Verb Particle Errors in Preschool Children With Specific Language Impairment

Corinne R. Juhasz
Bernard Grela
University of Connecticut, Storrs

It is well known that children with specific language impairment (SLI) have difficulty with the acquisition of language. They present with many errors, specifically in the areas of grammatical morphology, syntactic structure, and semantics. The deficit is thought to lie in language only because the children’s nonverbal skills, hearing, and socioemotional and neurological development are consistent with those of their age-matched peers (Leonard, 1998). At the present time, the etiology of SLI is unknown, but the disorder is thought of as either a deficit in linguistic knowledge (e.g., Gopnik & Crago, 1991; Rice, Wexler, & Cleave, 1995; van der Lely & Howard, 1993) or a processing capacity limitation associated with language (e.g., Johnston & Ellis Weismer, 1983; Kail, 1994; Lahey & Edwards, 1996; Miller, Kail, Leonard, & Tomblin, 2001).

One area of language that has received some attention in the past few years in children with SLI is their knowledge and use of verbs. Researchers of these children have noted a clear deficit in the acquisition of verbs in comparison to other parts of speech. For example, Conti-Ramsden and Jones (1997) found that preschoolers with SLI used fewer verbs with similar utterance lengths than did younger, typically developing (TD) peers. Also, Rice and Bode (1993) thought that children with SLI draw from a smaller verb lexicon, often using a limited number of nonspecific verbs that describe a variety of actions or events. Such verbs have been termed general all purpose (GAP) verbs (e.g., make, go, do, put). These verbs are used instead of more specific verbs (e.g., build, walk, wash, hang) to describe actions. Furthermore, Boynton-Hauerwas (1998) found that both children with SLI and TD children matched...
Grela and Leonard (2000) argued that the number of obligatory arguments and inflectional morphology more consistently with GAP verbs than with more specific verbs. However, this study showed that as the number of obligatory arguments within an utterance increased, children with SLI relied on more GAP verbs and produced fewer specific verbs. This pattern was not found in the TD group, who used both GAP verbs and specific verbs just as frequently, even with increases in argument structure complexity. Boynton-Hauerpwas suggested that children with SLI use GAP verbs to decrease the complexity of utterances in order to improve their accuracy for use of verb morphology.

There has been conflicting evidence concerning children with SLI and their ability to acquire verbs as rapidly as their TD peers. Kelly and Rice (1994) found that children with SLI performed similarly to younger, TD children when they were asked to identify the meaning of novel verbs. Kelly and Rice concluded that the children’s immature linguistic abilities prevented them from developing an interpretation that was similar to that of age-matched controls. In contrast, Oetting (1999) demonstrated that children with SLI were able to use linguistic knowledge to interpret the meaning of novel verbs as well as both TD age- and language-matched peers. However, the children with SLI were unable to produce the novel verbs as well as either group of TD peers. In another novel verb learning task during which children were asked to describe motion and change-of-state scenes, both children with SLI and their younger, TD peers produced a high percentage of GAP verbs (Kelly, 1997). However, the children with SLI made significantly more semantic errors (such as selecting a verb similar to the target) and were more likely to produce change-of-state than motion verbs. These studies suggest that children with SLI may be able to use syntactic knowledge to hypothesize the meaning of novel verbs, but that the semantic representations that they form are not as well developed as those of their TD peers. Therefore, children with SLI may be conservative in their use of language and may default to less complex and more generic, GAP verbs.

Consistent with a conservative approach to verb use, Leonard, Miller, and Gerber (1999) found that as the lexicon in children with SLI increases, finite-verb morphology fails to develop to the level found in TD children. In other words, children with SLI do learn new words, but they continue to make inflectional errors that are not expected at higher levels of lexical development. It is well documented that children with SLI have difficulty with the use of inflectional morphology (see Leonard, 1998, for a review). However, McGregor, Newman, Reilly, and Capone (2002) proposed that children with SLI avoid using inflectional morphology on new lexical items because of weak semantic representations formed during the acquisition of these words. Therefore, they may not use inflectional items because they may be uncertain as to which grammatical rules apply to these lexical items.

Some researchers argue that linguistic complexity can result in grammatical errors in children with SLI. Complexity has been defined in several different ways. For example, Grela and Leonard (2000) argued that the number of arguments required by the verb can be used to define its level of complexity. In this case, verbs requiring one obligatory argument form intransitive sentences (e.g., *The boy is running*). These sentences are considered to be the least complex because they only require one obligatory argument—the subject—in addition to the verb. Transitive sentences are more complex because they require a verb along with its subject and direct object (e.g., *The boy is feeding the dog*). Finally, sentences with three arguments—ditransitive—are the most complex because they require a subject, a direct object, and an oblique in addition to the verb (e.g., *The boy is giving the dog a bone*).

Consistent with this hierarchy of complexity, both Grela and Leonard (2000) and Grela (2003a) found that children with SLI, as well as their MLU-matched peers, make more grammatical errors as the number of obligatory arguments increases. A similar study by Grela (2003b) compared subject omission as a result of increases in verb complexity. A preschool child with SLI was compared to a younger child matched for MLU. The results of this study showed that subject omission increased for both children as argument structure increased. However, the child with SLI deleted the subject in less complex sentences, whereas the TD child only deleted the subject in more complex structures. The findings of both studies suggest that a verb with more complex argument structure is more likely to result in grammatical errors than are less complex verbs.

A different source of linguistic complexity is compound formation. Research in children with SLI has focused primarily on compound nouns, specifically, novel root compounds. A novel root compound is the combination of two or more words to form a new compound noun that is not a part of a dialect. For example, a horse that lives in barns could be called a *barnhorse*, which is a novel root compound. Children with SLI have been found to make fewer attempts at forming novel root compounds than their MLU-matched peers (Dalalakis, 1999; Fukuda & Fukuda, 1999; Grela, Snyder, & Hiramatsu, 2005). Grela et al. found that when children with SLI produced novel root compounds, they were more likely to make an error with word order (e.g., *a horsebarn* rather than a *barnhorse*). This research suggests that compounding presents a distinct challenge for children with SLI.

Verb particles are of particular interest because they consist of a form of compounding involving verbs and prepositions. This combination of words results in at least three sources of linguistic complexity. The first source of complexity is the creation of a different word through the combination of a verb stem and a preposition, each carrying its own meaning. More specifically, verb particles typically are used to describe an action that conveys some sense of direction that is not coded within the verb itself (e.g., *turn on*). The action *turn* is used to describe a direction taken while moving in a straight trajectory. By combining the verb stem with the particle *on*, the action describes a change of state such as a light switching from *off* to *on*. The second source of complexity is that each verb particle requires an argument structure. For example, a sentence with a verb particle (e.g., *She turns on the light*) contains a subject argument (*she*), a verb particle (*turns on*)...
and an object argument (the light). The complexity may change depending on the number of arguments required by the creation of a verb particle from the verb stem. A final source of complexity is word order. Word order varies in a complex way with verb particles. There are specific rules for identifying verb particles that involve intricate word order changes. A verb particle can be placed before or after the object if the object is a full noun phrase (e.g., Put on your coat. Put your coat on.). However, if the object is a pronoun, the verb particle must follow the pronoun (e.g., Put it on.). A particle between a verb stem and the pronoun results in an awkward sentence (e.g., Put on it.). In contrast, prepositions consist of the same phonetic form as particles; however, a preposition does not combine with a verb to alter its meaning. Rather, it functions as either an internal argument or an adjunct to the verb by providing additional information about an action (e.g., He is running up the hill.). Another way that a preposition differs from a particle is that it is not possible to move the preposition away from a verb when it is the head of a prepositional phrase (e.g., He is running the hill up.). Furthermore, unlike verb particles, the two remain separate semantic entities; there is no compounding to form a new meaning. Prepositional phrases may be syntactically simpler because the same word order applies in all cases. The preposition always precedes the noun phrase, both for nouns and pronouns (e.g., Stand on the rug. Stand it on. Stand the rug on. Stand it on.). The word order can change when a particle is produced with a full noun phrase, but not with a pronoun. Therefore, speakers must be aware of the rules governing the production of verb particles and prepositional phrases. Finally, as with compound nouns, English speakers can be creative in their invention of verb particles (e.g., turn on, turn off, turn down, turn away). Children must have a good understanding of their linguistic system to allow for this creativity.

Previous research has shown that the ability to use verb particles is an area of weakness for children with SLI. Watkins and Rice (1991) compared the acquisition of particles and prepositions in children with SLI in an attempt to distinguish between the verb-preposition relationship in a verb particle and the nonparticle use of a preposition. They found that children with SLI made more errors and omissions in sentences where these words were verb particles than in sentences where they served as prepositions. For example, one of the target sentences with the particle down was “Put down the box.” Children with SLI often said “Put the box.” In contrast, in the target sentence with down used as a preposition, “Run down the stairs,” children were less likely to delete the word down. Also, the group of participants with SLI was more likely to omit the noun phrase, the verb, and the particle. Watkins and Rice suggested that children with SLI have difficulty with verb particle formation either due to (a) a lexical limitation specific to verb acquisition or (b) processing limitations associated with the production of complex syntactic structures.

Further, researchers have shown that children with SLI have problems with various aspects of syntactic and semantic development, including a limited expressive vocabulary, especially with verb and verb particle use (e.g., Rice & Bode, 1994; Watkins & Rice, 1991). Furthermore, these children have been shown to have difficulty with compound formation and the use of argument structure (e.g., Grela, 2003a; Grela et al., 2005). Following along these lines, the present investigation asked whether children with SLI have difficulty with the syntactic and semantic components of verb particles in spontaneous speech. We examined whether children with SLI produced verb particles as frequently as younger, TD children matched for MLU did. Because verb particles are complex word formations, children with SLI were expected to demonstrate reduced lexical diversity in their verb particle combinations and to make more grammatical errors than their MLU-matched counterparts when utterances contained a verb particle. These errors may include problems with particle formation and use of argument structure.

### METHOD

#### Transcript Data

The data examined in this study came from transcripts of spontaneous speech from 20 monolingual English-speaking children who participated in a crosslinguistic study by Leonard, Bortolini, Caselli, McGregor, and Sabbadini (1992). These transcripts were made available on the Child Language Database Exchange System (CHILDES; MacWhinney, 2003).

Ten of these children had been diagnosed with SLI and ranged in age from 3:8 (years;months) to 5:7. Their MLU in words based on the first 100 spontaneous utterances ranged from 2.7 to 4.2 (M = 3.7), placing them well below age level according to the normative data provided by deVilliers and deVilliers (1973). A summary of each child’s age and MLU can be found in Table 1.

Nine of the 10 children were over age 4:0 and had been administered the Test of Language Development—Primary (Newcomer & Hammill, 1982). All showed composite (comprehension plus production) scores that were more...

| Table 1. Age (years;months) and mean length of utterance (MLU) for each participant in both the children with specific language impairment (SLI) and the control group. |
|---------------------------------|-----------------|-----------------|-----------------|
| SLI group Age MLU | MLU group Age MLU |
|---------------------------------|-----------------|-----------------|-----------------|
| 5;7 2.7 | 3;1 2.9 |
| 4;3 2.8 | 2;11 2.9 |
| 3;8 2.9 | 3;0 3.1 |
| 4;6 3.3 | 3;0 3.3 |
| 4;4 3.4 | 3;3 3.4 |
| 5;0 3.6 | 3;4 3.6 |
| 4;6 3.6 | 3;0 3.8 |
| 5;0 3.7 | 3;4 3.9 |
| 4;11 3.9 | 3;2 3.9 |
| 5;3 4.2 | 3;3 4.2 |
than 1 \(SD\) below the mean for their chronological ages. For 7 of the 9 children, the comprehension composite scores were also at least 1 \(SD\) below the mean. Another child performed 1 \(SD\) below the mean on a single comprehension subtest. For all 9 children, production composite scores were lower than the comprehension composite scores. The remaining child in the group with SLI, age 3;8, had been given the Test of Early Language Development (TELD; Hresko, Reid, & Hammill, 1981) and scored more than 1 \(SD\) below the mean. This test included both comprehension and production items, but provided only a single score. Each of the 10 children scored above 85 on the Arthur Adaptation of the Leiter International Performance Scale (Arthur, 1952). The scores ranged from 86 to 134. All children passed a hearing as well as oral motor function screening, and no child showed signs of neurological dysfunction.

The remaining 10 children were typically developing and served as MLU controls. The purpose of examining the transcripts of MLU controls was to compare verb particle usage for both groups of children when they were at similar levels of language development. The children in the MLU control group ranged in age from 2;11 to 3;4, and their MLUs ranged from 2.9 to 4.2 \((M = 3.7)\), similar to the children with SLI. The MLU of each child in the control group was within 0.2 words of the MLU of one of the children in the group with SLI (see Table 1). All of the children showed age-appropriate scores on the nonverbal and language test batteries. Given the younger ages of these children, the TELD was the language test administered and the Leiter was used to measure nonverbal abilities in this group.

**Language Sample Collection**

For both groups, the language samples consisted of interactions between the children and an experimenter from the Leonard et al. (1992) study who used the same set of toys for all children. The children’s mothers were also present and occasionally participated in the conversation. The number of spontaneous and intelligible utterances transcribed ranged from 483 to 1319 for the children with SLI and 567 to 773 for the MLU-matched children.

**Procedure**

**Coding.** Only the first 483 utterances of each child were analyzed. This was the lowest number of utterances that were produced by 1 of the children. By truncating the transcripts, each child had an equal opportunity to produce verb particle constructions. The next step was to identify utterances containing a verb particle or an attempt to produce a verb particle. Utterances were identified as containing a verb particle if they met the following condition: The particle could be separated from the verb while maintaining the grammaticality of the utterance (e.g., The girl *turned* on the light. The girl *turned* the light on.). A complication in identifying verb particles in English is that the verb and the particle must be separated when the direct object is a pronoun (e.g., *Take off* it.). In these situations, a complete noun phrase was substituted for the pronoun to test for the use of a particle (e.g., *Take off the coat. Take it off*.). The number of verb particles produced by each child was tallied over the 483 utterances.

**Error coding.** In addition to the number of verb particles produced, each transcript was examined for an error in verb particle construction or argument structure when a verb particle was attempted. When errors occurred, they were classified into one of two categories: (a) verb particle error including particle omission, verb stem omission, or anomalous verb particle construction, and (b) argument structure error including omission of the subject argument or omission of the object argument. Thus, five types of errors were examined (see Table 2 for examples of errors). An omission of a particle was coded when an utterance was produced with the verb stem minus the particle. A verb stem omission was coded when the main verb of the sentence was omitted but the particle was produced. The final verb particle error was coded when an anomalous verb stem and particle were combined. The two types of argument structure errors were coded when the subject argument was omitted and when the object argument was omitted. Because it was not possible to administer a syntactic test of verb particle attempts—particle movement away from the verb—verb particle attempts were identified by following the discourse of the transcripts to determine the children’s intended message. If it was not possible to identify a context for verb particle attempts, the utterances were excluded from the analysis.

**Analyses.** In order to determine the percentage of errors per group, several factors were computed. First, total verb particle attempts were tallied. A verb particle attempt was defined as any instance of either a grammatical sentence with a verb particle construction or a verb particle produced with any of the two error types. Second, the percentage of total errors was calculated. This was determined by dividing the total number of verb particle errors by the total number of verb particles attempted. Finally, the percentage of errors per error type was computed. This was determined by dividing the number of errors per error type by the total number of errors produced.

**Reliability.** To ensure reliability of the coding of the data, four transcripts were reviewed by the second author. Two transcripts for children with SLI and two transcripts

<table>
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<th>Table 2. Examples of error types coded for both groups of children.</th>
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<td><strong>Error type</strong></td>
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<td>Verb particle errors</td>
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<td>Particle omission</td>
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<td>Verb stem omission</td>
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<td>Anomalous verb particle</td>
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<td>Argument structure errors</td>
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<td>Subject omission</td>
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* indicates the word or phrase that was omitted in the utterance.
for the MLU-matched controls were checked for consistency of coding. The results showed that the two raters agreed at least 85% of the time for coding of verb particles and errors. Disagreements occurred in the identification of verb particles when the verb stem or the particle was absent from the children’s productions. This is because it was sometimes difficult to determine the children’s intended utterances based on the limited contextual notations provided by the transcribers in the Leonard et al. (1992) study.

RESULTS

Verb Particles Produced

One of the purposes of this study was to test whether children with SLI have an impoverished lexicon for verb particles in comparison to younger, TD children matched for MLU. Therefore, the children with SLI were compared to their MLU-matched peers for number of verb particles attempted. On average, the children with SLI produced 20 verb particles, and their TD peers produced 22 verb particles. These results are summarized in Table 3. The Mann-Whitney U test for K-independent samples with an alpha level of .05 revealed no significant group difference for the number of verb particles produced. This means that the children in this study produced an equal number of verb particles in their spontaneous speech, suggesting no differences in verb particles within the children’s lexicons.

Percentage of Errors

Another purpose of this study was to determine whether children with SLI had difficulty constructing grammatical sentences when verb particles were attempted. For the children with SLI, 38.8% of their attempts contained errors. In contrast, only 18.9% of particle attempts in the MLU-matched group had errors (see Table 3). The Mann-Whitney U test found a significant difference between the two groups of children: \( U = 21, p = .029 \). This indicated that the children with SLI produced significantly more errors in their verb particle attempts in comparison to their TD peers.

Errors by Type

Two categories of error types were coded in the children’s productions: errors within verb particles (i.e., particle omission, verb stem omission, or an anomalous verb particle construction) and two argument structure errors (i.e., subject argument and object argument omissions). Relatively few errors were noted within verb particles. Therefore, particle omissions, verb stem omissions, and anomalous constructions were combined for all subsequent analyses. Subject argument and object argument omission errors were kept as separate items (see Figure 1). The Mann-Whitney U test was used to compare errors by type. This analysis showed significantly more subject argument omissions than object argument omissions (\( U = 47, p < .0001 \)) and particle errors (\( U = 38, p < .0001 \)) for both groups of children. No such effect was found for object argument omissions in comparison to particle errors (\( U = 190, p = .80 \)).

A closer inspection of the two groups’ errors was completed. The Mann-Whitney U test was used to compare error type by group. A significant difference was found between the two groups of children for object omission: \( U = 24.5, p = .052 \). No other measures were found to be significant (subject omissions: \( U = 29.5, p = .123 \); particle errors: \( U = 42.5, p = .579 \)). Therefore, the children with SLI omitted more object arguments than their TD counterparts. A summary of the findings is represented in Figure 1.

In summary, the children with SLI produced the same number of verb particles as the control group. Subject argument omission was the most common error for both groups. However, the children with SLI produced significantly more object argument omissions than did the MLU-matched controls.

| Table 3. Average number (and standard deviations) of verb particles attempted, number of errors, and percentage of errors per group. |
|----------------|----------------|----------------|
| **Particles attempted** | **Errors produced** | **Percentage of errors** |
| Mean | SD | Mean | SD | Mean | SD |
| SLI | 20.1 | 7.5 | 7.5 | 2.7 | 38.8 | 21.5 |
| MLU | 22.1 | 6.9 | 4.1 | 1.9 | 18.9 | 6.5 |

DISCUSSION

This study investigated verb particle usage in a small group of children with SLI and younger, TD children matched for MLU. Contrary to expectations, both groups of children attempted similar numbers of total verb particles. However, the children with SLI produced significantly more errors when attempting verb particles than did their MLU-matched peers. The most common error for both groups of children was subject omission, which occurred significantly more often than either object omission or particle errors. A closer examination of the data revealed a significant difference in the number of object omissions between the two groups, with children with SLI omitting the object more frequently than the MLU-matched controls. No such difference was found for subject omission between the two groups, nor for particle errors.
The results of this study expand on the findings of Watkins and Rice (1991), who found that children with SLI were more likely to make errors during verb particle constructions in comparison to prepositions. They found the most common error to be omission of the particle, whereas in the current study, this was one of the least common errors. Furthermore, Watkins and Rice reported that the children with language impairments displayed more omission of the object arguments and the verb stems than did their language- and age-matched peers. The present study found a significant difference in object omissions but not verb omissions when comparing the two groups. Some of the differences in findings between the Watkins and Rice study and the current project may be attributed to the differences in study design and the context in which the children produced the utterances. The prior study used stimuli to elicit a limited set of targeted verb particles, whereas the current study used spontaneous speech samples. The former environment showed what the participants were capable of producing; the latter demonstrated the vocabulary the children chose to produce when playing. A controlled study could result in more errors because children are forced to produce structures that they normally may not attempt.

Contrary to our expectations, the children with SLI in the present study produced as many verb particles as the control group. This was somewhat surprising because previous work found that children with SLI tend to use fewer verbs than TD children in their spontaneous speech (e.g., Conti-Ramsden & Jones, 1997; Rice & Bode, 1993). One potential explanation is that verb particles are a limited set of words that fall within the category of verb. Therefore, this limited set of words may be used frequently during children’s interactions with adults, providing the children with many opportunities to hear them and incorporate them into their expressive vocabulary. Because the children with SLI were older than the MLU-matched controls, they would have had more “world experience” and likely more opportunity to include the words in their expressive vocabulary.

The results of the current study are not consistent with the argument that children with SLI rely on GAP verbs in complex syntactic structures (Boynton-Hauerwas, 1998). Verb particles may be more complex than verb stems because they involve the fusion of a verb stem and preposition, which alters the meaning of the verb stem. The change is necessary to identify direction of movement not included in the meaning of the verb stem. Despite this complexity, the children with SLI demonstrated use of a variety of verb particles in their language. These could be attributed to a number of factors. The first is simply that the small sample size of the study did not accurately capture differences in verb particle production. Another possibility is that all of the children had fewer opportunities or contexts to produce a variety of verb particles. All participants played with the same set of toys during the language sampling period, so the subject matter was similar for all of the children. This could have led to a similarity in word types that does not truly occur in the natural environment. Differences may have been found if a larger sample of utterances had been collected for all of the children in a greater variety of contexts.

As was hypothesized, children with SLI produced more errors overall in utterances containing verb particles. This is consistent with prior research of SLI, which found frequent errors with verbs (e.g., Goffman & Leonard, 2000; Loeb, Pye, Richardson, & Redmond, 1998; Rice, Wexler, & Hershberger, 1998) and verb particles (Watkins & Rice, 1991). For both groups of children, the prevailing error of subject argument omission that was noted in the current study is a common tendency in young children, both with and without language impairments (e.g., Bloom, 1993; Grela, 2003a, 2003b; Grela & Leonard, 1997). There have been several explanations for subject omission in both populations of children. Bloom (1993) reported that sentence length (as defined by increased postverb MLU) affects subject omission in TD children; Grela (2003a) argued that the number of postverbal arguments affected subject omission. The present study did not control for sentence length or argument structure complexity; therefore, we are unable to attribute these factors to subject omission. However, if we consider verb particles to be a more complex form of a verb stem, it is possible that subject omission was influenced by the syntactic and semantic complexity associated with the verb particles. For example, verb particles have a similarity with the original verb stem, but they also encode a direction associated with the action, thus increasing the number of semantic parameters associated with the combination of a verb and a preposition. In addition, the syntax of verb particles allows for movement of the particle to proceed or follow a direct object (kick over the chair or kick the chair over). However, this is not possible if the direct object takes the form of a pronoun (kick it over, kick over it). It is possible that the combination of the semantic and syntactic permutations required for verb particle production overwhelms the linguistic processing system of children who are still in the process of learning language, resulting in the omission of subjects.
Because subjects are vulnerable to omission in young children, it is one of the most common syntactic structures affected by increased complexity. One way of testing this hypothesis in a more structured environment would be to compare subject omission in verb stems and their corresponding particle (e.g., kick the chair versus kick the chair over). This comparison was not possible in this preliminary study, but is planned for future testing.

One of the interesting findings of the present study was the difference in object argument omission between the groups. Few studies have found object argument omission to be prevalent in this population. Although the number of omissions was relatively small (~10% for children with SLI), the finding is consistent with that of Watkins and Rice (1991). There are two possibilities for the omission of object argument. First, similar to subject argument omission, the production of a complex linguistic structure, such as a verb particle, may have overwhelmed the processing resources available for sentence construction. Thus, overall, children with SLI were more likely to make grammatical errors during the production of these sentences. It is possible that the object argument may have been susceptible to omission because the number of words following the verb particle were too great for the linguistic buffer to retain before the utterances could be articulated (see Leonard, 1998, for a review). Second, children with SLI may have difficulty with the linguistic rules associated with sentence constructions. For example, each argument requires the assignment of a theta role in the subject (agent) and object (theme) positions. Children with SLI may mistakenly assume that the particle fulfills the theta role of the theme and thus the object may not be required or may be considered to be an optional argument. Thus, children with SLI might produce the subject, the verb, and the particle and think that they have completed the utterance even though they have not produced the object. However, this explanation is unlikely because the children with SLI produced the object in 90% of obligatory contexts. This is much higher than chance occurrence. Therefore, some other unresolved factor must account for the object omission.

One final difference between the current study and the Watkins and Rice (1991) study is the small number of particle errors that were found in the present study. The children with SLI in the present study infrequently omitted the verb stem or the particle during sentence construction. Again, this is possibly due to the method used to collect the data. The present study used spontaneous utterances collected during free play sessions. The children were free to select words within their repertoire of production. It is highly possible that the children were conservative in their word choice. Therefore, it is likely that these children selected verb particles that they were highly familiar with and less likely to use with errors. In the Watkins and Rice study, the children did not have freedom in their word choice and were requested to produce the items targeted. Thus, their productions were more susceptible to error because the words may not have been familiar. Again, a controlled study would account for the factor of familiarity with a particular lexical item.

Despite the interesting findings of the current study, there are several weaknesses associated with it. The sample size was relatively small in this study, with only 10 children with SLI and 10 children matched for MLU. Any of these results might change if more participants were tested. In addition to the small participant pool, there are other limitations to this study. It relied on previously gathered language transcripts in which only the children’s utterances were available, not the experimenter’s utterances. In some cases, it was difficult to judge whether an obligatory context existed for a particle, a subject, or an object. The intended meaning of the child’s utterance could not be determined without knowing the experimenter’s previous utterance.

The clinical implications garnered from these findings may lead speech-language pathologists to develop better assessment tools for identifying and treating children with SLI. It is well known that children with SLI have difficulty with verbs and verb inflections. By comparing children with SLI to their TD counterparts on several aspects of grammar, we may be able to differentiate these two populations with greater levels of sensitivity and specificity during language assessment by identifying particular grammatical structures that are more likely to affect children with SLI. These grammatical structures that are most problematic for children with SLI may then be incorporated into both formal and informal measures of language assessment. In addition, by identifying factors that are most problematic for children with SLI, we may be able to target language structures that will have an impact on children’s oral and written communication abilities more efficiently. This is especially important for complex language structures such as verb particles, which may be problematic for children with SLI when other structures such as verbs stems have been mastered.

In summary, children with SLI were found to produce as many verb particles as their MLU-matched peers. The group of participants with SLI produced considerably more errors in their verb particle attempts than did the control group. Most significant was their higher instance of object omissions. However, this study did not control for complexity, so no definite conclusions can be drawn about why the demonstrated patterns occurred. Further study in a more controlled context is required.

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Contact author: Bernard Grela, 850 Bolton Road, Unit 1085, Storrs, CT 06066. E-mail: Bernard.grela@uconn.edu.