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Mind, Culture, and Activity

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t775653674>

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Online publication date: 13 October 2010

To cite this Article Poehner, Matthew E. and Lantolf, James P.(2010) 'Vygotsky's Teaching-Assessment Dialectic and L2 Education: The Case for Dynamic Assessment', *Mind, Culture, and Activity*, 17: 4, 312 – 330

To link to this Article: DOI: 10.1080/10749030903338509

URL: <http://dx.doi.org/10.1080/10749030903338509>

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ARTICLES

Vygotsky's Teaching-Assessment Dialectic and L2 Education: The Case for Dynamic Assessment

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This article concerns a particular application of Vygotsky's concept of the Zone of Proximal Development (ZPD) wherein conventional assessment situations are reorganized to allow for cooperation between assessor and learner as they jointly complete assessment tasks and work through difficulties that arise. This approach, known as Dynamic Assessment (DA), a term coined by Luria (1961), derives from Vygotsky's own work in the area of "defectology" and aims to reveal abilities that have fully developed as well as those that are still forming. Several models of DA have been developed and pursued in countries around the world, primarily in contexts of intelligence and abilities testing and in work with learners with special needs (Haywood & Lidz, 2007). We argue that DA in fact has profound implications not only for formal testing but for educational practice more generally, and for language education in particular, given that it posits a dialectical relation between instruction and assessment. Specifically, joint activity intended to reveal a learner's ZPD and the provision of mediation to support continued development are fully integrated in DA. Examples of this dialectical activity are presented involving classroom learners of French as a second language.

The concept of Dynamic Assessment (DA)—the dialectical unity of instruction and assessment—was initially introduced to Western educators and researchers by Luria (1961). At that time, Luria discussed DA within the broader framework of Vygotsky's program on "defectology" (see Vygotsky, 1990). Indeed, much of Western DA research has continued Vygotsky's focus on children with learning and developmental difficulties. More recently, however, DA has found its way into general education and has expanded its scope to include adults, especially with regard to instruction in second languages. In this article, we consider the implications of empirical research on second language (L2) development and DA. We argue that DA principles provide a framework

for organizing interactions with L2 learners that not only permits greater insights into their abilities in the language but also supports their continued development. Before doing so, however, we discuss some of the general assumptions of the field of second language acquisition (SLA) that are directly challenged by Vygotsky's theoretical orientation, which in turn allows us to better explicate the contribution that DA makes to L2 education. We then provide a brief overview of different approaches to DA. Finally, we consider empirical data from a recent project involving advanced university-level learners of L2 French to illustrate the impact of DA on language development.

SOCIOCULTURAL CHALLENGE TO SLA RESEARCH

In our view, the fundamental disagreement between general, or what we call “mainstream,” SLA research and sociocultural theory harkens back to what Vygotsky originally characterized as the “crisis in psychology.” Although space does not permit a full exposition of Vygotsky's arguments and proposals for resolution of the crisis, we would nevertheless like to underscore the fact that the field of SLA finds itself today in a crisis that parallels in many ways the circumstances in psychology in the 1920s. The field, for one thing, finds itself fraught with **dualisms**. N. Ellis and Larsen-Freeman (2005), for example, list some 20 dualisms that have challenged the field, including explicit versus implicit knowledge, (conscious) learning versus (unconscious) acquisition, form versus meaning, language versus thought, structure versus function, and language learning versus language use. Perhaps the most significant dualism at work in the field of SLA, yet not mentioned by Ellis and Larsen-Freeman, is theory/basic research versus applied research/practice. This particular dualism has given pause, and rightly so, to SLA researchers when it comes to considering the implications of their work for classroom practice, with some insisting that direct applications to teaching remain premature.

Although many argue that Vygotsky's most important publication is his book *Thinking and Speech* (Vygotsky, 1987), and although there can be no doubt of its significance, we think that a case can be made that his foundational work is his wide-ranging paper “The Historical Meaning of the Crisis in Psychology” (Vygotsky, 2004). It is in this work that Vygotsky lays the groundwork for his theory, because it is here that he emphatically commits to the project of building a Marxist psychology. A central concept of the new theory, according to Vygotsky, is *praxis*—the dialectical unity of theory and practice:

Previously theory was not dependent on practice; instead practice was the conclusion, the application, an excursion beyond the boundaries of science, an operation which lay outside science and came after science, which began after the scientific concept operation was considered completed. Success or failure had practically no effect on the fate of the theory. . . . Now the situation is the opposite. Practice pervades the deepest foundations of the scientific operation and reforms it from beginning to end. **Practice sets the tasks and serves as the supreme judge of theory**, as its truth criterion. It dictates how to construct the concepts and how to formulate the laws. (Vygotsky, 2004, p. 304)

From this orientation Vygotsky concludes that **the highest test of a theory is practice** and that the distinction that had been made between general and applied psychology (e.g., industrial, educational psychology) was not only invalid but in fact, as he convincingly argued in “The Crisis,” **applied psychology is psychology**. This was, for Vygotsky, the full implication

of Marx's Eleventh Thesis on Feuerbach for the science of psychology: "Marx has said that it was enough for philosophers to have interpreted the world, **now it's time to change it**" (Vygotsky, 1997b, pp. 9–10).

A second distinction between SCT and SLA that is relevant for the present discussion relates to what is known as the Universal Acquisition Hypothesis (UAH), which is widely, though perhaps not unanimously, accepted within the mainstream of SLA but, as we argue, it does not align with a Vygotskian understanding of development. According to the UAH, language acquisition comprises fundamentally the same psychological process no matter where it occurs:

Remove a 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 (as suggested, e.g., by comparisons of error types, developmental sequences, processing constraints, and other aspects of the acquisition process in and out of classrooms). . . . An eight-hour flight from a foreign language to a second language environment does not alter a learner's brain after all, so why should one *expect* any basic differences. (Long, 2007, p. 145)

Implications of the UAH for classroom instruction typically include, for instance, teaching grammar "in a relatively fixed and universal order" that is "compatible with the natural processes of acquisition" (R. Ellis, 2008, p. 3).

However, there is also evidence that conflicts with the so-called built-in learner syllabus and that therefore poses a challenge to the UAH. There is evidence from a child L2 learner of English who manifests different sequences for acquiring English *wh*-questions (e.g., What did Fred buy at the store?) in different social contexts—a clear violation of the UAH (Tarone, 2007). Of the five-stage sequence proposed for acquisition of *wh*-questions, the learner produced utterances with features of Stages 4 and 5 before he produced Stage 3 features. Moreover, when Stage 3 features finally appeared, they did so in a school context when the learner was interacting with classmates but not in the home context when interacting with an adult researcher. The competition model of language acquisition also allows for different processes of acquisition in cases where input varies in quality and quantity, as might happen in the case of instructed versus naturalistic exposure to an L2.

Despite the challenges just discussed, we think it is fair to say that the UAH is the dominant view in SLA and it is generally accepted that acquisition in the classroom setting follows the same process as acquisition in untutored settings. One important consequence of this is that even though, as we pointed out earlier, SLA researchers have been cautious in ascribing relevance of their theories and affiliated research findings to classroom practice, when they have advanced recommendations, these have been rooted in the UAH. Thus, it is often suggested that classroom-learning activities should be meaning focused and should foster the development of implicit (i.e., nonconscious procedural) knowledge of the language—the same type of knowledge that is assumed to underlie L1 communicative performance. This position forms the basis of a variety of approaches that coalesce under the general rubric of "communicative language teaching." As Larsen-Freeman and Long (1991) pointed out, "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" (p. 221). A well-known example of this position is the "natural approach" to language instruction—an

approach designed to reflect the process through which children acquire their first language—where the teacher’s role is to provide comprehensible exposure, or what is generally called “input” that is slightly beyond the learner’s current level of competence on the grounds that the Language Acquisition Device, or what Chomsky (2000) referred to as “the organ of language,” uses this input to generate the appropriate L2 grammar.

Vygotsky, on the other hand, makes a clear distinction between spontaneous development that occurs in the everyday world and educational development, which is intentional, goal directed, guided by well-organized and explicit conceptual knowledge, and mediated by dialogic interaction in the zone of proximal development (ZPD). For Vygotsky educational development is “artificial”:

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, 1997a, p. 88)

Thus, for Vygotsky, education is not just an undertaking whereby knowledge is obtained, it is an intentionally organized (i.e., artificial) activity that restructures mental behavior.

Although Vygotsky laid the foundation for a theory of educational development, he did not flesh out the specifics of the theory. This task was bequeathed to his colleagues and students. Nevertheless, he made it clear that education, as in everyday development, entails two fundamental forms of mediation: mediation through cultural concepts and mediation through social interaction (Karpov & Haywood, 1998). Although for analytical purposes each form of mediation can be looked at separately, as we do in this article, in actual practice they are inseparable. Those concepts at work in everyday life, Vygotsky refers to as *spontaneous*. We encounter these as we participate in such culturally organized activities as play, work, religious practice, and so on. The second type of cultural concept, most often encountered in school, is *scientific*. Although spontaneous concepts are heavily empirical (i.e., based on how the world appears to our senses), not tightly systematic, and generally not fully accessible to conscious inspection and deep reflection, scientific concepts are, by definition, systematic and rigorous and open to inspection and reflection. Above all, scientific concepts bring to light aspects of the world that are not directly observable to our senses. Despite their differences, Vygotsky insisted that spontaneous and scientific concepts form a dialectical unity once they “meet up” in educational activity.

To illustrate the difference between spontaneous and scientific concepts, consider the everyday concept “circle” as a generalization constructed by abstracting from empirical observation the geometric commonality of objects (e.g., coins, wheels, cakes, etc.) that are round. The scientific concept of circle, on the other hand, is the geometric shape that results from the movement of a line with one fixed and one rotating end. Given that our focus here is on DA, we do not say more about conceptual mediation and instead concern ourselves with socially negotiated mediation in the ZPD.

DA IN EDUCATIONAL DEVELOPMENT

One of the most pervasive and, in our view, most problematic dualisms that permeates L2 research and education, yet interestingly not included in Ellis and Larsen-Freeman’s list, is

instruction/assessment. Both language educators and psychometricians stress the need to bring instructional and testing practices into a closer nexus, although it remains unclear how this may best be done. One proposal concerns what is called test *washback*, whereby assessment instruments serve as guidelines for language instruction (Cheng, 2005). This, of course, places responsibility on instructional practices to ensure that they are meeting the learning outcomes established by the tests, whether it is an achievement or a proficiency test. This is not, however, an argument for teaching to the test, but it is an argument for taking account of test outcomes when designing instructional programs. Others see washback in a more negative light, suggesting that it curtails creativity and de-emphasizes higher level thinking ability. Be that as it may, the concept itself belies the teaching–testing dualism that establishes a unidirectional flow of influence from testing to teaching rather than a potentially much richer bidirectional flow.

Most educators and researchers, we suspect, have an easier time embracing the premise that instruction should, or even must, take account of assessment than they do the reverse, especially when we consider the fact that psychometric-based testing has flourished without experiencing the need to pay much attention to what transpires in educational practice. Vygotsky, because of the dialectical orientation of his theory, had no difficulty coalescing assessment and instruction into a single unified activity. Indeed, it is this unity that is at the core of Vygotsky's most widely recognized, but in many ways, most often misunderstood concept—the ZPD. The ZPD is fundamentally about social interaction where instruction leads development. However, effective instruction requires assessment, because it must be sensitive to what the individual is capable of achieving when acting independently; at the same time, a complete assessment requires instruction, which follows from Vygotsky's argument that higher mental development finds its source in sociocultural activity rather than in the recesses of the brain. Thus, through mediation,

we can take stock not only of today's completed process of development, not only the cycles that are already concluded and done, not only the processes of maturation that are completed; we can also take stock of processes that are now in the state of coming into being, that are only ripening, or only developing. (Vygotsky, 1956, pp. 447–448; as cited in Wertsch, 1985, p. 68)

It is important to stress that mediation is not just a matter of offering assistance, but it is a matter of offering *appropriate* assistance, that is, assistance that is not aimed at helping the individual solve a problem (i.e., get the right answer) but to move the individual toward independent, agentic performance and to be able to transfer what is appropriated in a given circumstance to future situations. In the DA literature, the notion of applying newly formed abilities to novel problems is referred to alternately as *transfer* and *transcendence*. Although not identical, both concepts emphasize that development is not synonymous with task-specific training and that individuals' development must be understood not only with regard to their ability to execute familiar tasks but also how they approach new and more complex problems.

The evidential basis for interpreting learner abilities is thus expanded beyond a single observation of independent performance, as in most conventional assessments, to include learner responsiveness to mediation as well as their success in recontextualizing their abilities as they encounter new problems. For example, the DA approach developed by Brown (Brown & Ferrara, 1985) and colleagues tracks learners through a series of *near*, *far*, and *very far transfer* tasks. These involve problems of increasing complexity beyond the original activity, and learner performance on each is included in an overall profile that comprises original independent scores as well

as scores on the transfer tasks and any mediation required. Such a profile provides powerful evidence of development that goes well beyond learner efficiency in completing a discrete task, and in this respect the concept of transcendence offers an antidote to the oft-cited problem of “teaching to the test.” It is also worth noting that although this approach creates multiple performance contexts, each different but related, the goal is not to represent every imaginable set of circumstances in order to produce absolute generalizations about learner abilities. Indeed, even if it were possible to represent and sample every scenario in which learners might perform, any resulting statement about learner abilities in absolute terms would run counter to the basic premise that **the abilities themselves are emergent** and forged in the social world. The value of transcendence, rather, is that it permits an ongoing diagnosis of learner abilities across contexts and includes consideration of changes in their level of independent functioning and in their response to mediation. Examples of transcendence involving L2 learners are discussed later in this article.

To return to the matter of mediation, the point to bear in mind is that mediation must be aimed at those abilities that are in the process of ripening. To illustrate what this means, consider the case of a mother who wishes to raise her child from a prone to a sitting position. One procedure the mother might use is simply to lift the child to the desired position. In other words, she can treat the child as an “object” that is manipulated by the parent. Another option open to the mother would be to grasp the child’s hands and slowly pull upward while exhorting the child to exert force against her pulling. Eventually, the child ends up in the same position as in the first situation. As Fogel (1993) pointed out, however, in the second case, the process is markedly different. The child is a coparticipant and coregulates the mother with regard to the amount of force she exerts and is much more likely to experience a sense of agency. The mother might even reinforce this feeling through speech: “Help mommy, pull, pull. Good girl, you sat up.” Crucially, the mother must be sensitive to the muscular capacity that is ripening in the child. It would not make much sense for her to attempt the same procedure with a neonate.

The ZPD entails comediation between someone who has the knowledge and capacity to attain a goal and someone who does not but who is able to participate in the process to some extent. The task of the expert is not to direct the learner to a desired outcome; this would be a relatively easy undertaking (e.g., “your response is inappropriate; here is the correct response”) but to guide the individual toward the desired outcome in a way that encourages the learner to take as much responsibility for the joint process as possible, to withdraw support when appropriate, and to reintroduce it when needed. In this way, DA foregrounds process over product, and thus it promotes development rather than learning (see Haywood & Lidz, 2007).

DA AND LANGUAGE DEVELOPMENT: INSTRUCTED ASSESSMENT AND ASSESSED INSTRUCTION

DA studies dealing with language instruction have generally followed one of two general approaches to promoting development in the ZPD. Some have used standardized menus of hints and clues and, following the lead of early researchers such as Budoff (1968), have adopted a psychometric orientation to performance and outcomes. Others, preferring a clinical orientation, as is the case in the present analysis, adopt a dialogic approach to mediation, which is more in line with Vygotsky’s (1998) understanding of diagnosis. Vygotsky argued that a genuine diagnosis of development must be grounded in “a critical and careful interpretation of the

data obtained from various sources” and “must provide an explanation, prediction, and scientific basis for practical prescription” (Vygotsky, 1998, p. 205). This type of diagnosis, according to Vygotsky, cannot be achieved by simply “measuring symptoms of development” through formal testing procedures because at best these are only able to verify “what is obvious to persons who just observe the child” and are therefore unable to explain, predict, or help the child “in any practical way” (Vygotsky, 1998, p. 205). In the next subsection we briefly outline the features of each approach.

Two Approaches to DA

In *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.

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) and administered to international students wishing to enter German universities. As with many language aptitude tests, the LLT presents examinees with an invented language and requires them to work 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 hint provides the correct response along with an explanation of why it is correct. The test then proceeds to the next item. Although the goal of the LLT is to assess language aptitude, it recognizes that aptitude is not a stable trait but a dynamic ability that can actually develop during the course of the very instrument 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 aptitude.

Interventionist approaches to DA have the advantage of efficiency because they can be simultaneously administered to large cohorts of individuals, especially in computerized format, and because mediation is standardized numerical scores can be easily generated and subjected to psychometric analysis. A distinct disadvantage of the approach is its lack of fine-grained mediation attuned to the specific needs of individuals as these emerge during the course of the procedure.

In *interactionist* DA mediation is not prefabricated but is instead negotiated with the individual, which means it is continually adjusted in accordance with the learner’s responsivity. In Feuerstein’s version of DA, known as the Mediated Learning Experience, for instance, the traditional examiner/examinee roles are abandoned in favor of a teacher–student 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, p. 102). Thus, instruction takes center stage and psychometric measurement is backgrounded if not removed

from the stage completely. In the next section we present examples of interactionist DA with L2 learners.

DYNAMIC ASSESSMENT AND L2 DEVELOPMENT

The examples that follow are taken from a larger study of L2DA carried out by Poehner (2008) and discussed in Lantolf and Poehner (2006). Advanced undergraduate (seventh semester) American learners of L2 French enrolled in a French oral communication course completed a series of narration tasks in which they either watched a brief video clip or read a literary excerpt and then recounted the scenes in the L2. A teacher, or mediator, was present to dialogically support learners as they constructed their narratives. During approximately eight weeks of the semester learners met individually with the mediator for the narrative activities. The initial narrative prompts were scenes from the popular Hollywood film *Nine Months* starring Hugh Grant and Julianne Moore. This film was selected because its light-hearted content might help ease learner anxiety and because it offered a broad range of interconnected events for learners to describe. Later in the semester, as learners gained confidence in their L2 narrative abilities, prompts were deliberately selected to place greater demands on learners' control over features of French to appropriately relate actions and events without losing their dramatic impact. Specifically, learners were shown intense sequences from the film *The Pianist* that contained little or no verbal language but that included powerful emotional and violent images as well as excerpts from the classic French literary text *Candide*, with its subtle yet acerbic satire. The purpose of these more complex tasks was to determine how effectively learners were able to transcend the original narrations and extend their capabilities to new situations and problems.

As mentioned previously, the matter of transcendence, discussed extensively by Feuerstein (Feuerstein, Falik, Rand, & Feuerstein, 2003), provides powerful evidence of learner development, highlighting that the purpose of DA is not simply to help learners complete a given task more efficiently but rather to help them develop abilities that they may employ to carry out unimagined tasks in the future. In other words, transcendence underscores the fact that the mediation offered to learners must be intended not simply to lead learners to the solution of a given problem but to support their internalization of conceptual knowledge they may then rely upon as they attempt to self-regulate. In terms of following learner development over time, their success in transcending their new abilities represents, along with the forms of mediation learners require and their level of responsivity, an important indicator of the extent to which they have benefitted from and internalized previously offered mediation.

In what follows, we examine four L2 DA interactions. The first two occurred during a single session while a learner, Donna (a pseudonym), was narrating a scene from *Nine Months* in which Hugh Grant's character, Sam, discovers that his girlfriend Rebecca (played by Julianne Moore) is pregnant, and in his surprise at this news he runs their car off the road. As we see, Donna encounters two distinct language-related problems describing these events and needs very different levels of support from the mediator in order to continue. The third interaction follows Donna as she attempts to recontextualize her control over L2 French while narrating a scene from *The Pianist*. The fourth interaction presents another learner, Jess (a pseudonym), whose transcendence performance contrasts sharply with Donna's.

Problems in L2 Development and ZPDs

One difficulty Donna experienced during her narrations concerned the use of verbal aspect to appropriately frame events, actions, and states of being. Briefly, French, like other Romance languages, makes a formal distinction between perfective and imperfective verbal aspect. Perfective aspect frames events as completed in relation to the present moment in time (i.e., the moment of speaking or writing). For instance, the construction *The candidate won the election* emphasizes that at the present moment the election has passed and the outcome is known. In contrast, imperfective aspect makes no commitment to the completion of events, as in the utterance *The candidate was running for office*. The act of seeking office is situated in the past, but it is described as ongoing during the past rather than completed. In discourse, imperfective aspect often functions to provide background for other events (e.g., *The candidate was running for office when a scandal broke.*), whereas perfective aspect moves narratives forward. In French, the imperfective (or *imparfait*) and perfective (*passé composé*) are usually and incorrectly presented to learners as two different past tenses, and their uses are defined according to various rules-of-thumb (e.g., use *imparfait* for past habitual actions and *passé composé* for single past occurrences). Consequently learners of L2 French, even at advanced levels of study, often remain uncertain about how the *imparfait* and *passé composé* can be used effectively in past narration.

In (1) Donna (D), with support from the mediator (M), considers which aspect to employ to express the idea that the character Samuel was shocked by Rebecca's pregnancy:

(1)

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. *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
14. continued to be shocked by this news but I think I first chose *passé composé*
15. to note that at a very distinct point he started to become shocked
16. M: so emphasizing that?
17. D: right so maybe what I want to say is *il a été choqué*
he was he was shocked

In line 2 Donna renders Samuel's state of being shocked both in the imperfective (*était choqué*) and perfective (*a été choqué*). Her apparent uncertainty as to which aspect is most appropriate draws the mediator's attention, and he asks which form she intends to use (line 3) and then repeats both of the forms she produced (line 5). At this point, the mediator's focus is not to resolve the matter for the learner but rather to state explicitly that she has two alternatives in order to prompt her to make a selection. Beginning in line 6, Donna works through a process of considering both imperfective and perfective framings of the event and she does so externally, that is, she verbalizes her thought processes. In lines 6 and 9 we see the learner rephrasing the idea in French (it was a shock to him, he was shocked by this news) as she tries to determine which aspect is most appropriate to how she wishes to portray the event. Then, in line 13, Donna switches to English as she explains that she is now reconsidering her initial choice of perfective aspect. Interestingly, however, while talking through this explanation, she determines that the perfective does in fact best fit the meaning she wishes to express (he became shocked when he heard the news). That is, the act of verbalization functions as a form mediation for the learner.

It is important to note that throughout the exchange in (1) the mediator does not attempt to influence her selection of aspect nor does he provide hints or clues to the form that he thinks is most appropriate. Instead, the mediator's efforts are aimed initially at encouraging Donna to make a selection and then at inquiring into the reasons for her choice. In other words, responsibility for this performance rests squarely with the learner. Although her hesitation, as well as the extended process she goes through to make a decision, indicate that her control over this feature of the language has not fully developed, it is clearly within her ZPD and one might argue is at an advanced state of maturity. Of course, narration is a complex activity that requires much more than control over verbal aspect. In (2) we see that other features of French were far more problematic for Donna.

Later during her narration of the same video clip, Donna relates an argument between the characters Samuel and Rebecca, and she attempts to employ a complex negative construction involving an infinitive (*avoir*) and a verb clitic (*'*). Her intended construction is *il l'accusait de ne pas avoir pris de soin avec ses médicaments* (he accused her of not having taken care with her medications), but she encounters a number of difficulties:

(2)

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, holds it over paper 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*
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

In line 1 Donna breaks from her narration and switches to English, signaling an effort to talk her way through selection of linguistic forms just as she had done in (1). As she states, "I have to think about this," she takes a pen and holds it over a writing tablet as if preparing to write. Donna is clearly experiencing some trouble as she relates this sequence of events from the film, but she is attempting to self-regulate and seems to connect writing to her thinking process in a manner reminiscent of John-Steiner's (1985) discussion of writing as a manifestation of private speech (see also DiCamilla & Lantolf, 1994). In line 2 she also mentions handouts that had

been distributed in class as references for students to use, again underscoring her awareness that her thinking can be supported by various forms of available mediation, in this case pedagogical tools. In the end, Donna does not write anything and does not have grammar references available to her but instead dialogically works through her dilemma with the mediator. Even so, as she formulates the negative infinitival construction in line 4 she holds the pen in her hand and marks out a series of beat gestures to coincide with each word, an act that may also perform a mediating function:

l'accusait [beat] à [beat]*n'être* [beat]*pas**[beat] à [beat]*ne*[beat] *pas* [beat]

In addition to Donna's attempts to self-regulate, she also received extensive support from the mediator. In line 5 the mediator seeks confirmation that Donna was employing the imperfective form of the verb *accuser* with a preceding partitive article. As becomes clear in line 9, this was not the difficult portion of the construction for Donna. Her attention throughout the interaction remains focused on the negative construction. In fact, in line 7 she momentarily shifts to ask the mediator for lexical support (the French term for "birth control"), and when the mediator provides this she begins to repeat it but abandons this attempt and to resolving the negative infinitival construction. Moreover, when she reformulates her utterance in line 19 she does not incorporate this term but instead uses her original choice of *médicaments*.

Given the complexity of the construction Donna is attempting to produce, the mediator proceeds through several steps, each addressing specific elements of the desired form. In line 12 he calls the learner's attention to the negative particles *ne* and *pas* and asks her to consider where these must be placed relative to verbal infinitives. When Donna remarks that both articles remain together, the mediator confirms this response, but rather than pursuing the original question of where they should be placed in the utterance he reveals that they precede the infinitive. In one sense, this move on the mediator's part is unfortunate because one cannot know whether Donna was already aware of this fact; that is, a relevant insight into the learner's knowledge of this type of structure was lost by the mediator moving quickly toward a very explicit form of support. It may be the case that the mediator's attention was directed at the overall construction and he was eager to move to the other necessary elements. A similar occurrence involves the past participle *pris*, which Donna omits in line 15. Instead of prompting Donna to determine if she is able to identify the need for a participle and correctly form it for the verb *prendre*, the mediator recasts her utterance with the missing form inserted in line 16. Finally, in line 18, the mediator provides yet another recast, this time replacing Donna's selection of the particle *a* with the requisite *de*. In line 19 Donna repeats the entire construction and the mediator provides confirmation that it is indeed correct.

In considering Donna's performance in both (1) and (2), it is important to point out that a non-dynamic assessment of her L2 abilities would have likely not differentiated her control of verbal aspect from her control of negative infinitive constructions. That is, in both instances an assessor would likely note that she was unable to employ these features correctly during oral narration. Only through interaction and the provision of mediation did it become clear that these features of French are not equally problematic for Donna and that in fact she is near to controlling aspect independently. Indeed, the mediator's contributions in (1) are minimal as he initially prompts the learner to make a selection and then seeks only to understand her reasoning. Responsibility for the performance, in this case, resides primarily with the learner, who talks her way through considering alternative forms and the nuances of meaning that would result from choosing one over the

other. In contrast, the mediator assumes a leading role in (2) as it becomes clear that the learner does not yet have the linguistic resources needed to express her ideas in the L2. As mentioned, there were points in (2) when the mediator may be overly explicit in the support he offers, and it is not certain whether less explicit mediation would have sufficed. Nonetheless, it is evident that the level of support Donna needed in (1) was far less extensive than in (2), where the mediator walked her through a step-by-step process to arrive at the negative infinitive construction. In fact, it was the mediator and not the learner who ultimately produced the full construction.

That mediator support played such different roles in (1) and (2) indicates that Donna is at very different points developmentally with regard to aspect and negative constructions. In our view, rather than a holistic ZPD of Donna's overall narrative ability in French, it is more appropriate—and certainly more helpful from a pedagogical perspective—to distinguish separate ZPDs for these two linguistic features. From this perspective, Donna's control over aspect is nearly fully formed, whereas negative constructions, if they are within her ZPD, are still at an early stage of development. The relevance of this information for classroom practitioners is clear, as one would predict that Donna will begin to use aspect appropriately in discourse far sooner than negative constructions and that the latter will likely require extended explicit instruction. Donna's performance during transcendence tasks in the weeks following these interactions further support this conclusion. The negative infinitive structure is relatively low frequency in the language, and so we do not have additional instances of its use in Donna's narratives, but we do have examples of her ability to maintain control over verbal aspect even when the narration tasks became more challenging. It is to this that we now turn.

Recontextualizing L2 Abilities and the Reemergence of Earlier Stages of Development

In (3), Donna is recounting a scene from *The Pianist* during which the title character must elude a German soldier who is searching a bombed-out apartment building. Stating that "he [the soldier] couldn't find him [the Pianist]" leads Donna to consider which aspect is most appropriate to use with the verb *pouvoir* (can, to be able to):

(3)

1. D: *il savait bien qu'il y a quelqu'un qu'il y avait quelqu'un qu'il y avait*
he knew well that there is someone that there was someone that there was
2. *quelqu'un dans l'atelier mais le soldat ne peut* trouver donc tout à fait—*
someone in the attic but the soldier can't find therefore completely
3. M: *il savait bien qu'il y avait quelqu'un dans l'atelier mais il?*
he knew well that there was someone in the attic but he?
4. D: *il ne pouvait pas trouver il ne pouvait pas le trouver, c'est mieux que il*
he couldn't find he couldn't find him, that's better than he
5. *n'a pas pu le trouver?*
couldn't find him?
6. M: I guess it depends on the meaning right? *il ne pouvait pas trouver* or *il*
7. *n'a pas pu trouvé* either is grammatical . . .

8. D: *je peux faire l'imparfait je crois*
I'll do the imperfect I think
9. M: alright
10. D: *il ne pouvait pas trouver—*
he couldn't find
11. M: you see the difference in meaning between the two?
12. D: well he couldn't find him and then he stopped looking for him would
13. be the *passé composé l'imparfait* would be he couldn't find him but
14. there's it doesn't imply a time when the soldier stopped looking for him
15. M: right so it kind of like depends I think on what you follow it up with

In line 2, Donna uses the present tense of the verb *pouvoir*, and this draws the mediator's attention. In line 3 the mediator prompts Donna to repeat her utterance by stating the words that immediately preceded it with a questioning intonation. She responds and self-corrects by placing the verb in the imperfect but then, in line 5, also produces a perfective form of the verb and asks the mediator to confirm that the imperfect is indeed the better choice. The mediator remains noncommittal, and Donna resolves the matter on her own. Her explanation in lines 12 to 14 reveals that her decision to use the imperfect is motivated by the meaning she wishes to convey and that she has selected the aspect that is appropriate to that meaning.

As in (1), the mediator is present to offer support but plays a very small role because the learner has primarily taken over the performance. In (3), his chief contribution is his presence as a knowledgeable interlocutor, and although Donna turns to him for help evaluating her performance, she ultimately does not use his support. As explained, her ability to maintain control over aspect even when the task has become more complex is a powerful indicator that this feature of the L2 is at an advanced stage of development in her ZPD. For Donna, the demands of this new task did not impair her ability to appropriately use perfective and imperfective aspect, although this was not true for all learners.

Jess (a pseudonym) was another learner in this same course, and like Donna she had initially struggled to use the *passé composé* and the *imparfait* during oral narration but through interactions with the mediator had developed a far better understanding of how both may be used to establish relations among past events. In contrast to Donna, however, Jess experienced difficulties when the original narrative prompts from *Nine Months* were replaced with more demanding ones from *The Pianist*. In (4), Jess is describing a scene from this film that depicts the Warsaw Uprising during which German soldiers were killed. She struggles to express the idea "they were killed," which in this case would require the passive voice as "they" refers to the object of killing and the agent of killing is not explicitly stated:

- (4)
1. J: [to self] *ils étaient* how do you say killed?
they were
 2. M: killed? *Tué*

3. J: *tués par des coups de fusil aussi*
killed by gunshots also
4. M: using the *plus-que-parfait*?
the pluperfect?
5. J: uh what is it? *La voix passive*?
the passive voice?
6. M: oh okay right you can use the *voix passive* but you're using which verb
7. tense though?
8. J: um *imparfait*
9. M: instead of *passé composé*
10. J: . . . yeah
11. M: to say that they were they were killed
12. J: uh huh
13. M: okay and how come?
14. J: I don't know actually should be saying *ils* [. . .]. . . because I have to say
15. was otherwise they would be killing someone else
16. M: *ils ont tué* would be they killed but you want to say they were killed
17. J: right *par quelqu'un*
by someone
18. M: so you need another verb in there
19. J: *ils étaient tués ils avaient tué*
they were being killed they had killed
20. M: well then using *plus-que-parfait* they had killed?
21. J: no how would I say they were killed? *Ils étaient tués*
22. M: *étaient*? So you're using *être* but *être* can be used in the *imparfait* or the
23. *passé composé* right so you could use the *passé composé*—
24. J: *ils ont été tués*
they were killed
25. M: *ils ont été tués* so it's the *passé composé* of *être* and *tué* as an adjective
they were killed
26. J: *oui ça marche*
yes that works
27. M: okay makes sense?
28. J: *oui, ils ont été tués par des coups des fusil*
yes, they were killed by gunshots

In attempting to use a passive construction, Jess's previous high level of control over verbal aspect seemingly disappears and she resorts in this case not to a set of grammatical rules but to a one-to-one translation of the French and English forms of the verb to be (*être*). Translations of French imperfectives typically include a form of the verb "to be" (e.g., he was happy; they were tired, etc.), and Jess appears convinced that the passive construction "they were killed," by virtue of including the "to be" verb, requires the imperfective, and she abandons any effort to determine how verbal aspect might be used to convey a particular meaning. In lines 9 and 11, when Jess is questioned by the mediator about her preference for imperfective aspect, her confusion becomes apparent. In lines 14 to 15 she explains that a form of "to be" is required to avoid the active construction "they killed" rather than "they were killed." In line 19, as she reformulates her utterance, she switches between two auxiliary verbs, *être* (to be) and *avoir* (to have) but renders both in the imperfective. She does not seem to understand that in passive constructions, just as in active ones, either aspect may be used depending upon the intentions and point of view of the speaker. In this case, the perfective of *être* is a more appropriate choice, and in lines 22 and 23 the mediator finally points out to the learner that this verb can be employed in either the perfective or imperfective. Only at this moment does Jess respond with the needed construction.

The extent of mediator support Jess required differs sharply from the quality of mediator–learner interaction that characterized Donna's performance in (3). Whereas Donna assumed primary responsibility for her narration of *The Pianist*, and not only appropriately employed verbal aspect but also was able to explain her reasoning to the mediator, Jess seems to have reverted to an earlier stage of development that relied on mechanical translation rather than the intentional use of aspect to construct meanings. The contrast between their performances as they attempted to recontextualize their abilities and meet the demands of new tasks has important implications for the view of their abilities that emerges. Although both had exhibited appropriate use of aspect during their earlier narratives, the difficulties experienced by Jess during this transcendence indicates that she has not reached the same level of development as Donna. On the basis of their earlier performances, one would conclude that Donna and Jess had very similar ZPDs for verbal aspect, but through transcendence we see that Donna was able to sustain her level of functioning with a high level of independence, whereas Jess was not. Considered from the perspective of their transcendence performances, Donna would be expected to attain a fully independent level of control over this feature of the language before Jess, who will likely need continued remediation.

CONCLUSION

In this paper we argued that Vygotsky's notion of praxis offers a way out of the current conceptual gridlock that has taken root in the fields of SLA and L2 education. Vygotsky, grounding his theory in the writing of Marx, posited a dialectical view of humans and their social and cultural worlds according to which understanding and intervention, or transformation, are integrated processes. At the level of practice, the ZPD represents a powerful framework for realizing this dialectic wherein the provision of mediation to learners encountering problems they are unable to resolve independently not only provides important insights into the diagnostics of their development but also advances their current level of ability. DA systematizes examiner–examinee or teacher–learner interactions such that individuals may benefit from a range of both implicit and explicit mediation that is attuned to their emergent abilities.

The excerpts from L2 DA interactions we have considered strongly support Vygotsky's thesis that the products of past development cannot alone predict future development. Instead, individuals' responsiveness to mediation as well as their success in transferring their abilities to new and more complex tasks are necessary to fully understand their development. For example, during her narrations Donna was unable to independently control verbal aspect (1) and negative constructions (2). However, when we take account of the ways in which she negotiated mediation during these two exchanges, it becomes clear that her abilities vis-à-vis these two features of the language were at different stages of development. Although responsibility for performance remained primarily with Donna in (1), suggesting that she is quite near to controlling verbal aspect, the same cannot be said of her ability to use negative constructions. The extent of the mediation she required in (2) reveals that her control over negative construction is in a very early stage of formation. On the other hand, Donna and Jess both exhibited considerable control over tense and aspect during their narration of the movie, *Nine Months*, but their respective performances in (3) and (4) underscore how psycholinguistically distinct their abilities in fact were. Donna continued to employ tense and aspect in appropriate ways to narrate stories as they became more complex and challenging, whereas Jess's performance deteriorated when she confronted the new demands. These important differences were only visible when the learners' internal, intramental processes were externalized and allowed to unfold in the dialogic space between mediator and learner.

Of course, it should be noted that the support negotiated between mediator and learner, although dialogic and responsive to learners' emergent needs, should not be viewed as the only or best possible form of mediation. Had the mediator employed other forms of support (e.g., alternate clues or prompts, a detailed graphic representation of verbal aspect, concrete materials that learners could manipulate to model relations, etc.), Donna and Jess may have responded differently. Interpretations of their abilities are thus necessarily based upon their responsiveness to the mediation that was offered, recognizing that any given form of mediation might be more helpful to some individuals than others. That said, the mediator in this case dialogically negotiated support with the learners, thereby tailoring it to their individual needs, and in our view this greatly reduces the possibility that either learner failed to receive appropriate support. Recalling the distinction discussed earlier between interventionist and interactionist approaches to DA, standardized forms of mediation offer the advantage of generating outcomes that are more easily scalable and comparable, but at the expense of fine-tuning support to learner needs as these become apparent during interaction. More dialogic approaches to DA do not limit how a mediator may engage with learners, recognizing that mediation is less likely to be effective when conceived in a "one-size-fits-all" manner. However, an open-ended approach to mediation carries with it the responsibility to continually reflect upon the range of alternatives that might prove beneficial to specific individuals.

A further point worth considering is that although Donna may be more advanced than Jess with regard to tense and aspect in French, this does not mean that her overall level of proficiency in the language is higher. Such an interpretation goes well beyond the scope of the intervention program, which focused particularly on a specific feature of the language, as this is important for relating past events and was a source of difficulty for both learners. It may be that in relation to other features of French Jess has greater facility than did Donna. This would not be unexpected, as there is no reason to assume that individuals have a single ZPD that extends across all domains of learning or even that encompasses all knowledge and abilities relevant to a given field. Indeed, the DA work of Brown and colleagues mentioned earlier provides evidence that learners may

be further developed with regard to reading than mathematical abilities or vice versa. Similarly, Aljaafreh and Lantolf (1994) reported that learners' level of ability was not constant for every feature of language they considered but was in fact highly variable. As with all approaches to assessment, DA practitioners must carefully plan tasks and materials that are appropriate to the abilities they wish to diagnose and help develop.

Much work remains to be done for DA to realize its full potential as a dialectical framework for integrating L2 assessment and instruction. Two projects currently under way promise to make substantial contributions in this regard. The first aims to redress a perceived shortcoming of DA, namely, its feasibility in classrooms with typical enrollments of 25 or more students. The project involves tasks designed to be sufficiently difficult that they challenge all students, and the mediation offered by the teacher is intended to support the class as they jointly work toward mastery of new material. The second project is concerned with how to effectively deal with the number of students enrolled in L2 courses (e.g., normally between 15 and 30, depending on the popularity and student interest). It focuses on employing computer technology as a mediation delivery system following a less flexible but more efficient interventionist format. This is made necessary given that the moment-to-moment, fine-grained adaptations possible in face-to-face interaction typical of interactionist DA are virtually precluded in human-computer interaction. The challenge is to construct a viable prefabricated menu of mediation, along the lines of Guthke's Leipzig Learning Test, that still diagnoses and promotes development. Despite this drawback, computerizing DA enables large numbers of learners to be assessed simultaneously and repeatedly. Through the use of DA in formal assessment contexts as well as the implementation of its principles in classroom settings, our hope is that the teaching-testing divide can be overcome in a way that maximally helps students develop their L2 abilities.

ACKNOWLEDGMENTS

We thank the editors of the special issue as well as the two anonymous reviewers for their useful comments and feedback, which helped us improve the original version of our manuscript. Any shortcomings in the current version are the sole responsibility of the authors.

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