The Inspiration of Vygotsky

There used to be a half-joking distinction made between paleo- and neo-Pavlovian psychology. That was in the late 1950s. Before that, we knew only about the former. Perhaps the latter had not yet been born. Or perhaps it was that what we were then hearing about the later Pavlov at second hand made him sound gaga. The real Pavlov was about conditioned reflexes—and what he dealt with was even called "classical conditioning" to distinguish it from such latecomers as instrumental and operant conditioning. The heart of the idea was that a conditioned stimulus "substituted" for the old unconditioned stimulus—a buzzer associated with food would now produce salivation just as the food had. I think it was Edward Tolman who first dubbed all such views of learning "switchboard theories."

As for neo-Pavlovian ideas, leaving aside the rumors of his gaga theories of personality that drifted to the West, they began to appear not so much on their own as in the form of a justification for other Russian work—particularly the work of Vygotsky and his devoted student, Luria. The phrase one heard (taken from Pavlov's later writings) was "the Second Signal System": the world as processed through language in contrast to the world of the senses. It was vague but interesting. We began to learn more about it when the Russians began coming in force to international congresses. I attended the one in Montreal in 1954. There was a big Russian delegation. Their papers characteristically started with a genuflection to Pavlov, followed abruptly by interesting accounts of studies of attention or problem
solving that seemed to have little to do with the paleo-Pavlov I had read.

Then came the classical Russian reception at the end of the week of meetings, replete with the customary vodka and barrel of caviar. It was at that reception (and at an informal party afterwards at Wilder Penfield’s) that I first encountered talk of Vygotsky’s influence, of his work on the role of language in development, of the “Zone of Proximal Development,” and of the role of the Second Signal System in all this. The Second Signal System, the world encoded in language, stood for nature transformed by history and culture. In fact, Pavlov had done little with the idea, Vygotsky had, and so too had his coterie of brilliant students. Vygotsky’s work, I learned that evening, was widely circulated in Russia, though it was officially banned. The Second Signal System was the perfect Marxist vehicle for vaulting beyond old Pavlov while still maintaining a posture of high respect for him as an ikon. It was to be the vehicle by which Vygotsky would be put back in circulation after having disgraced himself by delving too deeply into cultural differences in intelligence in earlier studies of farmers in Uzbeki and Kirghistan collectives.

The major premise in Vygotsky’s formulation (Marxist in his opinion, though advanced for its times and certainly regarded with suspicion by the official ideologists then in power) was the view that man was subject to the dialectical play between nature and history, between his qualities as a creature of biology and as a product of human culture. It risked being tagged as “bourgeois idealism,” for mental activity was given a dangerously dominant place in the system. Yet, as Raymond Bauer has pointed out in his book on those times, it was a necessary corrective to the passive environmental determinism of the early Pavlov. That view was fit only for victims of an old environment that could be blamed for the old troubles. Now the Soviet Union was building a new environment, one shaped by Plans. That required mind, mind that could rise above the circumstances the State had inherited from the past.

Vygotsky’s *Thought and Language* was first published in Russian in 1934, shortly after his death of tuberculosis at the age of thirty-eight. The authorities found it too mental, too idealist. Or perhaps it fell victim to the paranoia and anti-Semitism of the Stalinist purges. It was suppressed in 1936. As Luria and Leontiev said of the book two
decades later, “The first and most important task of that time [the late 1920s and 1930s when the ‘battle for consciousness’ raged] consisted of freeing oneself on the one hand from vulgar behaviorism and, on the other, from the subjective approach to mental phenomena as exclusively inner subjective conditions that can only be investigated introspectively.” It was not for twenty years that the book could appear openly in Russian. It was republished in 1956, the same year in which historians of science place the “birth” of the Cognitive Revolution. Something was altering the intellectual atmosphere, something that Vygotsky had helped foment.

Vygotsky’s book finally appeared in English in 1962. I was asked to write an introduction to it. By then I had learned enough about Vygotsky from Alexander Romanovich Luria, with whom I had become close friends, that I welcomed this added goad to close study. I read the translation-in-progress with meticulous care, and with growing astonishment. For Vygotsky was plainly a genius. Yet it was an elusive form of genius. In contrast to, say, Piaget, there was nothing massive or glacial about the flow of his thought or about its development. Rather, it was like the later Wittgenstein: at times aphoristic, often sketchy, vivid in its illuminations.

To begin with, I liked his instrumentalism, his way of interpreting thought and speech as instruments for the planning and carrying out of action. Or as he put it in an early essay, “Children solve practical tasks with the help of their speech, as well as with their eyes and hands. This unity of perception, speech and action, which ultimately produces internalization of the visual field, constitutes the central subject matter for any analysis of the origin of uniquely human forms of behavior” (Mind in Society, p. 26). Language is (in Vygotsky’s sense as in Dewey’s) a way of sorting out one’s thoughts about things. Thought is a mode of organizing perception and action. But all of them, each in their way, also reflects the tools and aids available in the culture for use in carrying out action. Take the epigraph from Francis Bacon with which Vygotsky begins Thought and Language, “Nec manus, nisi intellectus, sibi permittus, multam valent; instrumentis et auxilibus res perfectur.” But what a curious epigraph: neither the hand nor the mind alone, left to itself, would amount to much. And what are these prosthetic devices that perfect them (if I may be permitted a modern gloss on “instrumentis et auxilibus”)?
Well, for one thing, society provides a tool kit of concepts and ideas and theories that permit one to get to higher ground mentally. “The new higher concepts in turn transform the meaning of the lower. The adolescent who has mastered algebraic concepts has gained a vantage point from which he sees arithmetic concepts in a broader perspective” (Thought and Language, p. 115). They provide a means for turning around upon one’s thoughts, for seeing them in a new light. This is, of course, mind reflecting on itself. Not surprising, given the plodding, Lumper Marxist criticism and interpretation of those days, that Vygotsky was banned for twenty years. Consciousness plays an enormous role, consciousness armed with concepts and the language for forming and transforming them.

About consciousness he says: “Consciousness and control appear only at a late stage in the development of a function, after it has been used and practiced unconsciously and spontaneously. In order to subject a function to intellectual control, we must first possess it” (ibid., p. 90). This suggests that prior to the development of self-directed, conscious control, action is, so to speak, a more direct or less mediated response to the world. Consciousness or reflection is a way of keeping mind from (if the mixed metaphor will be permitted) shooting from the hip. That much is familiar enough as a form of conscious inhibition. But what of the instruments by means of which mind now grapples itself to “higher ground”?

This is the heart of the matter, the point at which Vygotsky brings to bear his fresh ideas about the now famous Zone of Proximal Development (the ZPD hereafter). It is an account of how the more competent assist the young and the less competent to reach that higher ground, from which to reflect more abstractly about the nature of things. To use his words, the ZPD is 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” (Mind in Society, p. 86). “Human learning,” he says, “presupposes a specific social nature and a process by which children grow into the intellectual life of those around them” (ibid., p. 88). And then, “Thus the notion of a zone of proximal development enables us to propound a new formula, namely that the only ‘good learning’ is that which is in advance of development” (ibid., p. 89).
There seems, however, to be a contradiction. On the one hand, consciousness and control can come only after the child has already got a function well and spontaneously mastered. So how could this “good learning” be achieved in advance of spontaneous development since, as it were, the child’s unmasterly reaction to a task would be bound initially to be unconscious and unreflective? How can the competent adult “lend” consciousness to a child who does not “have” it on his own? What is it that makes possible this implanting of vicarious consciousness in the child by his adult tutor? It is as if there were a kind of scaffolding erected for the learner by the tutor. But how?

Nowhere in Vygotsky’s writings is there any concrete spelling out of what he means by such scaffolding. But I think I can reconstruct his intentions from two sources, one of them philosophical-historical and in Vygotsky’s own hand, so to speak, the other from research on such “scaffolding” that I undertook myself, better to grasp what this intriguing concept might mean.

Philosophically, there is a hidden agenda in Vygotsky’s account, and it needs to be made explicit. He believed that “modernization” of the peasant through collectivization and mechanization could be described in the same way as one described the growth of the child from prescientific to scientific thinking. In both, there was a creative fusing of collective action and consciousness—a fuzzy notion that will, I think, come clear shortly. For him that “fusing” was primary to the human division of labor. He believed that the transmission of mind across history is effected by successive mental sharings that assure a passing on of ideas from the more able or advanced to the less so. And the medium in which the transmission occurs is language and its products: literacy, science, technology, literature. Recall that when Vygotsky went to Uzbekistan and Khirgizia to do his studies on changing peasant mentality, literacy was a passionate topic. Writing and reading were not only practically desirable. They were to “modernize” the mind. And there was even a school of Russian symbolist painters (vividly described and well illustrated in Robert Hughes’s book on the modernist tradition) that was to convert consciousness by new techniques of graphic design. The general idea was widespread among literary intellectuals and linguists of the day—the Formalist poets and men like Bakhtin and Jakobson and Troubetskoy, whom Vygotsky either knew personally or admired. He had, after all, written a book on
the psychology of art that focused principally on its
whether in art or in science, reflected our lives in it.
same time it could propel us beyond history.

But that is all very grand and, as Roman Jakobson once said,
me, more Russian than socialist, more literary than linguist.
philosophical than psychological. Indeed, it comes out of the
mold as Jakobson’s idea as a young man to create conscious
through literary devices that made the world strange again—a corner
stone of his poetics discussed in an earlier chapter. Yet, I think this
ingenious intuition can be given a psychological rendering. So let me
turn to the empirical research that can help us to it.

First, studies of tutoring and what makes it effective. Until very
recently, there were very few studies of tutoring—for the very reason I
mentioned in the preceding chapter: the child was studied as a lone
agent mastering the world on his own. Some years ago, David Wood,
Gail Ross, and I decided to have a close look at what actually happens
in a tutoring pair when one, in possession of knowledge, attempts to
pass it on to another who does not possess it. The task we chose
(because it allowed us to observe what the child was doing) was teach-
ing children to build a pyramid out of a set of interlocking wooden
blocks. The tutor, Dr. Ross, was not only knowledgeable about chil-
dren but genuinely interested in what they were doing and how they
could be helped. That part mattered, but we can pass it by here and
return to it in a later chapter on the relation of thought and emotion.
All we need note here is that she turned the task into play and caught it
in a narrative that gave it continuity.

What emerged was, I suppose, obvious enough. She was indeed
“consciousness for two” for the three- and five-year-olds she tutored,
and in many ways. To begin with, it was she who controlled the focus
of attention. It was she who, by slow and often dramatized presenta-
tion, demonstrated the task to be possible. She was the one with a
monopoly on foresight. She kept the segments of the task on which the
child worked to a size and complexity appropriate to the child’s pow-
ners. She set things up in such a way that the child could recognize a
solution and perform it later even though the child could neither do it
on his own nor follow the solution when it was simply told to him. In
this respect, she made capital out of the “zone” that exists between
what people can recognize or comprehend when present before them,
and what they can generate on their own—and that is the Zone of Proximal Development, or the ZPD. In general, what the tutor did was what the child could not do. For the rest, she made things such that the child could do with her what he plainly could not do without her. And as the tutoring proceeded, the child took over from her parts of the task that he was not able to do at first but, with mastery, became consciously able to do under his own control. And she gladly handed those over. (Interestingly, when the observations were repeated years later using young children as tutors for younger children, they were not as different as expected, save in one crucial respect: the young tutors would not hand over parts of the task as the younger child achieved mastery.)

Obviously, not everybody is a genius in serving as a “vicarious consciousness” for others. But David Wood’s later work on tutoring surely indicates that tutoring is a skill that can be learned. One final, rather rueful finding from another study leads me to think that there may even be little microcultures, sometimes as small as families or human pairs, that aid or destroy the “skill” involved. The English psychologist Barbara Tizard reports a study in which she sought to correlate the “interestingness” of children’s questions with the “goodness” of the replies that parents give to them. The rueful finding is this. The more likely parents are to give good answers, the more likely are children to ask interesting questions. But, on the other hand, given the nature of correlations, the finding can be stated in the reverse direction: the more likely children are to ask interesting questions, the more likely parents are to give good answers. So while there are specific things to be said about the “loan of consciousness” from the more able to the less, what is involved is surely not a simple act of will but a negotiable transaction.

Vygotsky himself remarks that the acquisition of language provides the paradigm case for what he is talking about, for it is in the nature of things that the aspirant speaker must “borrow” the knowledge and consciousness of the tutor to enter a language. And there are two observations that give vivid specificity to his point. The first comes from studies of language acquisition I did at Oxford. Those studies reveal one durable regularity in mother-child interaction during language acquisition. It is the mother who establishes little “formats” or rituals in which language is used: “book reading” routines with picture
books, request patterns, little games, and so on. She plays her part in them with striking regularity. In book reading, for example, she phases her questions in a regular sequence: (1) Vocative, (2) Query, (3) Label, (4) Confirmation. Or, (1) Oh look, Richard! (2) What's that? (3) It's a fishy. (4) That's right. This sequence provides a scaffold for “teaching” reference. At the start, the infant may understand little. His response to the query may then develop and take the form of a babble. And once that occurs, the mother will thereafter insist on some response in that slot of the scaffold. Once the child alters his responding babble to a word-length vocalization, she will again raise the ante and not accept a babble, but only the shorter version. Eventually, when the name of a referent is mastered, she will shift to a game in which the given and the new are to be separated. Whereas before, “What's that?” was spoken with a rising terminal stress, now it receives a falling terminal stress, as if to indicate that she knows that the child knows the answer. To which he typically responds with a new show of coyness. And shortly after, she raises the ante again: “What's the fishy doing?” with rising terminal stress anew as she takes him into the ZPD again, this time to master predication. She remains forever on the growing edge of the child’s competence.

Which led Roger Brown to ask how it could be that in transmitting a language mothers invariably talk at just the level of complexity that the child already can understand. What can the child learn from that? Brown’s answer is that the child is being given an opportunity to master meanings in new contexts, better to understand what language is about and what it can do. Vygotsky would have said, had he known of this regularity, that the mother was providing an opportunity for the child to achieve his own consciousness, that up to that point he was using hers as a crutch to get beyond infant speech.

In my own work, I concluded that any innate Language Acquisition Device, LAD, that helps members of our species to penetrate language could not possibly succeed but for the presence of a Language Acquisition Support System, LASS, provided by the social world, that is matched to LAD in some regular way. It is LASS that helps the child navigate across the Zone of Proximal Development to full and conscious control of language use.

While I think there are enormous differences between the way language is acquired and the ways other forms of knowledge and skill are
acquired, I agree with Vygotsky that there is at least one deep parallel in all forms of knowledge acquisition—precisely the existence of a Zone of Proximal Development and the procedures for aiding the learner to enter and progress across it. It was Vygotsky’s genius to recognize the importance of language acquisition as an analogue, and I think that he was led to this recognition by his deep conviction that language and its forms of use—from narrative and tale to algebra and the propositional calculus—reflect our history. It was also his genius to recognize the manner in which those “possible ways” across the ZPD become historically institutionalized—whether in schools, at work in the mechanized collective, through film and folktale and fiction, or through science.

I find it ironic, finally, that Vygotsky was shielded from Soviet intellectual dogmatism by being put under the umbrella of Pavlov’s Second Signal System. Marxism has always had difficulty with its Principle of Spontaneity, a principle to account for generativeness and creativity in human affairs beyond historical determinism. Psychology has had the same sort of difficulty, perhaps stemming from a dogmatic preference for determinism. Vygotsky strived mightily (for he was devoted to Marxist theory) to provide a means of bridging the gap between historical determinism and the play of consciousness. He embraced a psychology that had to have room for historical studies of the forming of mind, as well as for laboratory and observational studies of the details of mental functioning. He was never hamstrung by the theoretical system in which he located himself—and he probably suffered in consequence. Looking at his work again after many years of inspiration from it, I think he provides the still needed provocation to find a way of understanding man as a product of culture as well as a product of nature.