BILINGUAL PRESCHOOLERS: THE EMERGING, PRODUCTIVE USE OF ENGLISH TENSE MARKING

BACKGROUND & PURPOSE

Background
Monolingual English-speaking children with language impairment (LI) consistently show difficulties with certain grammatical morphemes (e.g., past tense -ed) (Rice, 2003) and irregular past tense (Bishop, 2013).

Typically developing (TD) bilingual children learning English as a second language (L2) show similar difficulties with regular and irregular past tense use (Paradis, 2005).

The similarity of English grammatical error patterns exhibited by TD bilinguals relative to those of monolingual children with LI places bilinguals at risk for misidentification.

Purpose and impact
To systematically and longitudinally track the emerging, productive use of English tense marking in bilingual preschool-age children.

Aim 1: To analyze changes in finite verb morphology over time.

Aim 2: To explore the utility of adapting traditional verb morphology composites in order to index the emergence of the tense-marking system.

Addresses the need for longitudinally-based, developmental data (Hoff, 2013) on early language growth and the emergence of the English tense marking system in preschool age bilinguals, who are a rapidly growing population of increasing concern.

METHOD

Participants and language samples
39 TD bilingual preschoolers tracked longitudinally over 3 semesters: fall’13; spring’14; and fall’14.

18 children in PK3 classrooms: Mean age (mos.) = 45.3 (4.6)
21 children in PK4 classrooms: Mean age (mos.) = 56.1 (5.4)

Home language: 38.5% primarily Spanish; 38.5% primarily English; and 23% relatively equal Spanish and English use.

Language sampling analysis (LSA) procedure
Four frog stories were counterbalanced: Frog Where Are You?, Frog Goes to Dinner; Frog On His Own; One Frog Too Many (Mayer, 1969, 1974, 1975a, 1975b).

This study focuses on narrative retells in English, although the children also retold narratives in Spanish each semester.

The narrative retell language samples were orthographically transcribed and coded in SALT 2012 (Miller & Iglesias, 2012).

Exclusionary criteria and final sample
17 language samples were excluded.
-9 samples were missing.
-8 samples with scarce tense marking opportunities:
  > 90% utterances without main verb (3 samples)
  < 8 complete and intelligible utterances (2 samples)
  < 2 min. transcript length (3 samples)

Final sample N = 100 language samples

Measures of finite verb morphology
Traditional finite verb morphology composites (FVMC, Bedore & Leonard, 1998) focus on regular verbs, disregarding irregular verb-marking error patterns, which may signal the emergence of the English tense-marking system (Jacobson & Schwartz, 2005).

Two adaptations of the FVMC were developed to index the emergence of the tense-marking system of bilingual preschoolers learning English.

Morphemes included
The FVMC included regular past tense (-ed); regular third person singular present (-s); copula; and auxiliary be forms.

The Adapted FVMC added auxiliary do forms; irregular past tense; and irregular present tense to the FVMC morphemes.

The Productivity-Criterion FVMC included the same morphemes as the Adapted FVMC, yet it counted (a) incorrect use of the target morpheme as partially correct, productive use; and (b) omissions as incorrect, non-productive use.

Accuracy calculations
For all composites, the total number of correctly used morphemes was divided by the total number of obligatory contexts (correct + incorrect [partially correct] + omissions).

Similarly, for all composites, incorrect use included disagreement between subject and auxiliary or copula (they were running), and inflection errors on auxiliaries or copulas (they be running).

However, incorrect use for the two adaptations also included productive errors such as overregularizations (runned) and double-marking (rannned), which were disregarded in the FVMC.

RESULTS & DISCUSSION

Analytic approach: Growth curve modeling (GCM)
Conditional GCMs estimated (a) the growth trajectories of each finite verb morphology composite and (b) the effect of grade at study onset.

The intercept (onset of growth) estimated the accuracy in finite verb morphology for PK3 children during the first semester.

The linear slope estimated the growth rate in finite verb morphology accuracy.

Grade was the effect of being a child in PK4 at study onset.

Dependent variables (verb morphology composites):
- FVMC
- Adapted FVMC
- Productivity-criterion FVMC

Independent variables (covariates):
- Academic semester (metric of time)
- Grade at onset (PK3 = 0; PK4 = 1)

Results
FVMC growth
- The FVMC had an intercept of 54%; a positive and significant growth rate of 11%; and ended with 76% accuracy in the third semester.

Adapted FVMC and Productivity-Criterion FVMC growth
- The Adapted FVMC intercept (53%) was lower, while the Productivity-Criterion FVMC intercept (58%) was higher than that of the FVMC (54%).
- The positive and significant growth rates of the Adapted (10%) and the Productivity-Criterion FVMC (9%) were slower than that of the FVMC (11%).
- Relative to the FVMC (76% accuracy), the Adapted FVMC ended with 73% accuracy in the third semester, while the Productivity-Criterion FVMC ended with 76% accuracy.

Effect of grade
- PK4 children’s FVMC intercept was 15% higher (69%) than that of PK3 children, ending with 91% accuracy in the third semester.
- PK4 children’s Adapted FVMC intercept was 14% higher (67%) ending with 87% accuracy in the third semester.
- PK4 children’s Productivity-Criterion FVMC intercept was 13% higher (71%), ending with 89% accuracy in the third semester.

Discussion
The final GCMs for the two adaptations, relative to the FVMC, indicate that bilingual preschoolers (a) show difficulties with irregular tense marking.
- (b) that these difficulties likely stem from the incorrect application of regular past tense rules (overregularizations or double marking).
- (c) exhibit slower growth in the acquisition of irregular past tense.

Our findings are comparable to published data on bilingual preschoolers/kindergarteners with and without LI (Gutiérrez-Clellen, Simon-Cereijido & Wagner, 2007).

On average, our bilingual sample exhibited lower verb morphology accuracy than TD monolingual preschoolers, but higher accuracy than monolingual children with SLI (Gladshefer & Leonard, 2013; Goffman & Bedore, 2000; Leonard, Miller, & Gerber, 1999).

Acknowledgements: We would like to thank the participating children and families and recognize the following members of the UT Dallas Bilingual Language Laboratory: G. Morales, L. Taffet, K. Purinton, R. Sanchez, N. Gao, M. Lopez, and K. van der Gracht.