as Koffka's to overcome the extremes of the first two by combining aspects of both are valid. Of the first two views, Vygotsky wrote:

There is a major difference in their assumptions about the temporal relationship between learning⁶ and developmental processes. Theorists who hold the first view assert that developmental cycles precede learning cycles; maturation precedes learning and instruction must lag behind mental growth. For the second group of theorists, both processes occur simultaneously; learning and development coincide at all points in the same way that identical geometrical figures coincide when superimposed. (1978, p. 81)

When speaking of the first group of theorists, Vygotsky primarily had Piaget in mind; when speaking of the second, E. Thorndike.

In contrast to these two approaches (as well as Koffka's unsatisfactory compromise), Vygotsky argued that a more complex relationship exists between development and instruction: "Instruction . . . is not development, although properly organized instruction of the child pulls mental development behind it and rouses to life a whole series of developmental processes that outside instruction is an internally necessary and universal moment in the process of a child's development" (1956, p. 450). He recognized that "periods of sensitivity," such as those identified by Montessori, exist for various aspects of development. During these periods, Vygotsky was concerned with the "higher psychological functions that emerge from the cultural development of

the child, having their origins in collaboration and instruction" (1934a, p. 223).

These comments leave unanswered the question of what exactly Vygotsky considered to be development. In his discussion of the relationship between development and instruction, he argued that development cannot be reduced to learning in instruction, yet that is precisely the interpretation that seems most compatible with his comments about the emergence of intrapsychological from interpsychological functioning.

The apparent inconsistency arises from the fact that "Vygotsky the methodologist" (Davydov and Radzikhovskii, 1985) called for an approach in which development proceeds at least partially in accord with its own internal dynamic. Vygotsky the psychologist, however, outlined an approach in which it is not clear that development is anything more than the product of learning in instruction.

This problem is perhaps most evident in Vygotsky's comments about the upper limit of a child's potential level of development. Although he argued that this limit is partially set by the child's actual development, he gave no account of why this development could not be reduced to past learning in instruction. If it could be so reduced, then it would seem that more extensive instruction at any level of development could by itself produce arbitrarily high levels of actual and potential development. This, however, is widely understood not to be the case, for reasons that Vygotsky recognized in principle but not in the actual practice of his research: namely, that development occurs in part as a result of its own internal dynamic. Hence the nature of development and its relationship to instruction is not fully clarified in a Vygotskian approach.

This weakness is related to another in Vygotsky's account of the natural line of development. There he also needed to invoke some internal developmental dynamic but failed to do so. Only when an adequate account of development is formulated in a Vygotskian approach will it be able to avoid reducing development to learning in instruction.

My second comment on Vygotsky's account of the zone of proximal development concerns his views on the early period of ontogenesis. Vygotsky said very little about this period, largely because of the general lack of knowledge about infancy at the time he was writing. During the past few decades, however, this situation has changed drastically,

and it is now possible to examine the zone of proximal development at earlier ages than Vygotsky ever attempted to do.

Studies such as those conducted by Bruner (1975a, 1975b, 1981), K. Kaye and R. Charney (1980), and Kaye (1982) have identified some of the complex processes of social and cognitive development that characterize the very early period of ontogenesis. In many respects the findings they report may be viewed as bearing more on the precursors of the zone of proximal development than on the zone itself, but a complete genetic analysis would strive to incorporate them.

Recently investigators such as J. Valsiner (1984) and B. Rogoff, C. Malkin, and K. Gilbride (1984) have examined adult–infant interaction specifically from the perspective of the zone of proximal development. For example, Rogoff and her colleagues observed such interaction involved in operating a jack-in-the-box and reported that “the focus of interaction shifted from attempting to maintain joint attention (four months), to managing joint use of the jack-in-the-box (five-and-one-half to twelve months), to managing the social relationship in the joint activity through persistent symbolic communication (twelve to seventeen months)” (1984, p. 43). These findings deal with crucial processes of entering into interpsychological functioning. In a Vygotskian genetic analysis, facts about these processes would have to be viewed as essential for understanding later functioning in the zone of proximal development. Only recently, however, have they begun to be incorporated into this research. As such findings are reported, it will be possible to understand the fundamental social interactional processes that give rise to increasingly complex zones of proximal development.

My third comment on Vygotsky’s formulation of the zone of proximal development concerns the two types of social phenomena I outlined earlier in this chapter. Most of Vygotsky’s discussion of this zone involves interpsychological processes. In certain respects, however, his comments bear on social institutional phenomena as well. For example, he argued that the “process of instruction that takes place before school age is essentially different from the process of school instruction” (1956, p. 445). Here he apparently viewed certain social institutional contexts as bearing on interpsychological processes. The influence in this case grows from the decontextualization of mediational means. Vygotsky’s general point was that sociohistorical processes at the social institutional level influence interpsychological functioning in the zone of proximal development.

This point has recently been elaborated by researchers such as Saxe,

M. Gearhart, and S. Guberman (1984) and P. Griffin and Cole (1984). Saxe and his colleagues have emphasized that most tasks carried out in the zone of proximal development are socioculturally specific. For example, in their analysis of the “cultural task context” (p. 28) of solving simple number problems, the adult’s representation of the “goal structure” of the task is grounded in a sociohistorically specific semiotic system, namely, arithmetic. Saxe (1977, 1981) has demonstrated that the arithmetic system and its uses are not natural or universal but instead depend on sociohistorical context. Hence Saxe and his colleagues assume that a full understanding of the zone of proximal development is possible only if the historically specific context is taken into account.

Griffin and Cole (1984) have approached the role of social institutional phenomena in the zone of proximal development somewhat differently. Following D. B. El’konin (1972; see also Wertsch, 1981b), Griffin and Cole have argued that in order to understand interaction in the zone of proximal development, one must identify the “leading activities” that characterize various phases of ontogenesis: “as an alternative to internal, individual stage approaches to the study of development, leading activities provide for a notion of societally provided progressions, the sort of context-selection mechanisms that we have considered important for understanding development” (1984, p. 51). The types of leading activity that Griffin and Cole have in mind are play, formal learning, and work. As children engage in these and other institutionally defined contexts, the nature of interaction and the zones of proximal development in which they participate may be expected to change.

For Saxe and his colleagues as well as for Griffin and Cole, the general point is that the interpsychological functioning found in zones of proximal development may vary widely depending on the social institutional contexts in which this functioning occurs. Since such contexts may be expected to change with sociohistorical settings, the zone of proximal development provides a point where the ontogenetic and sociohistorical domains may be examined in interaction (compare Cole, 1985).

Vygotsky’s comments about internalization and the zone of proximal development are part of a larger concern with the social origins of higher mental functioning in the individual. In outlining this argument, I have emphasized some of its weaknesses as well as its strength. The

weaknesses are many, but his insight about the relationship between social and individual processes still constitutes a major contribution today. Again, this contribution is largely attributable to the fact that Vygotsky did not operate within the boundaries of a single social science or humanities discipline. His breadth of knowledge is at least partially responsible for his success in avoiding the kind of individual reductionism that so often characterizes contemporary psychology.

8. The full title of this volume is *Mysl'enie i rech': Psikhologicheskie issledovaniya* [Thinking and speech: Psychological investigations]. The 1962 abridged English translation of this volume is titled *Thought and Language*. Russian clearly distinguishes between thought (*mysl'*) and thinking (*mysl'enie*) and between language (*yazyk*) and speech (*rech'*). Therefore the title *Thinking and Speech* will be used throughout this volume when referring to Vygotsky's 1934 work.

9. Vygotsky often shaved his head during certain times of the year. According to his daughter (October 16, 1981—conversation), this had nothing to do with illness or any fad such as that followed at the time by the Futurists. Rather, he simply thought it an appropriate way to stay cool during the summer.

10. The term “genetic” (Russian *geneticheskii*) is used throughout this volume. In all cases it is used in connection with developmental processes (as in ontogenetic or phylogenetic) rather than with genes, genetic codes, and the like.

11. The term “mental” is used as the translation of *psikhicheskii* throughout this volume unless otherwise noted. This term contrasts with “psychic” and “psychological,” which are sometimes employed as translations. I have avoided “psychic” because of its inappropriate connotations in English, and “psychological” because I wish to reserve it as a translation of *psikhologicheskii*. “Psychological” tends to be used by Soviet scholars in connection with the science of mind, whereas “mental” is preferred for the object of study. In English, “psychological” often covers both meanings.

12. Semiotics is the science of signs. It includes linguistics as one of its branches. I use the broader term “semiotics” throughout this volume because Vygotsky's concern was with nonlinguistic as well as linguistic signs.

2. Vygotsky's Genetic Method

1. This volume includes three chapters. As the authors explain in the foreword, Vygotsky wrote the first two chapters, and Luria wrote the third. All quotations used here come either from the introduction or from the first two chapters.

2. Vygotsky's emphasis on decontextualization led him to focus on the development of concepts or abstract word meanings in his analysis of mediational means in social history. Abstract word meaning is only one of two major emphases in Vygotsky's semiotic analysis. The other is inner speech. Vygotsky noted in passing that inner speech emerges only at later stages of sociocultural change, but he failed to develop this claim to any significant extent. Therefore I shall not go into it here.

3. In Soviet psychology the use of the term “methodology” (*metodologiya*) is not restricted such that it refers only to issues of experimental design and the analysis of empirical data. It has a much broader application, namely, to the metatheoretical issue of what constitutes appropriate and valid theories.

3. The Social Origins of Higher Mental Functions

1. The distinction between external and internal processes in Vygotsky's account cannot be equated with the distinction between interpsychological and intrapsychological processes, because Vygotsky identified a type of functioning (egocentric

speech) that is both external and intrapsychological. His analysis recognized external interpsychological processes, external intrapsychological processes, and internal intrapsychological processes.

2. A more literal translation of the Russian term here (*intersikhicheskii*) would be “interpsychic” or “intermental.” However, because Vygotsky occasionally employed the term *intersikhologicheskii* and because others such as Cole, John-Steiner, Scribner, and Souberman (see Vygotsky, 1978) have already used the term “interpsychological,” I shall continue that practice here. These same points apply to Vygotsky's term *intrapsikhicheskii*.

3. The Russian term is *zona blizhaishego razvitiya*. The Russian *blizhaishego* is the superlative form of *blizkii* (“close”). Hence a more literal translation would be “zone of closest” or “nearest development.” I shall follow the established practice of using “zone of proximal development” here, however.

4. The term “instruction” is a translation of the Russian *obuchenie*, a term that has sometimes been translated as “learning” (for example, Vygotsky, 1978, ch. 6). The inconsistent translation practice derives from the fact that there is no completely satisfactory English equivalent for *obuchenie*; it refers to the integrated activity of instructional interaction in which both teaching and learning are involved. Hence a more accurate, but entirely too cumbersome, translation might be “teaching-learning process.” In English, “instruction” is often understood as focusing primarily on teaching, but since it may be understood to cover both teaching and learning, it seems to be the most appropriate translation for my purposes.

5. In this case Vygotsky's use of *obuchenie* seems to focus primarily on the learning aspect.

6. This word is a translation of *obuchenie*.

4. Vygotsky's Semiotic Analysis

1. The English term “unconditional” rather than the more commonly used “unconditioned” is employed in this volume. Like Toulmin (1978), I believe this is a better English equivalent for the Russian term *bezuslovnyi*.

2. Several years after Vygotsky's death the Prague school linguist J. Mukařovský (1977) reexamined Yakubinskii's ideas. He pointed out that the difference between monologue and dialogue does not correspond to a difference in functional languages as defined in the Formalist tradition. Rather, he emphasized that one must view monologue and dialogue as ends of a dynamic polarity that are seldom found in practice. Instead of purely dialogic or purely monologic speech, one almost always finds that characteristics of both are involved.

3. The term “indicatory” rather than “indicative” is sometimes used as the English translation of *ukazatel'naya*.

4. I use the term “reference” here because it is widely accepted in the Fregean tradition. A more literal translation of *predmetnaya otnesennost'*, however, would be “object relatedness.” This latter translation reflects Husserl's terminology.

5. Kohlberg, Yaeger, and Hjertholm (1968) found that during an early period in the development of egocentric speech, the proportion of total speech it comprises