

Children at the ZPD Threshold: The Role of Experts in Literacy Acquisition

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In our consideration of the learning process, we must take into account the a priori difference between how children learn psychologically and developmentally, and what adults believe children need during the first half of the Critical Period (CP). It is my thesis that many of the problems of struggling readers and writers occur because of the hiatus between adult experts (teachers and parents) and children/students. In the cohort 0-6, the first half of the CP, children cross some major developmental thresholds – perhaps the greatest of their lives. The difference can be characterized as that between learning *process*, and *fossilized* (Vygotsky, 1978, p. 64) knowledge. Vygotsky (LSV) transcends the debate between innatists and social constructivists when he says development of higher psychological functions must be the effect of a dialectic between the two, and other *because it is, by nature, a process*. Mastery of reading and writing, or what we call “literacy,” is the result “the fundamental law of development which knows no exceptions, and [appears] in the general course of the child’s psychological development as the outcome [effect] of the same dialectical process, not as something introduced from without or from within” (p. 46).

Terms such as innate and social constructivist map back to historic developments in linguistics and psychology which occurred after the 1957 publications of Chomsky’s *Syntactic Structures* and B.F. Skinner’s *Verbal Behavior*, when the debate began. While LSV has been grouped with constructivists too, Chomsky (NC) – once considered an innatist -- is most relevant to our discussion here regarding the psycholinguistics of literacy because NC acknowledges both intrinsic innate and extrinsic structural influences in process,

particularly in his metatheories of metagrammar and Universal Grammar. It will be assumed below that, in some way, innate structures determine the linguistic nature of thought and thereby affect what is acquired in the process of learning language. This process “[bears] upon the biologically determined language faculty. The task of a child learning a language is to choose from among the grammars provided by the principles of universal grammar that grammar which is compatible with the limited and imperfect data presented to him” (Chomsky, p. 180). LSV’s emphasis on the primacy of process (versus fossilization) modifies NC’s metatheory in such a way as to make it a true metatheory rather than the modified polemic it might have been as a kind of rebuttal to Skinner (Simmons, 1997). The process of language acquisition then falls under macro principles which may be called Hegelian (as well as showing the influence of Marx and Engels as LSV acknowledges (pp. 19, 54; 54, 63, 94, 126; 60, 61, 120, 132).

The paradigm of the process of literacy acquisition may be built into the mind/brain structure *prior* to socialization. It is not inherited from an educational learning system. Therefore, the teacher’s traditional role as propagator and disseminator is relegated to facilitator. For the significance of such a process is that it happens of itself, and is therefore not to be induced by learning and education because it is a transformation from one developmental zone to another *that would occur without the expert and must occur for higher development to take place*. “Each of these transformations provides the conditions for the next stage and is itself conditioned by the preceding one; thus, transformations are linked like stages of a single process, and are historical in nature” says LSV (p. 46).

It is easier to see the “psychological” nature of something we tend to regard as technical if we look at it as pathology after age six when certain dysfunctions manifest, including

behavior issues, so-called dyslexia, and cognitive developmental delay. Not being able to read or read at grade level in the first and second grades will be the result of social, linguistic, psychological, or cognitive developmental dysfunctions or some combination of them. The institutional approach to this cocktail of negative potentialities, though, is often strictly technical. This reduction is due in part to state mandates and benchmarks and the imposition of fossilized state of adult literacy metrics, as well as occupation-related decoding and encoding of language. "The fossilized form is the end of the thread that ties the present to the past, the higher stages of the development to the primary ones" (Vygotsky, p. 64). It is not that fossilization is "bad," since all books and published/stored forms of information are by definition fossils of thought. Rather, it is the understanding and facilitation of early language learning as dialectical process that is critical here because thwarting it for whatever reason causes what we call the struggle of early learners.

I am taking for granted that readers have some familiarity with the idea of Vygotsky's Zone of Proximal Development (ZPD), defined 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 [expert] guidance or in collaboration with more capable peers*" (p. 86). The literature of developmental psychology shows that children go through definite stages of struggle and then achieve mastery (Piaget, 1926; Kohlberg, 1958; Fraiberg, 1959).

We are concerned with *students who are left behind in the struggle phase*, and what can be done to prevent, diagnose, and treat the problems caused by the frustrated learning process. While fossilization is the inevitable terminus for accumulated information and knowledge in the development of cohort 0-6,

particularly when it is committed to system and print, we are concerned almost exclusively with creative, inductive, dialectical process as children at this stage of development are not fossilized in any sense. Even cortical and neuronal development proceed as this stage – as is evidenced by CP neurology and its imperative of phonemic (sound) and morphemic (structure) language learning, and does not "fossilize" until well after age twelve. (Graphemes, or written characters, can be learned later.) "We believe that child development is a complex dialectical process characterized by periodicity, unevenness in the development of different functions, metamorphosis or qualitative transformation of one form into another, intertwining of external and internal factors, and adaptive processes which overcome impediments that the child encounters" (p. 73). Such a complex array of forces in a brain that is also changing neurologically should cause a dramatic reduction in emphasis on fossilization on the part of the facilitating experts.

The key word in the quote above is "complex," and yet teachers must not only make it simple for the students, but also for parents, administrators, and the state. In the gulf between complex reality and simple paradigm, we find a morass of struggling students who "just can't read" and, as any college freshman English writing course instructor will tell you, have extreme variations in the ability to write even an expressive, unambiguous sentence, never mind to engage in structured critical and analytical thinking. Next we will look at some of the periods (or zones) children in the 0-6 cohort encounter and are expected to master.

The Mirror Stage and its Positions

If we were discussing listening and speaking, there would be much to say about the earliest years of the 0-6 period. However, our focus is literacy (reading/writing), and what goes on in an institutional setting: a school. Therefore,

much of what we discuss here is centered on the first few years of school, and preschool. Certainly this exploration can be enclosed in the context of much later learning up through high school as these issues percolate into higher grades and, in fact, *dictate* success or failure when it matters most: after students reach age sixteen and may leave school according to the law or must pass a state or regents exam to graduate. Also, we cannot forget about listening and speaking as they form the part of this period that is “critical.”

However, there are a few thresholds all children cross in early development that have much to do with what they get out of the expert (home/school) environments that will support their literacy acquisition. The most important of these stages, according to psychologist Jacques Lacan (1949), is the Mirror Stage.

According to Lacan, the formation of the child’s sense of “I” can be described by using the concept of a mirror. I would go further and describe this initial and structural process in the language of LSV as “a complex dialectical process characterized by periodicity,” meaning there is a decided drift from A to B (thesis, antithesis), and then a C state (synthesis) where the period or zone coalesces into what we might be able to discern through testing and other forms of assessment and perception/evaluation. The statement, “This child reads at the second-grade level” is such a fossilized statement generated by assessment of the end of a period of dialectic. *A sample dialectic could be that a child has learned to write [A] better because of her assigned reading [B], and therefore arrives at a new skill: narrative exposition [C].* We can now assess if she has learned the rhetorical mode of narrative by assessing her on the criteria of such a mode. But to reach this fossilized stage the child must cross significant ZPD thresholds with the assistance of experts. To determine if she has done so, the expert must engage in *process analysis* rather than *object analysis*:

“the aim of psychological analysis [is ...] process analysis as opposed to object analysis” (p. 65). LSV adds that other assessments are important, such as “real, causal or dynamic relations” rather than “descriptive” assessment.

The most important developmental stage (or ZPD) is Lacan’s Ideal-I stage where an infant (around 10-18 months) begins to integrate the concept of “I” into behavior and thinking because she perceives that she exists as an entity. At this stage we see rudimentary integration of Chomsky’s metagrammar as it emerges with LSV’s dialectical process as it engages, in part through socialization. The a priori state of the metatheory of innate language structure/construction *contains* the subject-object (s-o) dichotomy.

The child crosses the cognitive threshold into the Ideal-I stage when she recognizes herself as entity, producing the self-conscious subject necessary for the next stage: the recognition of other subjects as objects in a social relationship, resulting in the formation of the Real-I (or social I). It is in this next stage, zone, or position (used synonymously here) that language learning begins “in the universal.” The “dialectic of identification” is a mimetic symmetry brought into being by the relative s-o *positions* in a Hegelian *thesis > antithesis > synthesis* chain resulting in the crossing of a ZPD threshold, which is a phenotype repeated at each threshold. “The development is experienced as a temporal dialectic that decisively projects the formation of the individual into history” as an *imago* or self-image (Lacan, p. 4).

In our own notation, we will call the Ideal-I position in development I1, or the first I. This may mean the child recognizing herself in a mirror, where the parent places an object on the child’s head and the child sees it in the mirror but reaches up to her own head to touch the object. This assessment shows the child has reached the Ideal stage, where the idea of I is integrated into the psychological

performance. This threshold is critical to language because of the introduction of the pronoun referring to the speaker (I, me). Language is first and foremost a problem-solving strategy where something that is missing is supplied because the lack, want, or need has been communicated to the expert who can acquire the object for the subject (I). Lacan sees this distinction as critical to understanding the formation of the linguistic psyche because "it sheds light on the formation of the *I*" when the child is at an age where she can "recognize as such [her] own image in a mirror" (p. 1). The "specular" or Ideal self can then prepare to begin language formation (listening/speaking), which becomes "the symbolic matrix in which the *I* is precipitated in a primordial form, before it is objectified in the dialectic [(A > B) C] of identification with the other, *and before language restores to it, in the universal, its function as subject*" [italics added] (p. 2).

The next threshold is formation of the Real-I, where the child learns that his unitary subjectivity is in relation to other subjects (socialization). He has learned that he is an entity through seeing himself in the mirror (actually or metaphorically, since we do not need a mirror to see our own body) and has reached the I1 (Ideal-I) position (stage, zone). He then makes the transition, *through the dialectical process between innate and social*, to the next stage or zone, which in our notation is the I2 position. It is as if his consciousness says, "I am, and I am in relation to others who are as I am." Now communication is possible. Now language becomes critical. Now linguistic development begins, because the necessary positions are in place (I1 + I2). We may say that without developmental pathology this process is more or less complete by age two. Delay beyond that age creates concern because the child now seems infantile in collateral developmental achievements, socially and intellectually, and in particular linguistically, which is, right or wrong, often the measure of both.

To broaden the usefulness of Lacan's positions in the mirror stage, we may add a position which lies before the specular (I1). This is the OI position, where the child has not made the fundamental psychological and perceptive leap from complete subjectivity to the preliminary subject-object dichotomy of the specular position (through the vehicle of the "mother" or "m-Other"). We may also add another position beyond I2, which can be called XI, or *the Ideal-Real positions abducted by a collective identity* (e.g. "I am an American, I am a Baptist, I am a Muslim, I am a teacher, I am a police officer, I am an academic, etc., before I am "I" -- with X representing any other identity. Therefore, we now have a kind of topography of the constructivist psyche with four fundamental positions, each of which has its own ZPD threshold: OI, I1, I2, XI. The centric position is OI, with I1 > XI being, by degree, more eccentric.

The final topology is expressed thus: [{OI} {(I1, I2) (XI)}], with the set {OI} as the centric position and set {(I1, I2) (XI)} as the eccentric positions, with (I1, I2) enclosed in a subset because they represent individual social development of the ideal and social pronouns (I, me) described by Lacan's mirror stage, and (XI) enclosed because it indicates *abduction* of these positions by the collective pronoun (we). The conclusion is that the abducted eccentric position is more fossil than process (a policeman, not Mark, who is works as a policeman), and that the centric position (OI) is, perhaps, all process *except for the innate qualities of the metatheory existing a priori of any socialization, which is a mind/brain fossilization*.

My proposition is that sequencing Lacan into this modification may correlate with NC's language acquisition process. NC seems to make the same distinction as LSV, that language acquisition, and, ergo, literacy, is a *process* that terminates in a fossil: "children proceed through a sequence of cognitive

states $S_0, S_1 \dots S_f$, where S_0 is the 'initial state,' prior to any language learning, and S_f is the 'final state,' a 'steady state' [...] When the child has attained this steady state, we say that he has learned the language" (p. 119). We may correlate S_0 with O_1 , and S_f with set $\{I_2, X_1\}$, both positions in the set being "social," but one identified with the social "I" and the other with the social "we."

While it is important to consider developmental pathology resulting from biology (such as certain forms of autism) and extreme deprivation and abuse, *this discussion is focused on the struggles and frustrations of learners who are not challenged by these obstacles*. Both the Ideal (specular) and Real (social) "I" are called an *imagos* by Lacan (p. 2). The stage is set for introduction of formal language learning, which typically proceeds in this overlapping sequence: *listening > speaking / > reading > writing* (l/s > r/w), which we will call the *language acquisition chain* or LA chain. We must now turn to the possible frustration of this process that may be at the root of the struggle leading to functional illiteracy in the first and second grades and beyond.

Expert Failure at the Threshold of ZPD Transition

Once the child has integrated I_1 and I_2 and perceives the subject-object relationship in a linguistic sense, and has also achieved fluency (though not necessarily "accuracy") in listening/speaking, the next half of the LA chain process initializes (reading/writing) provided the child has appropriate expert assistance across the threshold at the beginning of the new zone. For convenience we may say this process begins formally in preschool at about age four, though it may be earlier. We may group preschool and kindergarten together as one developmental unit, since the content/skills/method lines may be blurred. The next unit contains the first and second grades. The whole initial literacy acquisition zone, then, stretches from start of

preschool to the end of second grade, and corresponds, more or less, to the LA chain.

Once the child has crossed the thresholds O_1, I_1 , the innate process of metagrammar takes a back seat in the developmental process and *experts* rise in importance in the dialectic toward socialization. To LSV, facilitation of linguistic thresholds is critical to the success of the transition and acquisition of fossilization through process. In fact, he places great emphasis on the importance of the expert, not as a re-mediator or crutch for weak students, but as even more important for students with greater intellectual power or with more challenging thresholds and zones to master: "what children can do with the assistance of others [is] even more indicative of their mental development than what they can do alone" (p. 84). Therefore, the social positions of I_2 and X_1 become the context for further development, but also present the danger or overemphasis on fossilization and abduction. In my opinion, experts often make the gravest error at the ZPD threshold between I_1 and I_2 when they enforce fossilized knowledge and fossilization on the development process, rather than understanding that *the fossil is the outcome not the vehicle*, causing frustration and struggle. Furthermore, the social *arch* of schools, the state, the church, parents, and corporate entities, as de facto fossils of the top order, *have a special interest in abduction and fossilization that may be at fatal odds with process, which is by nature anarchic*.

Since we are looking at the developmental process from the view of psycholinguistics rather than pedagogical methodology, we can dispense with the "how to" talk and just look at what might cause frustration and struggle during the mirror stage (I_1, I_2). We must take into consideration the difficulty and severity of the transition and transformation from the first stage (listening/speaking), to the next (reading/writing) in the LA chain. They are asymmetrical in their difficulty, the latter being more problematic and complex and almost

void of innate metatheory. For perspective, we may consider the first half of the chain (I/s) as mostly a priori (innate), and the second half (r/w) as the a posteriori (social).

Again, this is not a problem of technique. It is a problem of relationship. As such it falls under the analysis of psychology and involves such non-technical intangibles as love, trust, understanding, compassion, wisdom, and evolved consciousness on the part of the expert. The expert must not have been abducted, and must have reference to OI at least as an intellectual position in the topology of being. Language is integral to the developmental process because its fossils, the personal pronouns, become the metonyms for the threshold positions of the developmental topology during the CP. The expert's reference to the OI position will vary. In the language of the Sanskrit phrase "om tat sat om," or "I am that I am," the position indicates no differentiation, linguistically, between subject and object, either as self-object (specular), or other-object (social). *The effective expert understands that progressive developmental positions are not disposable but are in fact part of the emerging structure (construction) of a topology through process, and are ontologically interdependent.* "The last and highest stage in the development of any process may demonstrate a purely phenotypic similarity with the first or primary stages, and if we take a phenotypic approach, it is impossible to distinguish between higher and lower forms of this process" (LSV, p. 64).

A social order with a special interest in enforcing fossilization and abduction corrupts the process, resulting in de facto exclusion of process methods and experts from the system. Process teachers then tend to be absent from critical thresholds. Understanding demands an approach to process few state-managed school systems would embrace as pedagogical criteria.

Moss (1981) describes the problems in learning and holistic development that result

from an imposition of fossilized states when the personality is at the critical threshold of transition to a new zone. He also describes the attitude (affect) that helps facilitate successful transformation if engaged from a spiritual and personal position of love, compassion, and understanding and full acknowledgement of the OI position as a "primary stage." For children and adults alike, pressure comes from within and without as the fossilization is internalized through systems of reward and punishment. Moss describes what anyone involved in a holistic process might experience as the ego (I) is formed and then begins to bridge its unitary state through the exercise of language and perception of the subject-object relationship through language.

I am coming to experience the world without a therefore, without a rationalization for being. It feels like a process of dissolving. Yet simultaneously reveals something else – a presence, an aliveness. At times I feel like a living experiment, an alchemist's vessel in which a marvelous, although sometimes painful, mystery is unfolding. On the one hand it is effortless and on the other hand certain patterns of *me* must be relinquished over and over again. One of these patterns [...] is the tendency to seek early or simplistic resolution to states of unknowing or paradox. It is uncomfortable to live at the edge of formlessness, but the longer we can remain in a consciousness that sustains uncertainty the deeper the resolution seems to be when it comes. *Practically speaking, this is one of the greatest challenges in any exploration of the transformational process: to let go into the process but not relax the energy and rest into resolution prematurely* [italics added]. (p. 225)

The expert becomes necessary in the dialectical process because the student at the threshold of the ZPD is in a unique domain. Without facilitation by an expert, the child may grasp for “early or simplistic resolution,” particularly if there is also a sense of “dissolving” as the autonomic expertise the child fossilized in the prior zone *platforms, becoming the basis for the new zone or position*. As the “sometimes painful” mystery of the new zone dawns, the expert must not encourage premature resolution, but rather assist in shepherding the child as deeply as possible into the next zone and toward autonomic expertise. This is a deeply troubling time for a child because it is the event of his continued birth process into the social arch. In the r/w stage, rewards and punishments, seemingly of existential consequence, are incorporated into the coercive system, increasing the need for expert assistance. Sustaining both the expert and the child through this ordeal is “a presence, an aliveness” that we know as curiosity, interest, fascination, engagement – in short, all the qualities often absent from the fossilized indoctrination enforced by the state and other archic systems. “The entire secret of teaching written language is to prepare and organize this natural transition appropriately. As soon as it is achieved, the child has mastered the principle of written language and then it remains to perfect this method” (LSV, p. 116).

The task of the expert becomes not immediate fossilization of skills, but the facilitation and accommodation of the transitional threshold from one ZPD to another as the child lets go of his reliance on listening and speaking (phonemes), which he has “mastered” on an extraordinary level even at three, and eases his way into the strange and frightening world of written symbols (graphemes) both decoded and encoded. At the same time he intuits that this is an important rite in his entry into “civilization” with its sacred mystery of signifier and signified, “which makes it

incumbent on us to define this process by the most radical determinants of the relation of man to the signifier” (Lacan, p. 184).

Lacan describes this transition from phoneme to grapheme, from the natural world of the literal to the civilized world of the symbolic, where the *signifier* (the word) becomes more important than the *signified* (the thing), as the algorithm of S/s, or Signifier over the signified (p. 149). *This is a phenomenological and ontological shift requiring love, understanding, and wisdom on the part of the expert*. The “radical” nature of this imperative of transformation lies at the core of civilization and socialization. Sooner or later the child who is the victim of fossilization would experience the dire consequences of not learning to read and write: to become a social outcast labeled with the now-derogatory epithet “an illiterate,” which is a connotation robbed from its denotation and indicates the terror of being *in* society but not *of* society. He learns that listening and speaking are expected of anyone who is capable, but that reading and writing represent and are indeed entry into the symbolic world of man.

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