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Re/thinking the Zone of Proximal Development (Symmetrically)

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> *[T]he zone of proximal development . . . 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.* (Vygotsky, 1978, p. 86, original emphasis)

The notion of zone of proximal development has come to be used widely to theorize learning and learning opportunities. Unfortunately, following a simplified reading of its original definition and primary sense in the quote that opens this text, the concept tends to be thought of in terms of the *opposition* of individuals. One of these individuals, a teacher or peer, is more capable than another individual, the learner. Somehow they engage in an "inter-mental" or "inter-psychological" plane from where the learner constructs knowledge from him-/herself on an "intra-mental" or "intra-psychological" plane. That is, such conceptualizations conveys a substantialist approach that thinks learning as knowledge assimilation and collectivity in terms of ensembles of individual actors interacting unproblematically. Their interaction is thematized through the dubious prism of the differences of what happens within the individual consciousness and what happens in collective consciousness—as if they could exist separately. Speaking is reduced to the individual, subjective intention of the speaker, who, in speaking, is considered to externalize ideas that have previously formed on the inside. The approach is substantialist in that it takes some prior situation, including the institutional

positions of the participants in an interaction (i.e., teacher, student), and uses it to make causal attribution about the events that ensue. But such approaches are unsatisfactory given that there is insufficient attention to the co-constitutive nature of subjective consciousness and collective consciousness. More so, such approaches convey notions of verbal expressions that are "radically false" (Bakhtine [Volochinov], 1977, p. 122). Do we have to think the zone of proximal development in terms of knowledge transmission and the underpinning opposition of a more and a less capable individual? Is it possible to think this concept in terms of the unicity of interactional processes in which any moments (individual subjects) are *constitutive*, that is, cannot be thought independently? In this editorial, we propose a different way to think about the zone of the proximal development in which asymmetries are possible because of the existing intercomprehension of interacting participants who become each other's teachers and students independent of their institutional positions.

In the work of Vygotsky, who created the concept, we do find starting points for thinking about the zone of proximal development from a *symmetric* perspective. The symmetric perspective is grounded in a common world of historical significations and ways of life that we come to share since our birth and that form the basis of common implicit or explicit reference, common knowledge, assumptions, etc. It is also grounded on the sharing of language. Thus, in a conversation – a word whose sense derives from the Latin *conversare* in the middle voice, that is, with active and passive aspects – speakers use words. But, any word spoken for the purpose of understanding is symmetrical, belonging to both speaker and listener. Thus, "[t]he word is a thing in our consciousness, as Ludwig Feuerbach put it, that is absolutely impossible for one person, but that becomes a reality for two" (Vygotsky, 1986, p. 256). A conversation is a *con*versation only when the word is a reality for two. That is, "each word has two sides. It is determined equally by the fact that it comes *from*

someone as by the fact that it is directed *toward* someone. It constitutes precisely *the product of the interaction of speaker and listener*" (Bakhtine [Volochinov], 1977, p. 123, original emphasis). That is, when we take a conversation as the unit, in which each word has two sides, any asymmetry within the unit, that is, between moments of the unit, has to be thought of differently. How, then, within this context, can we think about teaching/learning situations differently than from the asymmetry of institutional positions of teachers and students? In the following, we develop our reflections concretely using an instant from a second-grade mathematics classroom in their first lesson of a unit denoted on three-dimensional geometry.

In this lesson, the children are in the process of classifying "mystery objects" that they are pulling from a black plastic bag. The 22 children sit in a circle, the center of which develops into space for a classification of the objects (Figure 1). Each child gets a turn pulling an object and then either placing it on a colored paper with other "like" objects or create a new group. They are asked not to use color or size as a way of distinguishing objects, though most of the children continue to do so. The two teachers teaching the unit – Mrs. Turner, the regular classroom teacher, here in the lead, and a university professor – have stated previously (in their planning meeting preceding the lesson) their intent to allow the children to arrive at a classification system in which all objects are grouped according to their geometric properties, that is, as cubes, spheres, rectangular prisms, and so on. To achieve this end, Mrs. Turner interacts with each child so that at the end of its turn, the object has found its place according to what we recognize in the practice of Euclidean Tridimensional Geometry, its geometrical properties.

These interactions can be understood in terms of the zone of proximal development at two levels. Firstly, at the whole-class level, the teachers allow a classification of the 22 mystery objects to emerge from the collective activity of the children. Secondly, the teachers allow a classification to emerge from each child's

engagement in the task (a classification consistent with standard Euclidean geometry). Collectively, therefore, the zone of proximal development allows a category system to emerge, and individually, each child produces a proper grouping that is constitutive of the collectively achieved system.

For instance, it is Connor's turn, a child sitting in the circle. He has pulled what he eventually comes to know to be a cube, but has classified it on its own rather than with the other cubes on the floor. Following the interactions with Mrs. Turner, he ends up giving his mystery object its appropriate place. At this point, Mrs. Turner utters, her intonation falling toward the end as if she were making a statement, "em an what did we say that group was about," while pointing from afar toward Connor (Figure 1). There is a long pause developing, much longer than research has shown to exist in teacher-student interactions. Connor then takes a turn and utters with rising intonation characteristic of questions, "What do you mean like?" all the while touching his mystery object. (Transcription conventions in the Appendix.)

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01 T: em an ↑what did [we say that [group was about.]
                       [((points toward objects on the floor,
      maintained until turn 06))
                                    [((makes tiny circular
      movement with index finger))
02    (1.00)
03 C: <<p>what do you [mean li[ke?>]]
                       [((touches "his" cube))
                                [((looks up to Teacher))
04 T:                          ^[WHAt ] ↑was the (0.15) ^WHAt
      ↑did we put for the name of that group.
05    (1.51)
06    whats written on the] [card.]
      ((still points))    ] [((Pulls hand back, no longer
      points))
07    (0.26)
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08 C: <<pp>s:::::><<p>quares>-

09 T: ˇsquare [ˇan::d

[((Cheyenne has moved forward, jutting her index finger repeatedly to the card next to the cubes inscribed “square, cube”))

10 J: cubes.

11 (0.25)

12 T: cube. ‘does it meet the criteria of having the square or the cube?

Figure 1. Connor is in the center of a circle of second-grade students facing his “mystery object” and the teacher just off the left margin of the image (pointing finger can be seen in grey on left border).

At the end of this exchange, overlapping Connor, the teacher begins a new turn, “What was the . . . what did we put for the name of the group,” her intonation falling toward the end of the utterance. Another pause develops, again much longer than

the 0.8 seconds average wait time teachers tend to allow. After 1.51 seconds, Mrs. Turner takes another turn at talk, "what's written on the card" (turn 06), her intonation again falling toward the end as is typical for statements. Up to this point, her index finger has pointed toward the floor, and also made a little circular movement while she uttered, the "group was about" (turn 01). After a very brief pause Connor says with a very tiny, almost inaudible, voice, while drawing out the initial "s" sound, "squares" (turn 08). Mrs. Turner takes the next turn, "square and." But before Connor has the time to say something, in fact while Mrs. Turner says "and," Cheyenne, another child, has moved forward and points to a sign next to the colored paper on which the university professor had previously inscribed the words "square" and "cube." Jane takes the next turn at talk uttering "cube" (turn 10). As before, the teacher repeats the word and then begins another question.

We might gloss this excerpt in a traditional way saying that the teacher attempts to allow Connor to name his mystery object with the name of the group in which he has ended up placing it. She asks a question which he does not understand and then she facilitates the production of the answer. In traditional approaches, Mrs. Turner would be identified as the more knowledgeable individual who guides the six-year-old Connor to attribute the appropriate category name to his mystery object. The appropriate answers, "square" and "cube," are produced in an interactional turn-taking routine that has come to be known under the acronym of *IRE* – teacher *i*nitiation, student *r*esponse, and teacher *e*valuation. Here, the initiation occurs in turn 01, the student responses are produced in turns 08 (Connor's "square"), 09 (Cheyenne's pointing gesture), and 10 (Jane's "cube"). The teacher evaluation comes in the form of the constative repetitions of the words "square" and "cube" and the open completion slot following "square and. . . ." It is such sequences that are tacitly taken by researchers as evidence for the scaffolding that one party, the teacher or more knowledgeable peer, provides to another party. Within this overarching

pattern there exists another that specialists know as a *repair* sequence. The student makes known that he does not understand (the question) and the conversational repair is oriented for him to understand the question before he can answer it.

Yet when we take an approach to the analysis in which each word uttered in the transcript is a thing in the consciousness of both, then the analytic situation changes. In fact, we may say that not only does Mrs. Turner guide Connor to the point of naming what his group was about, but Connor also guides Mrs. Turner towards what she needs to do to assist him. Connor, in fact, exhibits considerable cultural competence, which allows the conversation to unfold. Even though the intonation of Mrs. Turner has descended as is common in statements, Connor, in responding, indicates that he understands her to want something from him. By responding, Connor comes to inhabit the public space of interaction and opens up possibilities for intersubjectivity to appear. Surely, in doing so, he shows to be ready to engage in actions that are not premeditated. He exposes himself. The *question* of what she wants is problematic, rather than the fact that she wants something from him. He allows her to know more than that he has simply not understood. His lack of understanding may have arisen from not listening or not hearing what she has said. But in this situation he might have asked, "What did you say?" thereby indicating that the problem is a failure to hear rather than a failure to comprehend. In asking Mrs. Turner what she means, Connor not only responds by stating a failure to understand what she wants, but he in fact guides Mrs. Turner through what to do next: state what she really means to say by uttering "what did we say this group was about." That is, not only do we observe Mrs. Turner scaffold Connor in producing the word "square," but also we see how Connor scaffolds her to produce a question that will allows him to understand what she wants of him. Both are engaged in the co-formation of an emerging intersubjective attunement. She gives it a first try, which consists in producing a translation of the original utterance into another one with

the same content. In not taking another turn and allowing a long pause to develop, Connor lets Mrs. Turner know that her first attempt in telling him what she means has failed, and she promptly gives it another try. That is, in not taking a turn at talk, Connor also communicates to Mrs. Turner his evaluation that her first attempt at phrasing an appropriate question has failed. The emerging intersubjective attunement is still fragile. Yet, both are decisively committed to make the interaction work. In his next turn, Connor utters, "squares." In repeating the word without rising (questioning) intonation, Mrs. Turner ratifies it, but, in uttering the connective "and" also allows listeners to understand that something else is required. Symmetrically, in producing at least the first part of what comes to be the sought-for response, Connor lets the teacher know that she now has asked the appropriate question; his appropriate response constitutes the evaluation of the appropriateness of her question. That is, Connor is a teacher allowing Mrs. Turner to find an appropriate manner to phrase her question at the very instant that she is attempting to allow him to articulate a proper response. In other words, Mrs. Turner and Connor are each other's teacher and student; and they are so simultaneously.

Up to now, we have focused on Mrs. Turner and Connor. But the words that they have oriented toward each other also have been produced for everyone else present. The circular arrangement with the current speakers taking up a central position has the organization of a theater in which the audience is allowed to follow and understand. That is, each word not only is for the benefit of the two main protagonists but also for the benefit of the generalized other, the other children constituting this class, the researchers present, and all those who will vicariously come to know about the event through the researchers' writings. The active participation of the audience is exhibited in Cheyenne's pointing to the inscribed words that Connor and Jane pronounce for all to hear.

Our analysis shows that far from exhibiting an asymmetry, the zone of proximal development is an interactional achievement that allows all participants to become teachers and learners. In our analysis, each utterance has come to be paired with an evaluation. Not only does the participant with an institutional position of teacher evaluate, but so do the participants with designated institutional positions of student (learner). Each word is the product of social interaction, which makes the turn pair the minimal unit of analysis. Each word (locution) is paired with a social evaluation; and it is the social evaluation that "defines all aspects of the utterance, totally permeates it, but finds its most pure and typical expression in expressive intonation" (Bakhtin [Medvedev], 1978, p. 122). It is precisely because of the evaluative role of each utterance that the teacher can know that the student has or has not understood, and the student can know that he has or has not provided the appropriate response. In other words, it is the unfolding and unpredictable *connectivity* that is allowed by the social evaluation of utterances and intentions that ties together, in a reciprocal manner, the participants in a symmetric space of *inter*-action.

Asymmetries are possible because the symmetry constitutes basis (ground) for asymmetrical teaching and learning roles to emerge. This approach is based on the idea that a word never belongs to the speaker only because it "addresses itself to an interlocutor; it is a function of the person of this interlocutor" (Bakhtine [Volochinov], 1977, p. 123). The utterance, therefore, "absolutely cannot be considered as individual in the narrow sense of the term; it cannot be explained in reference to the psychophysiological conditions of the speaking subject" (p. 119). The utterance *is* shared by speaker and listener rather than "taken-as-shared" by their separate minds; it reflects inter-comprehension rather than separate comprehension. The advantage of the symmetric approach to the zone of proximal development that we propose here is that it allows the question of the more capable

subjectivity to emerge from the interaction, appropriate especially when the question who is in the know cannot be established on the basis of the institutional positions that the individuals otherwise take. Both Mrs. Turner and Connor take the role of teacher; and both take the role of learner. Who is in the know and who learns is a product interactionally and contingently achieved as participants engage with each other. That is, it is appropriate to think of the institutionally sanctified "teacher" to be a "learner" and of the institutionally designated student to be the teacher. In fact, this approach allows us to understand why and how teachers learn during the course of their professional experience: In each interaction, teachers can find out whether something they have done or said was or was not successful, and also whether their subsequent attempts in changing their actions/utterances bring about the appropriate response. This situation is in fact very common in the classroom. In our classroom research we have often followed the teacher with a camera around the classroom, recording his/her interactions and observing how refined the teacher's actions and discourse become as the teacher goes from one group of students to another. Far from constituting a sole opportunity for the student to learn (e.g., subject matter), the zone of proximal development constitutes an opportunity for the teacher to learn too (e.g., subject matter pedagogy).

The reconceptualization of the zone of proximal development that we are suggesting rests hence in a form of intersubjectivity that is grounded in a common world of historical significations and ways of life that we come to share since our birth. As mentioned previously, this common world forms the basis of common implicit or explicit reference, common knowledge, assumptions, etc. It is this common world of reference that makes intelligible for the teachers and the students the game of the "mysterious objects" and all that the game entails. Intersubjectivity is grounded in this common subbasement. But there is more: our shared complex language with its intricate forms of reference, auto-reference, and expression –

accounts for the symmetrical role that participants come necessarily to play in conversations. Yet all this is not enough for learning to occur. What is still missing is what we observed in the Grade 2 episode: the willingness to tune ourselves to others, to commit to a common cause, and to engage in manner that is other-oriented. Thus, in the conversation with Mrs. Turner, Connor could have given up the discussion. Mrs. Turner could have too. She could have called on another student. But she did not. She kept adjusting to Connor, as Connors kept adjusting to Mrs. Turner, both oriented towards the respective other.

Of course, it would be a mistake to think that we enter in interaction with others as *tabulae rasae*. The teacher knew beforehand the classification of the mysterious objects. It is part of the historical and cultural knowledge which the teacher ubiquitously and continuously draws on to organize her experience of the world. She may not be aware of the fact that the classification of solids was an intense area of research in Plato's time and the Renaissance. Yet this cultural knowledge of solids and their classification endows the teacher with a particular asymmetrical role in the Grade 2 interaction. It is this asymmetrical element to which Vygotsky referred in the definition of the zone of proximal development. But this asymmetry in itself is not sufficient to understand learning. The teacher cannot make the object of knowledge merely appear in the students' consciousness. As Vygotsky pointed out in *Educational Psychology* (a text written during years when he taught in his hometown Gomel, Belarus), "Strictly speaking . . . [i]t is impossible to exert a direct influence on, to produce changes in, another individual" (Vygotsky, 1997, p. 47). He complained that "the old pedagogics . . . treated the student like a sponge which absorbs new knowledge" (p. 48). The primary asymmetry that results from the social distribution of cultural knowledge becomes drowned in a symmetrical space where the participants' consciousnesses connect. Such a connection requires the appearance of a form of intersubjectivity where the participants de-center

themselves. Their respective consciousness seeks the respective other through words and bodily actions and reactions, such as grasping, touching, and pointing. And it is only when the object of knowledge appears simultaneously in Mrs. Turner's and Connor's consciousness that learning occurs.

Naturally, the semantic density of knowledge (the cube as a theoretical construct) is not the same in each one of the participants. For the teacher, the conceptual object "cube" may relate to many theoretical aspects (theorems, abstract definitions, etc.) that are not part of the Grade 2 discussion. Yet, as our episode suggests, a common conceptual ground is reached. The appearance of the object of knowledge in Connor's consciousness, that is to say, its objectification, is a gradual and lengthy process in the course of which the various conceptual layers of the object become disclosed – e.g., that for something to be a cube, it has to meet specific criteria articulated not only in a perceptual manner but also *theoretically* (see turn 12).

To sum up, conceptualizing the zone of proximal development in the manner we suggest here rests on a non-transmissive form of knowing and on a non-individualistic conception of the participants. As to the former, knowing is not theorized as the reception of already-made pieces of cultural-historical knowledge. Knowing refers rather to the possibilities that become available to the participants for thinking, reflecting, arguing, and acting in a certain historically contingent cultural practice – here the practice of Euclidean geometry. As to the latter, instead of conceiving of participants as self-contained agents having already pre-formed intentions and ideas, or as solipsistic actors that merely take knowledge and intentions as shared illusions of interaction, participants are rather considered as actively involved in the *co*-formation of an emerging intersubjective attunement that is made possible by language, forms of perception, and more generally, our biological, historical and cultural heritage. The emerging intersubjective attunement

is certainly beyond a "pure" cognitive realm. As our classroom episode illustrates, it entails a tremendous load of mutual emotions and continuously adjusted corporeal positions in the space of discourse and inter-action.

There are various theoretical and practical implications. From a theoretical viewpoint, the role of participants in a zone of proximal development entails a better understanding of language and interaction. The perspective articulated here resorts to a conception of language and interaction that is at odds with classical ideas of information processing approaches and individualistic psychologies. Our notion of zone of proximal development draws on a conception of language, corporeality, and other semiotic resources that recognize the multiple perspectives of participants while at the same time are seen to offer a constitutive background for intersubjectivity and the attunement of the participants. Within this context, we need to better understand how participants draw from those resources to position themselves in zones of proximal development and to tune to others in conceptual and affective layers to collectively reach interactional achievement. We also need to better understand how participants deal with the various political forms of asymmetries (e.g., knowledge distribution, genre, and ethnicity) to orient to others in the symmetrical space of language and intentions. Language, we note above, ties us together. A word always exists for more than one consciousness. But at the same time, a word is *ideological*; that is, a word always belongs to a system of ideas: "*The word is the ideological phenomenon par excellence*" (Bakhtine [Volochinov], 1977, p. 31). A word hence reflects the social, political, and theoretical position of the person uttering it. What this means is that in the encounter of consciousness that the zone of proximal development brings together, there is also an encounter of ideologies and perspectives and potentials for their transformations. This is why the idea of learning as transmission is terribly misleading. As we suggest above, both Mrs. Tuner and Connor learned from each other. However, the most important aspect of

the zone of proximal development is not the mutual benefits that participants obtain in achieved interaction. To think along those lines is still to remain in the waters of individualism, one that justifies interaction in terms of the profits that each one of the participants collects. The most important aspect of the zone of proximal development is the emergence of a new form of collective consciousness, something that cannot be achieved if we act in solitary fashion.

From a practical viewpoint, we need to investigate the discursive, corporeal, and other actions that encourage participants to attend to others in a responsible and committed way, and to understand how new knowledge, subjectivity, and new forms of social consciousness become variously produced. More efforts have to be deployed to understand through empirical examples zones of proximal development not only as zones of agreements but also of tensions, disagreements, misunderstandings, conflict, and subversion.

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Appendix

The following transcription conventions have been used.

Notation	Description	Example
(0.14)	Time without talk, in seconds	`more ideas. (1.03) just`
((turns))	Verbs and descriptions in double parentheses are transcriber's comments	`((nods to Colby))`
::	Colons indicate lengthening of phoneme, about 1/01 of a second per colon	`si::ze`
[ ]	Square brackets in consecutive lines indicate overlap	`S: s[ize ]` `T: [colby]`
____	Underline indicates the extent to which a gesture overlaps with the simultaneously uttered word	`[card.]` `[((Pulls hand back, no longer points))`
<<p> >	Piano, words are uttered with lower than normal speech volume	`<<p>um>`
<<pp> >	Pianissimo, words are uttered with very low, almost inaudible volume	`<<pp>this>`
ONE bert	Capital letters indicate louder than normal talk indicated in small letters.	`no? okay, next ONE bert.`
–?.	Punctuation is used to mark movement of pitch toward end of utterance, flat, slightly and strongly upward, and slightly and strongly downward, respectively	`T: so can we tell a shape by its color?` `T: does it 'belong to another 'group (0.67) O:r.`
↑	Up arrow indicates jump in pitch upward	`↑did we put`
' ^ ˇ	Diacritics indicate movement of pitch within the word that follows—up, down-up, and down-up, respectively	`'sai:d`