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Emergent literacy skills in bilingual children: evidence for the role of L1 syntactic comprehension

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The study examines emergent literacy skills in a group of young English Language Learners who are dominant in their native language, Spanish. We investigate the relative contribution of syntactic comprehension in the L1 and L2 to the development of emergent reading skills in English. Participants were bilingual kindergarteners from two public schools in New York City. Two main tests were administered: a test of syntactic comprehension, given in both Spanish and English, and a test of literacy skills, specifically listening comprehension in both the L1 and L2 are significant predictors of performance on L2 listening comprehension, with L1 syntactic comprehension shown to be the stronger predictor. These findings provide support for the position that L1 knowledge may be accessible to facilitate comprehension in the L2, particularly in cases in which the learners are dominant in the L1 (cf. Riches & Genesee, 2006).We interpret our results as evidence that there are benefits to supporting the development of the native language in the homes and classrooms of ELLs.

Keywords: ELL; childhood bilingualism; literacy

Introduction

Research that furthers an understanding of successful second-language reading is critical, as the acquisition of literacy is, as Bialystok (2007, 46) points out, 'the supreme achievement of schooling and its most indelible academic legacy.' In a recent report, August and Shanahan (2006) issue a call for more research and indeed more sophisticated approaches to research that will ultimately lead to improving literacy for English Language Learners (ELLs). Part of that call emphasizes the need to address crosslinguistic factors that may be relevant to the development of L2 reading. Understanding these crosslinguistic factors is crucial to an understanding of the role that each language should play in the ELL classroom.

Bialystok (2007, 50) notes that although there is significant research describing the process of learning to read in a first language, there is 'surprisingly little investigation of how the knowledge of two languages creates a different stage on which it unfolds for bilingual children.' Recent studies (Proctor et al. 2005, 2006) have begun to address this gap, asking whether models of monolingual reading comprehension can be applied to bilingual readers. To take one well-known example, phonological awareness is a predictor of success in early reading, but as Riches and Genesee (2006, 73) discuss, it must be determined whether the relationship between

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phonological awareness and reading is 'tied to a particular language.' That is, it is essential to know whether phonological awareness in the L1 only affects reading in the L1, or whether there is potential for a crosslinguistic relationship.

The potential interconnectedness between developing language and literacy skills across the L1 and the L2 has long been recognized in the work of Jim Cummins (Cummins 2000). The overall thrust of Cummins's proposals and the empirical studies that have supported them is that the development of the first and second languages is intertwined. For example, the *Developmental Interdependence Hypothesis*[1] (Cummins 1981, 1991, 2000) states that transfer of proficiencies from the L1 to the L2 will occur. In this spirit, a large body of work has provided evidence that skills in the L1 such as phonological awareness, word reading, decoding, vocabulary knowledge, oral language skills and general reading proficiency can transfer to the L2 (August, Calderón, and Carlo 2000; August et al. 2005; Durgunoğlu, Nagy, and Hancin-Bhatt 1993; Ordoñez et al. 2002; Royer and Carlo 1991; Verhoeven 1994).

A pioneering study by Durgunoğlu, Nagy, and Hancin-Bhatt (1993), examining Spanish-dominant bilingual children in the USA, argued that the L1 may play an interesting role in the development of L2 literacy skills. The study showed that phonological awareness in the L1 is the best predictor of success on tasks of L2 word reading and L2 pseudo-word reading. In other words, in some cases a component skill in the L1 is a *better* predictor of performance on a higher-level skill in the L2 than the same component skill in the L2. The present study, in the spirit of work such as Durgunoğlu, Nagy, and Hancin-Bhatt (1993), asks whether syntactic comprehension in the native language might contribute to the development of a higher-level emergent literacy skill, as measured by listening comprehension, in the second language. In particular we ask whether L1 syntactic comprehension might in some cases be a *stronger* predictor of L2 literacy skills than L2 syntactic comprehension.

Our interest in this specific type of crosslinguistic relationship in no way undermines research that has established connections between language and literacy skills *within* the L2. Rather, we seek to contribute to a complete picture of the bilingual reading process, which undoubtedly includes a clear understanding of the contributions that both L1 and L2 component skills make to that process. Work by Lanauze and Snow (1989) and Reese et al. (2000) on the relationship between oral proficiency and reading has shown that the acquisition of reading in the L2 is able to proceed with limited development in the L2, if oral proficiency in the L1 is adequately advanced. The hypothesis that we investigate is that for children who are L1 dominant, the L1 plays a stronger role. In the next section, we situate our study in the broader literature examining emergent literacy skills.

The relationship between syntactic comprehension and emergent literacy skills

Research on emergent language and literacy skills in the L1 and L2 has predominantly addressed reading at the word level and has demonstrated the significance of component language skills such as phonological awareness (Carlisle et al. 1999; Ehri and Wilce 1980, 1985; Perfetti et al. 1987), vocabulary (Barnett 1986; Bossers 1992; Carlisle et al. 1999; Haynes and Carr 1990; Yamashita 1999), and oral proficiency (Reese et al. 2000; Verhoeven 1990). However, less is known about the precursor skills that may contribute to reading beyond the word level, such as those skills that will be crucial in the development of reading texts. It is expected that knowledge of syntax or sentence structure is crucial to success in reading comprehension, as the reading of

a text involves the processing of connected text, which is itself dependent on syntactic processing.

An observation from Wong Fillmore and Valadez (1986, 661), discussed by MacSwan and Rolstad (2005), nicely supports our interest in the particular precursor skill investigated here, namely syntax, and the development of a crosslinguistic understanding of reading comprehension, namely one that includes a specific role for the first language:

> There is no other area of the curriculum in which the arguments for beginning with native language instruction are clearer. Reading is unquestionably a language-dependent skill. . .What the reader must apply in this constructive process, as we have learned from studies of reading comprehension, is knowledge that is not encoded in the written word: knowledge of the language, of convention of its use, and of the topics treated in the text.

Wong Fillmore and Valadez (1986) recognize the relevance of the native language and point out that reading comprehension entails much more than the reading of individual words. The child must apply his or her knowledge of language in general to the reading of a text, and knowledge of language entails knowledge of syntax. In the monolingual literature, the role that syntax plays in the development of successful reading skills is well established (Adams 1980; Balota, Flores d'Arcais, and Rayner 1990; Bowey 1986a, 1986b; Craig, Connor, and Washington 2003; Goff, Pratt, and Ong 2005; Mann 1991; Siegel and Ryan 1989; Snow, Burns, and Griffin 1998; Tunmer, Nesdale, and Wright 1987; Waltzman and Cairns 2000). In the literature on reading in a second language, the number of studies investigating the relationship between L2 syntax and L2 reading comprehension remains relatively small. Nevertheless, a growing body of research on both children (Alderson 1993; Bernhardt 1991, 2000; Gaux and Gombert 1999; Lefrançois and Armand 2003; Nagy, McClure, and Mir 1997; Van Gelderen et al. 2003, 2004; Verhoeven 1990) and adults (Barnett 1986; Berkemeyer 1994; Kitajima 1997; Shiotsu and Weir 2007) has provided evidence for such a relationship. For example, Shiotsu and Weir (2007) showed L2 syntax to be a stronger predictor of L2 reading comprehension than L2 vocabulary knowledge. However, it may not be immediately evident exactly how the mastery of complex sentence structure contributes to successful reading. Adams (1980, 23) points out: 'If readers cannot recognize a word, they generally *know* they cannot. If they cannot recognize a syntactic structure, they may not even realize it. Further at the lexical level, it is easy to distinguish between whether readers do not know a word or just cannot read it. The parallel distinction at the syntactic level may be unclear.'[2]

Our study contributes to this growing body of research in an innovative way. To our knowledge, no study has examined the relationship between syntactic comprehension and emergent literacy in the bilingual child with an eye toward establishing the *relative contributions* of syntactic skills in the L1 and L2. We situate our investigation within the framework of emergent literacy. That is, rather than focusing on a learner population that already knows how to read, we investigate instead whether syntactic comprehension makes a significant contribution to emergent reading skills in the young bilingual child. We focus in particular on the development of listening comprehension. Previous studies have shown that listening comprehension is a reliable predictor of later performance on reading comprehension in both the first and second language (Gough and Tunmer 1986; Proctor et al. 2005; Royer and Carlo 1991; Stanovich, Cunningham, and Feeman 1984).

The paper is organized as follows. In the next section we outline our specific research questions and hypotheses. In the following two sections the methodology and results of our study are discussed. We conclude by discussing the implications of our results with respect to the role of the native language in ELL classrooms.

Research questions and hypotheses

The study investigates the role that the L1 can play when students have limited competencies in the L2 (cf. Lanauze and Snow 1989; Reese et al. 2000). Thus, we focus in particular on bilingual children who are dominant in their native language, Spanish. We predict that a strong syntactic base in the L1, Spanish, will contribute to better performance on a test of emergent literacy in the L2, English. Our design also allows for the examination of the relationship between L2 syntax and L2 emergent literacy. However, in the Spanish-dominant population that we investigate, we hypothesize that L1 syntax will be the stronger predictor of L2 emergent literacy. In order to examine these hypotheses, our participants were given a standardized test of reading readiness in English as well as tests designed to measure their level of syntactic comprehension in the L1, Spanish, and the L2, English.

Methodology

Participants

The participants were kindergarteners from two New York City public elementary schools with bilingual education programs. Twenty-two participants completed a standardized test of reading readiness, given in English, and a series of syntax measures, given in both Spanish and English.[3] Of these 22 participants, 13 were classified as Spanish dominant and thus we only report results for these children. Language dominance was determined on the basis of overall performance across the syntax measures that were given in each language. The 13 Spanish-dominant children performed significantly better overall on the complete set of syntax measures in Spanish. The mean age of the 13 participants was 5.9 (5.3–6.1).

Reading readiness measure

We administered the *Gates MacGinitie* reading test, level Pre-Reading (PR), a normed and standardized test of reading readiness '(Riverside Publishing, 2000)'. This test is designed for children in kindergarten and first grade and measures knowledge of a variety of concepts that are important in the development of reading skills. The four subsections of the test are: *Literacy Concepts, Oral Language Concepts, Letters and Letter-Sound Correspondence*, and *Listening Comprehension*. The *Gates MacGinitie* test was selected because it can be administered in a relatively short amount of time (75–100 minutes) and because the test has been adopted by various school districts to measure reading skills. The test was recommended to us by the New York City Board of Education's Division of ELLs.

We will focus in particular on the listening comprehension subsection, which measures a student's ability to understand connected text. As was mentioned in the introduction, listening comprehension has been shown to predict later performance in reading comprehension in both the first and second language (Gough and Tunmer

1986; Royer and Carlo, 1991). Participants listened to short story narrations and were then asked to select the picture that best matched the story from a series of three different pictures.

The PR test was administered in two sessions. In each session two researchers administered the test to a group of two to eight children. This multiple-choice test is administered orally; participants respond in a test booklet, marking down their answers in pencil.

Syntax measure

The syntax measure was designed to evaluate children's level of syntactic development with respect to knowledge of both coordinate (*The cat runs* and *the bear jumps*) and subordinate (*The cat hugs the bear* who jumps) structures. Comparable measures were developed in both English and Spanish. We chose to focus on coordination and subordination because these structures are considered milestones in syntactic development in the literature on monolingual children (De Villiers et al. 1979; Goodluck and Tavakolian 1982; Hsu, Cairns, and Fiengo 1985; Lust and Mervis 1980; Sheldon 1974). Research has shown that knowledge of coordination generally precedes subordination in both production and comprehension (Sheldon 1974). The specific structures we selected are similar in English and Spanish and therefore it was not expected that crosslinguistic differences between the L1, Spanish, and the L2, English, would affect the children's performance on this measure. In addition, only simple lexical items were used in the test sentences. Three types of coordinate structures were tested: sentence coordination, subject coordination and object coordination. Examples of the coordination test sentences in both Spanish and English are given in (1).

(1) Sentence Types: Coordination

(1a) Sentence Coordination
The cat jumps and the bear runs.
El gato salta y el oso corre.

(1b) Object Coordination
The monkey touches the bear and the cat.
El mono toca al oso y al gato.

(1c) Subject Coordination
The dog and the cat sleep.
El perro y el gato duermen.

In addition, four types of subordinate structures were included: relative clauses with intransitive (*jump*) and transitive (*push the box*) verb phrases, as well as temporal adverbial (*before*) clauses with intransitive and transitive verb phrases. Examples of the subordination test sentences in both Spanish and English are given in (2).

(2) Sentence Types: Subordination

(2a) Relative clause with intransitive verb phrase
The monkey hugs the dog who jumps.
El mono abraza al perro que salta.

(2b) Relative clause with transitive verb phrase
The bear hugs the cat who pushes the box.
El oso abraza al gato que empuja la caja.

(2c) Adverbial clause with intransitive verb phrase
The monkey pushes the dog before dancing.
El mono empuja al perro antes de bailar.

(2d) Adverbial clause with transitive verb phrase
The dog punches the bear before touching the box.
El perro golpea al oso antes de tocar la caja.

These particular subordinate sentence types were selected because the monolingual literature has shown that these structures are among the first complex sentence types to be acquired (Chomsky 1969; Fragman and Goodluck 2000; O'Grady 1997; De Villiers, Tager Flusberg, Hakuta, and Cohen 1979). Simple transitive sentences (*The cat pushes the box*) were used as fillers. The entire test included 32 sentences, four of each sentence type. Sentences were randomized and each child received one of four randomized test batteries in English and one of four randomized test batteries in Spanish. The procedure for this test is explained in the following section. Half of the children received the Spanish test first; half of the children received the English test first.

Syntax measure: procedure and scoring

Comprehension of the structures in (1) and (2) was tested using an *act-out task*. The test was administered to the children in both Spanish and English on two separate occasions. In an act-out task, children use stuffed animals and props to *act out* sentences that are read to them by a researcher (De Villiers et al. 1979; O'Grady 1997). Each child was tested individually, and participated in a warm-up session before moving on to the test items. The warm-up session was conducted in the same language in which the task was to be administered. During the warm up, each child was introduced to five props: a plastic box and four stuffed animals, a cat, a dog, a bear, and a monkey. The props were placed on a table between the researcher and the child. The child was then instructed to listen carefully to each sentence given by the researcher, and to then act out the sentence using the relevant props on the table. All props and all verbs included in the test sentences were introduced during the warm up. Following the warm up, the experimenter asked the child for permission to videotape the session. When child assent was given, the session was taped. Videotaping allows the researcher to focus completely on the child during the test session and also facilitates the scoring and evaluation of the child's performance.

Table 1. Mean percent correct on the subsections of the Gates MacGinitie test, level Pre-Reading (n=13).

	Literacy concepts	Oral language concepts	Letters/letter-sound correspondences	Listening comprehension	Reading readiness overall
M	54	35	71	43	53
SD	17.54	9.79	13.91	13.6	10.36

During the test session, if a child asked to have a test sentence repeated, the experimenter repeated the sentence one time. If the child asked a second time, the test sentence was repeated, but the child's response was not scored.

In order to evaluate the children's performance on this task, a conservative scoring procedure was used. A response was counted as correct only if the entire sentence was acted out correctly and included no lexical errors. If the child used the wrong animals to act out the sentence, the sentence was not scored as correct. Although our main interest is knowledge of syntactic structure and not knowledge of lexical items, we still felt that this strict set of criteria was necessary.

Results

We first report the results of the children's performance on the Gates-MacGinitie test, followed by the results of the syntax measure in both the L1, Spanish, and the L2, English. Next, we summarize the results of a series of correlations and regressions that examine the relationship between performance on the syntax measures and performance on the reading readiness measure, which address the question at the center of the present study.

Reading readiness measure

Group results for the standardized measure of English reading readiness, the *Gates MacGinitie Reading Test*, level PR, are summarized in Table 1.

The overall score is based on four sections: *Literacy Concepts, Oral Language Concepts, Letters and Letter-Sound Correspondences* and *Listening Comprehension*, all of which are predicted to indicate later reading skills. Of particular interest to the present study is performance on the listening comprehension subsection.

Syntax measure

Group results for the syntax measure in both English and Spanish are summarized in Table 2 below. In this summary we combine the three types of coordination (subject, object and sentence) and the four types of subordination (two types of relative clause and two types of adverbial clause).

Table 2. Mean performance on the syntax measure.

	English coordination	English subordination	English syntax	Spanish coordination	Spanish subordination	Spanish syntax
M	71	13	38	85	15	45
SD	20.3	14.3	12.2	15.0	13.6	11.6

It is clear from the results in Table 2 that performance on coordination was better than performance on subordination in both English and Spanish, just as has been reported in studies on monolingual language development. Results of a repeated-measures analysis of variance (ANOVA) confirmed that performance on coordination in Spanish was better than performance on subordination in Spanish, (F (1, 12) = 230.27, $p < 0.01$). Likewise, performance on coordination in English was better than performance on subordination in English, (F (1, 12) = 74.95, $p < 0.01$). Secondly, though the children perform better in Spanish than in English with the coordination sentences (F (1, 12) = 5.60, $p < 0.05$), they have equal difficulty in the two languages with the subordination sentences.

In order to understand the difficulty with subordination, an error analysis was conducted. Lexical substitutions accounted for about one-third of the errors in both languages. We also found that children frequently omitted the subordinate clause entirely, in both English and Spanish. This error pattern has been frequently observed in monolingual development (De Villiers et al. 1979; Hamburger and Crain 1982; Hsu, Cairns, and Fiengo 1985, among others). Therefore, although the children find subordination difficult, they are nevertheless following the same developmental patterns as monolingual children.

The relationship between syntax and reading readiness

We now turn to the correlations that are at the center of our study. Table 3 summarizes the correlations between performance on the syntax measures in English and Spanish and scores on the test of reading readiness in English. We focus on correlations with performance on the listening comprehension subtest. Correlations between the syntax measures and the other subsections of the Gates-MacGinitie test were not significant.

The results in Table 3 show that there is a significant, positive relationship between performance on the syntax measure targeting coordination and subordination and performance on the test of listening comprehension in English. These results suggest that having a strong syntactic base in either the L1 or L2 is related to better performance on listening comprehension in the L2. Although the positive relationship is evident in both languages, the strongest correlations are between the scores on Spanish syntax and English listening comprehension. In order to further examine the relative contribution of L1 and L2 syntax to reading readiness, we conducted a stepwise regression with performance on English (L2) listening comprehension as the

Table 3. Correlations between the syntax measures and English listening comprehension.

	Gates MacGinitie: listening comprehension subtest
English coordination	0.44
English subordination	0.58*
English syntax overall	0.70**
Spanish coordination	0.62*
Spanish subordination	0.78**
Spanish syntax overall	0.87**

*$p < 0.05$; **$p < 0.01$.

Table 4. Step-wise regression analysis evaluating the contribution of English subordination and Spanish subordination to English listening comprehension.

	B	SE B	B
Step 1			
Constant	36.31	4.42	
English subordination	0.55	.23	.58*
Step 2			
Constant	30.93	3.86	
English subordination	0.21	0.21	0.22
Spanish subordination	0.66	0.23	0.66*

Note: $R^2 = 0.336$ for Step 1; $\triangle R^2 = 0.307$ for Step 2 ($p < 0.01$).
*$p < 0.05$.

dependent outcome variable and Spanish (L1) subordination (mean percent correct) and English (L2) subordination (mean percent correct) entered as the predictors.

In the first analysis, the L2 (English) subordination score was entered in the first step and the L1 (Spanish) subordination score was added in the second step. Results of the step-wise regression are shown in Table 4.

L2 (English) subordination accounted for 34% of the variance in the performance on the English listening comprehension subtest and the addition of the L1 Spanish subordination score accounted for an additional 31% of the variance ($\triangle R^2 = 0.307$).

In the second analysis, the L1 (Spanish) subordination score was entered in the first step. The Spanish subordination score accounted for 61% of the variance and the addition of the L2 (English) subordination score in the second step explained only an additional 3%, a result that did not reach significance ($\triangle R^2 = 0.034$, $p = 0.352$). Therefore, the L2 (English) subordination score only reliably predicted performance on English listening comprehension when entered first. The results of both models suggest that Spanish subordination is the stronger predictor of performance on English listening comprehension. Although the number of subjects is small ($n = 13$) and the results must be taken as preliminary, these findings point to L1 syntactic comprehension as the stronger predictor of success in L2 reading readiness.[4]

Discussion

The broad goal of our study was to identify the role that syntactic comprehension plays in the acquisition of emergent literacy skills in bilingual children. Our empirical data contribute to an understanding of this role in two ways. First, our results identify syntactic comprehension as a precursor that is relevant to emergent literacy in ELLs. The relationship between syntax and reading has been established for monolingual readers, but has only begun to be established for second-language learners. Second, while our study establishes a connection between both L1 syntactic comprehension and L2 listening comprehension and L2 syntactic comprehension and L2 listening comprehension, our analyses show that for our group of young, Spanish-dominant ELLs, L1 syntactic comprehension was the *stronger* predictor of L2 listening comprehension. While this type of crosslinguistic relationship has been discussed in the literacy literature in the realm of phonological awareness (Durgunoğlu, Nagy, and Hancin-Bhatt 1993, cf. review in Riches and Genesee 2006),

to our knowledge this is one of the first studies to address the issue of the *relative contribution* of the L1 and L2 in the realm of syntactic development.

We acknowledge that the syntactic similarities between English and Spanish, especially with respect to structures tested in our syntax measure, could have played a role in our findings. Further research that addresses syntactically different languages will allow us to better understand the crosslinguistic connections established in our study. We also acknowledge the need for ongoing research with balanced bilinguals and bilinguals who are dominant in their L2, which will allow a fuller understanding of the implications of the research presented here.

Our results have significant implications for models of bilingual literacy development and for the role of the native language in the education of ELLs, which we address here in turn. Regarding models of bilingual literacy development, our results contribute to a growing body of work that identifies syntactic comprehension as a significant precursor to L2 reading comprehension (Shiotsu and Weir 2007). While word-level reading is unarguably an essential ingredient in the comprehension of written text, our study addresses the skills that may contribute to reading beyond the word level, providing compelling evidence for including syntactic comprehension among the set of predictors of literacy achievement. As noted in the Introduction, we cannot assume that the relevant precursors in a model of monolingual reading will necessarily translate to a bilingual model (Proctor et al. 2005, 2006). Our results contribute to the growing body of work that asks whether predictors for monolingual readers are the same as predictors for second-language readers (Lipka and Siegel 2007), and confirm that syntactic comprehension is a relevant predictor of emergent literacy for our ELL participants. Our results also support a crosslinguistic model of second-language literacy development with new empirical data. We have shown that syntactic comprehension in the L1 is actually a *better* predictor of L2 reading readiness than syntactic comprehension in the L2.[5] These results in no way detract from the important research that has established connections between L2 component skills and L2 reading. Rather, in investigating children who are not dominant in the L2, we have built on prior research to develop a more complete picture of the process that ultimately leads to second-language literacy.

The implications of the crosslinguistic relationship we report on here extend to the role that the native language should play in the classroom of the ELL. Recent research has shown that bilingual education, rather than immersion, ultimately benefits students (Krashen and McField 2005; Rolstad, Mahoney, and Glass 2005; Slavin and Cheung 2005). Still, the debate continues, and even meta-analyses of studies that assess bilingual and English Language Immersion programs have yielded different interpretations (Rolstad, Mahoney, and Glass 2005; Rossell and Kudar 2005; Slavin and Cheung 2005), leading to different views regarding which methods are most beneficial to students. The research presented here provides support for the role of the first language in the education of ELLs, as it suggests that syntactic development is not, as Riches and Genesee (2006, 73) put it, 'tied to a particular language': Just as Durgunoğlu, Nagy, and Hancin-Bhatt (1993) showed that L1 phonological awareness made a unique contribution to L2 word-level skills, we have shown here that L1 syntactic development makes a unique contribution to text-level listening comprehension in the L2. We interpret our results as evidence for the supporting role that the native language can play in the ELL classroom. Given the evidence we have presented in this study, we recommend L1 or native language support in instruction of reading, i.e. Spanish-language materials.[6] However, we

cannot and should not dismiss the impact of the same syntactic precursors in the L2 on L2 text comprehension. After all, our own study does report a correlation between L2 syntactic comprehension and L2 emergent literacy. Therefore a bilingual reading program with strong native language support would be beneficial. This view is consonant with a number of specific models of educational development and pedagogical approaches (Cummins 2000; Krashen 2004; MacSwan and Rolstad 2003, 2005) that converge on support for the role of the L1 in the education of ELLs, as opposed to the view that second-language academic development proceeds independent of the L1. We thus provide an empirical argument against the 'time on task' view (see Porter 1990; Rossell and Baker 1996; Rossell and Ross 1986) and argue in favor of the supportive role that the development of the native language has in the development of second-language literacy.

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Notes

1. Similar to the *Linguistic interdependence hypothesis* of Bernhardt and Kamil (1995).
2. Emphasis in original.
3. The research presented here is part of a larger study in which three syntax measures were administered: coordination and subordination; tense and aspect; and referential awareness. Here we report only on the coordination and subordination aspect of the study.
4. Given the low number of subjects we also examined the adjusted R^2 values for the regressions. The pattern of results remained the same. In the first analysis, English subordination was entered first and Spanish subordination was entered second: L2 English subordination accounted for 28% of the variance in the performance on the listening comprehension test and the addition of the L1 Spanish subordination score accounted for an additional 30% of the variance. In the second analysis, with Spanish entered first, scores on L1 Spanish subordination accounted for 30% of the variance and there was no change when scores on English subordination were added in the second step.
5. As a reviewer points out, at this point the conclusions that can be drawn from our study are restricted to cases in which the L1 and L2 are structurally similar. As we state earlier in the Discussion, future research with different language pairings will allow us to further investigate the extent of the crosslinguistic relationship we propose here.
6. A reviewer asks, given our stated interest in the bilingual reading process, what we might advocate more specifically in terms of reading instruction for bilingual children, including the timing of reading instruction. These are clearly important questions, as their answers directly impact the educational experience of ELLs. We are indeed interested in the bilingual reading process, as successful reading (not just successful PR) is the ultimate goal for these students. However, as our study was designed to answer questions about reading readiness and emergent literacy, we are limited in what we can say in this particular article about the actual reading process, and thus we are limited in what we can say about reading instruction. In future research we plan to address the contribution syntactic comprehension in the L1 and L2 make to reading comprehension directly, in older elementary students who have already begun to read. The present study does not speak to the timing of reading instruction, and in fact cannot and should not be interpreted as saying anything

about timing. A longitudinal study – one that looked at pre-readers as well as readers – is required to properly answer the reviewer's question. We do not feel we are in a position to advocate reading instruction in the L1 to the *exclusion* of reading instruction in the L2, as academic success will in many cases ultimately be tied to successful reading in the L2. Whenever reading does begin, our view is that reading instruction should be provided in both languages.

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