Marking Past Tense: Complex Syntax Effects in Children with SLI

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INTRODUCTION

Children with specific language impairment (SLI) are known to have deficits in tense-marking grammatical morphology (Leonard, 1998). The omission of regular past tense markers in children with SLI occurs with greater frequency and for a longer period relative to age- and language-matched peers (Rice, Wesler, & Hershberger, 1998). Production of bare verb stems (e.g., play) in contexts where inflected forms (e.g., played) are obligatory in the adult language can persist well into the elementary school years for children with SLI (Rice, Wesler, & Hershberger, 1998). Such productions are best characterized as variably occurring. Indeed, several studies examining the spontaneous language of children with SLI have documented inconsistent past tense marking on the same verb within a language sample (Bishop, 1994; Leonard et al., 1997).

One explanation of variable past tense performance relates to the linguistic complexity of the utterance containing the target verb. The potential trade-off between past tense proficiency and syntactic complexity has been explored using elicitation tasks. Owen (2010) reported that children with SLI between the ages of five and eight, like to their typical peers, were sensitive to syntactic planning demands when producing past tense morphology. These children omitted past tense more often when producing finite complex clauses and temporal adverbial clauses as compared to their production of coordinated clauses. This finding was explained via a processing capacities model. It was speculated that the increased syntactic planning demands associated with production of complex sentences, when compared to those associated with the production of compound sentences, rendered past tense marking more vulnerable to omissions. For example, the complement clause in John remembered where Sue played is an argument of the main verb and, as such, likely planned concurrently with the main clause. The temporal subordinate clause in John watched after Sue played displays similar hierarchical dependency. Conversely, the two coordinate clauses in John painted and Sue played can more readily be planned independent of one another.

PURPOSE

The purpose of this study was to explore the influence of syntactic complexity, specifically clausal dependency, on spontaneous regular past tense marking among children with SLI who variably used this morpheme in obligatory contexts. Accuracies in marking past tense where inflected forms were obligatory were compared across utterances containing only independent clauses and utterances containing dependent clauses.

PARTICIPANTS

Archived language conversational language samples (Hadley, 1998 protocol) from twenty-one children with SLI between the ages of 5:2 and 7:10 were initially analyzed for inclusionary Criteria:

1. Variable regular past tense marking (defined as 30-80% accuracy)
2. At least three obligatory contexts for regular past tense in each of the two utterance-type categories (Rice, Wesler & Cleave, 1995).

Language samples from seven children met the criteria. Three of these children were African-American English dialect speakers. They did not significantly differ from the four Standard American English speakers on any of the linguistic measures (as = .10, .99, .49).

METHODS

Audio-recorded language samples from the archival database were transcribed and coded for grammatical morphology (Howe, 1992) and complex syntax (Schuele, 2006). For 20% of the samples, transcription reliability was examined at the utterance boundary and morpheme level. Inter-rater transcription agreement was 99.4%. Graduate student coding for complex syntax for all samples was checked and corrected by the second author. Samples were analyzed using SALT (Miller & Iglesias, 2008).

Complex syntax refers to an utterance that includes one or more dependent clauses. Whereas a complex sentence is traditionally defined as an utterance wherein one or more dependent clauses are joined to an independent clause (Quirk & Greenbaum, 1973), complex syntax can be expressed in incomplete utterances. For example, the subordinate clause because it is raining can have an omitted main clause from the prior conversational turn, Why are you wearing boots?

In order to address the purpose of this study, utterances containing obligatory contexts for regular past tense were examined. Regular past tense accuracy was calculated as percent marked in obligatory contexts. Bare stem verb productions were coded as inaccurate. Omission of regular past tense morphology was considered only in those utterances containing a clausal subject.

Utterances were also categorized for clausal dependency. Simple sentences and multiple clause utterances containing only independent clauses joined by the coordinate conjunctions and, but, and or comprised one category: Independent Clause Only Utterances. Utterances defined by one of the complex syntax subtypes comprised the other category: Dependent Clause Utterances.

RESULTS

Results reveal that utterances containing clausal dependency are more likely than those containing only independent clauses to include omissions of past tense markers in obligatory contexts. Regular past tense was marked with a mean accuracy of 65% (SD = 21%) in utterances containing one or more independent clauses whereas regular past tense was marked with 48% mean accuracy (SD = .15%) for utterances containing one or more dependent clauses. Perhaps due to a small sample size, this difference did not meet statistical significance (p = .07). Although the average mean length of utterance (MLU) for utterances containing dependent clauses (8.83; SD = .85) was slightly higher than that for utterances containing only independent clause(s) (7.42; SD = 2.18), this difference was not significant.

By comparison, past tense marking mean percent accuracies were virtually identical between single clause utterances (58%; SD = 18%) and multi-clause utterances (56%; SD = 17%) despite an average MLU almost four morphemes greater in the latter category. These findings appear to confirm through language sample analysis what prior elicitation studies (e.g., Owen, 2010) have demonstrated, namely that dependency in the relationship between clauses makes regular past tense marking more vulnerable to omissions above and beyond the number of independent clauses or length of the utterance itself.

An explanation of such vulnerability beyond the general syntactic planning demands associated with clausal dependency falls outside the scope of this study. Future work should explore specific syntactic mechanisms that may influence the likelihood of tense marking omissions among children with SLI. One line of inquiry may relate to the finiteness structure of embedded clauses. Whereas some types of embedded clauses are finite, other types are nonfinite and contain bare verb stems marked by the infinitival to. Difficulty with the linguistic rules governing +/t tense marking according to embedded clause type may partially account for the treatment of tense-marking as optional in obligatory contexts.

ACKNOWLEDGEMENTS

Data collection was supported by the ASH-Foundation and the Satterfield Child Development Center at Vanderbilt University School of Medicine (P. Schuele). Completion of this study and preparation of this paper were supported by a Pre-Awards Leadership Development Grant (#1106000576). FH Schuele, U.S. Department of Education.

LIST OF CITATIONS AVAILABLE ON REQUEST

10:08/27/2012

Poster Presented At: The Annual Conference of the American Speech-Language-Hearing Association, Atlanta, GA, November 2012