



Integration and Compatibility of Sociocultural Theory and Cognitive Linguistics for Second Language Lexicogrammar Instruction

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Abstract

In recent years, there has been a growing interest in bringing together Vygotskian sociocultural theory and cognitive linguistics for research on second language (L2) instruction. This paper explores the compatibility of the two theoretical orientations and finds that certain key assumptions within cognitive linguistics align well with sociocultural theory. Importantly, both theories hold similar positions on the relationship between language and cognition and on the influence of culture and the external physical world on language. Possible tension between the theories lies namely in their application to L2 pedagogy and research methodology for the classroom. In order to examine how sociocultural theory and cognitive linguistics are being integrated in L2 pedagogy, we review six recent empirical studies that are informed by both theories and that target the instruction of lexicogrammar in four different languages. We identify common themes and note challenges for future research. Finally, we make recommendations for the continued integration of sociocultural theory and cognitive linguistics for L2 instruction.

Keywords: Concept-Based Language Instruction (C-BLI), Cognitive Linguistics, lexicogrammar instruction, Sociocultural Theory

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Introduction

Over the last two decades, a growing number of second language (L2) researchers have argued for the integration of Vygotskian sociocultural theory (SCT) and cognitive linguistics (CL) in approaches to language instruction and research (e.g., Achard, 2008, 2018; Holme, 2007; Lantolf, 2006; Lantolf & Poehner, 2014; Masuda et al., 2015; Masuda, 2018; Tyler, 2012; White, 2012). In a clarion call, Lantolf and Poehner (2014) made a convincing argument to integrate SCT and CL within *systemic theoretical instruction* (Gal'perin, 1969, 1992), commonly referred to as concept-based language instruction (C-BLI).¹ While CL provides the linguistic theory, SCT offers a theory for development and learning. There has been particular interest in such an integrative methodology for the instruction of lexicogrammar, where traditional rules of thumb prove inadequate for developing learners' control of lexicogrammatical items (Negueruela, 2003) including tense markers, modal verbs, and polysemous items. Here cognitive linguists' commitment to grammar as conceptualization (Langacker, 2000, 2008) and to the idea that knowledge of language emerges from language use (Croft & Cruse, 2004; Bybee, 2008; Langacker, 2000) promises to contribute to a more meaningful instructional approach. This makes a sharp contrast with traditional approaches that present decontextualized lexicogrammatical items in a piecemeal fashion without explaining how the forms and meanings are systematically related.

In the present paper, we take a praxis approach by attending to the dialectic relationship between theory and practice (Vygotsky, 1997; Lantolf & Poehner, 2014). We first discuss the ontological assumptions of CL and whether these are commensurable with those of SCT. Where is there overlap and where are there potentially challenging tensions? We then turn to the practice of L2 research by examining six recent studies integrating SCT and CL. We are particularly interested in how theory is realized and reflected in the studies' research methodologies. How are language and cognition understood? How is language development operationalized? By asking these guiding questions, we expect to reveal consistencies and differences across the studies and to raise new inquiries on the theoretical compatibility between SCT and CL. Such consideration allows us to probe how practice informs theory.

Finally, we address the promise of continued integration of SCT and CL for L2 teaching and learning. Beyond detailing specific contributions that the reviewed studies make to teaching practice, we offer suggestions for future research. Through this paper, we aim to promote a robust dialogue between researchers in SCT and CL and to encourage more L2 instructors to adopt an integrative approach.

How well does Cognitive Linguistics fit with Sociocultural Theory?

This section first briefly introduces CL and then discusses its commensurability with SCT. Compatibilities and possible tensions between the two theories are addressed.

Cognitive Linguistics

CL is a broad theoretical approach that seeks to better understand the nature of human language by examining the cognitive operations humans employ while using language. In CL, language is fundamentally grounded in human cognition and as such is a reflection of processes of conceptualization (Langacker 2000, 2008).² This differs significantly from a Chomskian view that an innate universal grammar is unique to human beings and is separate from other forms of cognition. Wen and Taylor (2021) lay out nine “major guiding principles or fundamental hypotheses” (p. 2) for CL:

- Language is part of human cognition and not a separate cognitive faculty;
- Language is full of constructions that pair forms with meanings;
- Meaning is central to language;
- Meaning is constructed through conceptualization;
- Conceptualization is key to the structure of semantics;
- Conceptualization is embodied;
- Meaning is structured through encyclopedic knowledge of the world;
- Meaning is found in grammatical constructions; and
- Linguistic knowledge arises through language use.

There is no doubt that CL privileges the role of meaning in language. Geeraerts (2021) specifies three crucial aspects of linguistic meaning: 1) it does not objectively reflect the world, but rather reflects human perspective on the world, 2) it is dynamic and subject to change, and 3) it is based on human experience in the world (p. 24). From a CL perspective, all aspects of language are imbued with meaning.

Not surprisingly, because the central focus is on meaning, meaning-making activities, and how meaning is related to form in context, CL has appealed to applied linguists interested in improving L2 pedagogy. In particular, CL has been helpful in providing systematic meaningful explanations for traditional L2 lexicogrammar challenges through concepts such as metaphor, metonymy, schemata, prototypes, and semantic networks (Tyler, 2012). CL-inspired charts or diagrams are known to help L2 learners make sense of seemingly abstract linguistic points (Tyler, 2008; White, 2012; Masuda & Labarca, 2015; Dolgova Jacobsen, 2018, Arnett & Deifel, 2015; Lysinger, 2015). Taylor (1993) points out how several CL insights can inform pedagogical grammar so that instructors are not just teaching forms but also the conceptual structures associated with those forms³.

Verbal aspectual contrasts, for example, are challenging for even advanced L2 learners. From a CL perspective, human beings conceptualize events metaphorically as physical objects. That is, tense is situated on a metaphorical timeline like ‘time is space’ with present being conceived of as immediate, while

past as distal. Aspect entails how these event-objects are construed or viewed. They may be construed as bounded when viewed from an outside holistic perspective or as unbounded when viewed from an internal perspective (Janda, 2015). Applied CL L2 instruction is able to approach traditionally difficult grammar areas like verbal aspect through conceptualization and meaning. This provides welcome relief to L2 learners who find traditional rules of thumb for grammar somewhat arbitrary and who struggle to apply these rules when using the L2.

Compatibility of Cognitive Linguistics and Sociocultural Theory

Certain shared ontological assumptions suggest the compatibility of CL and SCT. Among these are the fundamental view that language is deeply intertwined with general cognition. For Vygotsky (1986), thought and speech merge in the development of the child, thus enabling adults to engage in what he calls verbal thought. On the CL side, Verspoor and Tyler (2009) state that language is employed to think, express meanings, focus attention, categorize, and make generalizations, as well as to communicate in socio-cultural contexts.

Another shared assumption is that culture influences language. CL and SCT both recognize the importance of social interaction and human activity on language structure. As such, for each of the two theoretical approaches, culture plays a part in the ontogenetic development of language within an individual as well as in the sociocultural development of a language over time.

Both CL and SCT share the basic tenet that concepts exist in the mind and that concepts function as psychological tools in cognition and communication. Language performance requires manipulation of concepts, categories, and constructions. An implication for L2 learning contexts is that changes in conceptualization (e.g., through new perspective taking and the adoption of new concepts) will yield better control of language. In SCT, scientific concepts are central in schooling where individual experience becomes re-analyzed and transformed via interaction with scientific knowledge, while spontaneous concepts are based in everyday practical experience (Vygotsky, 1986).

It is worth noting how the two theoretical approaches view the relationship between the physical world and conceptualization. In CL, our hands-on physical experience and social interaction in the world shape our construal of events and our linguistic concepts. In SCT, physical experience and social interaction drive the development of everyday concepts. By intentionally manipulating that experience and interaction (as in C-BLI), educators guide learners to internalize scientific concepts.

C-BLI offers an excellent example of SCT's compatibility with CL. Through this particular pedagogical approach (for an example, see Negueruela & Lantolf, 2006), an instructor first establishes the learners' awareness of a target concept before reorienting the learners' orientation toward the concept through a SCOPA, an acronym that stands for *Schema of a Complete Orienting Basis of an Action* (Gal'perin, 1969, 1992). The SCOPA is meant to transform the concept from an abstract thought to material form and to guide learners' use of the concept. The

SCOBA may take the shape of a diagram, an image, a physical model, a flowchart, a video, an animation, a gesture, or some other materialization allowing learners to interact physically with it. Learners complete activities or tasks in which the SCOBA aids their performance. Through a verbalization stage, learners discuss their use of the concept / SCOBA with others before moving on to individual reflection. Over time learners come to rely less and less on the physical SCOBA in performance of the activities. The aim is that through these steps learners appropriate or internalize the target concept as a psychological tool. Mirroring CL's assertion that language develops from our physical and social interaction in the world, C-BLI follows a progression from material and social to psychological. Furthermore, CL concepts, such as the schema for a particular grammar construction, serve well as instructional targets for C-BLI and are easily materialized.

Both CL and SCT place considerable importance on conceptual symbols and on the flexibility with which individuals use those symbols. For example, Langacker (1987; 2002) analyzes grammar as made up of a great many meaningful constructions varying in degree of abstractness and arrived at over sustained exposure through language use. These constructions are symbols allowing the individual to choose among various construals during language use. As Achard (2018) puts it,

By treating the target grammar as a set of symbolic resources that speakers select to fit their interactive needs, the cognitive linguistics model frees speakers from a rigid system of rules to highlight the amount of control they enjoy over their own linguistic production. (p. 59)

Similarly, from a SCT perspective, Voloshinov (1973) emphasizes that linguistic forms are not fixed in the sense of x always equals y ; rather, linguistic forms are adaptable based on the individual's communicative situation and needs. As Lantolf and Thorne (2006) explain, "It is in the tension between meaning potential (collaboratively constructed by a culture and made available to its members) and concrete communicative practice of individuals that meaning, or what Vygotsky called 'sense', is actualized" (p. 9).

Tensions between Cognitive Linguistics and Sociocultural Theory

Tension between CL and SCT tends to appear in their applications to language pedagogy. Foremost is the observation made by Lantolf and Poehner (2014) that "applied CL . . . does not have a sound theory of developmental education" (p. 72). While CL explanations for linguistic phenomena may be systematic, the way CL researchers employ those explanations in L2 instruction is not consistent. It is not enough simply to present CL-inspired concepts in the classroom with the expectation that they will be understood and memorized by students.

Vygotsky (1986) notes "a concept is more than the sum of certain associative bonds formed by memory, more than a mere mental habit; it is a complex and genuine act of thought that cannot be taught by drilling" (p. 149). More

than simple learning, the aim of C-BLI is development through internalization of concepts. Negueruela (2008, p. 193) argues that internalization can be fostered by learners “thinking through the concept” as they engage in pedagogical tasks. Activity within the tasks expands connections between an internalized concept and its functional use, strengthening the connection of conceptual content and conceptual functionality. In effect, there is a dialectical relationship between concept and use.

Applied CL is less committed to a specific pedagogy or, perhaps, even to the goals of instruction. Achard (2018) writes that CL posits two seemingly contradictory views: “grammar as concept” and “the grammar as usage” (p. 37). The former view, like C-BLI, endorses deductive and explicit presentation of lexicogrammatical constructions, while the latter advocates an emergent, inductive, and implicit type of instruction. CL concept-based approaches to L2 instruction present metalinguistic knowledge often through schematic diagrams, for instance, in order to teach novel linguistic categorization or meaning motivation. Meanwhile, usage-based approaches expect L2 learners to become aware of the patterns of form-meaning pairing through exposure to a large number of instances. According to Achard (2008), CL itself does not favor explicit over implicit instruction or vice versa. He posits that both are available as strategies for teachers (Achard, 2018). In short, although CL provides useful analysis for language instruction, it does not endorse a specific type of language instruction or praxis.

It is important to note that in examining first language use, CL reveals cognitive operations like profiling, grounding, metaphor, and metonymy. These operations could be considered as spontaneous concepts since language users develop and utilize them through everyday participation in speech communities and not through formal education. From a SCT perspective, by introducing explicit attention to these operations in L2 instruction, they are reframed from spontaneous to scientific concepts. The challenge is not for students in C-BLI to learn something completely new—after all the students are already using these concepts in their first language. Rather, the challenge is to reshape the use of the cognitive operations to allow for greater control of the L2.

Further tension may be found in research methodologies. Because the foundation of SCT lies in developmental psychology, this approach tends to favor microgenesis and / or qualitative studies, where researches carefully document the learner's development of concepts over time via verbalization, known as *linguaging* (Swain, 2006). Thus, in this line of research focus is put on changes in the awareness and understanding of the target concepts. In contrast, following cognitive psychology or a linguistic sciences tradition, CL-oriented research tends to measure effectiveness of language instruction by statistically comparing two groups' scores, either comprehension and / or production (in experimental and control groups) as well as by gauging participants' perceptions in follow-up interviews. We will revisit this point in the following section, but individual development seems to be a secondary concern in CL.

Studies integrating Cognitive Linguistics and Sociocultural Theory

For present purposes, we consider six recent publications that report on efforts to combine elements of CL and SCT in L2 educational contexts. These studies, published between 2018 and 2022, target the instruction and learning of various lexicogrammatical constructions across a range of contexts.

Table 1

Overview of Recent Studies Integrating Sociocultural Theory and Cognitive Linguistics

Study	Language & Linguistic Targets	Participants & Context
Buescher and Strauss (2018)	French polysemous prepositions <i>à</i> , <i>dans</i> , and <i>en</i>	11 American university students and 11 teachers, Workshops outside regular instruction
Masuda and Labarca (2018b)	Japanese polysemous locative particles <i>ni</i> and <i>de</i>	28 American university students in 3 rd semester of Japanese
Lantolf and Tsai (2018)	English Verb + noun collocations for light verbs (e.g., <i>make</i> , <i>do</i>)	7 Taiwanese university students, a project outside regular instruction
Hill (2019)	English polysemous lexis (general vs. genre-specific meanings)	22 Japanese university students in advanced academic reading and writing courses
Poehner and Infante (2019)	English verb tense and aspect	1 L1 Arabic speaker seeking graduate study in USA, outside regular instruction
Kissling and Muthusamy (2022)	Spanish verb aspect	16 novice learners of Spanish regular course in USA

Buescher and Strauss (2018) report on two workshops held with university L2 learners of French and one workshop with French teachers. The purpose was to expose participants to graphic representations for the prepositions *à*, *dans*, and *en*. These conceptual representations are based on CL notions of *trajector* and *landmark*

(Langacker, 2002) and are meant to reflect core spatial meanings of the targeted prepositions. Participants were shown how the graphics could represent various uses of the prepositions and were then asked to choose appropriate prepositions for different contexts while verbalizing connections to the graphics. By administering pre- and post-tests, Buescher and Strauss were able to identify changes in students' conceptualization of preposition meanings as well as more appropriate use of the prepositions. The researchers also found that the teacher participants felt more confident in their own understanding of the prepositions and most teachers thought the approach would be effective with students.

Masuda and Labarca (2018b), part of a large study (see Masuda and Labarca 2015, 2018a), employ a quasi-experimental design to compare traditional and usage-based approaches for the instruction of polysemous particles *ni* and *de* in two third-semester Japanese courses at an American university. Participants in the usage-based approach experienced elements of C-BLI including materialization of concepts through SCOBAs as well as verbalization through pair work. The SCOBAs utilized CL concepts of *ground* and *figure* (Talmy, 2000) in color-coded schematic diagrams meant to represent four separate but related meanings or uses for each of the two locative particles. Further, the classroom presentation and diagrams highlighted the semantic connection and meaning motivations within the polysemy network for each of the two particles. During instruction, participants identified functions of the two particles within a short story, matched particle functions to the schematic diagrams in a second short story, and discussed particle use in their own previously written texts. The researchers found that participants in both the usage-based and the traditional groups improved their accuracy of particle use after instruction, but only the usage-based group was able to maintain their gain after 3 weeks. Questionnaires and interviews revealed that while many students in the usage-based group appreciated the *de* and *ni* schematic diagrams, some students struggled to understand them. Both groups valued paired interaction during instruction.

Lantolf and Tsai (2018) report findings on learner development from a larger study (Tsai, 2014) that employed a C-BLI approach to teach English verb-noun collocations to Taiwanese university students. The study targeted the verbs *make*, *do*, *take*, *get*, and *have* and demonstrated to students the metaphorical extensions from the verbs' literal prototypical meanings. Students applied SCOBAs (schematic illustrations representing the basic lexical semantics of each verb across space and time) to various uses of the verbs found in excerpts from the Corpus of Contemporary American English and explained connections between literal and metaphorical meanings, first in groups and then individually as homework. As part of the homework, participants also drew their own schematic illustrations to match individual uses of the verbs. After instruction, students showed dramatic improvement from a gap-fill pre-test to both an immediate and a one-week delayed post-test. Focusing on two of the participants, Lantolf and Tsai document changes in these participants' conceptual understanding of *do* and *make* through homework illustrations and interview data.

Hill (2019) examines the effectiveness of utilizing CL's concept of *motivated meaning extensions* to teach polysemous words in the context of advanced academic English courses at a Japanese university. Students in an experimental group compared everyday meanings to genre-specific meanings of given words by completing paired gap-fill activities. Handouts were included that represented the genre-specific meaning extension with arrows leading from general to more specific meaning. Each class period targeted words from a different genre (economics, politics, information technology, and science). Students in a control group, on the other hand, individually studied first everyday meanings for the same words in one class, followed by specific meanings within each of the four genres in subsequent classes. Through a pre-test and post-test format, it was found that participants in the control group did not improve on a definition-matching task while those in the experimental group did. Those same students, who performed the paired motivated extension activities during instruction, also performed better on a subsequent gap-fill task that required them to supply missing words in paragraphs from each of the four target genres. A further finding was that pairings of lower- and higher-level learners especially helped the lower-level learners make gains in their comprehension of polysemous words.

Poehner and Infante (2019) draw from a larger project (Infante, 2016) to report on the mediational interactions between one L2 English learner and the teacher-researcher. The project combined elements of C-BLI with the educational approach known as Mediated Learning Experience (Feuerstein, Feuerstein, & Falik, 2010) to provide instruction on the English verbal system. Drawing on CL research, Infante (2016) created a schematic graphic that visually represents separate event frames for the English tense-aspect system. In one-to-one meetings with the teacher-researcher (i.e., the mediator), the learner applied the schematic as a symbolic tool to analyze and interpret given sentences and then to review her own writing. The interactional data provided revealed steps the mediator took to guide the learner through various psychological actions in order to more fully understand and make use of the symbolic tool of the schematic graphic.

Kissling and Muthusamy (2022) explore the utility of teaching the CL concept of *boundedness* (Janda, 2015) to help beginner-level university L2 Spanish learners understand the preterite and imperfect aspects. Participants were instructed through a C-BLI approach that included videos and teacher gestures in the materialization phase. The videos provided different versions of the same story and used special animated imagery in order to exemplify the preterite as a bounded viewpoint and the imperfect as an unbounded viewpoint. Students verbalized their understanding of the concepts and applied the concepts to both gap-fill and communicative tasks. Through pre-tests, post-tests, and delayed post-tests, participants were asked to define relevant metalinguistic terms and to create oral and written narratives. The learners demonstrated more systematic knowledge and improved control of the preterite and imperfect after instruction.

Common Themes

In all of the six studies, we see researchers a) targeting the instruction of linguistic topics known to be frustrating for L2 learners, b) explaining these topics through CL concepts and ideas, c) attempting to materialize those concepts into pedagogical materials, d) engaging learners directly with the concepts through hands-on activities, and e) asking learners to verbalize their understanding of the concepts through social interactions and self-reflection. While not all of the studies explicitly state the use of C-BLI, they all employ materialization of concepts and verbalization among learners, key elements in SCT pedagogy. Learners, with the exception of those in Kissling and Muthusamy (2022), were at an intermediate to advanced level of L2 proficiency.

Each of the studies reports changes in learners' conceptual understanding, improvement in learners' control of the linguistic topic, or both. Changes in understanding were identified by various means. These included comments made in interviews, written questionnaires, oral and written explanations for linguistic choices on assigned tasks, and even student sketches. Control of the linguistic topics were also gauged through a variety of activities. These included gap-fill tasks (Buescher & Strauss, 2018; Masuda & Labarca; 2018b; Lantolf & Tsai, 2018; Hill, 2018), translation (Buescher & Strauss, 2018), written and oral personal narratives (Poehner & Infante, 2019; Kissling & Muthusamy; 2022), picture-prompted written stories (Masuda & Labarca; 2018b), and definition matching tasks (Hill, 2018).

As can be seen, the studies attempt to document participants' language development through both their verbalization and their performance on language tasks. Verbalization requires some type of reflection during or after conscious conceptual manipulation (García, 2018). While such reflection is able to shed light on changes in participants' understanding of the concepts, it does not reveal much about participants' functional application of those concepts. To do that, the researchers employ the tasks mentioned above, tasks that vary greatly. Some are more about language production while others comprehension. Some generate written responses while others oral responses. Some provide context through narratives while others only sentence-level context. Some ask participants to create their own narratives. There is obviously a significant difference between filling in the missing word in a sentence and telling a story to someone. No matter the task, we encourage researchers to place their focus less on assessing participants' responses as right or wrong and more on evaluating how participants are using instructed concepts in order to better guide their development. The technique of stimulated recall (Gass & Mackey, 2016) might prove useful here. For example, after completing a recorded narrative task or role-play activity, individual learners watch the recording of their performance and respond to queries from the researcher on specific uses (or non-uses) of instructionally targeted constructions.

Conspicuous across all of the studies are the short timeframes—from one day to six weeks. While C-BLI studies often focus on the introduction of new concepts to learners, Vygotsky (1986) reminds us “to introduce a new concept means just to start the process of its appropriation. Deliberate introduction of new

concepts does not preclude spontaneous development, but rather charts the new paths for it” (p. 152). Although the studies reviewed here document the beginnings of learners’ conceptual understanding⁴, these studies are unable to examine functional use of the concepts in more natural L2 activity as well as to chart more complete developmental paths of the learners.

Future Directions

As evidenced by the recent studies discussed here, we believe there is promise in the continued integration of SCT and CL. In particular, C-BLI offers an effective way to situate CL’s meaning-based analysis of language within a pedagogy centered on promoting conceptual development. To further investigate this SCT-CL integration and its effectiveness for L2 learning and teaching, we make the following suggestions for future research.

First, we urge L2 researchers to continue to explore the instruction and learning of traditionally challenging lexicogrammar topics through C-BLI. It is around these topics (e.g., polysemous prepositions / postpositions or verbal aspect) where the need for better instruction is most felt and where both teachers and students will appreciate a more meaningful concept-based approach to instruction. Further, it is to these very topics that CL is well suited to offer concepts and systematic explanations for difficult to explain or seemingly arbitrary linguistic patterns. The relevant research focus should be *obuchenie*, or learning and teaching (see Cole, 2009). To that end, we think it beneficial for more studies to include L2 instructors among their participants, as in Buescher and Strauss (2018).

Second, as researchers continue to pull concepts for instruction from CL, we encourage them to seek creative ways to materialize those concepts. SCOBAs need not be limited to two-dimensional diagrams on a paper handout or a projected slide. Concepts can be presented in a variety of ways reflecting the CL notion of language and cognition as embodied and shaped by the physical world. For example, in Kissling and Muthusamy (2022), gestures are used as a means of representing the concept of boundedness. The performative aspect of gestures, like that of drawing in Lantolf and Tsai (2018) or even of clay modeling in Serrano-Lopez and Poehner (2008), exploit the mimetic nature of human learning. Similarly, we encourage researchers to consider how technologies such as animation in slides (Masuda & Labarca, 2018b) and video recording (Arnett & Suñer, 2019; Suñer & Roche, 2019; Kissling & Muthusamy, 2022) can enhance the salience of SCOBAs.

We also recommend L2 researchers investigate the instruction of concepts that are relevant across linguistic constructions. For example, Masuda and Ohta (2021) and Masuda et al., (under contract) discuss how *subjective construal* is a foundational concept for a range of grammatical constructions in Japanese. They suggest that teaching this concept through C-BLI may help L2 learners better understand and use difficult constructions. Likewise, the concept of *boundedness* as applied in the instruction of verbal tense and aspect (Kissling & Muthusamy, 2022) could also be used when teaching other areas of grammar, including adjectives

(Paradis, 2001), nouns (Neiemier, 2008), and articles (White, 2018). Similarly, the concepts of *transitivity* and *prototype* can be useful in the instruction of the German case system (Arnett & Jernigan, 2004). The thought here is that if learners internalize unifying concepts early on, these concepts may enable learners to see connections across various aspects of the language, thus providing coherence and facilitating development. Here we see an opportunity for praxis, whereby the practice of instructing such concepts may inform both our theoretical understanding of language and learning.

If an important goal of C-BLI is for learners to internalize instructed concepts, we should strive for documentation of the entire developmental process. Many studies track only the beginnings of internalization, the initial change in L2 learners' conceptual understanding (e.g., Buescher & Strauss, 2018; Masuda & Labarca, 2018b; Lantolf & Tsai, 2018; Poehner & Infante, 2019; Kissling & Muthusamy, 2022). It would behoove researchers to incorporate more sustained C-BLI verbalization activities over a longer period of time⁵. Can we go beyond languaging and verbalization data on the front end of development and look more closely at the use of concepts over time? This should include more examination of learners' ability to generalize instructed concepts to new contexts, topics, and situations, which necessarily includes, as suggested by an anonymous reviewer, documenting overgeneralization and inappropriate use of concepts. More complete mapping of individuals' L2 development will inform our theorizing on the psychology of learning.

As Lantolf and Thorne (2006) suggest, "it is not enough to document internalization, we must also try to trace the reemergence of the language features focused on in private speech in social interaction" (p. 202). It is worth asking whether and how L2 speakers make use of internalized concepts during natural and spontaneous communication. Have the concepts, in fact, come to be psychological tools for L2 communication? Do proficient L2 speakers engage in automatic, effortless use of concepts that were initially taught through C-BLI?⁶ To pursue such questions, we especially need more longitudinal studies (Lysinger, 2015), time to track development carefully.⁷ More attention should be paid not just to the latter stages of L2 proficiency but also to the very beginning stages L2 learning, such as was done in Arnett and Suñer (2019), Arnett and Deifel (2015), and Kissling and Muthusamy (2022). By exposing beginner learners to C-BLI and following their development across proficiency levels, we will be better able to determine if early realignment of the learner's conceptual system leads to more efficient and successful L2 development. A more longitudinal approach should have important consequences for our teaching practice and theories of learning.⁸

With the above suggestions in mind, we revisit the six studies and offer specific recommendations for pedagogical extensions. We hope that doing so provides a clearer picture of what the continued integration of CL and SCT might mean for L2 pedagogy and research.

Table 2

Recommendations for Extensions of Recent Studies Integrating Sociocultural Theory and Cognitive Linguistics

Studies	Our Recommendations
Buescher and Strauss (2018)	The pedagogical treatment of <i>à</i> , <i>dans</i> , and <i>en</i> in this study could easily be extended from isolated workshops to regular classroom instruction within French courses. Pedagogy would be enhanced by adding internalization activities so that learners can engage in “thinking through the concept” (Negueruela, 2008, p. 193) of landmark and trajector. For instance, teachers / researchers can use a narrative pair-work activity where students collaboratively write stories based on a sequence of pictures provided or <i>dictogloss</i> (Swain & Lapkin, 1995), in which a short text is read by the teacher and students reconstruct the text from their notes. During the writing, students refer to schematic aid cards and discuss their choices of target prepositions. This may be followed by teacher feedback on and whole-class discussion of preposition choices within the stories. Such an activity prompts learners to engage meaningfully with the proposed conceptualization-based framework, to engage in languaging (Swain, 2006).
Masuda and Labarca (2018b)	This study could be improved by employing SCOPA-based instruction over a longer period of time and introducing it earlier to learners in their study of Japanese, when they are first introduced to particles <i>ni</i> and <i>de</i> . By doing so, the concepts of <i>ground</i> and <i>figure</i> will be available to learners as psychological tools with which to mediate their understanding of the diverse array of polysemous particles in Japanese. Further, it would be well worth executing studies that gauge L2 Japanese teachers’ understanding of both the proposed schematic aids and conceptual explanations as well as teachers’ opinions on the utility and effectiveness of the SCOPA-based approach for the challenging topic of spatial particles.
Lantolf and Tsai (2018)	The instructional approach targeting verb + noun collocations for light verbs could be extended to other semantically challenging verbs in English. For example, learners can be asked to apply the SCOPA to the traditionally problematic verb pairs <i>lie / lay</i> , <i>sit / set</i> , <i>rise / raise</i> , <i>teach / learn</i> , <i>lend / borrow</i> , <i>bring / take</i> , and <i>come / go</i> . By drawing their own sketches of the verb action over time and space, learners reinforce their understanding of key semantic distinctions involving transitivity, argument structure, and perspective. To emphasize the utility of the SCOPA for learners’ efforts to understand and control light verbs, students can be directed, as

Studies	Our Recommendations
Hill (2019)	<p>in White (2012), to collect verb collocations in their outside-of-class reading and in class to work collaboratively through the SCOBA to produce sketches for the collected verbs. The mining of authentic texts by students themselves promotes learner agency, awareness, and autonomy (van Lier, 1996).</p> <p>The study can be strengthened by adopting a pedagogy more closely aligned with C-BLI. For instance, learners would benefit from a richer SCOBA, one that utilizes greater imagery to capture the concept of motivated meaning extension (from everyday to genre-specific use) of polysemous lexis. Subsequent verbalization activities could require learners to apply the concept in vocabulary analysis tasks and vocabulary production tasks and to in turn reflect on that application. Important in both tasks is that there be sufficient context so that learners attend to relevant discourse elements of the various academic genres and process the vocabulary more deeply. To promote learner agency as well as the relevance of the concept of motivated meaning extension, students can be asked to read through genre-specific texts outside of class in order to identify more examples of polysemous lexis and to reflect on meaning extensions.</p>
Infante and Poehner (2019)	<p>This study could be extended to an L2-English classroom setting. Given the difficulty some of the original participants had in their understanding of tense and aspect, researchers / teachers might try to make the SCOBA more accessible. One way to do this it to incorporate embodied learning through gestures within the mediation stages. For instance, to convey the anterior or prior sense of the perfect aspect, learners can be asked to turn their heads back over their shoulders, to look behind themselves. Note how a backward glance from the present time represents present perfect, from a point in the past represents past perfect, and from a point in the future represents future perfect. To convey the dynamic activity and internal perspective of the progressive aspect, learners can be instructed to wave their arms about their sides and to imagine they are inside an event without any knowledge of when it might end. In addition to labeling images as in the original study, learners can sketch their own images on timelines, sketches that reflect learners' understanding of the semantic contributions of perfect and progressive aspects.</p>
Kissling and Muthusamy (2022)	<p>Follow-up studies could be undertaken to document learners' ongoing internalization of the concept of boundedness and to examine the concept's role in spontaneous communication at more advanced levels of L2 Spanish proficiency. After</p>

Studies	Our Recommendations
	<p>beginner students have been exposed to the authors' systematic instruction of the concept, they can later be assessed from an emic perspective on their understanding and use of boundedness. As the same students progress through intermediate and advanced levels, teachers / researchers can collect student-written narratives and recordings of students in free conversations. Students can then be asked to reflect on their use of preterite and imperfect aspects through stimulated recall techniques. Such an approach would allow researchers to examine whether learners are aware of and utilizing the concept of boundedness in fluent speech and writing.</p>

By discussing compatibilities as well as possible tensions of SCT and CL, we hope to promote continuing dialogue between these two theoretical approaches. Further, we hope that our examination of six recent SCT-CL studies encourages more L2 researchers and instructors to adopt a praxis approach, thereby advancing both our theoretical understanding of language and development and our instructional practices in the L2 classroom. We believe C-BLI provides an effective means of integrating SCT and CL and look forward to seeing more studies across more L2s and with learners at a wider range of proficiencies.

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Notes

1. Concept-Based Language Instruction (C-BLI) has also been called *Concept-Based Instruction* (CBI), but it is not the same as *Content-Based Instruction* (Sato et al., 2017), which also uses the acronym CBI.
2. Please see Taylor (2002) and Croft and Cruse (2004) for overviews of Cognitive Linguistics.
3. Taylor (1993) points out that pedagogical grammar explanations should be a) succinct, b) readily comprehensible, and c) intuitively plausible.
4. An anonymous reviewer asks how learners at intermediate to advanced levels of proficiency can be at the beginning of their conceptual understanding, when these learners have presumably been taught the targeted structures before. This is an important question. We agree that the learners most likely had met target constructions in their previous language study. However, because traditional language instruction (with its rules-of-thumb and decontextualized grammar focus) tends to prioritize accuracy of form over meaning and use, we suggest that learners were prompted toward *new* conceptual understanding of the constructions through C-BLI.
5. Although not explicitly a C-BLI approach, Lysinger (2015) provides an excellent example of a longer-term approach to L2 instruction. She uses CL schematic diagrams to teach the case system in Russian and asks learners to verbalize their understanding of the concepts over a one-year period.
6. We imagine one way to track use of internalized concepts outside the classroom is to ask learners to record themselves in communicative interactions in the “real world.”
7. An anonymous reviewer raises concerns about measuring long-term development and tracing such development back to initial C-BLI. While we acknowledge this as a legitimate concern, especially given existing expectations by academic journals, we strongly believe researchers would be wise to move beyond reductionist approaches that attempt to measure the impact of one variable upon another (most often within an abbreviated span of time). Instead, and especially when investigating such complex systems as language and psychological development, researchers might embrace more dynamic methodological approaches such as those found in activity theory (Engeström, 1987; Engeström, Miettinen, and Punamäki, 1999) and complex dynamic systems theory (Larsen-Freeman and Cameron, 2008; Al-Hoorie, Hiver, Larsen-Freeman and Lowie, 2012).
8. As observed by an anonymous reviewer, significant challenges exist for those wishing to carry out longitudinal studies and publish in academic journals.

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