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Plenary Speeches

Dynamic assessment: The dialectic integration of instruction and assessment

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This presentation is situated within the general framework of Vygotsky's educational theory, which argues that development in formal educational activity is a fundamentally different process from development that occurs in the everyday world. A cornerstone of Vygotsky's theory is that to be successful education must be sensitive to learners' ZONE OF PROXIMAL DEVELOPMENT. *This requires the dialectical integration of instruction and assessment into a seamless and dynamic activity. The presentation includes a discussion of how the integration is systematically achieved in the process known as* dynamic assessment *and illustrates through analysis of data from advanced learners of French how this functions in second language education.*

1. Introduction

Vygotsky (1997: 1) offered the following observation with regard to the new theoretical principles he was formulating on the cultural origins of human cognition: 'it is easier to assimilate a thousand new facts in any field than to assimilate a NEW POINT OF VIEW of a few already known facts' [emphasis added]. The goal of this presentation is to consider a new point of view on the relationship between language instruction and language assessment. Until fairly recently the assessment enterprise has more or less functioned as an independent activity that at best was indirectly linked to instruction. However, researchers have come to recognize the importance of, and the advantages that accrue from, bringing instruction and assessment into a closer nexus. Cheng (2005) for instance, proposes that one way of achieving this nexus is through washback, whereby assessment instruments serve as guidelines for language instruction in the sense that instruction has the responsibility of meeting the learning outcomes determined by test instruments. While washback is seen by many as a positive development in language pedagogy, it nevertheless reflects the general dualistic orientation of applied linguistics (e.g., learning–acquisition, implicit–explicit instruction, learning–use, instruction–assessment, etc.). Once such dualisms are established we then worry about the possible relationships, if any, between the poles of each opposition. However, there is another way of

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thinking about the relationship between what seems to be distinct, if not contrary, processes, and this is as necessary components of a unified process. Thus, for example, language acquisition and language use, currently hotly debated topics (see Lafford 2007), need not be conceptualized as unrelated and independent processes, but instead can be understood as dialectically unified components of the same human symbol-making and symbol-using capacity. It makes little sense to talk of acquisition unless one intends to use what one has acquired and it makes even less sense to talk of using something that one has not yet been acquired.

An excellent analogy for understanding the argument I am making is found in an early text by Marx (1844/1972) where he explicates the dialectical unity of the economic forces of production and consumption. In the *Grundrisse*, the precursor to his masterwork, *Capital*, Marx shows how production and consumption are moments of a single process. Production mediates and creates the object of consumption but at the same time consumption mediates and creates the motive, or driving force, for production. Each component of consumptive production requires the other; thus, 'without production, no consumption; but also, without consumption, no production; since production would then be purposeless' (Marx 1844/1927: 229). Something that is produced is not only of no value unless it is used, but it is, according to Marx (ibid.), not even real. A railway on which trains do not run, a garment not worn, or a house not lived in have at best potentiality but not reality. Each achieves reality in consumption: 'only in decomposing the product does consumption give the product the finishing touch' (ibid.). The same can be said with regard to language acquisition. Unless language is consumed (i.e., used) it has no reality. Thus, when we refer to language learners we could just as easily refer to language users.[1]

The same dialectical principle that Marx used to build his political and economic philosophy was taken over by Vygotsky to build his psychology of mind. One of the areas in which the dialectic plays out in Vygotsky's work is in his contention that effective instruction entails, and in fact is not possible, without assessment and, by the same token, assessment is not feasible without instruction, and therefore as with production and consumption they are both moments of a single process. This is the position that I want to argue for in the current presentation. Indeed, the dialectic unity of the two processes is the very foundation of the most widely recognized, although at the same time, most often misunderstood principle of Vygotskyan theory – the Zone of Proximal Development (see Chaiklin 2003). Before moving to a discussion of this topic, however, I would like to address two general assumptions of SLA that in my view impact heavily on how we think about what goes on – or should go – on in pedagogical practice.

2. SLA: A universal process?

A widely accepted premise of SLA research is that L2 acquisition is fundamentally the same process regardless of where it unfolds:

[1] Rossi-Landi (1983) argues that if we want to fully understand the essence of language we must study it within the general process of human production.

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> Remove the learner from the social setting, and the L2 grammar does not change or disappear. Change the social setting altogether, e.g., from street to classroom, or from a foreign to a second language environment, and, as far as we know, the way the learner acquires does not change much either. (Long 1998: 93)

When making recommendations on classroom practice, SLA researchers have based their suggestions on the universal acquisition hypothesis (UAH) and have therefore highlighted the importance of communicative activity and backgrounded the relevance of direct instruction. Larsen-Freeman & Long (1991: 221), for instance, point out that 'some writers on language teaching have advocated provision of "natural" language learning experiences for classroom learners, and the elimination of structural grading, a focus on form and error correction, even for adults'.

At least one SLA researcher, Elaine Tarone, has argued against the UAH. In a recent publication (Tarone 2007), for example, she asserts that different social contexts are likely to result in different L2 grammars and, more importantly, that different contexts are likely to change the way learners acquire an L2. Although Tarone parts company with the majority of SLA researchers regarding the UAH, to my knowledge, she has not proposed specific pedagogical practices that recognize her non-UAH position. Vygotsky, however, makes a very explicit and strong claim in this regard, when he asserts that 'education may be defined as the artificial development of the child. Education is the artificial mastery of natural processes of development. Education not only influences certain processes of development, but restructures all functions of behavior in a most essential manner' (Vygotsky 1997: 88).

Vygotsky considered education to be a specific form of cultural activity that has important and unique developmental consequences. As attested in the above quote, education is not just an undertaking whereby knowledge is obtained, but it is indeed an intentionally organized (i.e., artificial) activity that restructures the mental behavior that develops spontaneously in everyday concrete activity (Vygotsky 1987). I will return to this issue later in the discussion.

In classic Piagetian psychology, education is only effective if students are developmentally ready to learn. It does little good, for instance, to teach abstract concepts until the stage of formal operational thinking has been reached. Learners can only learn what they are developmentally ready to learn and stages cannot be skipped along the way. The Piagetian position, I believe, is clearly reflected in both Krashen's (1981, 1985) natural order hypothesis and Pienemann's (1998) processability theory. Instruction then becomes a matter of timing and if, as Ellis (2007: 91) suggests, it is 'ill-timed and out of synchrony with development . . . it can be confusing; it can be easily forgotten; it can be dissociated from usage, lacking in transfer-appropriateness [and] it can be unmotivating'. Vygotsky (1987) reverses the Piagetian process and argues that effective instruction must precede and indeed lay down the path for development to follow.

3. Basic research and pedagogical practice

A second general assumption within the field of SLA, which also separates it from sociocultural theory, is that in SLA a clear distinction is made between theory/research on the one hand and classroom practice on the other. Gass & Mackey (2007: 190), for example, reflect the SLA

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perspective as follows: 'Like most SLA researchers, however, [Rod] Ellis is cautious about making direct connections between theory, research, and teaching practice'. In commenting on the interactionist approach to SLA, the same authors state that because their primary concern is with 'how languages are learned . . . direct application may be premature' (ibid.).

Vygotsky, because of his commitment to the Marxist dialectic, argued for the unity of theory/research and practice (Vygotsky 2004) to the extent that practice rather than the laboratory is where theory is to be judged (Vygotsky 2004: 304). In this regard, he commits to Marx's famous eleventh thesis on Feuerbach (Marx 1845/1972): 'Marx has said that it was enough for philosophers to have interpreted the world, now it's time to change it' (Vygotsky 1997: 9). For Vygotsky, the full implication of the eleventh thesis is that applied psychology IS psychology.

I would like to make the same argument with regard to SLA that Vygotsky made for general psychology: SLA theory/research and pedagogical practice can be brought together into a dialectical unity and that the site where theory is tested is not the laboratory but the real world, including the educational setting. Indeed, from this perspective, pedagogical practice is the relevant research that not only is informed by, but also informs, the theory. In other words, if the theory is not closely connected to pedagogical practice it is a problematic theory. Sociocultural theory is not just a theory of SLA; it is a general theory of human mental development and since SLA is one aspect of such development, the theory must also account for this particular process along with all other processes that comprise human cognition in all circumstances where it develops and functions.

4. Educational development

While Vygotsky laid the foundation for a theory of educational development, he did not flesh out the specifics of the theory. This task was left to his colleagues and students, including Luria (1961), Gal'perin (1967, 1979), Leontiev (1981), Talyzina (1981), and Davydov (2004).

According to Karpov & Haywood (1998), Vygotsky distinguished two types of mediation: meta-cognition, or self-regulation, and cognition, or mediation organized according to cultural concepts. Cultural concepts, the stuff of thought, comprise two types of knowledge, each with different sources. One type – which Vygotsky (1987) calls spontaneous – arises in everyday life as people engage in social relationships through cultural activities such as play, work, religious practice, etc. (Kinard & Kozulin 2008: 25). Spontaneous concepts are not acquired as a goal in themselves but as a means of achieving other goals (i.e., learning the concept of rule – following behavior in order to participate in play). The second type of cultural concept is encountered in school and is referred to as scientific concepts. Scientific concepts are comprised of systematically and rigorously organized knowledge and are intentionally and explicitly presented to students. Scientific concepts bring to light aspects of the world that are not directly observable to our senses. For example, in the everyday world the concept circle is a generalization constructed by abstracting the geometric commonality of objects (e.g., coins, wheels, cakes, etc.) that are round. The scientific understanding of circle, however, is the geometric shape which results from the movement of a line with one fixed and one moving end (Kozulin 1995: 124). I will have no more to say about this topic here.

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For a fuller discussion of how scientific concepts and culturally organized learning activity figure into language education, see (Lantolf 2007; Ferreira & Lantolf 2008; Lantolf forthcoming b).

The ability to regulate ourselves emerges from mediation by others. It is here that the ZONE OF PROXIMAL DEVELOPMENT (ZPD) comes into play. How this occurs is the topic of the remainder of the discussion. Although my focus will be on the ZPD, it should not be inferred that this component of development functions independently from conceptual mediation and learning activity (see Kinard & Kozulin 2008).

5. The ZPD: instructed assessment and assessed instruction

At the heart of Vygotsky's argument in support of the unity of instruction and assessment is the notion of the ZPD. To paraphrase the well-known definition of the ZPD, it is the difference between what an individual can do independently and what he or she can do with assistance or mediation. The key lies in how mediation is understood. Consider the example of a mother wishing to raise her child from a prone to a sitting position. One way to do this is simply to lift the child to the desired position. Another option would be for the mother to grasp the child's hands and slowly pull upward while at the same time coaxing the child to exert force against her pulling. As Fogel (1991) points out, while the end result is the same, the processes are noticeably different, and the process matters. In the first, the child is not a co-participant but an object that is repositioned by the parent and is therefore unlikely to experience any sense of agency. In the second process the child is a co-participant and as such co-regulates the mother with regard to the amount of force she exerts and is thus likely to experience herself as an agent. The mother might even reinforce this through speech: 'Help mommy, pull, pull. Good girl, you sat up.'

The ZPD then is about co-mediation between someone who has the knowledge or capacity to attain a goal and someone who does not. The task of the expert is to know precisely how to pull the learner forward in a way that not only leads to attainment of the goal but in a way that allows the other to participate to the extent that they are able. Over time, the learner will begin to appropriate the know-how from the expert resulting in greater responsibility for independent performance. As Vygotsky (1978: 87) put it, what the person can do with assistance today, he or she can do tomorrow alone.

6. Dynamic assessment and language education

The term 'dynamic assessment' (DA) as the pedagogical instantiation of the ZPD, was coined in English by Vygotsky's colleague, Luria (1961). When Luria introduced DA, he did so within the framework in which it had been used in his and Vygotsky's research: children with learning disabilities. Today, it has even been extended to include adults suffering from various maladies associated with aging, including dementia (see Haywood & Lidz 2007). More recently, however, educators have extended DA to general education, including L2 pedagogy (Lantolf & Poehner 2004, 2008; Poehner & Lantolf 2005).

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6.1 Two approaches to dynamic assessment

From the time it was introduced by Luria, two general approaches to DA have developed. In both approaches instruction as mediation and assessment are fused into a single activity with the goal of diagnosing learning potential and promoting development in accordance with this potential. In one approach, known as INTERVENTIONIST DA, a prefabricated and fixed set of clues and hints is determined in advance and offered to learners as they move through a test item by item. The hints are arranged on a scale from implicit to explicit based on the assumption that if learners are able to respond appropriately to an implicit form of mediation they have already attained a greater degree of control over the educational object than if they require more explicit assistance. To provide explicit mediation when implicit mediation is sufficient obscures the developmental level of the learner (see Aljaafreh & Lantolf 1994) and, just as importantly, compromises the learner's sense of agency. A distinct advantage of interventionist DA is that because the mediation is not tailored to the responsivity of individual learners, it can be conducted with high numbers of individuals simultaneously via computer. In addition, because the number of hints is fixed, it is possible to generate numerical scores and compare these across learners. This approach then is more psychometrically viable than the alternative approach, INTERACTIONIST DA (see below).

An example of interventionist DA is provided by the LEIPZIG LEARNING TEST (LLT) of language aptitude developed by Jürgen Guthke and his colleagues (Guthke, Heinrich & Caruso 1986) to assess the learning potential of international students wishing to enter German universities. The results of the test were used to place students in appropriate L2 German classes. As with many language aptitude tests, the LLT presents examinees with an invented language and asks them to respond to a series of questions requiring them to figure out its morphosyntactic properties. Each test item is followed by a series of five hints ordered from implicit to explicit. Whenever examinees produce an incorrect response they are initially given the most implicit hint: 'That's not correct. Please think about it once again.' If the second attempt does not yield an appropriate response, the mediation becomes more explicit: 'That's not correct. Think about which rows are most relevant to the ones you are trying to complete.' The fifth and final form of mediation provides the correct response along with an explanation of why the response is correct. The test then proceeds to the next item. Although the goal of the LLT is to assess language aptitude, because it is based on the ZPD, it recognizes that aptitude is not a stable trait but a dynamic ability that can actually develop during the course of the very test designed to assess it. Thus, the expectation is that as learners move through the test they will require fewer hints and less explicit mediation, an indication that they are improving their language aptitude.

Interactionist DA, according to Minick (1987: 119), adheres to Vygotsky's preference for 'qualitative assessment of psychological processes and dynamics of their qualitative development'. Vygotsky (1998: 204) insisted that in education we must not measure but interpret students and this can only be accomplished through interaction and cooperation. Thus, mediation in interactionist DA is not predetermined but is instead negotiated with the individual, which means that it is continually adjusted according to the learner's responsivity. In Reuven Feuerstein's version of DA, known as the MEDIATED LEARNING EXPERIENCE (MLE), the traditional examiner/examinee roles are abandoned in favor of a teacher–student

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relationship in which both individuals work toward the ultimate success of the learner: 'it is through this shift in roles that we find both the examiner and the examinee bowed over the same task, engaged in a common quest for mastery of the material' (Feuerstein, Rand & Hoffman 1979: 102). Thus, instruction takes center stage and psychometric measurement is downplayed if not removed from the stage completely.

6.2 Illustration of interactionist dynamic assessment

The two examples of interactionist DA analyzed below are drawn from the video appendix presented in Lantolf & Poehner (2007). We will see two interactions between a mediator and an advanced L2 learner of French as they collaborate to help the learner produce her desired meaning while narrating a scene from the Hollywood movie *Nine Months*, starring Hugh Grant and Julianne Moore. In the scene Sam expresses his shock at discovering that Rebecca is pregnant.

In the first episode, Donna (pseudonym) has problems deciding on the appropriate verbal aspect – *passé composée* or *imparfait* – to use to relate the fact that Sam is shocked at hearing the news of Rebecca's pregnancy.

Episode A: *passé composée* or *imparfait*

1. D: . . . *en traîn de compter dans un livre tout à coup elle a dit à Samuel ah*
   in the process of counting in a book all of a sudden she said to Samuel
2. *bon je suis enceinte et Samuel était très choqué a été choqué était choqué*
   well I am pregnant and Samuel was very shocked was shocked was shocked
3. M: which one?
4. D: (laughs) okay
5. M: *était, a été*?
   was, has been?
6. D: *c'était un choque à lui cette nouvelle donc il était choqué et ça juste*
   it was a shock to him this news so he was shocked and that just after
7. D: *après ça* –
   that
8. M: *il était choqué* –
   he was shocked
9. D: *il était choqué à cause de cette nouvelle*
   he was shocked because of this news
10. M: okay, using *imparfait*
11. D: using *imparfait*
12. M: because?
13. D: *parce que il était choqué* he was shocked he started to be shocked and because he was shocked
    continued to be shocked by this news but I think I first chose *passé composé* to note that at a very distinct point he started to become shocked
14. M: so emphasizing that?
15. D: right so maybe what I want to say is *il a il a été choqué*
    he was he was shocked

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As the interaction opens, Donna (line 2) vacillates between the constructions *était choqué* (*imparfait*), expressing ongoing aspect, and *a été choqué* (*passé composée*) conveying completed aspect. At this point the mediator interrupts (line 3), asking which aspect Donna wishes to use to describe the situation. Donna's immediate reaction is laughter (line 4), which we believe shows her uncertainty regarding aspect. The mediator (line 5) does not resolve Donna's quandary but instead expresses verbally what in fact the quandary is: *était, a été?* At this point, Donna responds by justifying, in French (line 6), that the imperfect would be appropriate and then continues with the narration (line 7). At first the mediator (line 8) appears to confirm, through repetition, Donna's choice of aspect. However, Donna interprets the repetition as a request to justify her choice, and she launches into an explanation for her selection (line 9). This is interrupted by the mediator (line 10), who now switches to metalanguage. Donna repeats the mediators utterance (line 11), but the mediator now asks her explicitly (line 12) for an explanation for her aspect choice. This triggers (line 13) an extended stretch of meta-talk in English. As she verbalizes her explanation, Donna begins to realize that *imparfait* might not be the appropriate choice. The mediator (line 14) prompts her to continue her reasoning, and finally Donna settles on the *passé composée* (line 15). In essence Donna talks herself into the more appropriate option to express her intended meaning; however, she is unable to do this alone and requires hints and prompts from the mediator to reach her conclusion. This shows not only the value of effectively deployed mediation but also the fact that verbalization of the thinking process (i.e., self reflection) in itself is a powerful form of mediation (see Swain & Lapkin 2002; Negueruela 2003; Yáñez Prieto 2008).[2]

A bit later in her narration, Donna again encounters difficulties when relating the argument that ensues when Samuel accuses Rebecca of not having taken the proper precautions to prevent her pregnancy. In the episode we examine in B, the focus of Donna's language problem is on a complex negative construction involving an infinitive and a verb clitic.

Episode B: Negative construction

1. D: okay um et uh Samuel *l'accusait*, okay I have to think about this (grabs a
   and uh Samuel was accusing her
2. pen and moves it toward a piece but does not write anything) I need your little handouts
3. M: (laughs) well maybe we can figure it out
4. D: Samuel *l'accusait à n'être pas ∗ à ne pas* (. . .) (produces a series of beat
   gestures across the blank page)
   Samuel was accusing her of not being
5. M: *l'accusait* like l–*apostrophe–accusait?*
   was accusing her like l apostrophe was accusing
6. D: yeah *l'accusait n'avoir pas ∗ le soin? avec ses médicaments um pour uh* (. . .)
   was accusing her of not having the care? with her medication um for uh
7. *comment dit–on birth control en français*? (laughs)
   how do you say birth control in French ?
8. M: *uh la limitation de naissance*

[2] Donna also used gesture to work out her choice of aspect. For full consideration of this interesting topic, see Lantolf (forthcoming a).

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9. D: *limitation*, not having taken care with her birth control, Samuel *l'accusait* –
Samuel was accusing her
10. M: so like *l'accusait l'* and *accusait* being the imperfect *imparfait*?
11. D: *imparfait* he was accusing her of not being careful uh (. . .)
12. M: right so remember you were using the negative I'm sorry you were using the infinitive like *avoir* so remember when you're using the negative with the infinitive where you put the *ne* and the *pas*
13. D: the *ne* and the *pas* are together
14. M: right and it goes before
15. D: oh ∗*à ne pas avoir le soin*
not having care
16. M: or *pris de soin*
taken care
17. D: *ne pas avoir, il l'accusait à*
doesn't have he was accusing her of
18. M: *de ne pas*
of not
19. D: *de ne pas avoir pris de soin avec ses médicaments*
of not having taken care with her medications
20. M: right

Donna comments right at the outset (line 1) that she needs to think about the construction she is trying to produce and immediately picks up a pen and positions it over a yellow writing pad lying on the desk next to her as if she were intending to write something. It is revealing, but not too surprising, that Donna relates thinking to writing, a process that is a manifestation of private speech (see DiCamilla & Lantolf 1994; John-Steiner 1997). She also remarks that the handouts distributed in class by the instructor would be helpful artifacts to support her thinking.[3] Interestingly, Donna does not actually write anything, and when the mediator notices this, he laughs and suggests that they jointly figure out the construction (line 3). At this point, Donna proceeds to talk to herself while marking out a series of beat gestures with pen in hand across the face of the page with each beat coinciding with a word in the utterance she is attempting to construct (line 4).[4]

The mediator draws Donna's attention (line 5) to the verb *accusait* thinking that the completed aspect might be more appropriate, although Donna's choice of *imparfait* is certainly acceptable. In fact, Donna (line 6) confirms her choice of aspect by repeating the verb *accusait*. The problem for her is not with aspect selection but with the negative construction. She makes this clear to the mediator when she explains in English (line 9) the idea she wishes to express. Before stating this, however, she asks for the French word for 'birth control' (line 7), which the mediator provides (line 8). Notice that when Donna produces the final version of the utterance (line 19), she fails to use the expression provided by the mediator and instead reverts to her original term *médicaments*, a clear indication that her attention is singularly focused on the problematic negative construction. Indeed she begins to repeat the French expression for

[3] On the connection between artifacts and conceptual knowledge, see Lantolf (forthcoming b), Negueruela (2003), Yáñez Prieto (2008).
[4] On the function of beat gestures in L2 performance, see McCafferty (1998).

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birth control (line 9), but abandons her effort and shifts her attention back to the source of her difficulty.

The mediator (line 10) again repeats the imperfect form of the verb, thinking that this might still be part of the problem. However, Donna is insistent that the problem is the negative construction, as indicated by her repetition of the utterance in English (line 11). Once the mediator understands Donna's communicative intention, he prompts her (line 12) to consider the placement of the negative particles *ne* and *pas* in infinitival constructions. Donna recalls (line 13) that the particles occur next to each other. The mediator confirms this (line 14) and reminds Donna that the *ne pas* construction must appear in pre-infinitival position. This may be an instance of overly explicit mediation, since the mediator did not allow Donna to indicate if she already possessed this knowledge. Thus, an opportunity to fully explore the extent of the learner's ability may have been missed. Donna's 'oh' (line15) could very well be an indication that she indeed knew, or was at least familiar with, the proper constituent order. She proceeds to flesh out the full construction, but omits the necessary past participle *pris*. The mediator, instead of allotting Donna the opportunity to furnish the missing participle, correctly recasts this portion of the utterance (line 16), again missing a chance to fully explore Donna's knowledge. Donna repeats the problematic negative construction (line 17) and then begins to reproduce the full utterance but this time she uses the incorrect particle *a* instead of the correct *de*. The mediator (line 18) immediately recasts the construction with the proper particle. Finally, Donna repeats the full construction (line 19), which the mediator confirms as correct (line 20).

The differences in the performance of both interactants between episodes A and B are quite marked. In episode A, Donna's indecision regarding verbal aspect prompts the mediator to force her to make a decision. Once the process begins, Donna requires minimal assistance from the mediator as she talks herself into the appropriate aspect selection. In episode B, on the other hand, the mediator was more overtly and explicitly involved in assisting Donna construct her intended utterance. Even though he missed potential opportunities to probe Donna's knowledge of the negative construction, it seems clear that it was not a feature of French that she was highly familiar with.

We can conclude that verbal aspect is well within Donna's ZPD and that she is quite close to gaining control over this property of the language. The picture is rather different with regard to the negative construction. That Donna needed a great deal of overt mediation to even begin to put the construction together shows that she has a way to go before she can use the feature with facility. If it is even within her ZPD, it is likely to be in the early stages of development. We would, therefore, anticipate that in the future Donna would control aspect much sooner than the negative construction and that she would require much more instruction in the latter than in the former case. Indeed, as Poehner's (2008) research shows, Donna was able to transfer what she learned about aspect in episode A to other occasions where aspect choices impacted on the meaning of her narratives. Given that use of the negative construction is not a high-frequency occurrence, we have been unable to document Donna's future performances in this regard.

The point of the foregoing discussion is that in traditional assessment it is highly unlikely that a distinction would be made between Donna's unmediated performance on the two linguistic features under consideration here. In both cases her performance would have

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been problematic at best and wrong at worst. Her indecision in episode A is in traditional understanding of assessment just as problematic as the negative construction she produced in episode B. Of course, we cannot be absolutely certain how her performance on a traditional assessment would play out since Donna was not given a formal test. Nevertheless, I believe that the two protocols taken together illustrate powerfully Vygotsky's (1998: 245) assertion that 'determining the actual level of development [i.e., unmediated solo performance] not only does not cover the whole picture of development, but very frequently encompasses only an insignificant part of it'.

7. Dynamic assessment and psychometrics

I would like to make a few final comments that focus briefly on psychometric issues of reliability and validity and DA, especially in its interactionist version. For a more in-depth discussion of reliability see Lidz (1991) and for a well developed discussion of validity as it relates to language assessment, see Poehner (forthcoming).

With regard to reliability, we must keep in mind that this construct derives its foundation from the ontology of the autonomous individual. In this view, the environment may influence development (e.g., its rate), but it does not play a major role. For this reason, outside influences must be tightly controlled during assessments in order to avoid contamination from extraneous factors. The ontology proposed in Vygotsky's theory is quite different – it is an ontology of the individual as a socially constructed being and as such the environment is not a factor in development – it is the very source of development. This perspective, then, requires that assessment take account of the role of others in the assessment itself; otherwise, as Vygotsky argued (see above), we do not obtain the full picture of the individual's abilities. In other words, assessment must look to the future and not to the past and this requires an integral and indispensable role for social mediation. From this perspective, then, change rather than stability is at the heart of effective assessment. As Lidz (1991: 18) observes, 'the word "dynamic" implies change and not stability. Items on traditional measures are deliberately selected to maximize stability, not necessarily to provide an accurate reflection of stability or change in the "real" world'. This does not mean that reliability is to be ignored. It does mean, however, that its role in effective assessment is redefined within the ontology of the social individual and the ZPD. If one engages in formal assessment, then to determine an individual's actual developmental level requires a test that is reliable. However, because mediation is an indispensable component of assessment, one must seek to provoke change during the administration of the test. According to standard psychometric assumptions, this introduces an error measurement into the process, which compromises reliability. Yet from the perspective of mediation in the ZPD, this is precisely what ought to occur. The error, in this case, represents development.

Validity is a more complex issue. There are various ways of thinking about validity. For the purposes of the present discussion, I will address only two of these: predictive and consequential validity. With regard to the former, given Vygotsky's argument that mediated performance is an empirical predictor of future solo performance, DA makes a strong claim with regard to predictive validity. It is a claim that can be readily verified, as for instance was

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done in Poehner's (2007) research, in particular with regard to the concept of transcendence, whereby learners are expected to extend what they internalize during mediational episodes to other more complex activities.

Finally, consequential validity is an especially relevant matter. There are serious ethical problems having to do with the use of assessment outcomes based exclusively on solo performance to make decisions that impact the lives of individuals and the institutions in which they function. How appropriate is it, for example, to place students into the same language course on the basis of their solo performance knowing that their relative mediated performances could vary significantly and that the individuals in question would benefit from different forms of instruction? How ethical is it to knowingly miss an opportunity to help someone develop during an assessment for the sake of maintaining psychometric principles? These are important matters that one must confront when Vygotsky's theory of educational development is taken seriously. On the other hand, language-based DA researchers have the responsibility to develop appropriate ways of making the results of DA meaningful to those who must make decisions that impact on the lives of learners. Poehner has begun to take steps in this direction, but there is still work to be done.

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