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Can Concept-Based Language Instruction Change Beginning Learners' Aspectual Development? Preliminary Experimental Evidence that Novice Learners Taught *Boundedness* Are Less Influenced by Lexical Aspect

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Abstract

Concept-Based Language Instruction (C-BLI) is rooted in Vygotskian sociocultural theories (SCT) of learning and modeled after Systemic Theoretical Instruction. Investigations of C-BLI have reported positive instructional outcomes such as increased conceptual awareness and control for a variety of targeted concepts in a variety of languages, including aspect in Spanish. This study followed suit, by exposing novice Spanish learners (n = 26) to the concept of viewpoint aspect as a matter of boundedness. It also directly tested the learners' ability to form nonprototypical associations between preterite-imperfect morphology and lexical aspectual categories, which is the kind of learner development most of interest to scholars working in semantic theoretical perspectives outside of SCT such as the Aspect Hypothesis (AH). Comparisons with corpus data (n = 75) suggested that the C-BLI learners were able to use the Spanish preterite and imperfect non-prototypically, more like advanced learners than novices. The results suggest that C-BLI can facilitate aspectual development applied to disassociating viewpoint aspect from lexical aspect. It is argued that C-BLI and other approaches rooted in SCT principles could be enriched by engaging with new ways of examining learner development, and thereby perhaps garner the interest of scholars working outside of SCT. It is further argued that research on the AH could be enriched by considering data that elucidates effects of specific instructional approaches.

Keywords: Concept-Based Language Instruction, Concept-Based Instruction, Aspect, Aspect Hypothesis, preterite and imperfect

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Introduction

Tense locates events in time, and aspect communicates different ways of viewing those events. Definitions of both tense and aspect abound, but the current study adopts a Cognitive Linguistics-based view that invokes the metaphor of time as space. This implies that the present is close and the past is distal, and that humans conceive events metaphorically as physical objects located on that timeline (Janda, 2015). Aspect entails adopting either a bounded viewpoint of events (viewing them from the outside with a holistic perspective) or an unbounded viewpoint (viewing them internally without focusing on their beginning or end) (Janda, 2015). This sense of viewpoint is created by combining several elements, which include lexical aspect (inherent in verbs and their predicates), knowledge of how events typically take place in the real world, temporal adverbials, and grammatical aspect morphology such as the Spanish preterite (PRET) and imperfect (IMP). For instance, in the utterance "I was playing with my son when you called," "I was playing" would typically be interpreted with a progressive reading, which is an unbounded viewpoint focusing on the middle stages of the action in progress. "I was playing" would most typically be expressed in Spanish with the imperfect (*jugaba*). In contrast, the speaker views "you called" as completed, not in progress, which indicates a bounded viewpoint (*llamaste* –[PRET]).

English-speaking Spanish L2 learners face many challenges with regard to aspect. First, they are faced with form-meaning mismatches between their L1 and L2. While viewpoint is marked obligatorily on all past tense verbs in Spanish, it is not marked obligatorily on verbs of state in English. For instance, *fui* [PRET] *feliz* and *era* [IMP] *feliz* both mean "I was happy." Whereas the unbounded viewpoint is always marked with IMP morphology in Spanish, it can be expressed optionally through non-morphological means in English, as in *Yo miraba* [IMP] *la televisión todos los días* "I watched" or "used to watch" or "would watch television every day." Second, L2 learners must learn that viewpoint aspect works in concert with but operates independently of lexical aspect. Lexical aspect depends on the inherent semantics of verbs and their predicates and can be understood as grouping predicates into categories such as Vendler's (1967) states (e.g. be a good painter), activities (e.g. paint), accomplishments (e.g. paint a picture), and achievements (e.g. start painting). States are frequently construed as unbounded event-objects, since we often use state verbs to express conditions with a focus on their middle stages rather than their completion. Achievements are frequently construed as bounded event-objects, since we often use achievement verbs to express the beginning, ending, or completion of actions. Yet any verb and predicate can be viewed with either perspective. The third challenge for L2 learners is learning how to take into account the greater discourse context in order to make appropriate use of viewpoint aspect even in less prototypical ways. For instance, when discussing a past relationship, one might alternate between expressing "s/he/they loved me" as *me quería* [IMP]— to focus on the middle stages of the state of being in love— and *me quiso* [PRET] to focus on its end.

In the US, explicit instruction on Spanish PRET and IMP typically presents learners with a list of rules that make simplistic generalizations attempting to capture

their prototypical uses (Author, 2021; Frantzen, 1995). For instance, PRET is described as expressing completed actions, the beginning or end of actions, and series of actions that advance the plot (Frantzen, 1995; Yáñez Prieto, 2008). The IMP is described as expressing habitual and ongoing actions as well as background information including emotions, states, and descriptions. US learners are generally taught that certain key words cue the PRET (i.e. *ayer* "yesterday") or IMP (i.e. *siempre* "always"). They are also taught that some verbs such as *poder* change meaning depending on their formulation, meaning "be able to" in the IMP but "manage to" in the PRET. While attractive in their apparent simplicity, these rules are linguistically inaccurate (Frantzen, 1995), confusing for learners (Author, 2021; Liskin-Gasparro, 2000), misapplied by learners to the detriment of their productive accuracy (Rothman, 2008), and potentially an obstacle to developing more accurate concepts related to aspect later on (Yáñez Prieto, 2008).

Rooted in Vygotskian sociocultural theories of learning (e.g. Vygotsky, 1978) and modeled after Gal'perin's Systemic Theoretical Instruction (1989, 1992), a promising alternative to conventional, rule-based instruction is Concept-Based Language Instruction (C-BLI) (Negueruela, 2003). In C-BLI, the instructor selects a scientific concept as the minimal unit of instruction, materializes it in a didactic model, and guides learners through an intense process of mediated verbalization and conscious conceptual manipulation (García, 2018). Investigations of C-BLI have reported positive outcomes for a variety of concepts in various L2s, including aspect in Spanish. However, the way learner development is framed in C-BLI studies is not aligned with many aspect studies outside SCT, such as semantic approaches to aspect inspired by the Aspect Hypothesis (AH) (Andersen, 1991). To connect these two areas of aspect research and highlight their commensurabilities, this study taught novice Spanish learners (n = 26) the concept of boundedness via C-BLI and then directly tested the learners' ability to form nonprototypical associations between aspect morphology and lexical aspectual categories, which is the kind of learner development of interest to scholars working within the AH.

Literature Review

Concept-Based Language Instruction for L2 Spanish Aspect

Concept-Based Language Instruction (C-BLI) entails three stages (García, 2018; Negueruela, 2003; Negueruela & Lantolf, 2006). First, the instructor identifies a *scientific concept* (in Vygotskian terms) as the minimal unit of instruction. The concept must be generalizable, abstract, systematic, explicable, functional, and context-independent (Negueruela, 2003). The instructor then materializes this concept into a didactic model or SCOBA (Scheme for a Complete Orienting Basis of an Action), a schematized graphic illustration of the concept, or some other design aimed to mediate conceptual development and orient learner activity. The third stage is conceptual manipulation, when learners are encouraged to verbalize and reflect on their understanding and use of the concept as a tool to mediate their thinking in the L2 as they engage in communicative activities. Learners are encouraged to consciously manipulate the concept, making it unique and personally relevant to them (García, 2018). The instructor mediates learners' verbalizations and

manipulation of the concept taught. C-BLI has proven effective for a variety of topics in Spanish and other L2s (García, 2018, p. 184).

C-BLI and STI have been explored in at least four empirical studies of aspect in US Spanish L2 instructed learning contexts (Gánem Gutiérrez, 2016; García, 2012; Negueruela, 2003; Yáñez Prieto, 2008), all of which reported positive learning gains overall, though they showcased small numbers of participants at the intermediate to advanced levels in collegiate settings (no novices) and presented no control groups. These researchers tracked learners' development of conceptual awareness as well as learners' control of the concept. All four studies evinced notable conceptual development on the part of learners, although the authors noted that some learners were unable or reticent to develop complete concepts after instruction.

There is some evidence that C-BLI promotes the ability to distinguish lexical aspect from viewpoint aspect. García (2012, 2017) and Negueruela (2003) used SCOBAs that highlighted viewpoint aspect based on the notion of boundedness as well as the role of that lexical aspect plays by prompting learners to distinguish between cyclic and noncyclic verbs. In these studies, learners' definition, performance and verbalization data suggested that after C-BLI the learners developed conceptual awareness and demonstrated awareness of how lexical aspect contributes to viewpoint aspect. Gánem Gutiérrez's study (2016) was inspired by C-BLI and presented learners electronic concept maps teaching a Cognitive Linguistics-based notion of boundedness. After instruction, learners demonstrated metalinguistic knowledge about both lexical and viewpoint aspect. In terms of communicative performance data, Yáñez Prieto (2008) reported that all (n = 13) students were able to manipulate viewpoint in their creative writing after STI. Negueruela (2003) found that learners improved remarkably in the emergence and coherence of aspect in their personal narratives after C-BLI, whereas García's (2012, 2017) case study reported ceiling effects in the performance data. However, none of these studies directly tested the effect of lexical aspect in learners' oral or written narratives. Indeed, it is difficult to do so without employing more controlled tasks. In an investigation of Cognitive Linguistics-based notions of aspect taught to novice learners (n = 22) via Processing Instruction, Palacio Alegre (2013) employed controlled tasks and reported that there appeared to be no influence of lexical aspect on learners' production or comprehension, which was interpreted as evidence that the non-target-like uses of PRET and IMP learners typically display are actually motivated by the rules that they are taught in conventional instruction. It may be the case that C-BLI helps learners to rely less on lexical aspect to make choices about PRET and IMP when communicating in the target language, which is a developmental milestone of great interest to those working within semantic approaches to aspect such as the Aspect Hypothesis.

The Aspect Hypothesis

Andersen's (1991) Aspect Hypothesis (AH) proposes that regardless of their L1, L2 learners' production of aspect follows a predictable sequence: they first produce perfective morphology with achievements, then gradually begin to produce

it with other aspect classes across the spectrum, and lastly with states, whereas imperfective morphology appears first with states and lastly with achievements. There is a great deal of evidence drawn from various learner populations and experimental tasks that supports the AH fully or partially. Many studies have reported that the role of lexical aspect is important but also mediated by other factors both internal to the verb (e.g. frequency, irregularity) and external to it, such as learner proficiency and elicitation task (Bardovi-Harlig & Comajoan-Colomé, 2020).

For instance, Domínguez et al. (2012) evaluated the PRET and IMP use of 15 L1 Spanish speakers and 60 L2 learners of different proficiency levels using three oral tasks that ranged from controlled to spontaneous. The controlled task presented infrequent form-meaning contexts to test the AH by eliciting IMP with achievements and accomplishments and PRET with activities and states. They found that the AH was supported in the least controlled tasks. However, in the controlled task, beginning and intermediate learners associated IMP with states and PRET with all other verbs. This study is one of just "four studies that have begun to address the question of nonprototypical associations of past morphology and lexical aspectual categories" as identified in Bardovi-Harlig and Comajoan-Colomé's review of the past 20 years of research on the AH (2020, p. 1160). Tracy-Ventura and Myles (2015), using the same task and the same learner corpus, also highlighted the importance of task variability. They concluded that the "less controlled tasks encouraged few instances of more advanced features, suggesting that not all task types are equally successful at eliciting the range of tense-aspect morphological contrasts theoretically relevant for SLA research on tense and aspect" (2015, p. 58).

In sum, the AH is still a highly productive area of research, and it seems relatively uncontroversial to claim that beginning learners' production of aspect morphology is influenced by lexical aspect. Various possible explanations for the effect have been explored, including general principles of cognition and sensitivity to a distributional bias in the input (Bardovi-Harlig, 2002). Both naturalistic and instructed inputs tend to present learners with a limited number of statives that appear most frequently in the IMP, and a variety of achievements and other telics in the PRET (Daidone, 2019; Tracy-Ventura & Cuesta Medina, 2018). Conventional rule-based instruction further reifies this pattern of correlation by emphasizing only prototypical uses of PRET and IMP. Learners' tendency to conflate lexical aspect with viewpoint aspect, then, is perfectly understandable, but of course it is an incomplete conceptualization of aspect that might limit their ability to develop more accurate concepts later on (Yáñez Prieto, 2008) or improve their accuracy (Rothman, 2008). The unsystematic and incomplete conventional rules constitute faulty cognitive tools that can in fact delay learners' conceptual development rather than facilitate it (Negueruela, 2003). The question is, then, can a different kind of instruction counteract this tendency in beginning learners? Can instruction prompt learners to develop a concept of viewpoint that is generalizable to all contexts and predicates alike? The research question motivating the current study was: Does Concept-Based Language Instruction help novice learners avoid relying on lexical aspect to motivate their uses of Spanish preterite and imperfect?

Method

Participants

Participants included beginning learners in the USA (*n* = 26), beginning learners in the UK (*n* = 20), intermediate learners in the UK (*n* = 20), advanced learners in the UK (*n* = 20), and L1 Spanish speakers (NSs) in Spain (*n* = 15). The UK learners and NSs were the comparison groups, and their data were taken from the Spanish Learner Language Oral Corpora (SPLLOC) project. According to the project website, the learners were all English L1 speakers who learned L2 Spanish in instructed contexts and were matriculated in three different course levels (Table 1).

Table 1

Participants

L2 Spanish level	Typical age (Years)	Approx. hours of instruction	Educational level	Approx. CEFR level
Beginners in US (C-BLI group) *n* = 26	18-21	85	University (Years 1-4 US system)	A1
Beginners in UK *n* = 20	14-15	240	Lower secondary school (Year 10 English system)	A2
Intermediate *n* = 20	17-18	750	Upper secondary school (Year 13 English system)	B1-B2
Advanced *n* = 20	21-22	895 + year abroad	University (Year 4 English system)	C1-C2
L1 Spanish speakers *n* = 15	14-28	n/a	Lower secondary school – post-University	n/a

US participants were students at a small liberal arts college in a Spanish course for true beginners, taught by the researcher. They had never studied Spanish before enrolling in the course. An entrance questionnaire confirmed that their only prior exposure to Spanish was sporadic passive listening to music, television, or interacting with friends and family. Most (23) were English L1 speakers, and three were English L2 speakers with advanced proficiency. Four were L1 speakers of English and another language, but English was their most dominant language. Some had taken 1-4 years of courses in another second language (6 students took Latin, 3 French, 1 Italian, and 1 Mandarin).

Materials and Instruments

Instruction

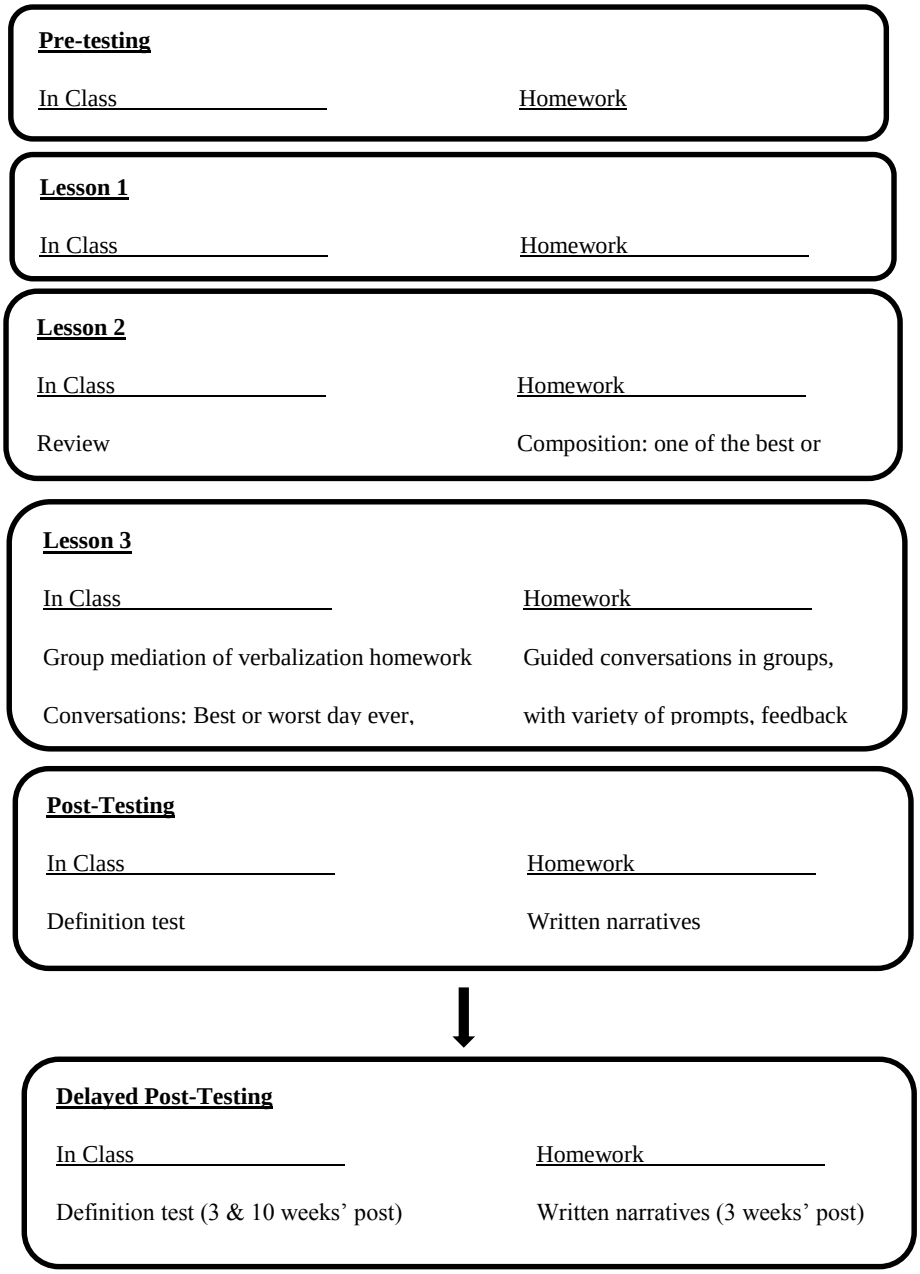
The course met seven times weekly for a total of 6.5 hours of instruction per week. The C-BLI intervention occurred during week 13, by which point learners had approximately 85 hours of instruction. The course had covered 11 thematic units (e.g. university life, family, and travel) that included cultural texts and a grammatical syllabus covering the present tense, copular verbs, and various types of pronouns. Typically, students studied and practiced new grammar lessons before class using an online textbook, and class time was used for communicative activities in the target language. However, the C-BLI unit was taught differently (Figure 1).

The formation of the preterite (PRET) was taught in three lessons stretched over four weeks so that learners could master its many forms. In terms of use, the lessons were prefaced by telling learners that "The preterite is one Spanish past tense form. It is used to talk about the past with a certain viewpoint (called 'bounded,' which will be explained later)." The formation of the imperfect (IMP) was taught in one lesson the next week. As for use, learners were told that "the imperfect expresses a different viewpoint of the past, called the 'unbounded viewpoint.'" The following week learners were led through a three-lesson C-BLI sequence focused on the concept of boundedness (Figure 1). Though C-BLI typically presents concept before form, in this case the form-focused lessons were embedded across multiple instructional units that could not be modified as per institutional policy, and so the concept was instead presented briefly at the outset and then brought into greater instructional focus once all forms had been presented.

In the orientation stage, learners read a summary of [±boundedness] (Figure 2) before class. In class it was materialized with an animated video series that explained [±boundedness] and illustrated it by presenting a short story about a girl who walked to class, missed her best friend from high school, called her, and then felt better. The same story was told many times but in different ways, by depicting the same events and states as variably bounded or unbouded. [±boundedness] was communicated visually by framing off events and states with a black box, then shrinking the box and moving it to the side, to indicate distance from the perspective of the speaker, as the next event or state in the story appeared (Figures 2, 3). In contrast, unbounded events and states were visualized as enlarging and zooming in and then fading away as the next event or state appeared. Verbs also appeared in text, with bounded verbs (PRET) underlined, whereas unbounded verbs (IMP) were marked with an undulating line to communicate focus on their middle stages in progress.

Figure 1

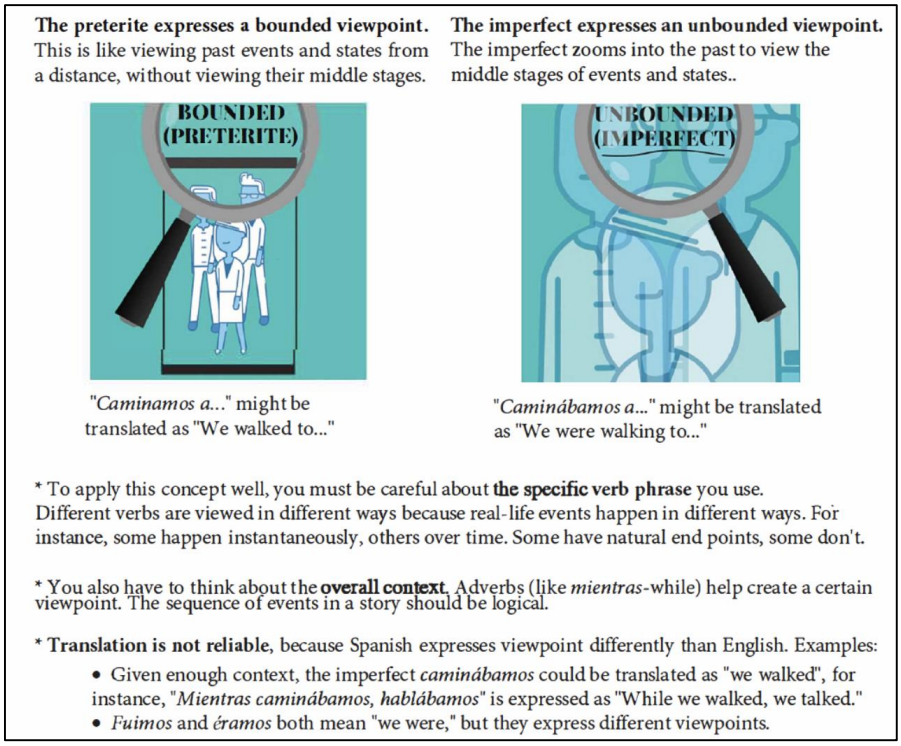
Sequence of C-BLI and Assessments



The visual depiction of [±boundedness] was reinforced in the classroom with corporal gestures, which are known to be important interactional classroom resources that can support aspectual development (Lantolf, 2010). Whenever communicating a distinction in [±boundedness], the instructor either placed her hands in the form of a square frame close to her eyes and then moved them out of her view (bounded) or slowly brought her hands towards her face and opened them wide while waving them in an undulating fashion (unbounded).

Figure 2

Orientation to the Concept of [±boundedness]



This C-BLI implementation did not directly address the differences between viewpoint aspect and lexical aspect, other than to instruct learners to pay attention to the precise verb they used and its features. Lexical aspect was not a key component of the concept taught to students (as it was, for example, in the SCOBA used by García, 2012 and Negueruela, 2003). However, it was recognized that English speakers find statives to be most challenging because English does not obligatorily mark statives for aspect as Spanish does, and so the videos highlighted the difference between bounded and unbounded construals of various state verbs, including (a) verbs that describe weather like *hacer sol* "be sunny" (Figure 3), (b) verbs of emotion like *estar alegre* "be happy" as opposed to *alegrarse* "become or

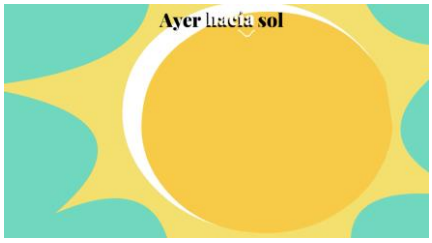
be made happy," and (c) state verbs that are presented in conventional rule-based instruction as changing meaning in the preterite such as *saber* "know, find out." The video series was the product of four years of action research in the author's classes. The action research process included iterative cycles of materials piloting and revision based on the results of various assessments of learning and one-on-one interviews. All components of the videos were created collaboratively with former students, heeding the call of Negueruela (2003, p. 471) to include students in the creation of didactic models to ensure their usefulness.

Figure 3

Illustration of a Contrast in Boundedness

"Yesterday it was [PRET] sunny."

"That's why I walked [PRET] to my class."



"Yesterday it was [IMP] sunny

while I walked [IMP] to my class."

The C-BLI stage of verbalization, in which internalization of the concept is supported by external speech, was carried out both inside and outside of class (Figure 1). During in-class viewings of the didactic model (the animated video series), learners paused regularly to describe what they were understanding of the concept and express any confusion. Class time incorporated a variety of communicative tasks in all modalities, as well as practice with conventional gap fill textbook activities. Learners were encouraged to apply the model and verbalize how they used the model to inform their aspect choices in all these activities. These verbalizations were mediated by the instructor one-on-one and as a whole class. Outside of class learners videotaped themselves explaining the use of PRET and

IMP in stories that they read, personal narratives that they wrote, and cloze passages that they completed. The instructor viewed all of these video-recorded verbalizations and then offered mediation in class by addressing common misunderstandings that surfaced in the verbalizations and leading the class through a close examination of at least two individuals' recordings that were representative of the challenges faced by their classmates. Learners had multiple opportunities to verbalize the concept in their own words and consciously manipulate the concept (García, 2018) so as to personalize and internalize their own concept of aspect. Learners were not, however, required to draw their own model as is often recommended for Conscious Conceptual Manipulation (see García, 2018), because animation of visual images was considered necessary to visualize changes in viewpoint, but requiring learners to work with animation software was considered too onerous.

The data from the UK participants was taken from a public corpus (SPLLOC), which does not provide information about the type of instruction that they received. It would be impossible to report their instruction in detail in any case, because participants attended different schools and classes. However, it is fair to assume that they received explicit instruction on aspect and that their instruction was relatively conventional (e.g. rules followed by practice) (L. Domínguez, personal communication, April 29, 2020) and thus quite different from the C-BLI provided to the US participants. All participants completed the same task; the corpus data comes from this task.

Controlled Impersonal Narrative Task

A variety of measures was used to assess aspectual development, namely definition data, verbalization data, and performance data on oral and written narratives, the same measures typically included in C-BLI research (e.g. Negueruela, 2003). However, because conceptual development is not the main object of inquiry here, and those data have already been reported in full elsewhere (Authors, 2022), they will not be described in detail here. The goal of the current study was to test the effect of lexical aspect on learners' performance after C-BLI, as measured with an experimental task.

The "Sisters task," a picture-based story retell task adapted from Domínguez et al. (2012), was designed to assess learners' ability to produce less frequent form-to-meaning associations. The story was about two sisters who took a trip and reminisced about their childhood. Learners took up to five minutes to review a series of slides with illustrations accompanied by 25 infinitival verbs. They then recorded themselves narrating the story in 5 minutes or less using those target verbs. The task prompted the past tense by introducing the story with a slide that read *Las vacaciones de Sarah y Gwen en España. Verano del 2006* ("Sarah and Gwen's vacation in Spain. Summer of 2006."). The foregrounding and backgrounding of the narrative prompted learners to use 21 of the target verbs in non-prototypical contexts (Table 2). The task was administered directly after C-BLI and again 10 weeks later (Figure 1). No pretest was administered because the concept of boundedness had been incorporated into learners' very first exposure to

PRET and IMP, so they had no prior knowledge of PRET and IMP that was not informed by C-BLI.

Table 2

Target Verbs and Expected Form (PRET, IMP) Given Context of Controlled Task

States	**Activities**	**Accomplishments**	**Achievements**
haber un revuelo "there was a commotion" (P)	visitar la ciudad "visit the city" (P)	leer un libro "read a book" (I)	despertarse "wake up" (I)
creer "believe" (P)	comer tapas "eat tapas" (P)	pintar un cuadro "paint a picture" (I)	terminar los deberes "finish homework" (I)
sentir "feel" (P)	beber vino "drink wine" (P)	escribir una carta "wite a letter" (I)	llegar tarde a clase "get to class late" (I)
necesitar "need" (P)	hablar "talk" (P)	ver una película "watch a movie" (I)	coger el tren "take the train" (I)
	ayudar "help" (P)	ir al colegio "go to school" (I)	
	reírse "laugh" (P)	hacer los deberes "do homework" (I)	
		acostarse "go to bed" (I)	

Coding

The task recordings were transcribed and coded independently by two trained assistants, one L1 Spanish speaker and one advanced L2 speaker. Given that the focus of the study was to promote aspectual development and that the participants were novices with limited experience producing PRET and IMP morphology, the data were coded as perceived attempts to use PRET, IMP, or another form. For instance, non-target-like but accepted attempts to express PRET included **crieron* and **comío* (in place of *creyeron "*they believed" and *comió "*he ate"). Attempts such as **leya* and **sentiria* (for *leía "I read"* and *sentía "*I felt") were accepted as IMP. It was assumed that learners were not attempting to produce the future, conditional, subjunctive, or other forms they had never been taught. A few ambiguous responses (e.g., **craí*) were eliminated. Inter-rater agreement reached 98%, and all discrepancies were discussed with the researcher to determine

the final coding decision. The same procedures were used to code the comparison data, which were taken from the Spanish Learner Language Oral Corpora project (SPLLOC).

Data Analysis

Only the 21 target verbs presented in non-prototypical contexts were analyzed. This decision was made after seeing that beginning learners tended to produce only the verbs shown on the slides without adding extra information, and that when participants (of all levels) did add information, it tended to be verbs in prototypical contexts. On average learners in the C-BLI group added 0.08 verbs and skipped 1.35 of the target verbs. On average learners in the UK beginners group added 1.10 verbs and skipped 0.90 of the target verbs. In contrast, the advanced learners added 8.10 and skipped 3.95, and the L1 Spanish speakers added 18.67 and skipped 5.47. It was decided that limiting the analysis to the target verbs only would make for fairer comparisons across groups. Target verbs were considered to be skipped if a participant modified their context or shifted their lexical aspectual class. For instance, some learners changed the item *(ver) una película* "(see) a movie" , which is an accomplishment, to *le gustaba ver una película* "liked/was pleased to see a movie," which is a state. Some changed *(sentir) agua* "(feel) water," a state, into *empezó a sentir agua* "began to feel water," an achievement. Thus, given the research question and the very limited number of target verbs in prototypical contexts (4 total), only the 21 non-prototypical pairings presented in the task itself were analyzed.

The number of target verbs each participant produced in PRET, IMP, or other forms (e.g. present tense, infinitive, gerund) was calculated as a proportion of verbs they attempted in each lexical aspectual class. For instance, if a learner used PRET for three of the six activity verbs, then the PRET proportion for activities was 50%. In cases where a participant skipped half or more of the target verbs in a verb class, the data were removed from analysis of that verb class. This resulted in losing one or two of a groups' participants in most lexical aspectual classes. In order to compare the participant groups, means of the proportions were calculated for each group and each lexical aspectual class, then graphed. Since the data were not normally distributed (target-like performance for achievements, for example, was 0% PRET and 100% IMP), parametric tests could not be used. Group differences were instead interrogated with Fisher exact tests, which are similar to chi-square tests but allow for small sample sizes. Raw count data were entered into a series of 2x2 contingency tables representing the number of times participants in two groups used PRET and IMP for each lexical aspectual category. Fisher exact tests are essentially a discrete form of a correlation test. They determine whether there is a relationship between the variable describing the columns (PRET or IMP) and the variable describing the rows (group membership) in the contingency table. The resulting *p*-value represents the likelihood that the two variables are independent.

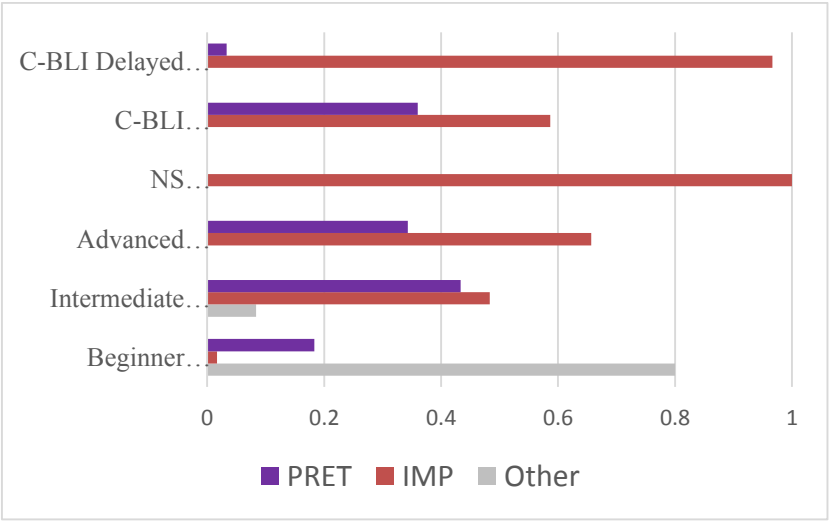
Results

Recall that a variety of measures was taken in order to assess whether learners developed in terms of conceptual knowledge, and those results were reported in full elsewhere (Authors, 2022). Given that the learners clearly did develop conceptually and improve their performance overall, the current study went a step farther to investigate whether their conceptual development prompted learners to reduce their reliance on lexical aspect to inform choices about PRET and IMP usage. To that end, the data from the controlled story retell task are reported here in detail.

The Sisters task prompted the IMP with four achievements (Table 2) by putting them in the context of habitual actions in the past (i.e. what the sisters used to do when they were children), adopting an unbounded viewpoint of them. As shown in Figure 4, in the corpus data, L1 Spanish speakers marked 100% of these achievements with the IMP, as expected. A cross-sectional comparison of Spanish learners in the corpus representing different proficiency levels indicated that more proficient learners increased their use of IMP and decreased their use of PRET and other forms (e.g. present tense). This is exactly the pattern of results that would be predicted by the AH. However, the beginning learners instructed with C-BLI produced IMP at rates that were much more similar to intermediate (p = .20) and advanced learners (p = .20 on Fisher exact tests) than the beginning learners in the corpus (p < .001). The C-BLI learners' performance was different than L1 speakers at posttest (p < .001), but the subgroup of 10 learners that took the delayed posttest 10 weeks after receiving C-BLI almost reached full target-like usage of 100% IMP, performing like L1 speakers (p = .43).

Figure 4

Use of Forms for Non-Prototypical Achievements (Expected Form: Imperfect)



The Sisters task similarly prompted the IMP with seven accomplishments (Table 2) framed as habitual actions in the past (unbounded viewpoint). L1 Spanish speakers marked them all with IMP, and more proficient learners tended to increase their use of IMP and decrease their use of PRET and other forms (e.g. present tense), as predicted by the AH. All groups in Figure 5 performed significantly differently from one another (all $p < .05$), but the beginning learners instructed with C-BLI seemed to pattern more like the L1 speakers than any other learner group at posttest, and even more so at the delayed posttest.

Figure 5

Use of Forms for Non-Prototypical Accomplishments (Expected Form: Imperfect)

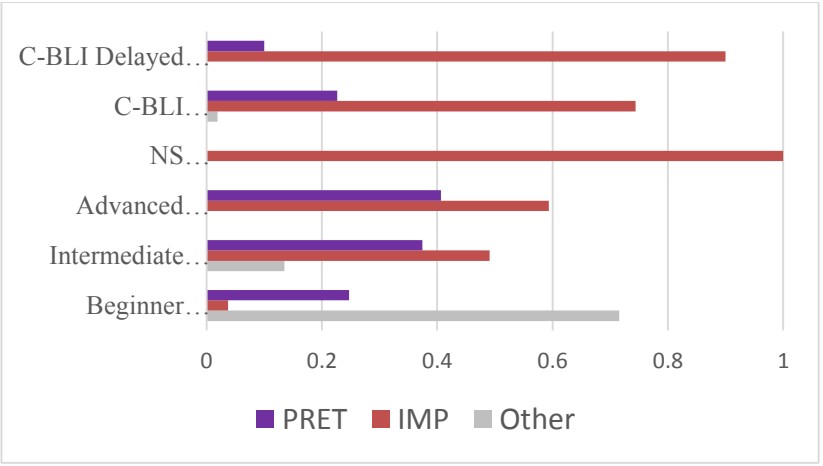
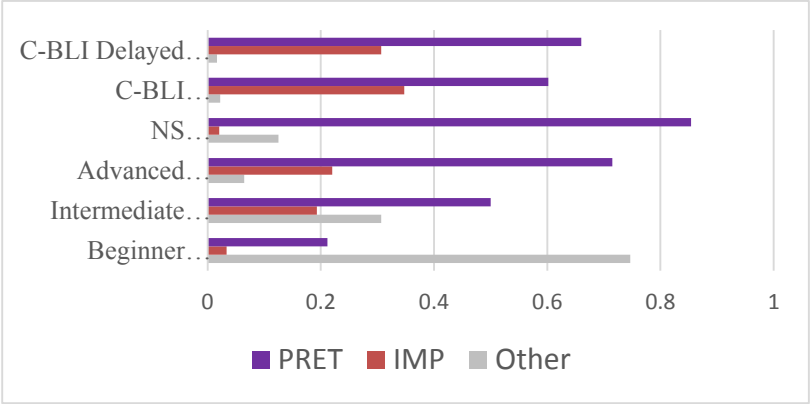


Figure 6

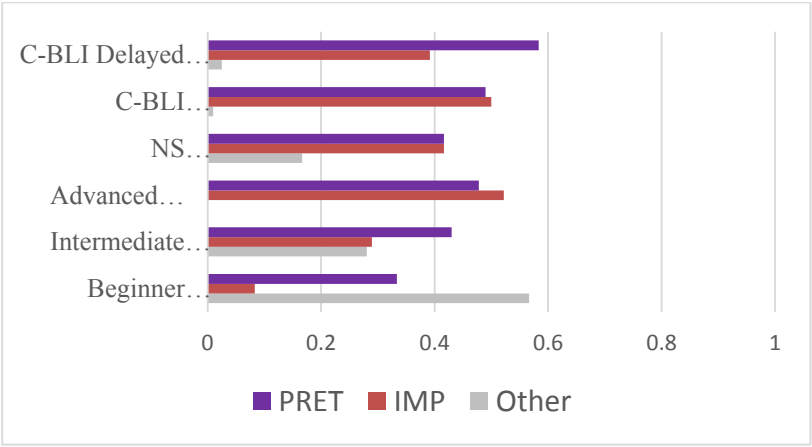
Use of Forms for Non-Prototypical Activities (Expected Form: Preterite)



The Sisters task prompted the PRET with six activities (Table 2) by putting them in the foreground as actions that advanced the plot, adopting a bounded viewpoint of them. L1 Spanish speakers were expected to use PRET with all these activities, but they occasionally produced some IMP and present tense, usually the historical present as a means to begin or end the narrative, because most of the activities were located at the beginning or end of the story. The cross-sectional data indicated again that increases in proficiency were associated with gradually approaching L1 rates of PRET and IMP production (Figure 6). Here the novice learners who received C-BLI performed better than beginning learners in the corpus (p = .02) and similarly to intermediate learners (p = .13) who had much more L2 experience (see Table 1). C-BLI learners did not do as well as advanced learners or L1 speakers (p < .001).

Figure 7

Use of Forms for Non-Prototypical States (Expected Form: Preterite)



Finally, the Sisters task prompted the PRET with four states (Table 2) by foregrounding them, adopting a bounded viewpoint. L1 Spanish speakers were expected to use PRET with all these states, but they actually produced equal amounts of PRET and IMP, as well as some present tense (Figure 7). It seems that the task design did not provide quite enough discourse context to always elicit the expected forms with states. For example, one L1 speaker said *"De repente en el tren hubo* [PRET] *un gran revuelo. Creían* [IMP] *que había* [IMP] *un problema. Esto no tiene mucho sentido (...) con la otra, pero. Sentían* [IMP] *el agua de la lluvia."* (H24N). "Suddenly in the train there was [PRET] a big commotion. They thought [IMP] that there was [IMP] a problem. This doesn't make a lot of sense (inaudible) with the other one, but. They felt [IMP] water from rain." With states, then, L1-like usage in this task could be characterized as roughly equal amounts of PRET and IMP. There is not a clear pattern of how learners in the corpus developed across proficiency levels. However, the C-BLI learners clearly were able to use PRET in

equal or greater amounts than the IMP with these states in non-prototypical contexts, and their distribution of PRET versus IMP forms approximated that of intermediate learners (p = .23), advanced learners (p = .75), and L1 speakers (p = 1). Their ability to use PRET with states only increased in the delayed posttest.

Discussion

The current study investigated whether or not Concept-Based Language Instruction (C-BLI) teaching the concept of [±boundedness] helps novice Spanish L2 learners avoid relying on lexical aspect (aspect inherent in verbs and predicates) to motivate their uses of Spanish preterite (PRET) and imperfect (IMP), as the Aspect Hypothesis (AH) predicts they will do in the early stages of learning. A controlled impersonal narrative (story retell) task was used to elicit PRET and IMP forms in non-prototypical contexts. Novice learners in the US instructed with C-BLI (n = 26) were compared with corpus data from L2 learners (n = 60) and L1 speakers (n = 15). The results from the experimental task suggest that novice learners who received C-BLI produced PRET and IMP forms in nonprototypical contexts in proportions similar to more advanced learners and L1 speakers than expected given their very limited exposure to the target language.

The particular C-BLI intervention described here focused on the scientific concept of boundedness as materialized via animated illustrated narratives and internalized via a series of asynchronously and collectively mediated recorded verbalizations. This particular C-BLI intervention lead to conceptual development and improvements in accuracy of using PRET and IMP in personal narratives for the novice learners recruited (as reported in Authors, 2022). Indeed, the main pedagogical implication of the current study is that scientific concepts (Gal'perin, 1989, 1992) are useful for orienting learners' thinking about complex L2 phenomena. Scientific concepts are more systematic, linguistically accurate, generalizable to many contexts, flexible, and agentive for the learner than the conventionally taught rules of thumb. The Cognitive Linguistics-inspired scientific concept of boundedness was chosen here because it accounted reasonably well for the main contrast of viewpoint between PRET and IMP while still being simple and concise enough for novice learners (Gánem Gutiérrez, 2016; Niemeier, 2008). Boundedness was materialized as an animated video series so as to avoid complex graphics and terminology. Students were included throughout the process of materials development, and the resulting didactic model (the animated video series) was comprehensible and engaging for them. Furthermore, and most importantly here, the C-BLI was also associated with leaners' developing ability to use PRET with statives and activities as well as the ability to use IMP with achievements and accomplishments. That is, in terms that AH researchers would find relevant, C-BLI "worked" in that it developed these novice learners' abilities to make nonprototypical associations of past morphology and lexical aspectual categories, which is not expected to occur until more advanced stages of acquisition. In their review of the past 20 years of L2 past morphology acquisition research, Bardovi-Harlig and Comajoan-Colomé (2020) highlighted the investigation of such nonprototypical association as the most intriguing area for future research on the AH.

Theoretically, if students develop a complete concept about boundedness, they will thereby be able to distinguish viewpoint aspect from lexical aspect, since the concept would not be complete without entailing awareness of both, but this assumption should be directly tested empirically. The current study tested the assumption by employing a controlled task eliciting nonprototypical pairings, a task developed within the AH framework but novel to C-BLI research. This is not to suggest that the kinds of data typically reported in C-BLI studies (see García, 2017) is not perfectly adequate to track the kind of development of interest to C-BLI scholars. Indeed, the same learners recruited in this study were evaluated along the same lines (see Authors, 2022) to demonstrate the effectiveness of the C-BLI for spurring conceptual development. However, those data (e.g. definition, verbalization) are not always compelling to researchers working in other frameworks. The current study embraced a new methodology in an attempt to transcend the theoretically-grounded but siloed way of tracking leaner development in C-BLI research, thereby opening dialogue with AH researchers.

C-BLI, like SCT research generally, tends to eschew controlled tasks that do not engage learners in meaningful communication. However, the tasks used to tap aspect that do represent real, meaningful communication—personal narratives being the gold standard—do not elicit a wide enough variety of token types to allow for hypothesis testing about the role of lexical aspect (Bardovi-Harlig & Comajoan Colomé, 2020). Learners tend to produce (a limited number of) statives in the IMP and atelic predicates in PRET, i.e. prototypical associations. But that does not mean that they are incapable of producing nonprototypical associations, just that a different, more controlled task is required to elicit them. Indeed, Domínguez et al. (2012) found major across-task differences when comparing the data elicited by three oral tasks differing in levels of control, the most controlled of which was the task employed here.

Conclusion

The main premise of the current study is that cross-theory dialogue is mutually beneficial. Namely, research on Concept-Based Language Instruction (C-BLI) and other approaches rooted in sociocultural theories of learning (SCT) could be enriched by engaging with new ways of interrogating learner development, and thereby perhaps engage scholars working outside of SCT. On the other hand, research on the Aspect Hypothesis (AH) and other approaches to L2 aspect could be enriched by considering data that elucidates effects of specific instructional approaches. The current study attempted to bridge the divide between the two camps by employing a controlled experimental task. However, this is not to say that controlled tasks do not present their own set of limitations. For instance, the Sisters task employed here presented a very limited amount of text to create the desired discourse contexts while being accessible to beginning learners. The unbounded viewpoint of habitual past actions was evoked with the phrases *de niña "*as a child," *cada fin de semana* "every weekend," and *durante la semana* "during the week," whereas the bounded viewpoint of a foregrounded series of actions was evoked with the phrase *de repente* "suddenly." The learners recruited here had not been explicitly instructed about any of these phrases, but conventional instruction does often

include explicit reference to such phrases as key words that cue the PRET or IMP. Thus, conventionally instructed learners might perform well on this task without having developed a complete concept of aspect or without awareness of lexical aspect but rather merely because they recognize particular adverbial phrases they have been taught to look for. Negueruela characterizes such an ability to use grammatical features in controlled contexts as "empty formalism" (2003, p. 448). The L1 Spanish speakers did respond as expected to the task prompts in terms of marking all the past habitual actions with IMP, but the task was less successful at coercing L1 speakers to use PRET for foregrounded and bounded statives. The contexts constructed for those verbs in the task must have not seemed natural enough to L1 speakers to prompt the PRET. Future work should focus on creating and refining tasks that can be used to investigate nonprototypical associations between lexical aspectual categories and past morphology (see Bardovi-Harlig & Comajoan-Colomé, 2020).

To be sure, this study did not and could not set out to test the Aspect Hypothesis. Nor did it directly test the effect of C-BLI as compared with conventional instruction or uninstructed learning. It lacked the necessary control groups to do either, partly because comparison groups of true beginners at the university level are so rare. However, the data reported here do offer some hint that conventional instruction may contribute to the tendency of beginning learners to rely on lexical aspect for their use of PRET and IMP, an effect that prior investigations of the AH in the instructed context have not always acknowledged (Palacio Alegre, 2013). The comparison groups here were instructed learners from a variety of educational contexts, and it is safe to assume that they received relatively conventional instruction, but the corpus provides no details about their instruction on aspect. Similarly, little detail is reported about the instruction on aspect that has been received by learners recruited in many other AH studies, though it is probably safe to assume that it was rather conventional. As an illustrative example, Camps (2005) reported that the learners recruited had six lessons on PRET, two on IMP, and three on the contrast, but provided no details about what learners were taught during those lessons. Future work on the AH should strive to be more transparent about exactly how learners are taught to think about PRET and IMP.

Conventional, rule-based instruction is known to be inaccurate (Frantzen, 1995) and confusing (Author, 2021; Liskin-Gasparro, 2000; Yáñez Prieto, 2008). Conventional rules about aspect tend to emphasize prototypical associations, e.g. IMP is used for states and conditions, and these inaccurate rules have been blamed for some of the pervasive performance errors that even advanced learners produce (Rothman, 2008). Corpus studies suggest that L1 Spanish exhibits a distributional bias for prototypicality (PRET with telics and IMP with atelics) (Tracy-Ventura & Cuesta Medina, 2018), observational classroom studies suggest that teacher discourse is even more biased towards prototypicality (Diadone, 2019), and conventional instruction may explicitly reinforce the implicit biases that learners are likely to develop suggesting that PRET and IMP are really about a contrast in lexical aspect. Future advances in PRET and IMP instruction should strive to disentangle lexical from viewpoint aspect, both implicitly (less biased input) and explicitly

(metalinguistic information given). The current study suggests that a C-BLI approach based on boundedness was successful in terms of developing novice learners' ability to use PRET and IMP in nonprototypical contexts, but it is surely not the only pedagogical approach that can do so. It may be that C-BLI is ideally suited for the novice level, before the concept taught must compete psychologically with learners' rule-based explicit knowledge or their implicit knowledge of distributional biases of forms in the input, but future work must investigate the effect of exposure and input variables on C-BLI learning, as they were all conflated here.

The current study had several other limitations as well. First, there may have been task timing or administration differences that influenced the results. The timing of testing for the corpus learners is not reported, but the C-BLI learners were tested directly after instruction, which may have influenced their reticence to use the present tense, as opposed to beginning learners in the corpus. This possibility seems less likely given that they used little present tense in the delayed posttest as well, but it is a possibility that should be explored in the future. Furthermore, delayed test data were only available from a subset of 10 learners, so future work should explore the long-term effects of C-BLI with a larger group. Future work should also look beyond group means and delve into individual learners' developmental trajectories. C-BLI researchers, and SCT researchers more generally, are to be commended for the tremendous effort they often make to collect and analyze rich data so as to deeply understand the development of individual learners. Space constraints make it challenging to do so here, but future research should investigate individual learners' abilities to use PRET and IMP in nonprototypical ways after various instructional experiences.

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