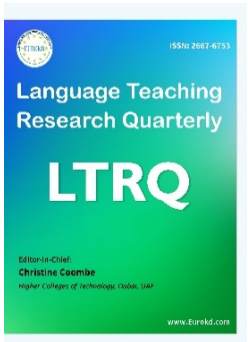

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On the Value of Explicit Instruction: The View from Sociocultural Theory

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Abstract

This article provides a theoretical and empirical argument in support of explicit language instruction. It proposes on theoretical grounds that certain features of a language are sufficiently complex and subtle that learners are unlikely to be able to decipher their full conceptual meaning on the basis of exposure alone. It further proposes that the kind of explicit instruction that has been assumed in much of SLA research—based on structural rules of thumb—is inappropriate and that an alternative approach, grounded in principles of sociocultural theory is an effective means of promoting development, which in the theory calls for both explicit conceptual knowledge and extensive and intensive communicative practice. The approach, or model, is referred to as Concept-based Language Instruction (C-BLI). Empirical support for explicit instruction using C-BLI is derived from pedagogical studies using the model. In addition, evidence from L2 neuroscience ERP research is considered as well as evidence from cultural evolution. The principles of C-BLI are compared to those supporting Dynamic Usage-Based instruction which emerges from L2 research informed by Complex Dynamic Systems Theory.

Keywords: *Concept-based Language Instruction, Creativity, Dynamic Usage-based Instruction, ERP, Cultural Evolution, Sociocultural Theory*

Introduction

Diane Larsen-Freeman has been one of the leading researchers in the field of applied linguistics and SLA. Her publications spanning nearly five decades have had significant influence on a wide array of topics from the early morpheme order studies (Larsen-Freeman, 1976) to pioneering work on Complex Dynamic Systems Theory and L2 development (Larsen-Freeman, 2023). Indeed, as co-editor of *Applied Linguistics* I had the pleasure of publishing what I believe to be her first piece on this topic (Larsen-Freeman, 1997). Diane has also made a significant contribution to language pedagogy, especially with regard to grammar instruction (Larsen-Freeman, 2014 & 2015), the topic of the present paper. Over the years I have engaged Diane in numerous formal and informal discussions in particular regarding the comparison of

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CDST and SCT and their relevance for language instruction. While we perhaps have disagreed more than agreed, I have always found the discussions stimulating, challenging and well worthwhile, as they have sharpened my thinking particularly about the pedagogical implications of SCT. In what follows I argue, in disagreement with what I believe is the most visible pedagogical model to emerge from CDST research—Dynamic Usage-Based instruction (DUB)—that explicit classroom instruction could be the optimal approach for late language learning (i. e., after one's first language is acquired and that typically takes place during secondary and post-secondary education). However, as I will propose, how explicit instruction is organized is crucial. Traditionally, it has been assumed by many SLA researchers and educators that explicit instruction necessarily entails the provision of rules-of-thumb that inform learners as to the appropriate and inappropriate ways to form and use specific structures in the target language. The model to be explained in this article abandons a structural approach to instruction in favor of a meaning, or more specifically, a conceptual-based, focus on explicit knowledge.

In what follows, I first outline DUB for purposes of comparison with SCT-based developmental instruction. As will become clear, the fundamental difference between the models is focus on implicit instruction in the former and on explicit instruction in the latter. Next, I consider evidence that I believe supports the relevance of explicit instruction emerging from L2 ERP research as well as recent research on the cultural evolution of human pedagogical practices dating back to the rise of homo sapiens. I then provide an overview of the theoretical principles of SCT and how they are concretized in C-BLI. Finally, I survey examples of pedagogical projects that implement the model.

DUB: Dynamic Usage-Based Instruction

DUB has been developed by Verspoor and her colleagues. It assumes that language is a complex system in which its subcomponents are interconnected and change in unpredictable ways (Rousse-Malpat, et al., 2022, p. 22). It further assumes that errors along with variability are normal manifestations of development (p. 22). Finally, it conceives of language development as an experiential process that is "individually owned and non-linear and that some sub-systems or skills are learned before others, such as lexicon before syntax" (Rousse-Malpat, et al., 2022, p. 22). While I agree that the subcomponents of language are interconnected, I do not believe that this is what makes language a complex dynamic system—a topic that is beyond the scope of my present pedagogical concern. Although SCT would certainly agree with DUB regarding errors and variability (for a discussion of what errors represent from the SCT perspective, see Aljaafreh & Lantolf, 1994), it does not support the view that learning is "individually owned", given its central principle that all forms of human development are directly or indirectly mediated by others as well as by psychological tools emanating from one's cultural environment (Vygotsky, 1987).

According to Rousse-Malpat, et al. (2022), DUB implements a strong version of communicative language teaching (CLT), more or less in line with Krashen's (1982) proposal that implicit language development (i.e., acquisition) happens through robust communicative exposure to comprehensible target language properties. Indeed, Verspoor and Schmid (in press) assert that DUB principles support Krashen's claim that adult acquisition happens subconsciously much in the way that we "pick-up" language during childhood. However, as

Verspoor and Hong (2013, p. 32) point out, there are important differences between DUB and Krashen's perspective having to do with whether or not language is understood as rule based (Krashen) or grounded in implicit form-meaning pairings (DUB), the importance of frequency (DUB) rather than simplified input (Krashen) and the teacher as mediator between L2 texts and learners (DUB) instead of provider of comprehensible input (Krashen).

DUB integrates three concepts from research on usage-based learning: frequency, salience, and contingency. Essentially, DUB argues for language development as a trial-and-error habit formation process resulting from repeated exposure to "conventionalized utterances" in "meaningful and multi-dimensional" contexts (Verspoor & Schmid, in press). Linguistic constructions, understood as form-meaning pairings in pragmatic contexts, are acquired through association as they are "heard and used frequently and therefore entrenched, which is the result of habit formation, routinization and automatization" (Verspoor & Schmitt, 2013, p. 354). Salience is attained through joint attention that highlights a specific component of a construction in order to point out a grammatical form whose meaning is conveyed through gesture and/or visual clues. Contingency provides learners with an array of different contexts in which the same word combinations co-occur in order to draw their attention to such combinations, which can transpire through use of gestures and other visual clues. This procedure presumably allows form-meaning associations to emerge. Through exposure and use, learners detect regular patterns via general learning mechanisms, such as perception, association, categorization and schematization.

This may be all well and good and I am not surprised that learners can "pick-up" bits and pieces of language under such circumstances given enough time and enough exposure; however, I believe that certain features of language will be exceptionally difficult to figure out and master through the kinds of limited exposure available in classroom settings, even with use of attention-attracting procedures and frequent repetition. Perhaps even full and extensive immersion settings may not provide enough evidence for learners to detect and work out the meaning and use of some complex features of a new language. Here I point to the example of very proficient users of L2 English who continue to manifest inconsistencies in their use of articles.

One of the most prominent proponents of usage-based learning, N. Ellis (2015, p. 13) notes that there are limits to implicit learning, due to such factors as "interference, overshowing, blocking, contingency, cue competition, or perceptual learning, all shaped by the L1." Consequently, he argues that "explicit learning is necessary in L2 acquisition" (p. 13). Nevertheless, he supports what VanPatten (2020) characterizes as the majority view among SLA researchers that to be viable for spontaneous language use, linguistic knowledge, even if gained through explicit instruction, must eventually become implicit. In this regard Ellis does not support a strong interface position in which explicit knowledge converts directly into implicit knowledge. Rather, he argues for a weak interface position, along the lines of what Krashen (1982, p. 84) called "self-stimulation"—a process through which performance arising from explicit knowledge functions as input to the implicit system that underlies acquisition. DeKeyser (2020, p. 91) proposes that in the early phases of the learning process when focus is normally on simple L2 features, L2 knowledge should be explicitly presented to learners followed by practice to proceduralize and automatize the knowledge. He contends, furthermore, that for complex features the classroom may not be the ideal place to promote

development owing to the difficultly learners may have understanding the structural rules that supposedly underlie such features. He suggests, therefore, that explicit instruction and learning in the early stages of SLA is useful for laying the foundation for future development when more complex features of the target language are acquired (p. 92). The pedagogical approach to be presented in this article makes a contrary argument: the more complex a linguistic feature is the more explicit instruction is required for learners to internalize the feature. As I will explain, however, the instruction cannot be based on the kinds of structure-based rules traditionally found in textbooks.

As far as I can determine, DUB says nothing about the potential relationship between implicit and explicit knowledge; however, given its support for strong CLT, it would seem that proponents of the model would not allow much room for explicit knowledge in the developmental process. Although in at least one variability study (Lesonen, et al., 2022), explicit instruction is paired with implicit exposure in a university level L2 Finnish course spanning approximately 70 contact hours. Instructional focus was on existential constructions, which are fairly complex structures. While focus was on variability manifested by four learners, initial exposure to existentials was primarily implicit until week 28 at which point learners were provided with explicit instruction on the rules for the formation of existential constructions. As far as I can determine, in the study nothing is mentioned regarding the relationship between explicit and implicit knowledge. However, as the authors point out (p. 13), following instruction two learners increased their use of existentials and decreased their use of non-conventional patterns. Moreover, instruction apparently helped provoke another learner to begin to use existentials. Perhaps most interesting with regard to my present concern, when semantics rather than form determines case marking in Finnish existentials, explicit focus on morphology may not be an effective instructional strategy (p. 13). As I will argue later, for language features that are conceptually based such as mood, aspect, articles, and word order, the absence of explicit instruction markedly increases the difficulty facing learners to figure out how a particular concept functions and how it can be manipulated to generate relevant meaning. Furthermore, the type of explicit instruction I will introduce, contrary to the general belief that this instructional approach must be structure focused, in fact, foregrounds conceptual meaning.

In DUB pedagogical studies, as far as I can determine, the language features under analysis are either lexical or formal rather than conceptual. Moreover, with a few exceptions, such as the study on Finnish existentials, the features are fairly simple, including such structures as French negation, present tense, nominal gender and past-perfect verbs (Rousse-Malpat & Verspoor, 2012). Spoelmann and Verspoor (2010) report on a longitudinal study of a Dutch L1 university learner of the L2 Finnish case system. Although Finnish has more cases (15) than other European languages, distinguishing four grammatical from eleven semantic cases. While the system seems complex, a learner can nevertheless encounter overt usage-based evidence of case marking. This, along with the study of Finnish existentials, is still quite different from the task confronting learners of Chinese word order, Spanish mood and verbal aspect, English phrasal verbs and the article system, German middle field, and the like. In these cases, the issue is not the forms themselves, as it is clear that learners of L2 Spanish will encounter ample evidence of indicative and subjunctive morphology, that learners of L2 Chinese will confront variations in word order, including by *ba*-, *bei*- and *rang*- constructions, and that learners of

English will be deluged with phrasal verbs and articles. The difficulty confronting learners is not appropriating the morphological and structural variations. It is instead about deciphering the conceptual meaning associated with the linguistic features. Even if teachers mediate between text and learner in the ways suggested by DUB—using "visuals, paraphrases, or translations" (Verspoor & Hong, 2015, p. 316)—it is highly unlikely that learners will be able to capture the subtle differences between SVO, S ba-O V and bei S O V order in Chinese: *Wǒ chīle píngguǒ* 'I ate an apple' vs. *Wǒ ba-píngguǒ chīle* 'I an apple ate' with regard how these options indicate speaker construal of events. The same can be said of the differences in speaker construal communicated through use of mood in Spanish: *Pablo hace que María* ***salga*** [subjunctive] *del restaurante* 'Pablo made Mary leave the restaurant'; *Pablo le hace* ***salir*** [indicative] *a María del restaurante* 'Pablo makes Mary leave the restaurante' (Vesterinen, 2012, p. 61).

The point I want to make is not that learners are incapable of noticing linguistic forms when they are salient or made salient through instruction. It is that the conceptual meanings associated with particular aspects of a language (according to Langacker, 2013, all structural features are conceptually motivated) are substantially complex and subtle and that learners are likely to confront a difficult task appropriating them through implicit exposure either in everyday communication or via classroom instruction. Of course, given a sufficient amount of exposure over a sufficiently extended time period, I assume that some individuals are likely to achieve a degree of mastery over even very complex and subtle aspects of a new language. Unfortunately, not all learners have sufficient exposure over an extended time period to figure things out. Moreover, as I argue later, the neurological system subserving the internalization of implicit knowledge after childhood might well be declining, or unavailable altogether, for adult learners. Consequently, the optimal system for appropriating a new language later in life could very well be the one responsible for explicit learning. However, the way explicit instruction is organized and its unit of instruction matter.

Sociocultural Theory and Educational Development

From the perspective of Sociocultural Theory (SCT), instruction that leads to development is neither teacher- nor learner- centered but is instead a social activity comprised of the dialectical unity of teaching and learning—an activity Vygotsky captured with the Russian term *obuchenie* (Vygotsky, 1978, chapter 6). Cole (2009) points out that the term has been inappropriately rendered as 'learning' or 'instruction' in most English translations of Vygotsky's writings. Sutton (1980, pp. 169-170) stresses that the Russian term "means both teaching and learning, both sides of a two-way process, and is therefore well suited to a dialectical view of a phenomenon made up of mutually interpenetrating opposites." Developmental instruction is understood to indicate a transformation in students' "psychological processes and knowledge" (Cole, 2009, p. 292), while teaching is the exercise of power to organize the school environment and the students' experiences in that environment in order to promote transformative processes. Vygotsky was committed to the proposition that "instruction propels intellectual development into directions that would not be possible otherwise" in everyday life (Zavershneva & van der Veer, 2018, p. 101). He considered formal education to be the 'artificial', or systematically planned and intentional development of individuals, as opposed to the type of unplanned and often incidental development that occurs

in everyday life (Vygotsky 1997a, p. 88). Wertsch (2007, p. 185) characterizes the artificial development that occurs in school as the intentional introduction of signs [by an external agent, e.g., teacher] into an ongoing flow of activity.

Indeed, social context plays an essential role in SCT as the source of human psychological development rather than as the setting where development happens (Vygotsky, 1994; Luria, 1967). Luria (1976), for instance, found that uneducated rural populations in the USSR manifested a very different thinking process from those who had attended school (see also, Schubert, 1983). Consequently, SCT is at odds with those SLA researchers such as Long (1997) and VanPatten (2020), who argue that SLA is the same psycholinguistic process no matter where it occurs because it is driven by mechanisms internal to learners, with the social environment at most impacting "the quantity and the quality of interactions that learners receive in the L2" … affecting "progress, ultimate attainment, attitudes, and other matters that form the complex quilt that is adult SLA" (VanPatten & Smith, 2022, note 5, p. 7). According to SCT, the mechanisms of learning and development are situated primarily in the social world and as this world varies, so to do developmental processes. The implication with regard to my current focus is that educational environments, as social contexts, because they are systematically and artificially organized, if organized appropriately, promote a different kind of developmental process that unfolds in everyday life (Vygotsky, 1987).

Given the relevance of social context, and school is a significant social context, in this article I will present a specific approach to formal education that incorporates principles of SCT, to be outlined later, with the goal of carrying out *obuchenie* in order to promote L2 development through explicit instruction (EI), especially with regard to language features that I believe are particularly difficult to master through immersion (everyday or instructional) experiences alone. Before doing so however, it will be necessary to provide a justification for why I believe EI matters. I want to stress, however, that my argument is not that all explicit approaches to instruction will promote development. There are numerous studies in which explicit information is imparted to students in fairly superficial, if not erroneous, ways. For instance, a study by Farley (2001) on Spanish subjunctive comparing EI with Processing Instruction (see VanPatten, 2020) and another by Hernández (2011) on Spanish discourse markers comparing EI with input flooding (see Trahey & White, 1993) both operationalize EI as a one-page handout explicating the relevant linguistic feature. However, little information, beyond the provision of feedback by the teacher in Hernández's study, is provided. While both studies incorporated explicit *information* regarding their respective foci, I do not believe that most language educators would consider this sufficiently qualifies as explicit *instruction.* In research conducted by Pienemann and his colleagues on the Teachability Hypothesis (Pienemann, 1989), instruction is vaguely described as 'traditional instruction' without much information on specifics. The point being that if the quality of EI matters, as argued by adherents of SCT (see Lantolf & Poehner, 2014), caution must be exercised when generalizing to all types of teaching the claim that such phenomena as processing and acquisition orders or developmental sequences are unaffected by formal instruction.

Before explaining the SCT model of developmental instruction, I would like to discuss two strands of research that I believe provide support for the C-BLI model of developmental instruction: L2 ERP research and cultural evolution.

Research in Support of Explicit Instruction

In this section, I consider two research strands that I believe provide support of explicit instruction. The first is L2 ERP neuroscience research and the second is a proposal on the evolution of human culture.

L2 ERP Neuroscience Research

Neuroscience research that has emerged in recent years provides some useful information that is relevant for language pedagogy as well as for theories of SLA with regard to implicit and explicit knowledge and learning. Two important L2 neuroscience researchers who have addressed the topic are Michael Ullman and Michel Paradis. In what follows I will outline their respective arguments with regard to what brain-based research reveals about implicit and explicit processing and L2 development.

Both researchers agree that the brain has two memory systems that are capable of learning language: Declarative and Procedural Memory (DM, PM). Ullman in several publications (e.g., 2001, 2005, 2020) has proposed what he calls the Declarative/Procedural Model (DPM). Accordingly, each memory system is comprised of non-overlapping neural circuitry, which precludes direct conversion of declarative into procedural memory. DM subserves, with one exception (explained shortly), explicit learning, which includes form-meaning mapping of words as well as information from other domains, including episodic memory of events in the world (Ullman, 2020, p. 132). DM learns relatively quickly and usually does not require a great deal of practice. PM underlies non-conscious, implicit, processing "including syntax, non-lexical semantics, morphology, and phonology" (Ullman 2001, p. 107). PM plays a significant role in processing "sequential and hierarchical structure (i.e., in grammatical structure building)" (p. 107). PM is not uniquely specified for language processing as it also processes perceptual motor skills, sequences and categories (Ullman, 2020, p. 132). PM learning is gradual and requires more time to occur. However, retention of what is learned is longer-term than in DM. What is learned in PM is automatized, meaning that it is processed faster, reliably and inflexibly (Ullman, 2020, p. 133).

Both memory systems seem capable of learning all aspects of language, implicitly for PM and explicitly for DM. However, PM seems be better suited for learning some complex patterns, including long-distant dependencies; but this does not preclude DM from learning these patterns as well (Ullman, 2020, p. 134). However, a recent study (Tagarelli, et al., 2016) on L2 classroom learning found that grammatical complexity was difficult for some learners when provided with implicit exposure only. Representations learned in either system can block learning in the other system depending on which system is prominent at the time (Ullman, 2020, p. 133). Hence, in a classroom context where explicit instruction occurs, conscious attention to language predominates and the DM system is more likely to engage. Lack of explicit stimuli or high levels of complexity can lead to the predominance of the PM system (p. 133). If one system is damaged or for some reason is not functioning properly the other system is able to compensate to some degree. Specific Language Impairment, for example, resulting from a dysfunction in PM, can result in increased dependence on DM, in which the compositionality of forms governed by PM (e.g., regular past tense marking in English as in talk >talked) are memorized as chunks by DM (Ullman, 2001, p. 110). In addition to lexical

learning, DM also plays a role in some aspects of L1 grammar learning as children age (Hamrick, Lum, & Ullman, 2018).

Paradis (2009) more or less agrees with Ullman's DPM, with the exception that Ullman (2005, p. 162) assumes that all lexical knowledge, including implicit processing of grammatical properties of words such as argument structure and subcategorization are processed implicitly in DM, while Paradis (2009, p. 18) argues that all implicit processing, including grammatical properties of words, is handled by PM. Support for the DPM is provided by two meta-analyses (Hamrick, Lum, & Ullman, 2018; Morgan-Short, Hamrick, & Ullman, 2022) of brain-based research using primarily ERP (Event Related Potential) data as well as some fMRI (Function Magnetic Resonance Imaging) evidence. The general assumption with regard to ERP research is that because L1 speakers acquire the grammatical properties of their language implicitly through PM, if L2 speakers manifest a pattern that reflects the L1 pattern, they are most likely processing the language features in the same way using PM.

For present purposes, the important aspect of the DPM is the contention that with increasing age PM declines and DM improves. According to Morgan-Short, Hamrick, and Ullman (2022, p. 68) PM is "well-established early in life and then may decline, whereas learning in DM is poor early on, but then improves during childhood" and therefore grammar development should rely more on PM for early-learned languages, L1 and L2, and "more on DM for later-learned languages." Ullman (2001, p. 105) states the following with regard to the maturation of each system:

> linguistic forms whose grammatical computation depends upon procedural memory in L1 are posited to be largely dependent upon declarative/lexical memory in L2. They may be either memorized or constructed by explicit rules learned in declarative memory. Thus, in L2, such linguistic forms should be less dependent on procedural memory, and more dependent on declarative memory, than in L1. Moreover, this shift to declarative memory is expected to increase with increasing age of exposure to L2.

Paradis (2009, p. 24) agrees with Ullman's position and adds that the decline of PM has a variable impact on language development resulting in "different optimal periods" for prosody, phonology, morphology, and syntax (in that chronological order).

Even though Ullman supports a decline in PM over time, he nevertheless argues that "with experience (practice)" learners can access PM to improve the learning of grammatical features (Ullman, 2001, p. 105). According to Ullman support for this claim comes from ERP research on an artificial language, Broncato2, whose linguistic structure is loosely based on romance languages (see Morgan-Short, et al., 2010 and Morgan-Short, et al., 2012). One study focused on article-noun/adjective-noun gender agreement and the other with the same participants addressed word-order. Both studies compared the ERP patterns of implicitly with explicitly taught learners and reported that with experience (operationalized as two additional instruction sessions conducted within 1 to 4 days of the initial instruction) the implicit group shifted from a DM pattern to one that reflected processing through PM because the pattern detected in this group at enhanced experience appeared to match a pattern reported for L1 speakers (not of Broncato2, but of any natural language). How can this happen if the PM system declines with

age? Unless, of course, the decline happens differentially across learners, as is suggested by Paradis (2009, p. 118).

A recent article by Freunberger, Bylund, and Abrahamsson, (2022) sheds new light on what counts as L1 ERP processing patterns. The Broncato2 researchers, as with many ERP L2 researchers, used the grand mean rather than individual performances to determine the processing patterns of the groups. Freunberger, Bylund, and Abrahamsson (2022, p. 439) challenge use of what they call the "gold standard" of ERP research whereby claims regarding the typical L1 response pattern, against which L2 speakers are compared, is often an artifact that results from averaging across study participants. In many cases, a substantial number of participants fails to produce the grand-mean pattern. They point out (p. 442) that L1 speakers recruit different neural circuits to process different morphosyntactic features, depending on processing conditions such as sentence complexity and length. They propose that a more accurate indication of L1 processing would be the range of patterns produced by L1 speakers depending on the factors just mentioned. They suggest that "the ability to dynamically adapt the parsing strategy to the processing demands might eventually be limited to L1 speakers" (p. 444). Thus, the benchmark for L1 processing would not be a specific processing pattern per-se but the ability to shift processing strategies depending on task conditions. The processing effect reported in the Broncato2 study could have either been an artifact of averaging, or it could have resulted from the fact that for some learners in the implicit group PM had not yet declined and was therefore still available to process implicit L2 exposure. For others in this group, PM could have declined and consequently, they would have relied on DM, but without considering individual performance, this possibility would have been masked. On the other hand, according to the L1 variability benchmark proposed by Freunberger, Blundy, and Abrahamsson (2022), the Broncato2 study would not have appropriately compared the participants to the new benchmark since relatively simple features were used in the study and therefore the participants' ability to vary their processing strategies would not have been fully assessed.

In general Paradis seems less reticent than Ullman to allow for PM to subserve late language learning. He asserts that although it might be theoretically possible for a late learner to proceduralize grammatical (and phonological) knowledge, "in practice, it is at best very rare that the L2 grammar in its entirety will be internalized and hence subserved by procedural memory" (2009, p. 16). He allows for the possibility that "some implicit linguistic competence in L2 can probably be acquired in certain aspects of linguistic structure … though not completely at any level" (2009, p. 118). According to Paradis, for most adults learning a new language is an achievement that mainly results from conscious processing "and control of output" (p. 117). The knowledge internalized through explicit means, while not automatized as in the case of implicit learning, can be accessed with sufficient speed to allow for fluent spontaneous performance:

> Moreover, if the aim of appropriation of a second language is to be able to communicate, and if one manages to do so with minimal use of automatic competence but with very efficient and speedy controlled metalinguistic knowledge, the end justifies the means. The distinction between automatic and speeded-up is important as long as it is a theoretical question, but for practical purposes, successful L2 speakers do not mind how and by what means they are able to communicate, as long as they do so efficiently … If formal

> instruction makes a difference in achieving native-like competence in L2 grammar …, for practical purposes, it does not really matter whether you use implicit memory or explicit knowledge. Who cares *how* you manage to pass for a native speaker of L2? As long as you are able to successfully communicate in the second language, and the more accurately and fluently the better, the question is moot. However, from a scientific point of view, if you are interested in how things work, then it is crucial. (Paradis, 2009, p. 103)

Based on the foregoing discussion, it seems reasonable to conclude that explicit instruction is not something to be avoided. On the contrary, for late learners it could well be an effective pedagogical approach resulting in a viable developmental outcome. The caveat, as I have already suggested is that the quality of instruction matters. The approach that I will consider, based on SCT, is not organized around a set of formal structure-based rules, typically encountered in most textbooks and which most language teachers have been, and continue to be, exposed to in teacher education programs.

Cultural Evolution and Pedagogy

In a recent publication by O'Madigain and Tomasello (2021) the authors argue that the transmission and transformation of human ways of knowing has, from the beginning of our species, transpired through explicit pedagogy. They trace the cultural evolution of pedagogical practices from the earliest time with the emergence of tool use among apes in which social learning occurs through emulation—reproduction of the same outcome produced by another without copying the same technique, or imitation—reproduction of the same behavior used by another (p. 2). While what is learned in such social contexts most likely could have been learned without a model with sufficient time, "there is little doubt that chimpanzee individuals do in fact learn many of their skills from their peers" (p. 2). However, this type of learning the authors characterize as "conservative", given that once the chimps have acquired a skill on their own, they exhibit a reluctance to learn from others, even if the alternative is more rewarding, as for instance obtaining more food (p. 2). Human children are willing to surrender their way of doing something when provided with an enhanced alterative.

By the time early homo sapiens emerged pedagogical practice had developed to the point where tool-use was acquired through normative based instruction and collaborative innovation (p. 4). In this case, novices were not only instructed how to use a tool to carry out an action (e.g., gut a fish), but they were also informed through use of language that the skill involved generalized to more than the particular fish involved in the empirical demonstration. Without everyday conceptual knowledge communicated through language as to where the procedure does and does not apply an endless amount of work is necessary "if all that is available is case by case demonstration" (p. 4). Following the passage of another 50 millennia, not only were normative procedures communicated to novices, but the reasons why the procedure was useful were also explained (p. 5). In this case, a community had to collaborate in determining not only what the best procedures were but also on the best reasons regarding the procedure's functionality. Providing a novice with a good reason why something should be done in a particular way thus became the basis for selecting a particular technique. The authors illustrate what they call "epistemic pedagogy" with the explanation for why using a specific kind of knot to tie up a canoe should be used—not because it is easy or because someone failed to think of

another way of doing so, but because the knot will not "be undone by the pulling of the tide on the canoe, but it can be quickly removed by tugging on this loop" (p. 5). Thus, trial and error techniques in search of the optimal solution is costly (many canoes are at risk), but obtaining the best solution based on its rationale "is free" (p. 5).

Once reasons enter the picture, communities can not only focus on what behaviors are to be transmitted, but they can also consider the reasons why a particular behavior does or does not work. O'Madigain and Tomasello (2021, p. 6) call this process "ratcheting reasoning" in which the quality of an explanation is considered and if need be, modified or abandoned in favor of a more viable explanation. They illustrate this process with the explanation for why hawk feathers attached to an arrow produce better flight. The original reason, the feathers worked because hawks fly fast, was abandoned in favor of an explanation based on the shape of the feathers, which then allowed the community to use more abundant turkey feathers that could be twisted into the correct configuration (p. 6).

The point of the preceding discussion is to demonstrate that human cultures, and individual members of cultures, evolved over the course of history through improvements in explicit pedagogical practices as the primary way of transmitting and transforming behaviors and the reasons that underlie the behaviors. Moreover, there is a freedom that comes when humans act for reasons than because of causes. Infants act out of biologically transmitted instincts that cause their behaviors (e.g., cry when hungry). Reasons for acting emerge as we are enculturated. Acting for a reason is a rational way of behaving (Bakhurst, 2007). Freedom, in turn, is necessary for creativity to emerge. If one is compelled to act in a particular way because alternative ways are not accessible, as when we assume a language feature must be used in a specified way in a specific context, freedom and creativity are compromised. C-BLI in many ways reflects the essential features of evolved human pedagogical practice with its dual concern with behaviors and knowledge that underlies these.

Four Principles of SCT

Table 1 lists the key theoretical principles of SCT along with a brief explanation of the significance of each principle. Each principle is given in an abbreviated form. The interested reader can consult the references cited at the bottom of the table where a fuller discussion can be found in Vygotsky's own words.

The four principles are closely interconnected, and in some way each reflects the other principles. The principles can be brought together into a single theoretical statement in the following way: the human psyche (the term Vygotsky often used for mind) is the outcome of the dialectical interaction of biologically endowed instincts that we share with other animals penetrated and structured into a unified system by the cultural symbolic artifacts (primarily language) that are made available to each of us during childhood and which at first function to regulate, or mediate, our mental and physical behaviors and which over time are appropriated, internalized, and transformed, as we mature and gradually integrate into the social life of our community.

Table 1

Key Principles of SCT

Principle	Significance
Transition from innate natural behavior to artificial (mediated) mental functions through cultural development[1]	Humans act indirectly on the world through culturally formed mediational means
Artificial (higher) mental functions originate in concrete social relations[2]	Formation of the human psyche is a sociogenetic process whereby mental processes first occur interpersonally and then transition to become intramental processes
Mental functions transition from outside inward[3]	Internalization: the human psyche is a dialogue between I ~ Me that is derived from and reflects dialogues with others (I ~ You)
Each artificial (higher) mental function passes through four developmental stages[4]	Stages: (1) innate biological, emotional and cognitive processes; (2) mediation and regulation of individual's thinking by others; (3) individual adopts and adapts mediation by others for self-mediation through egocentric speech; (4) egocentric speech converts into inner speech as self-mediation moves to internal plane

[1]Vygotsky (1998, p. 168); [2]Vygotsky (1998, p. 168); [3]Vygotsky (1998, p. 170); [4]Vygotsky (1997a)

Vygotsky (1997b, p. 106) summarizes the essence of the theory as follows:

> We might say that all higher functions were formed not in biology, not in the history of pure phylogenesis, but that the mechanism itself that is the basis of higher mental functions is a copy from the social. All higher mental functions are the essence of internalized relations of a social order, a basis for the social structure of the individual. Their composition, genetic structure, method of action—in a word, their entire nature—is social; even in being transformed into mental processes, they remain quasisocial. Man [sic] as an individual maintains the functions of socializing.

The mental capacity that emerges from the socializing (Vygotsky distinguishes this from socialization) process is human consciousness, which according to Arievitch (2017), represents the unique adaptation that empowers humans, individually and collectively, to cope with, and by and large overcome, unanticipated events in our world. Thus, human adaptation is distinguished from animal adaptation in that humans have the potential to intentionally alter the material world (for better or worse) in order to achieve a particular (individual or collective) goal. This is achieved through what Vygotsky (1997a, p. 68) called the "*doubled experience*" whereby the action carried out on material reality is initially carried out in the individual's or collective's imagination; in other words, the material actions are mentally planned.

Concept-based Language Instruction (C-BLI): Concretizing the Principles

In this section I outline how SCT researchers have concretized the four theoretical principles discussed above into a viable language pedagogy. The individual most responsible for bringing the theory into a systematic educational model is P. Y. Gal'perin, a psychologist whose project was to explain the process through which external forms of cultural mediation are internalized and to maximize the process in the educational context. Gal'perin referred to his approach as Systemic Theoretical Instruction (Gal'perin, 1992; Haenen, 1996; Talyzina, 1981). However, for purposes of language instruction SCT L2 researchers have modified Gal'perin's original proposal in order to render it more flexible and to incorporate concepts from contemporary

meaning-based theories of language, primarily, Cognitive Linguistics, Systemic Functional Linguistics, and more recently, Integrational Linguistics. The approach highlights the notion of concept as the unit of instruction and operates with phases that are more tractable than the stages established by Gal'perin's original framework.

Table 2 presents the six phases of C-BLI. Once the phases are explained, I will consider two studies that have implemented the model; one addressing Chinese topicalization and the other dealing with Spanish temporal aspect, both of which are complex language features assumed by some L2 researchers not to be amenable to explicit instruction.

Table 2

Concept-based Language Instruction (C-BLI)

Phase	Description	Pedagogical Rationale
1. Pre-understanding	Knowledge of concept prior to instruction	Identify & make visible starting point for instruction
2. Concept presentation	Coherent explanation of concept	Compare current (1) and new knowledge (2)
3. Materialization	Concretize (2) as drawing, graph, diagram, object—SCOBA, GESTURE	Holistic representation of concept; memorable; avoid verbal memorization without understanding
4. Verbalize (languaging)	External speech/writing	Reveal conceptual understanding; transform external (SCOBA) to internal mediation
a. Communicative	Explain concept & use to others (recorded)	Speak/write socially to begin internalization process—transition away from reliance on SCOBA
b. Dialogic	Explain concept & use to self (recorded)	Speak/write to continue transition away from reliance on SCOBA and social mediation toward internalization and self-reliance
c. Student SCOBA (optional)	Students visually represent their understanding of a concept	Visualization informs teachers of student thinking and it helps students better organize their thinking and reliance on teacher SCOBA
5. Performance	Use concept in goal-directed communicative activities: drama, tasks, improv etc.	Ability to embed concept in practical and purposeful activity
6. Internalization	Concept used without external mediation (SCOBA or external speech)	Concept becomes generalizable and functionally useful

The pedagogical model captures Vygotsky's concept of *obuchenie*, described above. As in all dialectics both poles matter and therefore marginalizing either pole (teacher or learner) undermines instructional activity. For example, learners may not appreciate the value of externalizing their knowledge of a concept, whether it be what they had learned or thought they had learned in previous instruction, or what they know tacitly about a concept as it may be represented in their own language. Teachers have the responsibility of helping them in the externalization process, especially if the knowledge is tacit. They must also guide learners as they compare their current knowledge with the new conceptual knowledge as presented in phase 2. This is particularly important if previous learner knowledge (phase 1) is reflected in pedagogical rules of thumb that are either context specific, incomplete or erroneous. One of the problems that can emerge in phase 2 is that teachers, through no fault of their own, but

because of the nature of teacher education programs, may lack the kind of knowledge necessary to capture the essence of a concept. For instance, as I explain later, the concept that operates in use of temporal aspect in Spanish is “boundedness”, which also functions in distinguishing what have traditionally been referred to as mass and count nouns. Conceptual knowledge should not be an impediment to language instruction, but unless teacher education programs take language knowledge more seriously than they have to the present time, effective instruction will be hindered.

The challenge for phase 3 is to construct an appropriate material representation of the concept covered in phase 2. In some instantiations of the model this has been achieved through use of branching flow charts where yes/no decisions are made regarding the semantic options available to convey particular meanings (see for example Negueruela’s 2003 study on Spanish aspect). However, this type of representation is not holistic, is not memorable and includes too much verbal language, which we have found can be problematic because it interferes with the memorable quality of the representation. I will present examples of verbally minimalist presentations later in the discussion. The term that Gal’perin used to describe the representations included in phase three is Schema for the Orienting Basis of Action (SCOBA). The idea is that the knowledge functions as a resource that learners draw on to orient (i.e., plan and implement) a particular action, verbal or otherwise. As far as I can determine, there is no perfect SCOBA for a given concept. Teachers need to experiment, taking account of student reactions and even recommendations for improving the representation. More recently, researchers led by Goldin-Meadow and her colleagues (e.g., Zhen, et al., 2019) have explored the impact of gesture as embodied learning inside and outside of school settings. The advantage of gesture with regard to SCOBA representations is that one can in a real sense carry the representation in one’s body. I will show an example of this later in the discussion.

As explained in the Table 2, verbalization, or what Swain (2006) terms ‘languaging’, is about using language with a cognitive rather than a purely social communicative function. In Vygotsky’s theory, speaking (and writing) are phases in the internalization process. It is how the symbolic artifacts that communities develop over the course of history are appropriated and transformed into psychological functions. Accordingly, speaking that is initially social (I ~ You) begins to take on a psychological function, even though in appearance it remains social (Vygotsky, 1987). Over time, social speech takes on a non-social appearance as it becomes highly abbreviated and difficult for some would-be interlocutor to interpret as it transitions to an I ~ Me dialogue (Vocate, 1994). Gal’perin proposed that the two subphases of languaging functioned for learners to transition away from reliance on the external representation of a concept—the SCOBA—and toward the psychological internalization of the concept as indicated in the final phase (6).

It turns out that an effective complement to the languaging phase, which also helps learners display their understanding of a concept is student-generated SCOBAs. This activity is not only informative for a teacher, as it reveals how students are thinking about the concept and provides additional information that may not come to the surface during languaging. In addition, it also helps students organize their own thinking regarding a concept. A study by Qin, Ouyang, and Ren (2023) demonstrated the usefulness of linking languaging with student generated SCOBAs. One of the important findings of the research is the difference in the relatively disorganized knowledge illustrated in lower-level student SCOBAs when compared to the

more structured knowledge depicted in SCOBAs produced by higher-level students. This does not mean that the disorganized knowledge is a problem. On the contrary, it is part of the process through which knowledge becomes organized. Learners (and teachers) benefit from visually observing what their knowledge looks like and they can appreciate what needs to be done to organize it into useful knowledge. As reported in Qin, Quyang, and Ren (2023) novice learners either generated highly fragmented and disorganized SCOBAs or often copied the teacher's SCOBA rather than producing one of their own. This indicates that they are still in the early phase of appropriating the concept and more mediation is needed. More advanced learners produced their own unique and systematically organized representations.

Phase 5 must connect conceptual knowledge with concrete communicative (spoken and written) activities. While such activities might include what is typically done in communicative classrooms, including task-based learning, games and play, I believe that the use of drama as a pedagogical tool is an especially effective means of promoting the development and creative use of conceptual knowledge. In fact, Vygotsky often referred to psychological development as a drama consisting of conflicts, dissonance, emotion, with surprising twists and turns. He captured this in the concept of *perezhivanie* understood as the dialectical unity of emotion and cognition (see Sukhikh, Veresov, & Veraksa, 2022).

Di Pietro (1987) proposed an approach to drama-based instruction called Strategic Interaction (SI) that brings out the conflict at the core of any drama in which participants are assigned roles where each actor knows only their own motive for an interaction, and only in the interaction do they discover the motive provoking their interlocutor. In some DUB studies (e.g., Verspoor & Hong, 2013) movie clips have been used to provide learners with implicit exposure to L2 lexical and grammatical features. The clips are repeatedly shown to learners in a stepwise procedure in order help them understand what is going on in a particular scene as a way of supporting their recall of specific words and expressions (p. 35). I believe that the integration of movie clips can be an effective means of motivating learners and of fulfilling the goal of phase 5. Leaving aside the specifics of each step, as implemented in DUB, the final step in which learners either role-play or write about a particular scene (p. 35) can be modified to reflect the aim of SI, which is to go beyond role-play and develop alternative interactions based on a scene that allows creativity to come to the fore. Van Compernolle (2014) made extensive and effect use of scenarios in his study on L2 learners' development of the pragmatics of French vocative and first-person plural pronouns and negation.

Another especially creative approach to drama-based activity emerges from improvisational theatre. Holzman (2009, p. 61) notes that improv means "without preparation", "spontaneous" or "unexpected" (p. 61). It "is a performance art in which an ensemble of actors creates scenes or stories without a script" with the actors working "off each other to create the stage, characters and plot—to go anywhere and make anything happen" (p. 61). It very much resembles the kind of play that children engage in as described by Vygotsky (1978). In play children are emancipated from the constraints of immediate concrete reality but at the same time they behave according to the emergent rules of the play activity, which means they must often act counter to their "immediate impulse" (p. 99). In play, children begin to experience what it is like to be other than what they are in reality. In essence, play creates a zone of proximal development that empowers them to behave beyond their "average age" as if they were "a head taller" than what they are (p. 103). Improv, much like play in childhood, opens

space where participants can experience feelings, emotions, and ways of thinking and behaving that they may have not previously experienced, essentially opening a zone for adult development. For additional discussion of performance drama and improv in educational praxis, see Davis, et al., (2015).

All of the phases ultimately lead to phase 6 where the developmental process is finalized as learners internalize the concept and are able to not only understand it but to functionally and effectively use the concept without recourse to external forms of mediation either from another person, from a SCOBA, or from their own languaging. However, if they encounter unexpected difficulties, they should know how to resolve it on their own. The value of the dialectical focus on development as outlined here is performance with understanding.

C-BLI Pedagogical Studies

In this section I will briefly describe some C-BLI research that addresses two of the complex language features mentioned earlier—word order and verbal aspect. To be sure, space does not permit detailed consideration of the research, but I will nevertheless highlight those aspects that illustrate some of the phases described in the preceding section.

Topicalization in Chinese: Challenge to the Teachability Hypothesis

Zhang and Lantolf (2015) report on a pedagogical study conducted by Zhang (2014) on topicalization in Chinese designed to assess the Teachability Hypothesis proposed by Pienemann (1989), which argues that some language features, including word order in Chinese, must proceed through a predictable sequence determined by learner-internal mechanisms that are unaffected by instruction. Briefly, canonical word order in Chinese is S (Adv) (Adv) V O. Topicalization permits Objects and Adverbs to appear in utterance initial position. Thus, a topicalized alternative to the canonical utterance *Wǒ chīle píngguǒ* 'I ate an apple' is *Píngguǒ, wǒ chīle* 'An apple I ate.'[NB: the comma indicates a pause (#) typical in the spoken language]. Temporal and locative adverbs may also be topicalized as in *Zuótiān, wǒ píngguǒ chīle* 'Yesterday, I ate an apple'. The order predicted for acquisition of Chinese topicalization is given in Table 3

Table 3

Developmental Stages for Chinese Topicalization

Stage	Illustration
1. S ADJ ADJ V O	Xian yesterday at home ate an apple
2. ADJ S ADJ V O	Yesterday Xian at home ate an apple
	At home Xian yesterday ate an apple
3. O S ADJ ADJ V	An apple Xian yesterday at home ate

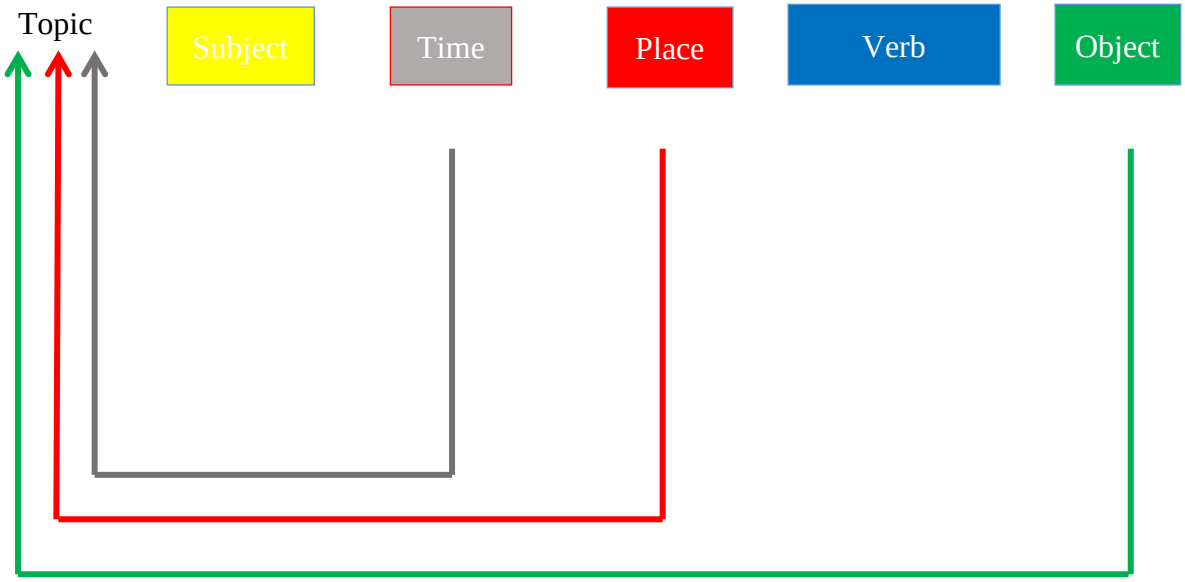
The prediction is that learners must acquire stage 1 before stage 2 and stage 2 before stage 3. Zhang's study demonstrated that through C-BLI learners were able to acquire stage 3 before stage 2 as well as stages 2 and 3 simultaneously. The performance of the learners was assessed using several communicative activities, including cartoon descriptions, questions and answers, and free conversation.

The study deployed two types of SCOBAs to materialize the conceptual knowledge (phase 3) that in Chinese speakers can communicate their construal of a particular component of an

event as salient by positioning the relevant constituent at the head of an utterance, as illustrated in Table 3. One SCOBA was an animated PPT cartoon which showed a person, a picture of a clock (temporal adverb) and a home (locative adverb), and an apple that were variously moved from canonical to topical position. The second SCOBA presented in Figure 1 utilized Cuisenaire rods that were haptically manipulated to represent the topicalization options of Chinese.

Figure 1

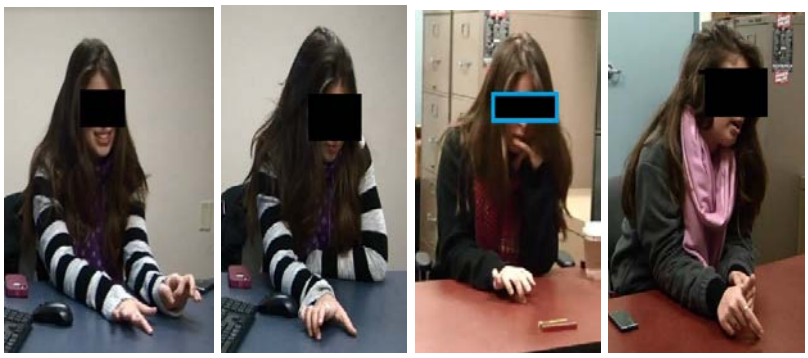
Haptic SCOBA for Chinese Topicalization



One of the most interesting outcomes observed in the study is the fact that one of the students, who had displayed a low working memory capacity on a pre-study test—a factor that could have inhibited her language development—performed as well as other learners with normal working memory capacity. The key to her success seemed to emerge from her use of gestures that imitated haptic movement of the rods to mediate her speaking performance. An example of the student's performance is shown in Figure 2.

Figure 2

Student Speaking with Gestures



The pictures show the student positioning her hands as if she were manipulating the rods. Notice that in the third frame, some of the rods are visible. In this way, she was able to

compensate for working memory problems. Research on gesture-speech interface shows that gesture can indeed lighten the load on working memory (Gillespie, James, Federmeier, & Watson, 2014). The fact that she had to rely on an external form of mediation shows that she had not yet completely internalized the concept of topicalization. On the other hand, her use of gestures is a powerful example of how they form of thinking can be used to mediate verbal performance. As McNeill (2005) argues, gesture and speech form a dialectical unity in which each contributes to the meanings one wishes communicate, which is why gesture can play a significant role in phase 3 of C-BLI.

Spanish Temporal Aspect

A recent article by Kissling and Muthusamy (2022) demonstrates use of the concept of 'boundeness' to explain the meaning and use of Spanish temporal aspect, a notorious problem for speakers of English. The students participating in the study were novice university learners of the language who had had minimal to no previous exposure to Spanish. Briefly, preterit aspect temporally bounds events as if they were containers, while imperfect aspect profiles events that are analogous to objects such as water when they are not restricted by containers. There are of course more complexities involved in understanding the concept, as the researchers/teachers explained to the students in phase 2. The materialization phase 3 used video SCOBAs to illustrate how boundeness functions to profile temporal meaning in Spanish. The video SCOBAs narrated a story that was initially related with all verbs in preterit and then repeated several times with aspect incrementally changed to imperfect with each iteration in order demonstrate how a speaker can shift construal of temporal events and profile these differentially for an interlocutor (p. 376). The SCOBAs can be viewed at (https://www.iris-database.org/).

The researchers detail student performance through all phases of instruction, including languaging for understanding as well as performance on written and spoken narrative tasks. As the researchers note, however, given the time constraints imposed on the study that was conducted as part of the regular Spanish instructional program some of the students failed to demonstrate full conceptual understanding of the concept of boundedness and in their view, more time might well have helped these individuals more fully develop their knowledge (p. 383). Learner performance on written and spoken narratives significantly improved as a result of instruction with most learners assessed at 80% appropriate use of aspect, while six learners were assessed at 100% appropriate use.

In an extension of the Spanish aspect study, Kissling (to appear) reports results that seem to challenge the previously well-documented Aspect Hypothesis proposed by Andersen (1991). According to the hypothesis, beginning L2 learners follow a predictable sequence in acquiring temporal aspect initially relying on inherent aspect and then expanding aspect marking that does not match inherent aspect of an event or state. For preterit this means beginning with achievement events and concluding with states, while imperfect first appears with states and ends with achievements. Kissling compared the performance of beginning C-BLI learners with a corpus of L2 learners at different proficiency levels and with a group of L1 speakers of the language. The more proficient learners represented in the corpus followed the AH prediction, while the novice C-BLI group produced non-prototypical imperfect forms at a rate that was closer to what intermediate and advanced learners in the corpus produced, although on the

immediate post-test they were different from L1 speakers. On the delayed post-test administered after 10 weeks, however, the learners approached L1 use of imperfect aspect. With regard to preterit, the C-BLI learners were better than beginning and were similar to intermediate learners in the corpus data but they did not yet approach the advanced corpus group or the L1 speakers.

Conclusion

In this article I have argued for the value of explicit language instruction. In this regard I would like to repeat the observation of VanPatten and Smith (2022) that SCT deals with language instruction as educational subject matter. This is indeed an appropriate way of looking at SCT's orientation to the topic. I believe the argument is supported by L2 ERP research as well as by the proposal regarding cultural evolution of human pedagogy. If, as argued by Ullman and Paradis, the PM system declines and the DM system grows as we age, it makes a lot of sense to expose late language learners to explicit instruction. However, as I showed in the discussion of C-BLI this instruction does not rely on the "kinds of rules and structures that classroom learners find in textbooks" (VanPatten & Smith, 2022, p. 26). Such rules are often interpreted by teachers and students the same way that an instruction in a computer program is interpreted—as a cause of some output. Rules, according to Harré (2002, p. 125), are "conventions, customs and habits" that reflect "norms in everyday life." While norms are important, they are clearly not commands for how one *must* behave. Indeed, those who are able to disrupt norms we often celebrate for their creative prowess. As argued in O'Madagain and Tomasello (2021), challenges to norms and accepted wisdom were crucial for the evolutionary enhancement of human cultures. As this happened, humans not only developed the proclivity to teach future generations but to teach them in different and more effective ways, including most importantly, explaining the reasons underlying particular behaviors.

According to Voloshinov (1973), because structural linguistic theory, at least as far back as Saussure, has focused its attention on isolated sentences rather than dialogic utterances we are left with a linguistics of "stable and always self-equivalent "*signals*" that are "internally fixed" and do not "stand for anything else, or reflect or refract anything" but instead serve as "a technical means for indicating this or that object or this or that action" (Voloshinov, 1973, p. 110 and p. 68). In traffic signals, for instance, red always indicates stop and green always indicates go. In a linguistics of *signs*, (Voloshinov, 1973, p. 68) signs are socially constructed, "always changeable and adaptable" and manifest a "speaker's point of view" (i. e, construal of a reality). Traditional pedagogical rules point to language as a set of inflexible signals that demand recognition of their *identity* no matter the context in which they occur. Signs, on the other hand, must be understood, which demands recognition of their "novelty" in a "particular context" (Voloshinov, 1973, p. 69).

Yáñez-Prieto (2014) demonstrated that learners have the capacity to use language in unanticipated and creative ways, (i.e., create signs), if provided with appropriate resources and guidance and are liberated from their suppositions inculcated in previous educational experiences that there are only right and wrong ways of doing things. Conceptual knowledge provides the resources necessary for creative use of language because the concepts are motivated by meaning rather than form and therefore function as a resource to profile events and objects for interlocutors in accordance with the speaker's construal of reality. Through

instruction concepts as units of instruction promote dialectical interaction between understanding and performance to enhance language development that allows for creative rather than so-called "correct" (i.e., native-speaker norms) use of language.

The impression I come away with from reading DUB literature, and I could be wrong, and if so, I stand corrected, is that because focus is on internalization of conventionalized form-meaning pairings in specific contexts, there seems to be little room for creativity and the creation of signs rather than signals as described by Voloshinov. Verspoor and Schmid (in press) discuss creativity but only with respect to beginning learners' way of expressing a particular structure when they lack the knowledge and ability to use appropriate target language constructions. The following comments from Verspoor and her colleagues, I believe, supports this contention: "a beginning L2 Finnish learner may not yet have noticed or acquired the form of this [existential] construction and may therefore use creative linguistic solutions to express a similar meaning"; "However, before any pedagogical intervention, learners may want to express this meaning, and so they need to rely on creative linguistic solutions that may not be conventionalized in the target-language speaking community" (Lesonen, et al., 2022, p. 2). Indeed, they suggest that in the early stages of L2 development it may be more effective for learners to "repeat, imitate, and reuse" what they hear (and presumably see) than it is to encourage them to be creative (Verspoor & Schmid, in press). They point out that language comprises a "large array of conventionalized utterances that have a certain meaning in a certain context," which seems to imply that learners need to internalize the utterances along with the contexts where they are appropriately used. On the other hand, internalizing the conceptual meaning of features such as mood, aspect, word order, and figurative language, not addressed here (see Kim & Lantolf, 2018; Wang, 2023) with opportunities to use such features in open-ended activities such as Strategic Interaction, improv and other forms of drama, empowers learners to experiment and create with the language rather than adhere to so-called native-speaker conventionalized norms. This kind of creativity results not from a lack of L2 knowledge, but as a consequence of conceptual knowledge, as is illustrated in Yáñez-Prieto's (2014) study mentioned earlier.

As was noted in the C-BLI studies reviewed here, the model challenges the claim that the key mechanisms that guide language development are learner internal. In this regard, the predictions of the Teachability Hypothesis and the Aspect Hypothesis were called into question as learners in each study produced language that failed to adhere to the acquisition order predicted by the respective hypotheses. Of course, there are aspects of any language that are relatively fixed (e.g., articles follow nouns in English, Spanish, German, Italian), but such conceptual meanings as temporal aspect, word order, mood, modality, article use, etc. are not. Consequently, to treat language as a set of fixed rules undermines opportunities for creative use of our most powerful social and psychological tool.

Finally, a significant implication of C-BLI is that teacher education programs need to make room for instruction on language that highlights concepts over traditional textbook rules. This requires the introduction of courses that provide teachers with appropriate knowledge to be able to implement a conceptually oriented pedagogy. In this regard, it is not sufficient to substitute courses in formal structurally-based linguistics with courses in theories such as Cognitive Linguistics, Systemic-Functional Linguistics, or Integrational Linguistics. The courses must focus on the development of teacher knowledge for pedagogical purposes, much

as is done in mathematics and science teacher preparation programs. The goal is not to prepare teachers to become linguists but to be able to make concepts pedagogically functional; that is, represented for students in ways that are simple, appropriate, memorable, and communicatively functional, and open to creativity.

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References

Aljaafreh, A., & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *The Modern Language Journal, 78*(4), pp. 465-483. https://doi.org/10.1111/j.1540-4781.1994.tb02064.x

Andersen, R. W. (1991). Developmental sequences: The emergence of aspect marking in second language acquisition. In T. Huebner & C. A. Ferguson (Eds.), *Crosscurrents in second language acquisition and linguistic theories* (pp. 305–324). John Benjamins.

Arievitch, I. M. (2017). *Beyond the brain: An agentive activity perspective on mind, development, and learning*. Sense Publishers.

Bakhurst, D. (2007). Vygotsky demons. In H. Daniels, M. Cole, & J. V. Wertsch (Eds.). *The Cambridge companion to Vygotsky* (pp. 50-76). Cambridge University Press.

Cole, M. (2009). The perils of translation: A first step in reconsidering Vygotsky's theory of development in relation to formal education. *Mind, Culture, and Activity. An International Journal. 16*(4), 291-295.

Davis, S., Ferholt, B., Clemson, H. G., Jansson, S-M., & Marjanovic-Shane (2015). *Dramatic interactions in education. Vygotskian and sociocultural approaches to drama, education and research.* Bloomsbury.

DeKeyser, R. M. (2020). Skill acquisition theory. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition. An introduction (3rd edition)* (pp. 83-104). Routledge.

Di Pietro, R. J. (1987). *Strategic interaction*. Cambridge University Press.

Ellis, N. (2015). Implicit and explicit language learning. Their dynamic interface and complexity. In R. Rebuschat (Ed.), *Implicit and explicit learning of languages* (pp. 4-23). John Benjamins.

Farley, A. P. (2001). Authentic processing instruction and the Spanish subjunctive. *Hispania, 84*(2), 289-299.

Freunberger, D., Bylund, E., & Abrahamsson, N. (2022). Is it time to reconsider the 'gold standard' for nativelikeness in ERP studies on grammatical processing in a second language? A critical assessment based on qualitative individual differences. *Applied Linguistics, 43*(3), 433-452. https://doi.org/10.1093/applin/amab058

Gal'perin, Ia. (1992). Stage-by-stage formation as a method of psychological investigation. *Journal of Russian and East European Psychology*, *30*(4), 60-80.

Gibbs, R. W., Jr. (2017). *Metaphor wars: Conceptual wars in human life*. Cambridge University Press.

Gillespie, M., James, A. N., Federmeier, K. D., & Watson, D. G. (2014). Verbal working memory predicts co-speech gesture: Evidence from individual differences. *Cognition, 132*(2), 174-180. https://psycnet.apa.org/doi/10.1016/j.cognition.2014.03.012

Haenen, J. (1996). *Piotr Gal'perin: Psychologist in Vygotsky's footsteps*. Nova Science Publishers.

Hamrick, P., Lum, A. G., & Ullman, M. T. (2018). Child first language and adult second language are both tied to general-purpose learning systems. *Proceedings of the National Academy of Sciences of the University States of America, 115*(7), 1487-1492.

Harré, R. (2002). *Cognitive science: A philosophical introduction*. Sage.

Hernández, T. (2011). Re-examining the role of explicit instruction and input flood on the acquisition of Spanish discourse markers. *Language Teaching Research, 15*(2), 159-182. https://doi.org/10.1177/1362168810388694

Holzman, L. (2009). *Vygotsky at work and play*. Routledge.

Kim, J., & Lantolf, J. P. (2018). Developing conceptual understanding of sarcasm in L2 English through explicit instruction. *Language Teaching Research, 22*(2), 208-229. https://doi.org/10.1177/1362168816675521

Kissling, E. (to appear). Can concept-based language instruction change beginning learners' aspectual development ? Preliminary experimental evidence that novice learners taught *boundedness* as less influenced by lexical aspect. *Journal of Applied Linguistics and Applied Literature: Dynamics and Advances*. Special Issue.

Kissling, E., & Muthusamy, T. (2022). Exploring boundedness for concept-based instruction of aspect: Evidence from learning the Spanish preterite and imperfect. *The Modern Language Journal, 106* (2), 371–392. https://doi.org/10.1111/modl.12778

Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Pergamon Press.

Langacker, R. (2013). *Essentials of cognitive grammar*. Oxford University Press.

Lantolf, J. P. & Poehner, M. E. (2014). *Sociocultural theory and the pedagogical imperative in L2 education: Vygotskian praxis and the research/practice divide.* Routledge.

Larsen-Freeman, D. E. (1976). An explanation for the morpheme acquisition order of second language learners. *Language Learning, 26*(1), 125-134. https://doi.org/10.1111/j.1467-1770.1976.tb00264.x

Larsen-Freeman, D. E. (1997). Chaos/complexity science and second language acquisition. *Applied Linguistics, 18*(2), 141-165. https://doi.org/10.1093/applin/18.2.141

Larsen-Freeman, D. E. (2014). Teaching grammar. In M. Celce-Murcia, D. M. Brinton & M. A. Snow (Eds.), *Teaching English as a second or foreign language* (pp. 256-270). Heinle/Cengage Learning.

Larsen-Freeman, D. E. (2015). Research into practice: Grammar learning and teaching. *Language Teaching, 48*(2), 263-280. https://doi.org/10.1017/S0261444814000408

Larsen-Freeman, D. E. (2023). Complex dynamic systems theory: A webinar with Diane Larsen-Freeman. *Language Teaching, 56*(3), 402-419. https://doi.org/10.1017/S0261444822000362

Lee, H-W. (2012). *Concept-based approach to second language teaching and learning: Cognitive linguistics-inspired instruction of English phrasal verbs*. Unpublished doctoral dissertation. Pennsylvania State University, University Park, PA.

Lesonen, S., Steinkrauss, R., Suni, M., & Verspoor, M. (2022). Variation and variability in L2 learning trajectories: Learning the Finnish existential construction. *Journal of the European Second Language Association, 6*(1), 1-17. https://doi.org/10.22599/jesla.77

Long, M. H. (1997). Construct validity in SLA research: A response to Firth and Wagner. *The Modern Language Journal, 81*(3), 318-323. https://doi.org/10.2307/329306

Luria, A. R. (1967). 'Brain and conscious experience': A critical notice from the U.S.S.R. of the symposium edited by J. C. Eccles (1966). *British Journal of Psychology, 58*(3), 467-476.

Luria, A. R. (1976). *Cognitive development: Its cultural and social foundations. (Trans M. Lopez-Morillas & L. Solotaroff).* Harvard University Press.

McNeill, D. (2005). *Gesture and thought*. University of Chicago Press.

Morgan-Short, K., Hamrick, P., & Ullman, M. T. (2022). Declarative and procedural memory as predictors of second language development. In S. Li, P. Hiver, & M. Papi (Eds.), *The Routledge handbook of second language acquisition and individual differences* (pp. 67-81). Routledge.

Morgan-Short, K., Sanz, C., Steinhauer, K., Ullman, M. T. (2010). Second language acquisition of gender agreement in explicit and implicit training conditions: An event-related potential study. *Language Learning 60*(1), 154-193. https://doi.org/10.1111/j.1467-9922.2009.00554.x

Morgan-Short, K., Steinhauer, K., Sanz, C., & Ullman, M. T. (2012). Explicit and implicit second language training differentially affect the achievement of native-like brain activation patterns. *Journal of Cognitive Neuroscience 24*(4), 933-947. https://psycnet.apa.org/doi/10.1162/jocn_a_00119

Negueruela, E. (2003). *A sociocultural approach to the teaching and learning of second languages: Systemtic-theoretical instruction and L2 development.* [Unpublished doctoral dissertation]. The Pennsylvania State University.

O'Madagain, C., & Tomasello, M. (2022). Shared intentionality, reason-giving and the evolution of human culture. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 377*(1843), 20200320. https://doi.org/10.1098/rstb.2020.0320

Paradis, M. (2009). *Declarative and procedural determinants of second languages*. John Benjamins.

Pienemann, M. (1989). Is language teachable? Psycholinguistic experiments and hypothesis. *Applied Linguistics, 10*(1), 52-79. https://doi.org/10.1093/applin/10.1.52

Qin, L., Ouyang, X., & Ren, W. (2023). Decoding EFL learners' internalization of English modal verbs in concept-based language instruction: Integrating SCOBAs with languaging. *The Modern Language Journal, 107*(S1), 24-45. https://doi.org/10.1111/modl.12821

Rousse-Malpat, A., Steinkrauss, R., Wieling, M., & Verspoor, M. (2022). Communicative language teaching: Structure-based or dynamic usage-based? *Journal of the European Second Language Association, 6*(1), 20-33. https://doi.org/10.22599/jesla.86

Rousse-Malpat, A., & Verspoor, M. (2012). Measuring effectiveness in Focus on Form versus on Meaning. *Dutch Journal of Applied Linguistics, 2*(1), 263-276. https://doi.org/10.1075/dujal.1.2.07rou

Schubert, J. (1983). The implications of Luria's theories for cross-cultural research on language and intelligence. In B. Bain (Ed.), *The sociogenesis of language and human conduct* (pp. 59-78). Plenum Press.

Spoelmann, M., & Verspoor, M. (2010). Dynamic patterns in development of accuracy and complexity: A longitudinal case study in the acquisition of Finnish. *Applied Linguistics, 31*(4), 532-553. https://doi.org/10.1093/applin/amq001

Sukhikh, V. L., Veresov, N. N., & Veraksa, N. E. (2022). Dramatic perezhivanie as a driver of executive functions development through role-play in early childhood: Theoretical framework and experimental evidence. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.1057209

Sutton, A. (1980). Backward children in the USSR: An unfamiliar approach to a familiar problem. In M. Brine, M. Perrie, & A. Sutton (Eds.), *Home, school and leisure in the Soviet Union* (pp. 160-191). George Allen & Unwin.

Swain, M. (2006). Languaging, agency and collaboration in advanced language proficiency. In H. Byrnes (Ed.), *Advanced language learning: The contribution of Halliday and Vygotsky* (pp. 95-108). Georgetown University Press.

Tagarelli, K., Ruiz, S., Vega, J., & Rebuschat, P. (2016). Variability in second language learning: The roles of individual differences, learning conditions, and linguistic complexity. *Studies in Second Language Acquisition, 38*(2), 293-316. https://doi.org/10.1017/S0272263116000036

Talyzina, N. (1981). *The psychology of learning*. Progress Press.

Trahey, M., & White, L. (1993). Positive evidence and preemption in the second language classroom *Studies in Second Language Acquisition, 15*(2), 181-204. https://doi.org/10.1017/S0272263100011955

Ullman, M. T. (2001). The neural basis of lexicon and grammar in first and second language: the declarative/procedural model. *Bilingualism: Language and Cognition, 1*(2), 105-122. https://doi.org/10.1017/S1366728901000220

Ullman, M. T. (2005). A cognitive neuroscience perspective on second language acquisition: The declarative/procedural model. In C. Sanz (Ed.), *Mind and context in adult second language acquisition: Methods, theory, and practice* (pp. 141-158). Georgetown University Press.

Ullman, M. T. (2020). The declarative/procedural model: A neurobiologically motivated theory of first and second language. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition: An introduction (3rd edition)* (pp. 128-161). Routledge.

Van Compernolle, R. A. (2014). *Sociocultural theory and L2 instructional pragmatics*. Multilingual Matters.

VanPatten, B. (2020). Input processing in adult L2 acquisition. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition: An introduction. (3rd edition)* (pp. 105-217). Routledge.

VanPatten, B., & Smith, M. (2022). *Explicit and implicit learning in second language acquisition.* Cambridge University Press.

Verspoor, M., & Hong, N. T. P. (2013). A dynamic usage-based approach to communicative language teaching. *European Journal of Applied Linguistics, 1*(1), 22-54.

Verspoor, M., & Hong, N. T. P. (2015). A dynamic usage-based approach to second language teaching. In T. Cadierno & S. W. Eskildsen (Eds.), *Usage-based perspectives on second language learning* (pp. 305-327). De Gruyter.

Verspoor, M., & Schmid, H-J. (in press). What counts as usage in dynamic usage-based models. In K. McManus (Ed.), *Usage in second language acquisition: Critical reflections for theory and research*. Routledge.

Verspoor, M. H., & Schmitt, N. (2013). Language and the lexicon in SLA. In P. Robinson (Ed.), *The Routledge encyclopedia of second language acquisition* (pp. 353–360). Routledge.

Vesterinen, R. (2012). Control and dominion: Factivity and mood choice in Spanish. *Language and Cognition, 4*(1), pp. 43-64.

Vocate, D. (1994). Self-talk and inner speech: Understanding the uniquely human aspects of intrapersonal communication. In D. Vocate (Ed.), *Intrapersonal communication. Different voices, different minds* (pp. 3-32). Erlbaum.

Voloshinov, V. N. (1973). *Marxism and the philosophy of language*. Seminar Press.

Vygotsky, L. S. (1978). *Mind in society. The development of higher psychological processes*. Harvard University Press.

Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky. Volume 1. Problems of general psychology. Including the volume Thinking and speech*. Plenum.

Vygotsky, L. S. (1994). The problem of the environment. In R. van der Veer & J. Valsiner (Eds.), *The Vygotsky reader* (pp. 338-354). Blackwell.

Vygotsky, L. S. (1997a). *The collected works of L. S. Vygotsky. Volume 3. Problems of the theory and history of psychology*. Plenum.

Vygotsky, L. S. (1997b). The collected works of L. S. Vygotsky. Volume 4. *The history of the development of higher mental functions*. Plenum.

Vygotsky, L. S. (1998). *The collected works of L. S. Vygotsky. Volume 5. Child psychology*. Plenum.

Wang, T. (2023). *The concept of conceptual metaphor as a psychological tool for L2 development: A conceptual metaphor theory-informed concept-based language instruction.* [Unpublished doctoral dissertation] The Pennsylvania State University.

Wertsch, J. V. (2007). Mediation. In M. Cole, H. Daniels, & J. V. Wertsch (Eds.), *Cambridge companion to Vygotsky* (pp. 178-192). Cambridge University Press.

White, B. J. (2011). *In search of systematicity: A conceptual framework for the English article system*. [Unpublished doctoral dissertation]. Michigan State University.

White, B. J. (2012). A conceptual approach to the instruction of English phrasal verbs. *The Modern Language Journal*, *86*(3), 419-438. https://doi.org/10.1111/j.1540-4781.2012.01365.x

Yáñez-Prieto, M.-del-C. (2014). *Sense* and subjectivity: Teaching literature from a sociocultural perspective. *Language and Sociocultural Theory*, *1*(2), 179-203. https://doi.org/10.1558/lst.v1i2.179

Zavershneva, E., & van der Veer, R. (2018). *Vygotsky's notebooks. A selection*. Springer.

Zhang, X. (2014). *Teachability and topicalization in L2 Chinese* [Unpublished doctoral dissertation]. The Pennsylvania State University.

Zhang, X., & Lantolf, J. P. (2015). Natural or artificial: Is the route of second language development teachable? *Language Learning*, *65*(1), 152-180. https://doi.org/10.1111/lang.12094

Zhen, A., Van Hedger, S., Heald, S., Goldin-Meadow, S., & Tian, X. (2019). Manual directional gestures facilitate cross-modal perceptual learning. *Cognition*, *187*, 178-187. https://doi.org/10.1016/j.cognition.2019.03.004