Published in final edited form as:

Lang Sociocult Theory. 2014 ; 1(2): 101–124. doi:10.1558/1st.v1i2.101.

Bilingual children's use of lexical strategies under narrative monologue and dialogue conditions

Kai J. Greene*, Lisa M. Bedore, and Elizabeth D. Peña

California State University, East Bay, CA, USA.

Abstract

Purpose—This study examined lexical strategies produced by Spanish-English bilingual kindergartners across two different narrative elicitation tasks.

Method—Fifty participants ($M = 67.24$ months) produced narratives in English under monologue and dialogue conditions. Participants were placed in high and low language performance groups determined by results from a bilingual language screener. Per parent report, children were matched by age, current language use, and age of first exposure to English. Analyses examined strategy types across participants' performance levels and task condition. Further evaluation compared strategy usage with general language productivity measures.

Results—Child learners access similar lexical strategies as reported for adult second language learners. Performance level did not differentiate strategy type and frequency of use. Overall, participants relied more on all-purpose words and code-switching in the monologue condition, while employment of word approximation and literal translation increased during the mediated dialogue sessions. Application of all-purpose words, word approximations, and literal translation influenced utterance length and lexical diversity.

Conclusions—Participants adjusted lexical strategy use according to narrative condition. The application of mediated learning serves as an instructional model that reveals information specific to young second language learners. Application of all-purpose words, word approximations, and literal translation influenced utterance length and lexical diversity.

Implications—Insight to the characteristics of bilingual children's language processing skills guides evidenced-based instructional decisions.

Keywords

mediated learning; narrative; preschoolers; Spanish-English

Correspondence concerning this article should be addressed to Kai J. Greene: kai.greene@csueastbay.edu. Kai J. Greene is Assistant Professor in the Department of Communicative Sciences and Disorders at California State University, East Bay, CA.

Lisa M. Bedore is Professor, Communication Sciences and Disorders, The University of Texas at Austin.

Elizabeth D. Peña is Professor, Communication Sciences and Disorders, The University of Texas at Austin.

Introduction

Bilingual children who primarily speak Spanish at home and start formal second language (L2) English instruction upon preschool entry represent the largest language-minority group in the United States (NCES, 2010). While young L2 learners begin school with mixed experience and exposure in two languages, most participate in English-only instruction (Garcia, 2010; Kindler, 2001). As a result, bilingual kindergarteners primarily confront academic activities in a less familiar language. Key to the development of early communication skills is word knowledge, which permits access to curricular activities (August *et al.*, 2005; Bedore *et al.*, 2010; Silverman, 2007). Classroom teachers employ a range of vocabulary-based instructive techniques such as word repetition, elicitation tasks, and question elaboration. Within these contexts, verbal exchanges between teachers and students promote word learning (Bodrova and Leong, 2007; Griffin *et al.*, 2004;). In this sense, kindergarteners practice vocabulary via interactive dialogues with others, which provides many opportunities to enhance vocabulary skills (Bohman *et al.*, 2010; Gee, 2007; Mercer, 1995).

Along with word enrichment activities, exposure to narrative discourse constitutes an integral component of children's early education (Gutiérrez-Clellen and Simon-Cerejido, 2009; Johnston, 2008; Uccelli and Paez, 2007). Narratives represent the earliest form of monologue discourse (Boudreau, 2008; Ukrainetz *et al.*, 2000). Oral narrative production tasks require greater linguistic processing skills over sentence production and conversational exchanges (Bedore *et al.*, 2010; Hammer *et al.*, 2011; McCabe and Bliss, 2003). Berman and Slobin (1994) describe how preschoolers learn to filter language-specific options and consequently apply expressive knowledge into organized verbal events. As a result, oral narrative tasks provide an opportunity for children to apply vocabulary skills and practice sentence construction within a structured format.

Lexical strategy use and emerging second language learners

While kindergarteners' command of L2 is at a nascent developmental phase, most noted is growth in the language domain of semantics (Kan and Kohnert, 2009; Silverman, 2007; Uccelli and Paez, 2007). Naming errors, word approximations, and word retrieval difficulties often characterize an emerging learner's oral language skills due to limited exposure to, and knowledge of, the L2 semantic-lexical system (Sheng and McGregor, 2010). When speakers have not yet acquired specific L2 words, they may compensate by using lexical strategies. A synthesized definition of lexical strategies establishes how L2 learners systematically and consciously attempt to express an alternative speech plan to overcome linguistic obstacles during language processing and oral production (Bialystok, 1990; Kaspar and Kellerman, 1997; Poullisse, 1997). Lexical strategy usage further reveals how L2 speakers handle discrepancies between linguistic knowledge and communicative intention to meet their interlocutor's needs (Dore, 1986; Dornyei and Kormos, 1998; Genesee *et al.*, 1996).

Presently, less is known about child L2 learners' use of lexical strategies and whether strategy type and frequency serve as indicators of language performance. Strategy use may fluctuate among L2 learners contingent upon factors such as age, onset of L2 exposure,

language learning skills, and communicative context. Limited exposure to a less familiar language might explain how typically developing L2 children commit naming errors or use specific lexical strategies.

Studies of bilingual children's word learning abilities also note that limited word inventories, word choice errors, and non-responses on labeling tasks suggest general difficulties in language learning (Bedore and Peña, 2008; Sheng and McGregor, 2010; Sheng *et al.*, 2012). Bilingual speakers routinely code-mix or alternate between their two languages as a strategic option due to lexical uncertainty. One study in particular highlights English- and Spanish-speaking preschoolers' code-mixing patterns on test items from a bilingual semantic screener (Greene *et al.*, 2013). Participants exhibited similar code-mixing patterns yet the low language performers committed more naming errors than their high performing peers. In this case, the strategic use of code-mixing was less successful based on language performance differences. The ability to internalize and systematically apply lexical strategies may provide insight as to how effective information processing and new word learning take place among L2 learners. The purpose of the current study is to explore the relationship between Spanish-English bilingual kindergartners' language performance levels and lexical strategy usage observed under narrative monologue and dialogue discourse tasks.

Lexical strategy taxonomic and classification systems

Researchers have proposed multiple approaches to classify lexical strategies (Bialystok, 1983; Faerch and Kaspar, 1983; Kormos, 2006; Poullisse, 1990, Poullisse and Schills, 1989). Review of various classification systems indicates that strategies fall under *achievement* and *reduction* categories following the terminology. Achievement strategies require the application of existing linguistic knowledge in order to accomplish a communicative goal. Reduction strategies result in partial omission or simplification of an intended message to avoid a collapse in message execution (Dornyei and Scott, 1997). Table 1 lists lexical strategies divided by category followed by definitions and examples from the current study.

Bilingual learner's lexical strategy options

Emerging bilingual children acquire uneven but distributed knowledge between two languages (Ordoñez *et al.*, 2002; Peña and Kester, 2012). The Revised Hierarchical (RH) model centers on dual language semantic development and organization (Kroll *et al.*, 2002; 2010). Initially, first language (L1) words form direct links to matching conceptual meanings that form the foundation of knowledge in both languages. According to this model, new L2 words are accessed by means of the L1 lexicon during the early stages of L2 acquisition. Conceptual meaning in the semantic domain can be lexicalized or encoded free of grammatical restrictions. As L2 proficiency increases, words in both languages connect to a shared semantic representational system. The RH model helps explain how an L2 speaker who confronts lexical uncertainty may opt for an achievement strategy by utilizing existing linguistic knowledge (Bialystok, 1990; Poullisse, 1993). Consequently, the same speaker might employ a reduction strategy and omit part of an intended message due to conceptual uncertainty or word retrieval difficulties (Kormos, 2006).

Achievement strategies

Achievement strategies arise when an L2 speaker alters conceptual or linguistic specifications within a proposed message. The originally intended lexical item is substituted and consequently replaced. For example, *circumlocution* reflects how a speaker provides relational information based on previous semantic representations. The original message is re-conceptualized and modified by partial bits of information (Kormos, 2006). *Word approximation* reflects an effort to characterize a word's semantic features whereas *all-purpose words* correspond to lexically vacant terms when the anticipated word is unavailable (Bialystok, 2001).

Achievement strategies may also incorporate cross-linguistic transfer contingent upon the speaker's level of mutually shared knowledge in both languages. By age five, children become more skillful speakers as communicative competence increases (Dore, 1986; Genessee *et al.*, 1996). Bilingual communicative competence reflects how a speaker conceptualizes and generates a message but further demonstrates a speakers' ability to determine how effective a message is conveyed between two languages (Grosjean, 1999; Hammer *et al.*, 2011). When confronted with a less familiar word, L2 learners might *code-switch* or produce a *literal translation* based on previous L1 knowledge. The successful use of achievement strategies that involve cross-linguistic transfer also considers the speaker's awareness to discern their communicative partner's ability to understand the use of another language.

Reduction strategies

An L2 speaker overcomes linguistic obstacles by deleting part of an anticipated message via reduction strategies (Dornyei and Kormos, 1998). *Complete omission* and *message abandonment* reflect how a message is simplified on account of resource deficits or indecision. Attempts to retrieve and label a lexical item are avoided altogether. The speaker however completes the communicative goal despite a word-level omission or reduction.

Adult second language learners' use of lexical strategies

Previous research reveals how language exposure, proficiency, and task demand influence L2 adult learners' lexical strategy selection. Poulisse (1990) examined adult Dutch-speakers' use of lexical strategies in English (L2) across multiple tasks: object description, story retell, and an interview with a native English-speaker. Noticeable trade-offs existed between an L2 learner's linguistic skill and strategy use. Strategies such as circumlocution and word approximation were primarily used on the story retell and interview tasks. The high-proficient speakers reformulated word sequences based on prior and richer L2 linguistic knowledge. For example, circumlocution requires a higher cognitive and linguistic processing effort. In comparison, word approximation requires less contextual support since a single alternative word replaces the target word's fundamental semantic properties. The story retell and interview tasks imposed more language processing burdens on the less proficient speakers who were likely to code-switch or provide literal translations. This use of linguistic transfer strategies required nominal alterations as the language form is manipulated by L1 information (De Bot, 1992). Due to limited L2 knowledge, the less

proficient English-learners demonstrated an overall higher frequency of strategy use (Poulisse and Schills, 1989).

Child second language learner's use of lexical strategies

Strategy use and language task

As children possess less combined language experience and exposure than adults, it is uncertain if they access the same variety of lexical strategies. In one study, Bialystok (1983) described nine-year old English-French children's lexical strategy use during an object description task conducted in French (L2). The following strategies were identified: circumlocution, word approximation, word coinage, code-switching, literal translation, topic avoidance, and word abandonment. Children evidenced high use of achievement strategies: circumlocution (80%) and approximation (12%); and low use of avoidance (4%); code-switching (2%); and word coinage (<1%). Galván and Campbell (1979) studied the strategy use of two English-speaking students in a Spanish-language (L2) immersion program. The students acted as interpreters during interviews between a monolingual Spanish-speaker and a monolingual English-speaker. They maximized strategic use of word approximation and appeal for assistance and evidenced minimal use of reduction strategies. In these instances, the demonstrated use of achievement strategies over reduction strategies likely indicates how L2 child learner's strategy use reflects task specific demands.

Strategy use and proficiency level

Chamot and El-Dinary (1999) examined learning strategies used among third and fourth grade language immersion students identified with high and low language proficiency. The low proficiency learners clung to ineffective strategies while the high ability learners utilized strategies such as inference and elaboration that required monitoring and adapting previous linguistic knowledge. Another study examined bilingual primary school-aged children's self-identified use of language learning strategies (Purdie and Oliver, 1999). In this instance, results revealed how children's strategies that involved memory, planning and language monitoring were significantly linked to the number of years of L2 experience and exposure. Comparisons drawn between these research findings imply that during the process of L2 acquisition, adults and school-age children choose comparable lexical strategies despite noted differences in task condition and language proficiency levels.

Sociocultural theory and second language learning

Second language acquisition reflects both individual learning and learning through interactions with others. One effective instructional method used to develop and increase bilingual children's emerging L2 skills is mediated learning. Mediated learning stems from sociocultural theory, which posits how a child's cognitive and linguistic development evolves from social interactions with more informed others (Haywood and Lidz, 2007; Peña, 2000; Vygotsky, 1978; 1986). Mediated learning supports a child's modifiability or potential for learning as measured by Vygotsky's (1978; 1986) concept of the zone of proximal development (ZPD). The ZPD lies between an individual's unassisted independent performance level and the dependent level of achievement attained with guided instruction

by a more informed other. Via mediated instructional sessions, learning processes gradually become internalized thus allowing a child to independently develop more autonomous learning skills. To date, mediated learning has served as a successful method to expand L2 children's language skills across narrative tasks (Fiestas, 2008; Miller *et al.*, 2004); vocabulary learning (Kester *et al.*, 2001; Ukrainetz *et al.*, 2000); and novel word learning (Kapantzoglou *et al.*, 2012).

The current study used a task approach to evaluate the language processing skills of L2 kindergarteners. In order to document how lexical strategies vary under the demands of different discourse tasks, we compared two discourse conditions. Participants produced two separate narrative samples independently during a monologue condition, which allowed observation of the unaided use of lexical strategies. In contrast, children with guidance from an examiner produced narratives during two mediated learning sessions. The mediated sessions provided a script for interaction, which requires the active participation of both examiner and an emerging English-language learner. Children tend to show the most linguistic development when they are exposed to more complex language (see Fey, 1986). Our goal was to push the children's use of L2 skills to encourage the use of more complex language within a narrative context to increase the likelihood of lexical strategy use. While studies have evaluated strategy use among L2 adults and older school-age children, to date less is known about how younger child L2 learners make use of lexical strategies across varying discourse demands.

Specific research questions are as follows:

1. Do existing lexical strategy taxonomic systems developed for L2 adult learners apply to L2 young learners?
2. Are there lexical strategy use differences associated with language performance level on monologue and dialogue elicitation tasks?
3. Is lexical strategy use associated with language productivity measures?

Method

Participants

Fifty kindergarteners ($M = 67.25$ months) selected for this study came from two Central Texas school districts where enrollment reflects a range of language background levels across the bilingual continuum (Grosjean, 1999). Participants took part in a large English-Spanish bilingual language study on diagnostic markers for language impairment. For this study, the participants were grouped into 25 pairs based on the following criteria: chronological age (within six months); current percentage of L2 language use (combined input and output within 10%); year of first exposure to English (combined input and output within one year); and performance level based on results from a bilingual screener that measured semantic and morphosyntactic skills in both languages. Children were assigned to the high performance group if they scored at or above the 25th percentile on at least two of the four screening tasks in each language. Children were placed in the low performance

group if they scored below the 25th percentile on all four subtests. All participants passed a school-based hearing test prior to completing the bilingual screening battery (see Table 2).

Materials

Bilingual English Spanish oral screener

Participants completed the experimental version of the *Bilingual English Spanish Oral Language Screener* (BESOS) (Peña and Bedore, in preparation). The BESOS consists of semantic and morphosyntactic subtests in English and Spanish. The items are a subset drawn from the *Bilingual English Spanish Assessment* (BESA), a test of language performance for four-to-six year olds (Peña, E. *et al.*, 2014). The BESOS semantic subtest contains a variety of tasks – category generation, functions, attributes, similarities and differences, linguistic concepts and analogies – that maximally differentiate semantic development across both languages. Statistical analysis between the individual semantic subtests of the BESOS and the corresponding subtests of the BESA demonstrates strong positive correlations of 0.855 (Spanish) and 0.887 (English) (Summers *et al.*, 2010).

The BESOS morphosyntax subtests cover developmentally challenging grammatical structures in both English and Spanish. The cloze items target specific morphosyntactic forms such as plurals in English and direct object clitics in Spanish. The sentence imitation items contain sentences varying in grammatical complexity (e.g., number of clauses) and difficulty levels (e.g., age of acquisition and developmental morphosyntactic targets). Bilingual research assistants administered the screening battery to all participants. Testing in each language required approximately 15 minutes to administer and complete.

Narrative monologue and dialogue elicitation conditions

We were interested to determine if different narrative discourse conditions influenced child L2 learners' strategy use. We collected a total of four language samples under independent-monologue and dependent-dialogue elicitation conditions as part of the test protocols. In the monologue sessions, each child independently produced two narrative samples from different wordless picture books: *Two Friends* and *Bird and His Ring* (Miller *et al.*, 2001). Narratives produced under the monologue condition without examiner involvement reflect a participant's independent performance or lower end of the zone of proximal development (Bodrova and Leong, 2007; Peña, 2000; Vygotsky, 1978). The books *Two Friends* (Miller *et al.*, 2001) and *A Boy, a Dog, a Frog and a Friend* (Mayer, 1969) served as the stimuli for the two narrative samples obtained from the mediated learning sessions with an examiner under the dialogue condition. Herein, the examiner introduced new words or concepts to promote more complex language use via prompts, repetition, scaffolding techniques, and open-ended questions (Lidz and Peña; 1996; Peña *et al.*, 2006). (See Appendix A for a sample transcript of the mediated learning session.)

Transcription and coding

All of the monologue and dialogue sessions were audio-recorded (Sony MS-515 or ICD-P320). Trained graduate research assistants transcribed and coded all four sessions for data analyses using *Systematic Analysis of Language Transcripts* (SALT) software (SALT; Miller

and Iglesias, 2008). Narrative samples were marked for grammaticality to ensure correct word count and coded for English grammatical structures such as noun plurals, possessive, and verb tense markers (Bedore *et al.*, 2010). We calculated two language productivity measures from the samples: number of different words (NDW) and mean length of utterance (MLU). An extensive body of research based upon adult L2 learners directed our understanding of how to categorize, define and classify lexical strategies (Dornyei and Kormos, 1998; Dornyei and Scott, 199; Faerch and Kaspar, 1983; Poullisse, 1990). We applied previous taxonomies to classify strategy use specific to the narrative samples produced by the participants in this study. Of interest was to pinpoint a potential range of strategies that L2 children might employ. The following strategies were identified: all-purpose words, word approximation, code-switching, literal translation, word abandonment, and complete omission (see Table 1). Samples were then coded for lexical strategy use via word level codes in SALT. Low incidence strategies (occurrence < 1%) such as circumlocution, request for help, grammatical and semantic word coinage were eliminated from further analysis.

Reliability

Trained graduate research assistants reviewed each transcribed narrative session twice in order to corroborate transcription reliability. This two-tiered checking system allowed for verification of subjects' word use and grammatical accuracy within narrative utterances. Inter-rater reliability for agreement on the taxonomic coding system used to identify lexical strategies was achieved at 89.4% agreement based on 20% of randomly selected narrative samples across both elicitation conditions. A third transcriber resolved any discrepancies during the transcription and coding process.

Results

This study focused on kindergarten L2 learners' use of lexical strategies under narrative monologue and dialogue conditions. First, children's lexical strategies were identified and coded to allow a comparison to previously established adult L2 strategy taxonomies. Second, we examined high and low performers' strategy use by narrative elicitation condition. Finally, we determined whether associations linked lexical strategy use to language productivity measures via correlation analysis.

With respect to children's use of lexical strategies, we discovered that they used similar strategy categories as those utilized by adults as reported in the literature (refer to Table 1). As displayed in Figure 1, overall, participants employed strategies that fell under two general categories: achievement-based strategies: all-purpose words ($M = 23\%$); word approximation ($M = 16\%$); code-switch ($M = 5.1\%$); and literal translation ($M = 4.8\%$); and reduction-based strategies: complete omission ($M = 27.26\%$) word abandonment ($M = 23.02\%$). Circumlocution, request for help, grammatical and semantic word coinage were documented with higher frequency in adult studies yet reflected less than 1% of total strategy use among participants in this study. Additionally, results show that participants did not utilize unclassifiable strategies that deviated from previously existing taxonomies.

Lexical strategy use specific to monologue and dialogue conditions

Next, we compared high and low language performers' lexical strategy use across task conditions. Table 4 displays group means and standard deviations under monologue and dialogue conditions. We conducted a repeated measures ANOVA with task type (monologue and dialogue) and strategy use (all-purpose words, word approximations, code-switch, literal translation, complete omission, and word abandonment) as the within-subjects factors and group (high performance and low performance) as the between-subjects factor. Results indicate no significant effect for performance group, $F(1,47) = 0.356$, $p = 0.554$.

Additionally, there were no significant interactions with performance group. Thus, for further analyses, the two groups were combined.

Lexical strategy comparisons between monologue and dialogue conditions

To address potential differences by task condition, we conducted a repeated measures ANOVA with task type (monologue and dialogue) and strategy use (all-purpose words, word approximations, code-switch, literal translation, complete omission, and word abandonment) as the within-subjects factors. We report the multivariate solution because Mauchly's test of sphericity was significant indicating that we did not meet the assumptions of a normal distribution. Results indicate a significant main effect for strategy use, $F(1,44) = 58.71$, $p < 0.001$, $\eta^2 = 0.869$; and a significant strategy use by task type interaction, $F(5, 44) = 6.616$, $p < 0.001$, $\eta^2 = 0.429$. There was no significant effect of task type alone, $F(1,48) = 2.695$, $p = 0.107$, $\eta^2 = 0.053$. Post hoc paired samples $t = 0.053$ compared participants' mean percentage use of strategies between the monologue and dialogue conditions. Significant differences were observed across task type for all-purpose words ($t = 3.68$ df = 48, $p = 0.001$), code-switching ($t = 3.364$, df = 48, $p = 0.002$), and literal translation ($t = 2.672$, df = 48, $p = 0.010$) (see Figure 2). Results for word approximation ($t = 1.937$, df = 48, $p = 0.059$) were marginally significant. Overall, participants demonstrated an increased use of all-purpose words in the monologue ($M = 0.2955$) over dialogue ($M = 0.1799$); and code-switching during monologue ($M = 0.0910$) compared to the dialogue ($M = 0.0267$) task. Conversely the use of word approximation increased under the dialogue ($M = 0.1833$) over monologue ($M = 0.1226$) condition; and literal translation ($M = 0.0636$) occurred with higher frequency in the dialogue over the monologue ($M = 0.0267$) condition.

Lexical strategy use and narrative language productivity measures

Finally we assessed the relationship between language productivity measures and lexical strategy use across both narrative conditions. Correlational analysis explored the total mean percentage summary of each strategy used to determine if strategy use impacted language productivity measures: the number of different words (NDW) and the mean length of utterance at the word level (MLU-w) across all sessions. The following lexical strategies yielded positive correlations with NDW: all-purpose words ($r = 0.366$, $p = 0.009$), word approximation ($r = 0.358$, $p = 0.011$). Negative correlations surfaced between code-switching ($r = -0.283$, $p = 0.046$), and complete omission ($r = -0.280$, $p = 0.049$) for NDW. The following positive associations were discovered for MLU and lexical strategy type: all-purpose words ($r = 0.353$, $p = 0.012$), word approximation ($r = 0.510$, $p < 0.001$), and literal translation ($r = 0.323$, $p = 0.022$). Code-switching ($r = -0.283$, $p = 0.046$) and complete

omission ($r = -0.485$, $p = 0.001$) negatively impacted at MLU at the word level (see Table 4).

Discussion

This study examined how bilingual kindergarteners at a nascent stage of L2 development utilize lexical strategies to compensate for gaps in word knowledge across two narrative conditions. Initially we applied a taxonomic classification schema to identify children's use of lexical strategies. Next, we compared strategy use with participants identified with high and low language performance levels across monologue and dialogue elicitation tasks. Finally we inquired if associations existed between strategy use and language productivity measures.

Lexical strategy classification for young second language learners

The first research question evaluated if previously existing lexical strategy taxonomic systems developed for L2 adult learners apply to L2 young learners. Child L2 learners utilized a number of different strategies to avoid communication breakdowns while attempting to produce oral narrative story elements under two elicitation conditions. Systematic patterns emerged related to L2 children's employment of strategy types. Participants evidenced a high frequency of reduction strategies; complete word omission (27%) and word abandonment (23%) under both discourse conditions. The high incidence of reduction strategies reflects challenges inherent in oral narrative production, which requires more linguistic and cognitive processing skills than conversational language samples. The elevated use of reduction strategies may also be linked to participants' age ($M = 67.24$) and the limited number of years of exposure to English (see Table 2). We interpret the considerable use of achievement strategies such as all-purpose words ($M = 23\%$) and word approximation ($M = 16\%$) as a demonstration of emerging L2 skills. At this stage of learning, young L2 learners utilize empty lexical terms or approximations that share semantic features with the target word due to weak or less-formed word representations and limited intrinsic links connected with lexical knowledge (Ordoñez *et al.*, 2004; Sheng and McGregor, 2010). While a child's exposure to two languages contributes to the development of conceptual knowledge, additional achievement strategies involve the transfer of previous linguistic knowledge. The use of code-switching ($M = 5.1\%$) and literal translation ($M = 4.8\%$) informs how young child L2 learners are developing communicative competence and consequently modify L1 and/or L2 phonological and morphological rules to fit the semantic representation of the target word.

While L2 learners used a variety of strategies during dialogue and monologue conditions, low incidence strategies such as circumlocution, paraphrasing, word definitions, grammatical word coinage and appeal for assistance were not significant ($< 1\%$). However the use of circumlocution, paraphrasing, request for help, and word definitions were steadily observed in previous studies with L2 adults and older school-age children (Bialystok, 1983; Galván and Campbell, 1979; Wongsawang, 2001). Recall how circumlocution and paraphrasing involve an additional processing burden as the speaker attempts to organize language knowledge to include the semantic features of a word. Minimal application of

these strategies suggests how due to age and limited L2 experience, the young L2 learners in this study lack sufficient linguistic knowledge that restricts the employment of these achievement strategies.

Overall, findings demonstrate that children and adults in the process of L2 learning display comparable patterns of strategy use. Apparently a core set of common lexical strategies is available to L2 learners, while use of other strategies seems contingent upon factors such as age of exposure and years of language experience. Overall, children implemented lexical strategies consistent with L2 adult taxonomies established from previous studies (Bialystok, 1983; 1990; Dornyei and Kormos, 1989; Kormos, 2006; Poulisse, 1990).

Strategy use across language performance levels

The second research question compared strategy use and participant's language performance levels across discourse conditions. Recall how children's performance levels were determined by comparative analysis of English and Spanish semantic and morphosyntactic skills from a bilingual screener. Even though challenges in word retrieval, naming errors, and over use of all-purpose words are often interpreted as red flags for language learning difficulties, in this case, high and low performance levels did not differentiate participants' use of lexical strategies (Bedore and Peña, 2008; Sheng *et al.*, 2012). Strategy implementation may vary considerably among child L2 learners based on other factors such as chronological age, amount of L2 exposure, and contextual demands. These results are comparable to previous child (Bialystok, 1983; Galván and Campbell, 1979) and adult studies (Poulisse, 1990; Poulisse and Schills, 1989), where the elicitation task and language proficiency served as the principal factors that differentiated strategy selection. In sum, findings suggest that regardless of language performance level, once an L2 learner possesses a certain degree of linguistic experience and communicative knowledge, strategy use reflects the speaker's ability and/or motivation to accomplish a language goal.

Lexical strategy use in monologue and dialogue condition

Patterns emerged between the independent use of lexical strategies in the monologue condition and participants' implementation of on-line strategies under guided instruction in the dialogue condition. The different use of lexical strategy types demonstrates how young child L2 learners adjust strategy selection while encountering communication challenges contingent on task demands. Participants exhibited a significant increase of all-purpose words and code-switching in the monologue over dialogue condition. Children in the monologue condition produced narrative samples resulting in strategy use that reflects oral language performance without examiner support. Speakers were required to apply word knowledge in a less familiar language and independently organize cohesive units of story grammar and episodic information within a narrative format (Berman and Slobin, 1994). Under the monologue condition, participants used lexically vacant all-purpose words to compensate for an intended word that was unavailable. At the same time, participants independently demonstrated the ability to reference existing L1 conceptual knowledge and code-switched as a communicative strategy to confront lexical gaps in word knowledge.

A significant increase of word approximations and literal translation occurred in the dialogue condition. Under the dialogue condition, the goal of each mediated learning session was to increase L2 child learner's narrative language complexity. Language input from the examiner supported the child L2 learner's ability to process information during the mediated learning interactions. Herein the examiner provided continuous support in the form of scaffolding, modeling, imitation, prompts, comprehensive probes, and corrective feedback in order for the child to learn, practice and internalize the use of new words within the structure of an oral narrative format (refer to Appendix A). Participants' increased use of word approximation during the dialogue condition suggests that frequent word exposure over multiple contexts assisted in the formation of important associative and intrinsic links from semantic representational concepts to the lexicon. The use of literal translation allowed children to expand their communication skills by relying on the knowledge of Spanish grammatical structure(s) while offering information in English. In this case, speakers further exhibit emerging communicative competence on sociolinguistic factors such as the instructional context and the language used by an English-speaking examiner.

The increase of reduction strategies in the dialogue over monologue condition reflects potential trade-offs in task performance. Under the monologue condition, the L2 learner is challenged to independently draw upon lexical items to fill knowledge gaps. However, the examiner's use of interactive dialogue within the guided instructional settings might explain the increase in use of word abandonment and omissions. In the dialogue condition, children are more likely to abandon some words in an effort to select other precise words or they omit words in the process of recalling vocabulary specific to the story grammar components required in narrative language discourse. These findings are consistent with past studies that observed similar tradeoffs during narrative task productions in which children commit naming and grammatical errors while trying to produce more complex stories (Cain, 2003; Bedore *et al.*, 2006).

Strategy use and language productivity measures

The third question examined associations between lexical strategy use and language productivity measures. In this study, subjects confronted the challenge of producing oral narratives in a less familiar language. Word approximations and all-purpose words were positively associated with the number of different words (NDW) and mean length of utterance (MLU). Recall how achievement strategies surface when an L2 speaker adjusts linguistic or conceptual requirements within an intended message. Both word approximations and all-purpose words reflect how a single alternative word is substituted based on general characteristics of the word target's semantic properties. These results are consistent with previous studies (Bialystok, 1983; Chamot and El-Dinary, 1999; Galván and Campbell, 1979) and demonstrate how L2 children utilize background knowledge such as inferences and elaborations to approximate target words. Overall findings suggest how systematic word exposure within a narrative discourse format over multiple contexts has an additive effect from semantic representation to lexical selection (Bedore *et al.*, 2010; Griffin *et al.*, 2004; Huckin and Coady, 1999; Peña and Kester, 2012).

Another achievement strategy, literal translation yielded a positive correlation with MLU at the word level. Recall how linguistic-transfer strategies require nominal alterations as the language form is directed by L1 information (De Bot, 1992). This finding corresponds with the Revised Hierarchical model, which purports how L2 learners begin to form associative and intrinsic links between L1 and L2 semantic-lexical knowledge (Kroll *et al.*, 2002; 2010). Additionally, the use of literal translation over code-switching reinforces the notion of communicative competence in that bilingual speakers filter the use of one language over another contingent upon task and interlocutor. No positive associations linked reduction strategies with productivity measures. Apparent trade-offs exist between an L2 learner's linguistic skill and strategy use. As L2 knowledge develops, achievement strategies serve as an indicator of how emerging word knowledge is applied to sentence formation within a narrative discourse format.

Implications for instruction

This study revealed how the use of lexical strategies represents a cognitive and linguistic processing component specific to L2 learners regardless of age. In this capacity, we observed Vygotsky's concept of the zone of proximal development at work by exploring the variability in L2 children's lexical strategy use under two narrative production tasks. Differences between the two conditions, monologue and dialogue, reflect the dynamic nature and modifiability of young L2 learners' language skills and learning potential. Narrative production in the monologue condition revealed how child L2 learners independently begin to regulate and internalize strategy use specific to lexical terms. Young L2 learners' lexical strategy use under the dialogue task conditions shows how word knowledge is co-constructed under the mediated learning sessions. Children's narrative performance via interactive assistance with the examiner revealed how different strategies surfaced that were not necessarily available under the monologue condition. An instructive approach that considers an L2 child's choice of words under independent-monologue and dependent-dialogue task conditions allows a more precise view of an individual's emerging L2 skills as related to lexical and semantic knowledge.

Acknowledgments

This research was funded by grant R01DC007439 from the National Institute on Deafness and Other Communication Disorders (NIDCD) while the authors were in attendance at the University of Texas at Austin.

References

- August D, Carlo M, Dressler C, Snow C. The critical role of vocabulary development for English language learners. *Learning Disabilities Research and Practice*. 2005; 20(1):50–57. DOI: 10.1111/j.1540-5826.2005.00120.x
- Bedore L, Peña E. Assessment of bilingual children for identification of language impairment: Current findings and implications for practice. *International Journal of Bilingual Education and Bilingualism*. 2008; 11(1):1–29. DOI: 10.2167/beb392.0
- Bedore L, Peña E, Boerger K. Ways to words: Learning a second language vocabulary. In: Schatz M, Wilkinson L, editors *The Education of English Language Learners: Research to Practice*. New York: Guilford Press; 2010.

- Bedore L, Peña E, Gillam R, Ho T. Language sample measures and language ability in Spanish-English bilingual kindergarteners. *Journal of Communication Disorders*. 2010; 43(6):498–510. DOI: 10.1016/j.jcomdis.2010.05.002 [PubMed: 20955835]
- Bedore LM, Pena ED, Summers CL, Boerger KM, Resendiz MD, Greene K, Bohman T, Gillam RB. The measure matters: Language dominance profiles across measures in Spanish–English bilingual children. *Bilingualism: Language and Cognition*. 2012; 15(3):616–629. DOI: 10.1017/S1366728912000090
- Berman R, Slobin D. *Relating Events in Narrative: A Cross-linguistic Developmental Study*. Hillsdale, NJ: Lawrence Edition; 1994.
- Bialystok E. Some factors in the selection and implementation of communication strategies. In: Faerch C, Kasper G, editors *Strategies in Inter-language Communication*. London: Longman; 1983. 100–118.
- Bialystok E. *Communication Strategies: A Psychological Analysis of Second Language Use*. Oxford: Basil Blackwell; 1990.
- Bialystok E. *Bilingualism in Development: Language, Literacy, and Cognition*. New York: Cambridge University Press; 2001.
- Bodrova E, Leong D. *Tools of the Mind*. Harlow: Pearson; 2007.
- Bohman T, Bedore L, Peña E, Mendez-Perez A, Gillam R. What you hear and what you say: Language performance in Spanish-English bilinguals. *International Journal of Bilingual Education and Bilingualism*. 2010; 13(3):325–344. DOI: 10.1080/13670050903342019 [PubMed: 21731899]
- Bongaerts T, Poulish N. Communication strategies in L1 and L2: Same or different? *Applied Linguistics*. 1989; 10(3):253–268. DOI: 10.1093/applin/10.3.253
- Boudreau D. Narrative abilities: Advances in research and implications for clinical practice. *Topics in Language Disorders*. 2008; 28(2):99–114. DOI: 10.1097/01.TLD.0000318932.08807.da
- Cain K. Text comprehension and its relation to coherence and cohesion in children's fictional narratives. *British Journal of Developmental Psychology*. 2003; 21(3):335–351. DOI: 10.1348/026151003322277739
- Chamot A, El-Dinary P. Children's learning strategies in language immersion classrooms. *The Modern Language Journal*. 1999; 83(3):319–338. DOI: 10.1111/0026-7902.00025
- De Bot K. *Applied Linguistics*. *Applied linguistics*. 1992; 13(1):1–24. DOI: 10.1093/applin/13.1.1
- Dore J. The developmental of conversational competence. In: Schiefelbusch R, editor *Language Competence: Assessment and Intervention*. San Diego, CA: College Hill Press; 1986.
- Dornyei Z, Kormos J. Problem-solving mechanisms in second language communication. *Studies in Second Language Acquisition*. 1998; 20(3):349–385. DOI: 10.1017/S0272263198003039
- Dornyei Z, Scott ML. Communication strategies in a second language: Definitions and taxonomies. *Language Learning*. 1997; 47(1):173–210. DOI: 10.1111/0023-8333.51997005
- Faerch C, Kasper G. Plans and strategies in foreign language communication. In: Faerch C, Kasper G, editors *Strategies in interlanguage Communication*. London: Longman; 1983.
- Fey M. *Language Intervention with Young Children*. San Diego, CA: College-Hill Press; 1986.
- Fiestas C. *The Dynamic Assessment of Narratives: A Bilingual Study*. ProQuest; 2008.
- Galván J, Campbell R. *Pidginization and Creolization as Language Acquisition*. New York: Newbury House; 1979. An examination of the communication strategies of two children in the Culver City Spanish Immersion Program; 133–50.
- Garcia E. *Education and Achievement: A Focus on Latino Immigrant Children*. Washington, DC: The Urban Institute; 2010.
- Gee J. *Social Linguistics and Literacies: Ideology in Discourses*. Abingdon: Routledge; 2007.
- Genesee F, Boivin I, Nicoladis E. Talking with strangers: A study of bilingual children's communicative competence. *Applied Psycholinguistics*. 1996; 17(4):427–442. DOI: 10.1017/S0142716400008183
- Goldstein B. *Bilingual Language Development and Disorders*. Second. Baltimore, MD: Brooke's Publishing; 2012.
- Greene KJ, Peña ED, Bedore LM. Lexical choice and language selection in bilingual preschoolers. *Child Language Teaching and Therapy*. 2013; 29(1):27–39. DOI: 10.1177/0265659012459743

- Griffin T, Hemphill L, Camp L, Wolf D. Oral discourse in the preschool years and later literacy skills. *First Language*. 2004; 24(2):123–147. DOI: 10.1177/0142723704042369
- Grosjean F. The bilingual's language mode. *One Mind, Two Languages: Bilingual Language Processing*. Oxford: Blackwell; 1999.
- Gutiérrez-Clellen V, Restrepo M, Simon-Cerejido G. The discriminant accuracy of a grammatical measure with Latino English-speaking children. *Journal of Speech-Language-Hearing Research*. 2007; 50(4):968–981. (2007/068). DOI: 10.1044/1092-4388
- Gutiérrez-Clellen V, Simon-Cerejido G. Using language sampling in clinical assessments with bilingual children: Challenges and future directions. *Seminars in Speech and Language*. 2009; 30(4):235–245. DOI: 10.1055/s-0029-1241722
- Hammer CS, Jia G, Uchikoshi Y. Language and literacy development of dual language learners growing up in the United States: A call for research. *Child Development Perspectives*. 2011; 5(1): 4–9. DOI: 10.1111/j.1750-8606.2010.00140.x [PubMed: 23259006]
- Haywood H, Lidz C. *Dynamic Assessment in Practice: Clinical and Educational Applications*. Cambridge: Cambridge University Press; 2007.
- Johnston J. Narratives: Twenty-five years later. *Topics in Language Disorders*. 2008; 28(2):93–98. DOI: 10.1097/01.TLD.0000318931.08807.01
- Kan P, Kohnert K. Fast mapping by bilingual preschool children. *Journal of Child Language*. 2008; 35(3):495–514. DOI: 10.1017/S0305000907008604 [PubMed: 18588712]
- Kapantzoglou M, Restrepo M, Thompson M. Dynamic assessment of word skills: Identifying language impairment in bilingual children. *Language, Speech, and Hearing Services in Schools*. 2012; 43(1):81–96. (2011/10-0095). DOI: 10.1044/0161-1461
- Kaspar G, Kellerman E, editors *Communication Strategies: Psycholinguistic and Sociolinguistic Perspectives*. New York: Longman; 1997.
- Kester E, Peña E, Gillam R. Outcomes of dynamic assessment with culturally and linguistically diverse students: A comparison of three teaching methods within a test-teach-retest framework. *Journal of Cognitive Education and Psychology*. 2001; 2(1):37–54. DOI: 10.1891/194589501787383435
- Kindler A. Survey of states' limited English proficient students and available educational programs and services: 2000–2001 summary report. Washington DC: National Clearinghouse for English; 2001.
- Kormos J. *Speech Production and Second Language Acquisition*. New York: Lawrence Erlbaum; 2006.
- Kroll JF, Michael E, Tokowicz N, Dufour R. The development of lexical fluency in a second language. *Second Language Research*. 2002; 18(2):137–171. DOI: 10.1191/0267658302sr2010a
- Kroll J, Van Hell J, Tokowicz N, Green D. The Revised Hierarchical Model: A critical review and assessment. *Bilingualism: Language and Cognition*. 2010; 13(3):373–381. DOI: 10.1017/S136672891000009X
- Lidz C, Peña E. Dynamic assessment: The model, its relevance as a nonbiased approach and its application to Latino American preschool children. *Language, Speech, and Hearing Services in Schools*. 1996; 27:367–372. DOI: 10.1044/0161-1461.2704.367
- Mayer M. *A Boy, a Dog, a Frog, and a Friend*. New York: Dial Books for Young Readers; 1969.
- McCabe A, Bliss L. *Patterns of Narrative Discourse: A Multicultural, Life Span Approach*. Boston, MA: Allyn; 2003.
- Mercer N. *The Guided Construction of Knowledge: Talk Amongst Teachers and Learners*. Cleveland: Multilingual Matters; 1995.
- Miller J, Iglesias A. *Systematic Analysis of Language Transcripts (SALT), English and Spanish (Version 9)* [Computer software]. Madison, WI: University of Wisconsin – Madison, Waisman Center, Language Analysis Laboratory; 2008.
- Miller L, Gillam R, Peña E. *Dynamic Assessment and Intervention: Improving Children's Narratives*. Austin, TX: PRO-ED; 2004.
- National Center for Education Statistics. *Status and Trends in the Education of Racial and Ethnic Groups*. Washington, DC: US Government Printing Office; 2010.

- Ordoñez C, Carlo M, Snow C, McLaughlin B. Depth and breadth of vocabulary in two languages: Which vocabulary skills transfer? *Journal of Educational Psychology*. 2002; 94(4):719–728. DOI: 10.1037/0022-0663.94.4.719
- Peña E. Measurement of modifiability in children from culturally and linguistically diverse backgrounds. *Communication Disorders Quarterly*. 2000; 21(2):87–97. DOI: 10.1177/152574010002100203
- Peña E, Gutiérrez-Clellen V, Iglesias A, Goldstein B, Bedore L. BESA: Bilingual English Spanish Assessment. San Rafael, CA: AR Clinical Publications; 2014.
- Peña E, Bedore L, Gutiérrez-Clellen V, Iglesias A, Goldstein B. BESOS: Bilingual English Spanish Oral Screener. (in preparation).
- Peña E, Gillam R, Malek M, Ruiz-Felter R, Resendiz M, Fiestas C, Sabel T. Dynamic assessment of school-age children's narrative ability: An experimental investigation of classification accuracy. *Journal of Speech, Language, and Hearing Research*. 2006; 49:1037–1057. (2006/074). DOI: 10.1044/1092-4388
- Peña E, Kester E. Bilingual lexical development: Influences, contexts, and processes. In: Goldstein B, editor *Bilingual Language Development and Disorders in Spanish-English Speakers*. Baltimore, MD: Brookes; 2012. 105–130.
- Poulisse N. The Use of Compensatory Strategies by Dutch Learners of English. Dordrecht: Fors Publications; 1990.
- Poulisse N. A theoretical account of lexical communication strategies. In: Schraeder R, Weltens B, editors *The Bilingual Lexicon*. Amsterdam: John Benjamins Publishing; 1993. 157–189.
- Poulisse N. Language production in bilinguals. In: de Groot A, Kroll J, editors *Tutorials in Bilingualism. Psycholinguistic Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates; 1997. 201–224.
- Poulisse N, Schills E. The influence of task- and proficiency-related factors on the use of compensatory strategies: A quantitative analysis. *Language Learning*. 1989; 39(1):15–48. DOI: 10.1111/j.1467-1770.1989.tb00590.x
- Purdue N, Oliver R. Language learning strategies used by bilingual school-aged children. *System*. 1999; 27(3):375–388. DOI: 10.1016/S0346-251X(99)00032-9
- O'Malley J, Chamot A. *Learning Strategies in Second Language Acquisition*. Cambridge: Cambridge University Press; 1990.
- Sheng L, McGregor KK. Lexical-semantic organization in children with specific language impairment. *Journal of Speech, Language and Hearing Research*. 2010; 53(1):146–159. (2009/08-0160). DOI: 10.1044/1092-4388
- Sheng L, Pena ED, Bedore LM, Fiestas CE. Semantic deficits in Spanish-English bilingual children with language impairment. *Journal of Speech, Language and Hearing Research*. 2012; 55(1):1–15. (2011/10-0254). DOI: 10.1044/1092-4388
- Silverman R. Vocabulary development of English-language and English-only learners in Kindergarten. *The Elementary School Journal*. 2007; 107(4):365–383. DOI: 10.1086/516669
- Summers C, Bohman T, Gillam R, Peña E, Bedore L. Bilingual performance on nonword repetition in Spanish and English. *International Journal of Language and Communication Disorders*. 2010; 45(4):480–493. DOI: 10.3109/13682820903198058 [PubMed: 20565327]
- Uccelli P, Paez M. Narrative and vocabulary development of bilingual children from kindergarten to first grade: Developmental changes and associations among English and Spanish skills. *Language, Speech, and Hearing Services in Schools*. 2007; 38(3):225–236. (2007/024). DOI: 10.1044/0161-1461
- Ukrainetz T, Harpell S, Walsh C, Coyle C. A preliminary investigation of dynamic assessment with native American kindergartners. *Language, Speech, and Hearing Services in Schools*. 2000; 31(2): 142–154. DOI: 10.1044/0161-1461.3102.142
- Vygotsky L. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press; 1978.
- Vygotsky L. *Thought and Language*. Cambridge, MA: MIT Press; 1986.
- Wongsawang P. Culture-specific notions in L2 communication strategies. *Second Language Studies*. 2001; 19(2):111–135.

Appendix A

Sample transcript of the narrative dialogue focused on story grammar components for setting and character information.

Mediated Learning Component	Mediated learning session between child (C) and the examiner (E) C: The <i>animals</i> (APW: cat and dog) are talking <i>here</i> (APW: lake) and the sky is <i>*</i> (WAB: dark or nighttime).
Intentionality: Understanding the goal	E: We are going to talk about telling good stories. You will need to include information about the setting of the story or where and when the story takes place. Also, be sure to include the characters in the story.
Meaning: Purpose of the goal	E: Information about the setting tells the listener about the world the characters live in. Also information about the characters allows me to understand who you are talking about. So the dog and the cat are the characters in the story. C: The dog and the cat are by the lake.
Transcendence: Development of hypothetical thinking about the goal	E: Where are the two animals, the cat and the dog, in the story? Are they by the lake or an ocean? And when does the story take place? Is it daytime or nighttime? How do we know? (Examiner points to picture in the book with the moon and stars in the sky). C: And it is night time. The sky has stars in it.
Transcendence: Development of hypothetical thinking about the goal	E: You included information about the when or the time of the story: nighttime; and place: the lake. Now I know about the world the characters live in. Also, you told me that a cat and a dog are in the story. Now I understand who the characters are in the story. Why is it important to tell the listener about the setting and the characters of a story? C: Because to tell the story you need to understand the story.
Competence: Developing a plan to realize the goal	E: Okay, so now tell me your story again and make sure you include information about the setting and the characters. C: One night the <i>estrellas</i> (CSW: Spanish for 'stars') are in the sky, the dog and the cat are talking by the <i>water</i> (APX: lake).

Note: APW = all-purpose words; APX word approximation; WAB – word abandonment; CSW = code-switch (refer to Table 1). Words in italics reflect lexical strategy usage.

The asterisk (*) indicates an abandoned word.

Sample script protocol modified from *Dynamic Assessment and Intervention: Improving Children's Narrative Abilities* (Miller *et al.*, 2001).

Figure 1.
Subjects' overall percentage of strategy use across both narrative conditions.

Figure 2.
Participants mean percentage use of strategies between narrative task conditions.

Table 1

Taxonomy of lexical strategies with descriptions and examples

Lexical Strategy Category	Description	Example
<i>Achievement Strategies</i>		
Circumlocution	Paraphrase or describe the properties of the target object or action.	The bird wants the <i>round ... circle</i> , you put it on your finger. (<i>round, circle</i> = ring)
All-purpose words	A general lexical item used instead of a specific word.	The <i>thing</i> wants to find <i>it</i> . (<i>thing</i> = bird, <i>it</i> = ring).
Word approximation	An alternative lexical term that shares the target word's semantic features.	The bird, he wants to go to get the <i>circle</i> . (<i>circle</i> = ring).
Code-switch	Alternating a word from one language to another.	The dog finds him in the <i>lago</i> . (<i>lago</i> /Spanish = lake/English).
Grammatical word coinage	Creating a non-existing L2 word by applying L1 or L2 morphosyntactic rules.	The bird is <i>branching</i> in the tree. (<i>branching</i> = climbing or sitting).
Semantic word coinage	Creating a non-existing L2 word.	The <i>dinolizard</i> talks about his friend. (<i>dinolizard</i> = dinosaur or lizard).
Literal translation	Literal translation of a lexical item from L1 to L2.	The cat is <i>making a party</i> . (<i>hacer una fiesta</i> /Spanish = to throw a party/English).
<i>Reduction Strategies</i>		
Complete omission	Omission of a word yet continuing as if stated.	Then the * are in the tree. (* = the bird and ring).
Word abandonment	Starting but leaving a well-formed message unfinished.	The dog goes to the *. (* = lake).

Note: Taxonomy adapted and modified from Dornyei and Scott, 1997; Dornyei and Kormos, 1998). Italicized words reflect achievement level strategy use.

The asterisk (*) implies an omitted word.

Table 2
Participants' age, language performance levels, proficiency profiles, and age of first exposure to English.

	Number	Age in Months		Percentage of English Use		Age of First English Exposure	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
High Performers	25	66.96	(3.52)	44.42	(21.73)	1.74	(1.68)
Low Performers	25	67.52	(3.75)	42.84	(21.09)	1.88	(1.72)
Total	50	67.24	(3.61)	43.63	(21.21)	1.68	(1.72)

Table 3
Participants mean percentage (standard deviation) of strategy use across narrative condition and language performance levels.

Strategy Type	Monologue			Dialogue		
	High Performance	Low Performance		High Performance	Low Performance	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>
All-purpose Words	.29	(.24)	.30	.17	(.10)	.19
Word Approximation	.08	(.11)	.16	.15	(.13)	.21
Code-switch	.10	(.23)	.08	.03	(.10)	.01
Literal Translation	.02	(.04)	.04	.05	(.06)	.07
Complete Omission	.28	(.26)	.21	.32	(.18)	.27
Word Abandonment	.22	(.18)	.21	.2463	(.10)	.2

Table 4

Correlation matrix for language productivity measures and strategy types.

	APW	APX	CSW	LIT	COW	WAB	MLU	NDW
APW	–	–0.089	–0.325	0.053	–0.451	–0.197	0.353 [*]	0.366 ^{**}
APX		–	–.241	0.080	–0.365	–0.158	0.510 ^{**}	0.358 [*]
CSW			–	–0.255	0.070	–0.247	–0.385 ^{**}	–0.283 [*]
LIT				–	–0.202	–0.178	0.323 [*]	0.072
COW					–	–0.282	–0.485 ^{**}	–0.280 [*]
WAB						–	0.069	–0.151
MLU							–	0.626 ^{**}
NDW								–

Note:

Two-tailed significance is reported at 0.05* and two-tailed significance at 0.01**.

All-purpose words = APW, word approximation = APX, code-switching = CSW, literal translation = LIT, complete omission = COW, word abandonment = WAB, mean length of utterance-word = MLU, and number of different words = NDW.