Production of Tense Morphology by Afrikaans-Speaking Children With and Without Specific Language Impairment

Frenette Southwood
Stellenbosch University, Stellenbosch, South Africa

Roeland van Hout
Radboud University, Nijmegen, the Netherlands

Purpose: To establish whether the predictions of the extended optional infinitive (EOI) hypothesis (Rice, Wexler, & Cleave, 1995) hold for the language of Afrikaans-speaking children with specific language impairment (SLI) and whether tense marking is a possible clinical marker of SLI in Afrikaans.
Method: Production of tense morphology was examined in 3 groups of Afrikaans-speaking children—15 with SLI who were 6 years old, 15 typically developing (TD) 4-year-olds matched on mean length of utterance, and 15 TD 6-year-olds—using both elicited and spontaneously produced verb forms.
Results: On the sentence completion task, children with SLI fared on par with 4-year-olds and worse than age-matched peers. However, in terms of spontaneous production of morphemes pertaining to tense, children with SLI fared worse than both TD groups. Furthermore, children with SLI mostly made the same types of errors as 4-year-olds, although some errors were unique to the SLI group. Most errors entailed omissions, of modal and temporal auxiliaries as well as of copula *be*.
Conclusion: The errors offer support for the EOI hypothesis. Tense marking has the potential to be a clinical marker of SLI in Afrikaans, but further research with larger groups of Afrikaans-speaking children, including children of other ages, is needed to confirm this.

KEY WORDS: specific language impairment, tense morphology, clinical marker, Afrikaans, optional infinitives

Specific language impairment (SLI) is a significant impairment in the spoken language ability of children in the absence of identifiable causal factors or obvious accompanying factors such as neurological deficits, mental challenges, hearing disabilities, and emotional or behavioral problems (Leonard, 1998; Stark & Tallal, 1981). The characteristics of SLI as it presents itself in English and a few other languages are comparatively well known. These characteristics include problems with grammatical morphemes and word order. Some morphemes appear to be disproportionately difficult to master (Dromi, Leonard, & Shteiman, 1993), and, in general, more errors are made on verb-related grammatical morphemes than on noun-related ones (Hansson & Nettelbladt, 1995; Leonard, 1989; Roberts & Rescorla, 1995; Rom & Leonard, 1990).

Verb-related grammatical morphemes have been shown to be problematic for children with SLI of various ages, from as young as 2 years (Demuth & Suzman, 1997) to as old as 12 years (Marchman, Wulfeck, & Weismer, 1999; Van der Lely & Ullman, 1996). Children with SLI have been shown to be outperformed by younger, typically developing (TD) control participants matched on a measurement of language (such as

mean length of utterance [MLU] or scores obtained for tests of expressive language) for some aspects of tense production (Conti-Ramsden, 2003; Leonard et al., 2003), but not for others (Blake, Myszczyszyn, & Jokel, 2004; Håkansson, 2001). Furthermore, most studies indicate that children with SLI fare worse than TD age-matched control participants in terms of certain aspects of tense production (Bortolini, Caselli, Deevy, & Leonard, 2002; Rice, Wexler, & Herschberger, 1998).

This general result—that of children with SLI being outperformed by language- and/or age-matched controls—has been obtained for a variety of data-gathering methods, languages, types of constructions related to tense marking, and types of tense marking errors. We discuss each of these next.

Regarding the data-gathering method, children with SLI have been shown to make more errors of tense morphology than do control participants, regardless of whether the data are collected by means of elicitation tasks involving real verbs and/or novel verbs (Bortolini et al., 2002; Van der Lely & Ullman, 1996) or by means of spontaneous language samples. The latter have been used by, among others, Hansson, Nettelbladt, and Leonard (2000) and Roberts and Rescorla (1995).

Problems with tense morphology have furthermore been shown to be experienced by children with SLI of various languages. Regarding Germanic languages, this is the case for child speakers of English, the language in which SLI has been most frequently studied (see Conti-Ramsden, 2003; Rice et al., 1998); Swedish (Hansson & Leonard, 2003; Hansson et al., 2000); German (Clahsen, 1989; Lindner & Johnston, 1992); and Dutch (De Jong, 2004; Wilsenach, 2006). In the Romance languages, SLI has also been shown to entail problems with tense marking (for Italian, see Bortolini et al., 2002; for French, see Paradis & Crago, 2000, 2001, and Rose & Royle, 1999). Other languages in which child speakers with SLI have been shown to experience problems with tense marking include Greek (Dalalakis, 1994), Hebrew (Dromi et al., 1993), Japanese (Fukuda & Fukuda, 1994), and Zulu (Demuth & Suzman, 1997).

Children with SLI have been shown to fare worse than TD control participants in terms of various types of constructions related to tense, for example, regular past tense inflection by means of suffixation (see Hansson & Leonard, 2003, for Swedish, and Oetting & Horohov, 1997, for English) as well as for present tense third person singular/plural marking on verbs by means of suffixation (see Loeb & Leonard, 1991, for English, and Bortolini et al., 2002, for Italian). In terms of the production of auxiliaries, children with SLI are also outperformed by children without SLI; see, for example, Paradis and Crago (2000) for French past and future tenses, which entail the use of an auxiliary verb; Hansson (1997) and Hansson and Nettelbladt (1995) for Swedish; and Loeb and Leonard (1991) and Roberts and Rescorla (1995) for English. Furthermore, production of modals is more challenging for children with SLI than for TD children; see Hansson (1997) and Hansson and Nettelbladt (1995) for Swedish and Roberts and Rescorla (1995) for English. Last, children with SLI fare worse in the correct use of copulas than do children without SLI (Hansson & Leonard, 2003; Loeb & Leonard, 1991).

Children with SLI have been shown to fare worse than TD control participants in terms of both inflected present tense forms (see Bortolini et al., 2002, for Italian, and Loeb & Leonard, 1991, for English) and past tense forms (see Oetting & Horohov, 1997, for English, and Paradis & Crago, 2000, for French). Whether these children have more problems with regular past tense forms than with irregular forms is being debated. Some studies show that children with SLI fare more poorly in the correct production of regular tense forms than do TD children (Van der Lely & Ullman, 1996), whereas others have found no difference between children with and without SLI (Blake et al., 2004; Marchman et al., 1999; Marchman, Saccuman, & Wulfeck, 2004). Likewise, some studies have shown that irregular past tense is more problematic for children with SLI than for TD control participants (Blake et al., 2004; Roberts & Rescorla, 1995; Van der Lely & Ullman, 1996), but other studies have not (Hansson & Leonard, 2003). Furthermore, English-speaking children with SLI have been shown to produce both the past tense *–ed* and the passive participle *–ed* less in obligatory contexts than do TD children. Also, children with SLI, but not control participants, had greater difficulty with the production of past tense *–ed* than passive participle *–ed* (Leonard et al., 2003).

Last, in terms of error types, children with SLI make more errors of omission than do TD children, whether these errors entail zero marking of a verb (Marchman et al., 2004; Oetting & Horohov, 1997) or omission of a copula, modal, or other auxiliary (Hansson, 1997; Loeb & Leonard, 1991). Children with SLI also overregularize irregular past tense forms more than do children without SLI (Blake et al., 2004), substitute one verb-related morpheme for another (Roberts & Rescorla, 1995), and inappropriately insert past tense markers (see Roberts & Rescorla, 1995).

The Extended Optional Infinitive Hypothesis

The most relevant account for children with SLI experiencing difficulties with tense marking is Rice, Wexler, and Cleave's (1995) extended optional infinitive (EOI) hypothesis, known in its current form as the agreement/tense omission model (ATOM; Schütze & Wexler, 1996;

Wexler, Schütze, & Rice, 1998). The EOI hypothesis is based on Wexler's (1994) claim that TD children, at least those acquiring English, go through a stage in which they optionally use the infinitival verb form in contexts where the finite verb form is required in the grammar of adults. Infinitival forms are thus alternated with finite forms, resulting in the former appearing in contexts where the adult grammar allows only finite forms. The EOI hypothesis states that children with SLI remain in this early, normal stage in the development of tense marking of verbs, either for an extended period or not progressing past it at all. In contrast, TD children progress to a more advanced stage in which finite verb forms are consistently used in obligatory contexts.

Tense marking in the language of children with SLI is said to be characteristic of what Rice (2003) called a *delay-within-delay*: Children with SLI are "slow getting started" (p. 73) compared with age-matched controls, and they furthermore exhibit a delay beyond what one would expect for their level of language development compared with TD children of the same general language level. In other words, in children with SLI, who exhibit delayed language development, tense marking is more impaired than, for example, plural marking (see Rice, 2003). On the basis of their and others' findings, Rice and Wexler (1996) thus proposed *finiteness,* or tense marking, to be a sensitive and specific clinical marker of SLI in English (see also Marchman et al., 1999), where a *clinical marker* of SLI is defined as "a linguistic form, or principle that can be shown to be characteristic of children with specific language impairment" (Rice et al., 1998, p. 1412).

The predictions of the EOI hypothesis have to be understood against the background of Wexler's (1994) claims regarding the use of overt tense marking by TD children (see Wexler, 1994, 1998, for a summary): In the optional-infinitive stage, these children sometimes refrain from overtly marking tense by means of a grammatical morpheme in matrix clauses (i.e., in clauses in which tense marking is obligatory). The morphemes by which tense is marked overtly in English, and that are (sometimes) omitted even by TD children in the optional-infinitive stage, include the following four (Rice & Wexler, 1996): (a) the third person singular *–s,* as in "She runs"; (b) the regular past tense morpheme *–ed,* as in "They chewed gum"; (c) *be* forms, as in "They are/were listening to him"; and (d) *do* forms, as in "They do spot him from time to time," where *do* is used in an emphatic sense, or as in "She does not spot him," where the auxiliary verb *does* is used unemphatically.

Wexler (1994) claimed that children fail to mark tense overtly because they treat the grammatical category tense—that is, the head of the tense phrase (TP), on Pollock's (1989) split-inflection hypothesis—as optional. According to this view, if the TP is present in a derivation, then the verb will move from the verb phrase to the TP so that the verb can be marked for tense. For certain languages, such as English, it is assumed that this move takes place covertly. Evidence for this comes from the fact that the finite verb occurs after the adverb in a sentence such as "He always chews gum," with the adverb taken to mark the left periphery of the verb phrase. However, if the TP is not present, the construction will be treated as an infinitival one. This would mean that the verb does not move to the TP (because the TP is not present), resulting in the verb not being marked for tense. Hence, the grammatical tense marker is omitted in the phonological realization, with the verb instead displaying the infinitival form. For this reason, children with SLI often produce utterances such as "*Yesterday we walk home," where the grammatical tense marker *–ed* has been omitted.

According to Rice and Wexler (1996), the term *omitted* in the preceding analysis is an abbreviation for "not apparent in the surface forms, i.e., in the phonological forms" (p. 1240). They stated that the absence of surface tense markers can be attributed to the nonoccurrence of the functional category tense in a given derivation. It is thus not the case that tense is totally absent in the grammars of children with SLI and that surface tense markers are always omitted. Instead, according to their view, these children's grammars allow utterances with TPs as well as utterances without TPs, whereas the adult grammar, in this context, would accept as grammatical only utterances with TPs, hence the qualification "optional" in Rice et al.'s (1995) EOI hypothesis: The tense-marked phonological form is optional in the grammars of children with SLI, at least for a markedly longer period than is the case for TD children.

Other Germanic languages, apart from English, in which support for the EOI hypothesis has been found are Dutch and German. De Jong (2003) found that Dutch-speaking 6- to 9-year-olds with SLI produced more optional infinitives (occurring in the sentence-final position in Dutch instead of in the verb-second position) than did both younger and age-matched control participants. These results were confirmed by Wexler, Schaeffer, and Bol (2004), who found that Dutch-speaking 6- to 8-year-olds with SLI still produce optional infinitives, at an age at which these have all but disappeared from the language of TD child speakers of Dutch. Clahsen (1989) found that, compared with TD child speakers of German, German-speaking children with SLI used uninflected verb stem forms and infinitives as default forms and frequently omitted auxiliaries and copulas.

Features of Afrikaans Verb Morphology

In this study, we gathered data from Afrikaans-speaking children with SLI to establish whether they experience more difficulty with the production of tense

morphology than do their TD peers. Afrikaans, a descendant of Dutch, is analyzed underlyingly as subject–object–verb, demonstrating a verb-second surface word order in matrix clauses and a verb-final one in embedded clauses. In Afrikaans, the grammatical features tense, number, person—and, to a lesser extent, case—are realized overtly, mainly but not exclusively by means of suffixation. For example, present tense does not require suffixation; it is indicated on the modal auxiliaries in Afrikaans constructions containing (one or more) such auxiliaries. As illustrated in Example 1 in Appendix A, modal auxiliaries co-occur with the infinitival form of the main verb.

When modal auxiliaries do not occur, present tense is carried by the main verb. Such a verb has the same form as the infinitive, regardless of the person and number features of the subject, as can be seen in Example 2 in Appendix A. *Hê* ("to have") and *wees* ("to be") are the exceptions, as shown in Examples 3 and 4, respectively, in Appendix A: The present tense form of *hê* is *het,* and the past tense form is *het gehad* (with *gehad* being the past participial form). The present tense form of *wees* is *is,* and the past tense form is either *was* or *was gewees* (with *gewees* being the past participial form).

The present tense form of the main verb may also optionally be used in contexts where past tense is denoted by, for example, an adverbial phrase, as shown in Example 5 in Appendix A. This is called the *historic present tense form*.

Past tense is also not indicated by means of suffixation; it is expressed by the obligatory temporal auxiliary *het* in constructions not containing modal auxiliaries. The *het* co-occurs with the past participial form of the main verb, as shown in Example 6 in Appendix A. This form resembles the infinitive but has the prefix *ge–*, except in the case of verbs beginning with the derivational morphemes *be–*, *ge–*, *her–*, *er–*, *ont–*, or *ver–*, or another unstressed prefix, as shown in Example 7 (see Donaldson, 1993).

Another exception is the second verbal element of a *hendiadys*. A hendiadys in Afrikaans is a syntactic construction in which two verbal elements are connected by means of the conjunctive particle *en* ("and") to express a single complex idea (Roberge, 1994). An example is *staan en wag* ("stood waiting"). According to Roberge (1994), this second verbal element is the main verb, yet this element occurs in the form resembling the infinitival one in a past tense hendiadys, whereas the first element can occur either in the form resembling the infinitival one or in the *ge–* past participial form, as shown in Example 8 in Appendix A.

When expressing past tense in Afrikaans constructions containing a modal auxiliary, the use of the temporal auxiliary *het* and the past participial (*ge–*) form of the main verb is optional. If *het* and the past participle are not used, the main verb remains in its infinitival form. In such cases, the modal auxiliary takes its past tense form, as can be seen in Example 9b of Appendix A.

If the temporal *het* and the past participial form of the main verb are used in past tense constructions containing modal auxiliaries, then these modals may occur in either of the two tense forms (present or past). Example 9b of Appendix A, "Sy wou/moes/kon swem" ("She wanted to/ had to/could swim") can thus be paraphrased as "Sy wil/moet/kan geswem het" (see Example 10a) or "Sy wou/moes/kon geswem het" (see Example 10b); these three examples can all have the same aspectual interpretation.

In summary, in Afrikaans, present tense is not realized morphologically. Past tense is, and in more than one way.

Predictions of the EOI Hypothesis for Afrikaans Verb Morphology in Children With SLI

For Afrikaans, the EOI hypothesis would predict that verbs may occur in their infinitival (i.e., unmarked) form in the language of children with SLI. For present tense verb forms, this prediction does not seem to be linguistically significant, seeing that present tense verbs must also appear in a form resembling the infinitival form in the language of both TD children and adult speakers of Afrikaans. Therefore, this prediction of the EOI hypothesis is not testable as far as present tense constructions in Afrikaans are concerned. However, because tense is "carried" by the modal auxiliaries in present tense constructions containing modals, the EOI hypothesis predicts that such modals will be omitted. Similarly, the EOI hypothesis predicts that modal auxiliaries and the temporal auxiliary *het* will be omitted in past tense constructions.

As stated above, we gathered Afrikaans data from children with and without SLI to assess their production of grammatical morphology related to the grammatical feature tense in particular. We made three specific predictions:

1. This study forms part of a larger one on SLI in Afrikaans (see Southwood, 2007) in which it was shown that Afrikaans-speaking children with SLI achieve lower scores than age-matched peers for the comprehension and production of certain plural forms. Because verb-related grammatical morphemes usually pose more problems for children with SLI than do noun-related ones (see, e.g., Roberts & Rescorla, 1995), and because tense marking in the language of English-speaking children with SLI constitutes a delay-within-delay (Rice, 2003), we predicted that the Afrikaans-speaking children with SLI would fare

significantly worse than both younger and age-matched control participants on the production of tense morphology. Specifically, we predicted that the present tense of main verbs (which requires no overt grammatical morphology and which resembles the infinitival form) would not pose problems for the children with SLI but that more and a wider range of errors would be made by the children with SLI when producing the past tense (generally indicated by the presence of the auxiliary *het* and the past participial *ge–* verb form) than by the two groups of TD children.

2. In Afrikaans present tense constructions containing a copula *is* (a so-called *be* form) or an auxiliary, tense is "carried" by such copula or auxiliary; the same can be the case for past tense constructions containing an auxiliary. Because copulas and auxiliaries carry tense in Afrikaans, we predicted, on the basis of the EOI hypothesis, that copula *is* and auxiliaries would be optional in the language of the Afrikaans-speaking children with SLI, more so than in the language of the TD children.
3. Children with SLI sometimes differ from control participants in terms of correct use of morphology when comparisons are based on elicited production but not when based on spontaneous production. Blake et al. (2004) stated that the reason for this could simply be that the children with SLI avoid unfamiliar forms in their spontaneous language use. Accordingly, we predicted that, should there be a difference in comparative performance of the Afrikaans-speaking children with SLI on the elicited and the spontaneous tasks, the children will fare worse in elicited tense production than they will in spontaneous tense production.

Method

Participants

Forty-five Afrikaans-speaking children participated in the study: 15 age 6 years with SLI, 15 TD age-matched children, and 15 younger (4-year-old), MLU-matched TD children. In selecting participants, we took care to include only speakers of so-called standard dialects of Afrikaans (as judged by the participants' teachers and/or speech-language therapists). Contact with speakers of other, nonstandard dialects could not, however, be ruled out.

To recruit participants with SLI, speech-language therapists at seven government-funded institutions and 12 private practices were requested to identify from their caseloads all Afrikaans-speaking 6-year-olds from monolingual Afrikaans-speaking homes who demonstrated language problems in the absence of hearing, intellectual, socioemotional, and neurological problems. Over a period of 21 months, 17 children who met these criteria were identified by their therapists as possible participants. One of these 17 presented with a delay in vocabulary acquisition only and was therefore not included in the study. The parents of another did not consent to their child's participation. After obtaining the written consent and a completed case history form from the parents, we made arrangements for a nonverbal IQ score to be obtained, if such a score had not yet been obtained. If this score was 85 or above, the auditory sensitivity of the child was screened according to the American Speech-Language-Hearing Association's (1997–2006) guidelines, if no previous hearing test had been done.

The SLI group comprised seven males and eight females. Their specific ages ranged from 6;0 (years;months) to 6;11 (M = 6;5.3). These children had an MLU measured in words (MLU_w) ranging from 3.54 to 5.79 (M = 4.35). Fourteen of the participants with SLI were receiving speech-language therapy at the time of the study. The language of the child who did not receive therapy, and never had, was severely impaired; her parents cited financial reasons for not attending therapy. All 15 children with SLI were reported by their speech-language therapists as demonstrating problems with morphosyntax, but not with pragmatics.

After recruiting the participants with SLI, we recruited participants for the age-matched and younger control groups from four Afrikaans-medium child care centers. Only 6-year-olds who were close to the same age as one of the children with SLI were considered potential participants. At first, all 4-year-olds were seen as potential participants. We chose 4-year-olds to be the second control group for three reasons:

1. We assumed that this was the age at which the children would be cognitively mature enough to cope with the demands of the tense elicitation task.
2. We also assumed that the grammatical morphemes examined in this study would have been acquired (to a great extent) by this age. (There are no relevant developmental data available for Afrikaans; therefore, this assumption was based on the findings of researchers such as Lahey, Liebergott, Chesnick, Menyuk, & Adams, 1992, and Paul & Alforde, 1993, for English-speaking children.) As Balason and Dollaghan (2002) stated, it is believed that variability regarding grammatical morphology declines at around age 4 in TD children.
3. The language-matched control participants in some other studies (e.g., Johnston, Miller, Curtiss, & Tallal, 1993; Oetting & Rice, 1993; Rice, 2003) have been, on average, 2 years younger than the experimental group consisting of children with SLI, even when MLU

matching was performed (De Jong, 2003; see also Leonard, 2000; Rice, Redmond, & Hoffman, 2006).

Parental consent for participation of the 6- and 4-year-olds was obtained via the staff of the child care centers, and a case history form was completed by the parents. Most of the children were then visited at their child care center so that a hearing screening could be performed, which took place as it did for the participants in the SLI group. Three 4-year-old boys and two 6-year-old boys were visited at their homes.

We calculated the MLUs of the 4-year-olds, as well as those of the age-matched control children, to ensure that the MLUs of the one group did not overlap with that of the other. A one-way analysis of variance (ANOVA) on the MLUs of the two control groups returned a significant result, indicating that a difference between the MLU of the 4-year-olds and that of the TD 6-year-olds can be assumed, $F(1, 28) = 56.34$, $p = .00$. Exact MLU pairing of the younger control group with the SLI groups was not carried out, but we expected that the age difference of 2 years would render an MLU-matched control group, as it has in other studies mentioned above. The results of a one-way ANOVA indicated that this was indeed the case: No statistically significant difference could be assumed between the MLU of the SLI group and the younger control groups, $F(1, 28) = 1.87$, $p = .18$.

Six males and nine females age 6;2 to 6;11 (M = 6;6.8) formed the older age-matched (TD6) control group. A one-way ANOVA on the age difference between the TD6 and SLI groups returned a nonsignificant outcome, indicating that no significant age difference between the groups could be assumed, $F(1, 28) = 0.04$, $p = .84$. The MLU_w of the age-matched control group ranged from 5.12 to 7.10 (M = 5.92).

The younger (TD4) control group consisted of seven males and eight females. Their ages ranged from 4;0 to 4;7 (M = 4;2.3), and their MLU_ws ranged from 3.91 to 5.00 (M = 4.56). According to their parents and classroom teachers, the 30 participants in the control groups were TD in all respects: Their language, intellectual, and socioemotional development were deemed to be age-appropriate, and there was no evidence of any visible neurological deficits. All 30 children exhibited normal hearing sensitivity and had no previous referral to, or treatment by, a speech-language therapist.

Throughout the study, the participants were treated according to the procedures approved by the Ethics Board of the Research Committee of Stellenbosch University. The ethics and safety standards of the National Research Foundation of South Africa were also followed.

Collection of Spontaneous Language

All language samples were collected by the first author. During language sample elicitation, the first author and the participant mostly played alone in a quiet room. Three of the samples were collected with other children taking part in the conversation: One girl with SLI did not want to participate if her (TD) twin sister could not accompany her to all sessions, and two 4-year-old boys wanted a friend present.

Language sample elicitation took the form of free-play with toys that included little figurines with accessories, such as radios, hats, mugs, and brooms; wooden building blocks; and plastic kitchen furniture. The first author initiated the language sampling interaction by inviting the participant to join her in kitting out the dolls, building a house, and/or assembling the kitchen. If the participant was quiet for extended periods, the first author used a variety of techniques to encourage conversation, including parallel play, self-talk, making statements, and asking questions (both *wh*-questions and yes/no questions). These questions were asked about topics found to be suitable for discussion with preschool children, such as their families, pets, and birthday celebrations (see Southwood & Russell, 2004). Following the procedure of Crystal, Fletcher, and Garman (1976), the language samples collected in this study were each 30 min long. An audiocassette recording was made of each language sample collection session using an observable recorder.

Experimental Task

The aim of this task was to establish whether Afrikaans-speaking children with SLI perform age-appropriately in regard to their production of various types of past tense constructions. The procedure has previously been used successfully to test the production of grammatical morphemes by young children of different languages, by researchers such as Hansson and Leonard (2003), Jakubowicz (2003), and Marchman et al. (2004). The task was first performed with TD Afrikaans-speaking 3-, 4-, 5-, and 6-year-olds, during a pilot study, to ensure that test items were appropriate and that the demands placed on the participants were realistic (see Southwood, 2005, 2006).

The elicitation task entailed sentence completion. The participant was shown a picture of a person or animal performing an action, was told that this action is performed every day, and was requested to provide information on what the person or animal had done the day before. For instance, the participant was shown a picture of a woman arranging flowers in a vase and told "Hierdie vrou pluk elke dag 'n blom. Gister, net soos elke ander dag,…" ("Every day this woman picks a flower. Yesterday, just like every other day,…"). If the participant used the historic present tense, which would be appropriate because of the adverb *gister,* which indicates past tense, the first author provided the temporal auxiliary *het,* as in "Hierdie vrou pluk elke dag 'n blom. Gister, net soos elke

ander dag, het…." Six types of verbs were included: (a) four main verbs that take the *ge–* prefix in the past participial form, as in the flower-picking example just given; (b) two main verbs that do not take the *ge–* prefix in the past participial form (e.g., *verstaan* ["understand"] in "Hierdie kind verstaan elke dag alles. Gister, net soos elke ander dag,…" ["Every day this girl understands everything. Yesterday, just like every other day,…"]); (c) two *be* forms (e.g., "Hierdie katjie is elke dag hier. Gister, net soos elke ander dag,…" ["This kitten is here every day. Yesterday, just like every other day,…"]); (d) two *have* forms (e.g., "Hierdie seun het elke dag 'n nuwe maatjie. Gister, net soos elke ander dag,…" ["This boy has a new friend every day. Yesterday, just like every other day,…"]); (e) six modal auxiliaries (e.g., "Hierdie kind moet elke dag skool toe gaan. Gister, net soos elke ander dag,…" ["This child must go to school every day. Yesterday, just like every other day,…"]); and (f) two hendiadyses (e.g., "Hierdie oupa sit elke dag en slaap. Gister, net soos elke ander dag,…" ["Every day, this grandpa (sits while) sleeping. Yesterday, just like every other day,…"]).

The task had 20 items, of which the first 2 were practice items. However, if the participant did not give the targeted response (e.g., if a nontargeted auxiliary verb or the historic present tense was used), the first author prompted the participant by giving the auxiliary verb in part or in full, to see whether the participant could then produce the rest of the targeted construction. In theory, then, if nontargeted responses were given to all 18 items, a participant could give maximally 18 more responses (after prompting). During the performance of the experimental task, the first author and participant sat next to each other in a quiet room. Participants could rest at any stage during any session and could request any particular visit to end.

Data Transcription and Scoring

Language sample. The utterances occurring in the first 30 min of each language sample were transcribed orthographically. Hereafter, the first 100 complete and fully intelligible utterances were identified. Following Hunt (1970), an utterance was considered to be a T-unit, that is, "one main clause plus whatever subordinate clause and nonclausal expressions are attached to or embedded within it" (p. 4). Accordingly, *want* ("because"), *en toe* ("and then"), and *en dan* ("and then") were each taken to introduce a new T-unit, as were *en* ("and") and *maar* ("but") if these two were followed by a clause containing a verb.

The following were not included in the 100 utterances (see Brown, 1973; Johnston, 2001; Unsworth, 2005): (a) fillers such as *mm* or *o* ("oh"); (b) utterances containing unidentifiable material; (c) formulaic utterances, such as "Ek weet nie" ("I don't know") or "Kyk hier" ("Look here"); (d) exact self-repetitions; (e) exact repetitions of the conversational partner; (f) proper names in response to *wh*-questions where the response contained only the so-called queried constituent; (g) utterances that trailed off; and (h) *ja* ("yes") and *nee* ("no"; and their equivalents, e.g., *jip, uh, uh-huh, huh-uh, OK*), whether occurring as an answer to a question, as an acknowledgment of the adult's previous utterance, or during self-talk.

We then counted the words in the first 100 complete and fully intelligible utterances and determined the mean, to calculate the MLU measured in words. Several researchers have found a high correlation between MLU_w and MLU measured in morphemes (MLU_m; see, e.g., Arlman-Rupp, Van Niekerk de Haan, & Van der Sandt-Koenderman, 1976; Oetting & Rice, 1993; Thordardottir & Weismer, 1998). We chose MLU_w over MLU_m because it is a simpler process to decide what constitutes a word than it is to decide what counts as a morpheme (see Hickey, 1991).

Also, for these first 100 complete and fully intelligible utterances, we tallied the number of occurrences of the following seven (the examples were produced by the participants in this study): (a) each of the various kinds of present tense constructions produced correctly (e.g., "Ek **bak** koekies" ["I am baking cookies"], "Ek **wil** nog speel" ["I want to play some more"], "Ek **het** die sebra" ["I have the zebra"], "Jou naels **is** sterk" ["Your nails are strong"]), (b) each of the various kinds of present tense constructions produced incorrectly (e.g., "Nou moet daar nog 'n wit ding in ***is**" instead of "wees" ["Now there must still be a white thing in there"], "*Het jy **het** net een byl?" instead of "Het jy net een byl?" ["Do you have only one axe?"], "*Nou's hy daar sit" instead of "nou sit hy daar" ["Now he sits there"]), (c) use of historic present tense (e.g., "Toe **sny** ek my hier" ["Then I cut myself here"]), (d) each of the various kinds of past tense constructions produced correctly (e.g., "Hulle **het** weer af**ge**val" ["They fell off again"], "**Het** sy betaal?" ["Did she pay?"], "Hierso's hy wat see toe **was**" ["Here is he who went to the sea"], "Sy **het** voor die tyd daai **gehad**" ["She had that beforehand"]), (e) each of the various kinds of past tense constructions produced incorrectly (e.g., "*Hulle seergekry" instead of "Hulle het seergekry" ["They were hurt"], "Toe **het** Jessica 'n sakkie **gekan kry**" instead of "Toe kon Jessica 'n sakkie **kry/gekry het**" ["Then Jessica could get a bag"]), and (f) passive constructions in the past tense form (e.g., "Dit **was** deur 'n hond **gekrap**" ["It had been scratched by a dog"]).

We did not tally correct and erroneous occurrences of tense morphology from Utterance 101 onward; however, each utterance that occurred after the 100th one but before the end of the 30 min and was in any way deviant (i.e., non-adult–like) was identified and placed in a

separate database. Exceptions are modal auxiliaries, the temporal auxiliary *het,* and copula *be* forms; where data on the omission of these are given separate from other error types, these omissions were tallied for the full 30 min.

Three samples (that of one child per group of participants) were transcribed independently by a final-year speech-language therapy student; intertranscriber reliability was 97%. The MLU_w for each of the 45 language samples was also calculated independently by this student; interrater reliability was 94%. The verb forms referred to in items (a) through (f) were tallied independently by a linguist with experience in nontypical child language development; interrater reliability was 97%.

Experimental task. All responses on the experimental production tasks were recorded on a score sheet. Self-corrections were allowed, with only the final response being scored.

All responses were categorized in such a way that it was possible to compare the three groups of participants in terms of the following:

A. Number of targeted (unprompted) responses given.

B. Number of grammatical past tense constructions, whether exactly like the target or not, given without prompting (including Response Type A)—for example, "Het hy skool toe gegaan" ("He went to school") instead of "Moes hy skool toe gegaan het" ("He had to go to school"), "Het hy geslaap" ("He slept") instead of "Het hy gesit en slaap" ("He sat while sleeping"), and "Wou sy buite speel" ("She wanted to play outside") instead of "Kon sy buite gespeel het" ("She could play outside").

C1. Number of highly idiosyncratic errors. An example of such an error is "Kon om heuning te eet" ("Could infinitive-complementiser honey to eat") instead of "Kon hy heuning eet" or "Kon hy heuning geëet het" ("He could eat honey") in response to "Hierdie beer kan elke dag heuning eet. Gister, net soos elke ander dag,…" ("This bear can eat honey every day. Yesterday, just like every other day,…").

C2. Number of past participial errors, that is, past tense constructions in which *het* occurred but where the past participial (*ge–*) form was replaced by an infinitival one (e.g., "Het sy 'n blom *pluk" ["Have she a flower pick-infinitive"] instead of "Het sy 'n blom gepluk" ["She picked a flower"]).

C3. Number of other errors, excluding Response Types C1 and C2, before any prompting. An example would be "Was hy weer geswem" ("He was again swam") instead of "Wou hy weer (ge)swem (het)" ("He wanted to swim again") in response to "Hierdie eendjie wil elke dag swem. Gister, net soos elke ander dag,…" ("This duckling wants to swim every day. Yesterday, just like every other day,…").

D. Number of other errors, excluding Response Types C1, C2, and C3 but including errors made after prompting (e.g., when *gespeel* ("played") was given instead of "Sy buite [ge]speel [het]" ["She (could) play outside"] in response to "Hierdie meisie kan elke dag buite speel. Gister net soos elke ander dag, kon …" ["This girl can play outside every day. Yesterday, just like every other day, (she) could …"]).

Three sets of responses (those of the same three children whose language samples were transcribed and analyzed independently) were scored independently by the linguist referred to earlier; interrater reliability was 92%.

Results

Production of Present Tense Versus Past Tense Constructions

Tense production in the language samples. The results of the language sample analysis in the first 100 utterances of the language samples for the present tense constructions, including the results of the statistical analysis, are summarized in Table 1. Note that not all participants produced the constructions under investigation, which explains why the degrees of freedom are smaller in some cases (e.g., for hendiadyses).

Present tense verb forms were used with a high degree of accuracy by all participants, with the lowest scoring participant producing .80 (80%) of the total set of present tense occurrences correctly. All participants together produced 3,546 present tense forms, of which 3,449 (97.3%) were correct forms. For all types of present tense forms combined, a significant difference between groups for the proportion of accurate forms could be assumed, based on the outcomes of a one-way ANOVA, $F(2, 42) = 7.635$, $p = .000$; $\eta^2 = .267$. Post hoc analyses (Tukey's honestly significant difference [HSD] test, $p = .05$) indicated these differences to be between the SLI group and the TD4 group and between the SLI group and the TD6 group. However, no differences could be assumed between groups in terms of the level of accuracy with which hendiadyses were produced, $F(2, 16) = 0.543$, $p = .591$. A difference between groups could, however, be assumed in regard to main verbs, $F(2, 42) = 5.690$, $p = .007$, $\eta^2 = .213$; modal auxiliaries, $F(2, 42) = 3.263$, $p = .048$, $\eta^2 = .134$; *have* forms, $F(2, 42) = 3.889$, $p = .028$, $\eta^2 = .156$; and *be* forms, $F(2, 41) = 7.134$, $p = .002$; $\eta^2 = .258$. In the case of modal auxiliaries, post hoc analyses (Tukey's HSD; $p = .05$) did not reveal which groups differed from which, but in regard to the other verb forms, the difference was between the two groups of 6-year-olds.

For all three groups, most errors were ones of omission; we report on the omission of modals, temporal *het,* and *be* forms later in this section. However, other types

Table 1. Summary of performance per group—correct production of present tense forms in the language samples, in proportions.

CT	Gr	n^a	*M*	*SD*	Minimum	Maximum	ANOVA		
							F (*df*)	*p*	η^2
Main verbs	SLI	15	.977	.028	.92	1.00	5.690 (2, 42)	.007	.213
	TD4	15	.979	.021	.95	1.00			
	TD6	15	.993	.018	.94	1.00			
Modals	SLI	15	.919	.142	.60	1.00	3.263 (2, 42)	.048	.134
	TD4	15	.992	.016	.95	1.00			
	TD6	15	.989	.028	.92	1.00			
Have forms	SLI	15	.873	.289	.00	1.00	3.886 (2, 42)	.028	.156
	TD4	15	.998	.007	.97	1.00			
	TD6	15	1.00	.000	1.00	1.00			
Be forms	SLI	14	.904	.109	.64	1.00	7.134 (2, 41)	.002	.258
	TD4	15	.968	.065	.75	1.00			
	TD6	15	.993	.017	.94	1.00			
Hendiadyses	SLI	2	1.00	.000	1.00	1.00	0.543 (2, 16)	.591	.064
	TD4	7	1.00	.000	1.00	1.00			
	TD6	10	.950	.158	.50	1.00			
Total	SLI	15	.940	.062	.80	1.00	7.636 (2, 42)	.001	.267
	TD4	15	.981	.024	.90	1.00			
	TD6	15	.993	.009	.98	1.00			

Note. Analyses of variance (ANOVAs) were applied to the log-odds of the frequencies of incorrect versus correct forms. CT = type of past tense construction; Gr = group; SLI = specific language impairment; TD4 = 4-year-old typically developing control participants; TD6 = 6-year-old typically developing control participants.

[a]Number of participants who produced a minimum of one relevant form.

of errors also occurred. One made by one participant in each of the TD4 and SLI groups was the inappropriate insertion of a *be* form, as in Example 11 in Appendix B, which contains a selection of the ungrammatical utterances produced by the participants. Another type of error was the inappropriate insertion of a main verb, which yields a doubling pattern, as exemplified in Example 12 of Appendix B. This error type can be argued to be syntactic in nature (with both copies of the verb receiving sound form) instead of morphological. We return to this doubling in the Discussion.

Other errors were made only by the participants with SLI. These include the following five: (a) substituting a *have* form with a *be* one; (b) substituting a *be* form with a *have* one; (c) substituting a *be* form with a modal auxiliary; (d) inappropriately inserting a modal auxiliary, as in Example 13 in Appendix B, where a doubling pattern is again yielded; and (e) using the incorrect form of the infinitive, as in Examples 14 and 15. All error types that occurred on present tense verb forms in the first 100 utterances of the language samples also occurred in the remainder of the 30 min.

Table 2 contains a summary of the occurrence of past tense forms in the first 100 utterances of the language samples. Past tense verb forms were sometimes used with a low degree of accuracy (some participants obtained a score of 0). All participants together produced 408 present tense forms, 378 (92.6%) of which were correct. The TD6 group used more past tense forms (n = 220) than the other two groups (for the SLI group, n = 80, and for the TD4 group, n = 108). Although the two TD groups both fared well in terms of accuracy, the TD6 group still outperformed the 4-year-olds in terms of accurate production of past tense constructions. A one-way ANOVA returned a significant outcome; a difference among the groups in terms of accurate production of all types of past tense constructions combined could therefore be assumed, $F(2, 41) = 11.734$, $p = .000$, $\eta^2 = .384$. Post hoc analyses (Tukey's HSD, $p = .05$) showed these differences to be between the SLI and TD6 groups.

In terms of specific types of past tense constructions, differences between groups could be assumed for *be* forms—one-way ANOVA, $F(2, 26) = 5.525$, $p = .010$, $\eta^2 = .298$—and *het ge–* forms only—$F(2, 40) = 10.163$, $p = .000$; $\eta^2 = .337$. Post hoc analyses (Tukey's HSD, $p = .05$) revealed that these differences were between the SLI and TD4 groups and between the SLI and TD6 groups. As expected, the participants with SLI made the most errors of the three groups.

In terms of types of errors, some were made only by participants in the SLI group: omission of the past participle, as in Example 16 in Appendix B; omission of the

Table 2. Summary of performance per group—correct production of past tense forms in the language samples, in proportions.

CT	Gr	n[a]	M	SD	Minimum	Maximum	ANOVA F (df)	ANOVA p	ANOVA η^2
Modals	SLI	0	—	—	—	—			
	TD4	1	1.00	—	1.00	1.00			
	TD6	9	1.00	.000	1.00	1.00			
Have forms	SLI	1	1.00	—	1.00	1.00	1.688 (2, 8)	.245	.297
	TD4	3	1.00	0.00	1.00	1.00			
	TD6	7	.761	.418	0.00	1.00			
Be forms	SLI	7	.964	.094	0.75	1.00	5.525 (2, 26)	.010	.298
	TD4	9	.777	.363	0.00	1.00			
	TD6	13	.980	.069	0.75	1.00			
Hendiadyses	SLI	1	1.00	—	1.00	1.00			
	TD4	2	1.00	.000	1.00	1.00			
	TD6	2	1.00	.000	1.00	1.00			
Het /ge–/	SLI	13	.720	.421	0.00	1.00	10.163 (2, 40)	.000	.337
	TD4	15	.977	.061	0.80	1.00			
	TD6	15	.996	.016	0.94	1.00			
Het but no */ge–/*	SLI	3	.667	.577	0.00	1.00	1.757 (2, 7)	.241	.334
	TD4	2	1.00	.000	1.00	1.00			
	TD6	5	1.00	.000	1.00	1.00			
Passive forms	SLI	3	.667	.577	0.00	1.00	1.282 (2, 8)	.329	.243
	TD4	2	.750	.354	0.50	1.00			
	TD6	6	1.00	0.00	1.00	1.00			
Total	SLI	14	.777	.311	0.00	1.00	11.734 (2, 41)	.000	.384
	TD4	15	.925	.146	0.50	1.00			
	TD6	15	.978	.047	0.83	1.00			

Note. Dashes represent instances when the results of statistical analysis were left out because the number of participants who produced relevant data was too low. ANOVAs were applied to the log-odds of the frequencies of incorrect versus correct forms.

[a]Number of participants who produced a minimum of one relevant form.

ge– of the past participle, as in Example 17; and omission of temporal *het,* as in Example 18.

Example 19 in Appendix B, found in the remainder of the 30 min, was the only one of its kind. It was produced by a girl with SLI and is given for the sake of interest, seeing that a doubling pattern is again at issue here.

Tense production in the sentence completion task. The performance of the three groups in terms of grammatical responses is presented in Tables 3 and 4. Recall

Table 3. Summary of performance per group—sentence completion task: past tense, grammatical responses.

RT	Group	n	Group mean	SD	Minimum	Maximum	ANOVA[a] F	ANOVA[a] p	ANOVA[a] η^2
A	SLI	15	2.78	3.326	0	10	13.631	.000	.394
	TD4	15	1.73	2.520	0	9			
	TD6	15	8.00	4.472	0	16			
B	SLI	15	4.40	5.082	0	14	15.238	.000	.421
	TD4	15	2.07	3.261	0	11			
	TD6	15	11.20	5.480	0	17			

Note. Number of test items = 18. RT = response type; A = number of targeted responses before prompting; B = number of grammatical forms before prompting (including A).

[a]*df* = 2, 42.

Table 4. Summary of performance per group—sentence completion task: past tense, ungrammatical responses.

RT	Group	*n*	Group mean	*SD*	Minimum	Maximum	ANOVA[a] *F*	*p*	η^2
C1	SLI	15	2.33	2.526	0	8	5.589	.007	.210
	TD4	15	0.47	0.743	0	2			
	TD6	15	0.67	1.234	0	4			
C2	SLI	15	0.33	0.617	0	2	3.128	.054	.130
	TD4	15	0.07	0.258	0	1			
	TD6	15	0.00	0.000	0	0			
C3	SLI	15	1.40	1.844	0	5	2.203	.123	.095
	TD4	15	0.73	1.163	0	4			
	TD6	15	0.40	0.737	0	2			
D	SLI	15	8.73	6.713	1	22	3.543	.038	.144
	TD4	15	7.67	9.092	0	30			
	TD6	15	2.20	5.321	0	21			

Note. Number of test items = 18. C1 = number of highly idiosyncratic errors; C2 = number of past participle errors; C3 = number of other errors (in addition to C1 and C2); D = number of other errors (excluding Response Types C1–C3), including forms obtained after prompting.

[a] *df* = 2, 42.

that Response Types A and B, described earlier, represented grammatical responses (whether targeted or not; see Table 3) and Response Types C1–D represent ungrammatical ones (see Table 4). As one can see in Table 3, the TD6 group gave the most targeted responses (Response Type A). A one-way ANOVA returned a significant outcome, indicating that a difference between the groups could be assumed, $F(2, 42) = 13.631$, $p = .000$, $\eta^2 = .394$. Post hoc analyses (Tukey's HSD, $p = .05$) revealed that the significant differences were between the SLI and TD6 groups and between the TD4 and TD6 groups, with no statistically significant difference between the SLI and TD4 groups.

In terms of grammatical past tense forms before prompting (Response Type B), the TD6 group also outperformed the other groups. On the basis of the results of a one-way ANOVA, $F(2, 42) = 15.238$, $p = .000$, $\eta^2 = .421$, a difference between groups could be assumed. Post hoc analysis (Tukey's HSD, $p = .05$) again indicated the significant differences to be between the SLI and TD6 groups, and between the TD4 and TD6 groups, with no statistically significant difference between the SLI and TD4 groups.

We now turn to the ungrammatical past tense constructions (see Table 4). Most errors occurred when the responses after prompting were included (Response Type D). We performed one-way ANOVAs on each of these types of ungrammatical responses to determine whether the differences in the mean scores of the three groups were significant. The results of these statistical analyses are also given in Table 4. Differences between groups could be assumed to exist for Response Types C1 and D. In each case, post hoc analyses (Tukey's HSD, $p = .05$) showed the differences to be between the SLI and TD6 groups. For Response Type C1, there was a further difference between the TD6 and TD4 groups. As expected, the highest number of highly idiosyncratic errors (Response Type C1) occurred in the SLI group. The mean scores of the other two groups were comparable on this measure.

In short, the SLI and TD4 groups made a comparable number of errors after prompting. Furthermore, the SLI group made more idiosyncratic errors than did the other two groups.

Omission of Auxiliaries and Copula Be

We turn now to the omission of modal auxiliaries (whether in their present or past tense form), the temporal auxiliary *het,* and *be* forms (whether in their present or past tense form) in particular: These are given in Examples 20, 21, and 22, respectively, in Appendix B.

As one can observe in Table 5, all three of these types of verbs were omitted more frequently by the SLI group than by the two TD groups. The language of the TD6 group showed almost no such omissions. More participants in the SLI group than in the other two groups made such omissions, with only 2 TD 6-year-olds making such omissions. For the omission of modal auxiliaries in the first 100 utterances and in the full 30 min of the language samples, a one-way ANOVA returned a nonsignificant result, indicating that no statistically significant differences between the groups could be assumed, $F(2, 42) = 1.400$, $p = .258$, and $F(2, 42) = 1.887$, $p = .164$, respectively. Similarly, a nonsignificant result was returned for omission of the temporal auxiliary *het,* again

Table 5. Summary of performance per group—omission of modal auxiliaries, temporal auxiliary *het*, and *be* forms in the language samples, given as mean frequencies of omission.

Construction	Group	*n*	Group mean[a]	*SD*	Min score	Max score	ANOVA[b] *F*	*p*	η^2
Modal auxiliary, first 100 utterances	SLI	15	.47	1.125	0	4	1.400	.258	.069
	TD4	15	.27	.704	0	2			
	TD6	15	.00	.000	0	0			
Modal auxiliary, full 30 min	SLI	15	.67	1.345	0	5	1.887	.164	.082
	TD4	15	.47	.990	0	3			
	TD6	15	.00	.000	0	0			
Temporal *het*, first 100 utterances	SLI	15	.40	1.298	0	5	1.424	.252	.063
	TD4	15	.00	.000	0	0			
	TD6	15	.00	.000	0	0			
Temporal *het*, full 30 min	SLI	15	1.07	2.086	0	8	2.803	.072	.118
	TD4	15	.20	.561	0	2			
	TD6	15	.07	.258	0	1			
Be forms, first 100 utterances	SLI	15	1.60	1.957	0	7	5.889	.006	.219
	TD4	15	.67	1.234	0	4			
	TD6	15	.07	.258	0	1			
Be forms, full 30 min	SLI	15	2.67	2.498	0	7	9.480	.000	.311
	TD4	15	.73	1.438	0	5			
	TD6	15	.07	.258	0	1			

[a]Group means give the mean frequencies of omission. [b]*df* = 2, 42.

indicating that there were no statistically significant differences among the three groups, $F(2, 42) = 1.424$, $p = .252$, for the first 100 utterances, and $F(2, 42) = 2.803$, $p = .072$, for the full 30 min. A difference between groups could, however, be assumed for the omission of *be* forms, $F(2, 42) = 5.889$, $p = .006$, $\eta^2 = .219$, for the first 100 utterances, and $F(2, 42) = 9.480$, $p = .000$, $\eta^2 = .311$, for the full 30 min. In the case of the first 100 utterances, post hoc analyses (Tukey's HSD, $p = .05$) revealed that the significant differences occurred between the TD6 and SLI groups, with the TD4 group not differing significantly from either of the 6-year-old groups. For the full 30 min of the language sample, post hoc analyses (Tukey's HSD, $p = .05$) showed the significant differences to occur between both of the two TD groups, on the one hand, and the SLI group, on the other.

Elicited Versus Spontaneous Use of Tense Constructions

A summary of the percentages of correct use of tense constructions in the language samples (past and present tense) and during the sentence completion task (past tense only) is provided in Table 6. As can be seen in this table, all three groups fared worse in elicited than in spontaneous tense production. Furthermore, during elicited production but not during spontaneous production, the use of tense constructions differed significantly between the two TD groups.

Discussion

The general pattern for the task eliciting production of past tense forms was that the children with SLI quantitatively performed like TD 4-year-olds, with the TD 6-year-olds outperforming the other two groups. The children with SLI furthermore made more idiosyncratic errors than did the 4-year-olds and age-matched controls.

Of interest regarding the experimental task is that most of the ungrammatical past tense constructions were produced in response to prompting. This could be explained as follows: If a participant did not give the targeted construction, prompting was used in an attempt to elicit the targeted construction. This construction was presumably not given without prompting because the participant could not produce the construction. Now, with prompting, the participant was to a certain extent forced to attempt to produce the construction, and this resulted in an ungrammatical form of the construction being produced. A possible reason for the low mean number of errors produced before prompting is that if participants did not know the targeted construction, they could provide an alternative (grammatical) construction. For instance, if the past tense form of *het* ("have") was not known to participants, then they would not have said "Het hy 'n nuwe maatjie gehad" ("He had a new friend") in response to "Hierdie seuntjie het elke dag 'n nuwe maatjie. Gister, net soos elke ander dag,…" ("Every day, this boy has a new friend. Yesterday, just like every other

Table 6. Percentage of tense constructions produced correctly in the language samples and sentence completion task.

Group and statistically significant differences between groups	Group mean for spontaneous tense constructions (language samples)		Group mean for elicited tense constructions (sentence completion)
	Present tense	Past tense	Past tense
SLI	94.0	77.7	24.4
TD4	98.1	92.5	11.7
TD6	99.3	97.8	62.2
Group differences			
SLI and TD4	Yes	No[a]	No
SLI and TD6	Yes	Yes	Yes
TD4 and TD6	No	No	Yes

[a]Based on all types of past tense constructions combined; for *be* and *het ge–* forms, there were indeed significant differences between the SLI and TD4 groups.

day,…"). They could use another grammatical construction, such as "Het hy 'n nuwe maatjie" ("He has a new friend"—the historic present tense form) or "Het hy weer met 'n maatjie gespeel" ("He again played with a friend"). However, when prompted, the participants did not have this freedom of choice, and then a deviant response or no response was more likely to be given.

The results of the elicitation task lend partial support to the first prediction, namely that Afrikaans-speaking children with SLI would fare significantly worse than both the younger and the age-matched control children: The children with SLI did indeed achieve scores that were significantly lower scores than those of their TD peers but not lower than those of the younger, MLU-matched TD children. On the basis of the results of the elicitation task alone, tense marking can be viewed to be delayed, but not a delay-within-delay. However, as predicted, the SLI group did produce a wider range of errors than the TD children.

We turn now to the spontaneous production of tense morphology: All present tense verb forms were used correctly by all three groups to a high degree, as predicted. In terms of correct production of past tense forms, the participants with SLI fared worse than the other two groups overall but still demonstrated relatively high levels of accuracy (on average, 78% for all past tense forms combined). One reason one might be tempted to offer for the comparatively lower frequency of use of past tense constructions in the language of children with SLI is that they prefer to use the morphologically simpler historic present form instead of the *het ge–* form. However, an examination of the language samples revealed that the group for which most historic present tense forms occurred was, in fact, the TD6 one (38 times in the first 100 utterances), despite the fact that this group also used more than double the number of *het ge–* forms than either of the other two groups. Historic present tense forms occurred 21 times in the first 100 utterances of the 4-year-olds and only 4 times in those of the participants with SLI.

In general, the Afrikaans-speaking children with SLI performed worse than both younger, MLU-matched and age-matched controls in terms of their spontaneous production of tense morphology, lending support to the findings of Hansson and Nettelbladt (1995), Loeb and Leonard (1991), and Paradis and Crago (2001), among others, obtained with child speakers of other languages. The prediction that Afrikaans-speaking children with SLI would fare significantly worse than both the younger, MLU-matched and the age-matched controls, and that past tense forms would pose problems, whereas present tense forms would not, was thus borne out fully by the data obtained from spontaneous tense production. The results of the spontaneous language production task lend support to those of Paradis and Crago (2000), who also found that children with SLI were outperformed by both control groups for French, a language in which, similar to Afrikaans, the present tense verb form has no temporal morphology and the past tense form involves an auxiliary. Furthermore, as predicted, the children with SLI made a wider range of errors than the TD children. On the basis of the spontaneous language results, tense marking can thus be regarded as a delay-within-delay, making it a potential clinical marker of SLI in Afrikaans.

The elicited and spontaneous data obtained in this study differ in the extent to which they support the first prediction: The spontaneous data show that the children with SLI were outperformed by both TD groups, whereas the elicited data show that only the TD 6-year-olds outperformed the children with SLI. Contrary to Blake

et al.'s (2004) proposal (see Prediction 3), the Afrikaans-speaking children with SLI did not fare comparatively worse in the elicited than in the spontaneous production tasks; they were outperformed by both of the control groups when comparisons were based on spontaneous production but not on elicited production. However, when one compares performance on elicited and in spontaneous production for each child with SLI individually, one can see that these children, generally speaking, fared better on the spontaneous than on the elicited production task, which could still point to a type of avoidance on their part.

Regarding the types of errors made during spontaneous tense production, the most frequent of these were errors of omission, as Roberts and Rescorla (1995) also found. Prediction 2 was that auxiliaries and copula *is* will be optional in the language of the children with SLI, more so than in the language of the TD children. Whereas the raw data indicated that this was the case for auxiliaries, the statistical analyses could not confirm this prediction. However, copula *is* was indeed optional in the language of the children with SLI, more so than in the language of the TD children. This result lends support to the EOI hypothesis, which states that tense marking (in this case, in the form of copula verbs) is optional in the language of children with SLI for a longer period than in the language of TD children.

As was found to be the case for French, a Romance language (Paradis & Crago, 2001), Afrikaans SLI can thus be said to be an EOI grammar. Few errors occur on the present tense form of verbs, which is identical to the infinitival form, both being bare stems. Present and past tense forms of the (tense-carrying) copula are frequently omitted. When producing past tense forms of main verbs, which require a prefix (*ge–*) and the temporal auxiliary *het,* Afrikaans-speaking children with SLI, but not their TD peers, view the *ge–* and *het* as optional, with omissions of these occurring frequently. It appears, then, that Afrikaans is yet another Germanic language that demonstrates optional infinitives in the language of child speakers.

Of interest in the language of the Afrikaans-speaking children with SLI is that the temporal auxiliary *het* was not only omitted (as the EOI hypothesis would predict it would be) but also, at times, doubled. This doubling did not occur in the language of any of the TD children and has not (yet) been reported for child speakers with SLI of other Germanic languages, such as Dutch or German. While Afrikaans-speaking children with SLI thus sometimes omit the tense-carrying auxiliary *het,* at other times they give sound form to both copies of this auxiliary where it does occur in their past tense constructions. This phenomenon falls outside the scope of the EOI hypothesis, but it still needs to be accounted for. Southwood (2007) argued that the doubling of the *het* forms part of a more general doubling pattern found in the language of Afrikaans-speaking children with SLI, which is not restricted to verb forms. For example, an instance of doubling found in the language samples entailing a possessive pronoun is "Hierso is jou klere jou" ("Here are your clothes yours"; see Example 23 in Appendix B).

The minimalist account provided by Southwood (2007) for the frequent omission, substitution, and occasional inappropriate insertion of grammatical morphemes and functional categories is related to problems at Spell-Out (see Chomsky, 1995) at the level of phonetic form: Either certain grammatical features are given a sound form different than that found in the adult speaker's language (which accounts for substitutions) or certain copies of a movement chain in the pre–Spell-Out derivation receive no sound form at all at Spell-Out (which accounts for omissions), whereas other copies are spelled out twice (which accounts for some inappropriate insertions, specifically those involving doubling). The language problems that children with SLI have could thus be seen to be localized (principally) in that part of the grammar which concerns the mapping between syntax and phonology. Furthermore, for these children, difficulties seem to arise specifically in contexts where there is more than one potential Spell-Out candidate available, that is, where there is competition between sound forms that may realize a functional category—as in the case of the Afrikaans past tense, which can be realized in a number of different ways—or competition between various copies for Spell-Out—as in the case of the temporal auxiliary *het*.

This account differs from that of the *unique checking constraint* (Wexler, 1998) that underlies the ATOM (recall that the ATOM is the current form of the EOI hypothesis). In short, this constraint stipulates that the D feature of the determiner phrase can check against only one functional category, either tense or agreement-subject (Agr-S). If the D feature is checked against tense but not against Agr-S, an utterance such as "Her eat oranges" will be produced; conversely, if the D feature is checked against Agr-S but not against tense, then "She eat oranges" will be produced (see Wexler, 1998). In contrast to this, the account we propose here assumes that there is no constraint on the number of checking operations that can be performed; working within a copy theory of movement, we proposed that, after all checking operations necessary for convergence have taken place, certain copies are not deleted and/or others are inappropriately deleted.

The results and proposals of this study should be interpreted with caution, however, for two reasons. The first pertains to the number of participants. Children with SLI are known to constitute a heterogeneous group (Aram, 1991); given this, the 15 children with SLI who participated in this study may not have been fully

representative of the Afrikaans-speaking child population with SLI. The second reason is that some of the children with SLI could have overcome at least some of their problems pertaining to tense marking. These children were all 6 years old, and all but one of them had been receiving speech-language therapy when they took part in this study. Had their language been studied when they were younger (and, conversely, more impaired), a different pattern of errors might have been found: Children with less remedied, more severely impaired language might have performed uniformly across different tasks, with both elicited and spontaneous language showing a delay-within-delay for tense marking.

Conclusion

Cross-linguistic data on the manner in which SLI presents itself in typologically diverse languages are of value, because they allow one to test the merit of theoretical accounts of SLI. The data of this study revealed that Afrikaans-speaking children with SLI performed similarly to younger TD ones on the experimental tasks. By contrast, in terms of the spontaneous production of morphemes pertaining to tense, the Afrikaans-speaking children with SLI fared worse than both younger, MLU-matched and age-matched TD children. The children with SLI mostly made the same types of errors as the younger ones on morphemes related to tense, with omissions being the most common error type. These results lend support to one theoretical account of tense marking in the language of children with SLI, namely the EOI hypothesis. However, some errors were unique to the children with SLI, such as the omission of the main verb *het* and the doubling of the temporal auxiliary *het,* the latter needing explanation that falls outside the scope of the EOI hypothesis.

We recommend that future research on this topic gather data from the full age range of preschool children with SLI (2–6 years), in an attempt to gain insight into the development of tense morphology in the language of Afrikaans-speaking children with SLI. Because of the problems in executing experimental tasks with very young children, spontaneous language samples may be gathered, especially considering the relative success with which TD Afrikaans-speaking children were identified as such by means of discriminant analysis performed with various measures of the spontaneous language samples (see Southwood, 2007). Note that developmental data do not yet exist for TD Afrikaans-speaking children. Therefore, the proposed study would have to include TD children as well, to enable comparison between atypical and typical development regarding tense production in Afrikaans. Such data will allow one to establish conclusively whether problems with tense marking is a reliable and stable clinical marker of SLI in Afrikaans as it has, preliminarily, been shown to be in English (see Rice & Wexler, 1996, and Marchman et al., 1999).

Acknowledgment

This material is based on work financially supported by the National Research Foundation of South Africa. Any opinion, findings, conclusions, or recommendations expressed in this material are those of the authors, and therefore the National Research Foundation does not accept any liability in regard thereto.

References

American Speech-Language-Hearing Association. (1997–2006). *Hearing screening*. Retrieved from www.asha.org/public/hearing/testing/.

Aram, D. M. (1991). Comments on specific language impairment as a clinical category. *Language, Speech, and Hearing Services in Schools, 22,* 84–87.

Arlman-Rupp, A. J. L., Van Niekerk de Haan, D., & Van der Sandt-Koenderman, M. (1976). Brown's early stages: Some evidence from Dutch. *Journal of Child Language, 3,* 267–274.

Balason, D. V., & Dollaghan, C. A. (2002). Grammatical morpheme production in 4-year-old children. *Journal of Speech, Language, and Hearing Research, 45,* 961–969.

Blake, J., Myszczyszyn, D., & Jokel, A. (2004). Spontaneous measures of morphosyntax in children with and without specific language impairment. *Applied Psycholinguistics, 25,* 29–41.

Bortolini, U., Caselli, M. C., Deevy, P., & Leonard, L. B. (2002). Specific language impairment in Italian: The first steps in search for a clinical marker. *International Journal of Language and Communication Disorders, 37,* 77–94.

Brown, R. (1973). *A first language: The early stages*. Cambridge, MA: Harvard University Press.

Chomsky, N. (1995). Bare phrase structure. In G. Webelhuth (Ed.), *Government and binding theory and the minimalist program* (pp. 383–439). Oxford, England: Blackwell.

Clahsen, H. (1989). The grammatical characterization of developmental dysphasia. *Linguistics, 27,* 897–920.

Conti-Ramsden, G. (2003). Processing and linguistic markers in young children with specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research, 46,* 1029–1038.

Crystal, D., Fletcher, P., & Garman, M. (1976). *The grammatical analysis of language disability*. London, England: Edward Arnold.

Dalalakis, J. (1994). Developmental language impairment in Greek. *McGill Working Papers in Linguistics, 10,* 16–227.

De Jong, J. (2003). Specific language impairment and linguistic explanation. In Y. Levy & J. Schaeffer (Eds.), *Language competence across populations: Toward a definition of specific language impairment* (pp. 151–170). Mahwah, NJ: Erlbaum.

De Jong, J. (2004). Grammatical impairment: An overview and a sketch of Dutch. In L. Verhoeven & H. Van Balkom (Eds.), *Classification of developmental language disorders: Theoretical issues and clinical implications* (pp. 261–281). Mahwah, NJ: Erlbaum.

Demuth, K., & Suzman, S. (1997). Language impairment in Zulu. *Boston University Conference on Language Development Proceedings, 21,* 124–135.

Donaldson, B. C. (1993). *A grammar of Afrikaans*. Berlin, Germany: Mouton de Gruyter.

Dromi, E., Leonard, L. B., & Shteiman, M. (1993). The grammatical morphology of Hebrew-speaking children with specific language impairment: Some competing hypotheses. *Journal of Speech and Hearing Research, 36,* 760–771.

Fukuda, S. E., & Fukuda, S. (1994). Developmental language impairment in Japanese: A linguistic investigation. *McGill Working Papers in Linguistics, 10,* 150–177.

Håkansson, G. (2001). Tense morphology and verb-second in Swedish L1 children, L2 children and children with SLI. *Bilingualism: Language and Cognition, 4,* 85–99.

Hansson, K. (1997). Patterns of verb use in Swedish children with SLI: An application of recent theories. *First Language, 17,* 195–217.

Hansson, K., & Leonard, L. B. (2003). The use and productivity of verb morphology in specific language impairment: An examination of Swedish. *Linguistics, 41,* 351–379.

Hansson, K., & Nettelbladt, U. (1995). Grammatical characteristics of Swedish children with SLI. *Journal of Speech and Hearing Research, 38,* 589–598.

Hansson, K., Nettelbladt, U., & Leonard, L. (2000). Specific language impairment in Swedish: The status of verb morphology and word order. *Journal of Speech, Language, and Hearing Research, 43,* 848–864.

Hickey, T. (1991). Mean length of utterance and the acquisition of Irish. *Journal of Child Language, 18,* 553–569.

Hunt, K. W. (1970). Syntactic maturity in school children and adults. *Monographs of the Society for Research in Child Language Development, 35*(1, Serial No. 134).

Jakubowicz, C. (2003). Computational complexity and the acquisition of functional categories by French-speaking children with SLI. *Linguistics, 41,* 175–211.

Johnston, J. R. (2001). An alternate MLU calculation: Magnitude and variability effects. *Journal of Speech, Language, and Hearing Research, 44,* 156–164.

Johnston, J. R., Miller, J. F., Curtiss, S., & Tallal, P. (1993). Conversations with children who are language impaired: Asking questions. *Journal of Speech and Hearing Research, 36,* 973–978.

Lahey, M., Liebergott, J., Chesnick, M., Menyuk, P., & Adams, J. (1992). Variability in children's use of grammatical morphemes. *Applied Psycholinguistics, 13,* 373–398.

Leonard, L. B. (1989). Language learnability and specific language impairment in children. *Applied Psycholinguistics, 10,* 179–202.

Leonard, L. B. (1998). *Children with specific language impairment*. Cambridge, MA: MIT Press.

Leonard, L. B. (2000). Specific language impairment across languages. In D. V. M. Bishop & L. B. Leonard (Eds.), *Specific language impairment in children: Causes, characteristics, intervention and outcome* (pp. 115–129). Hove, England: Psychology Press.

Leonard, L. B., Deevy, P., Miller, C. A., Rauf, L., Charest, M., & Kurtz, R. (2003). Surface forms and grammatical functions: Past tense and passive particle use by children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 46,* 43–55.

Lindner, K., & Johnston, J. (1992). Grammatical morphology in language-impaired children acquiring English or German as their first language: A functional perspective. *Applied Psycholinguistics, 13,* 115–129.

Loeb, D. F., & Leonard, L. (1991). Subject case marking and verb morphology in normally developing and specifically language-impaired children. *Journal of Speech and Hearing Research, 34,* 340–346.

Marchman, V. A., Saccuman, C., & Wulfeck, B. (2004). Productive use of the English past tense in children with focal brain injury and specific language impairment. *Brain and Language, 88,* 202–214.

Marchman, V. A., Wulfeck, B., & Weismer, S. E. (1999). Morphological productivity in children with normal language and SLI: A study of the English past tense. *Journal of Speech, Language, and Hearing Research, 42,* 206–219.

Oetting, J. B., & Horohov, J. E. (1997). Past-tense marking in children with and without specific language impairment. *Journal of Speech, Language, and Hearing Research, 40,* 62–74.

Oetting, J. B., & Rice, M. L. (1993). Plural acquisition in children with specific language impairment. *Journal of Speech and Hearing Research, 36,* 1236–1248.

Paradis, J., & Crago, M. (2000). Tense and temporality: A comparison between children learning a second language and children with SLI. *Journal of Speech, Language, and Hearing Research, 43,* 834–837.

Paradis, J., & Crago, M. (2001). The morphosyntax of specific language impairment in French: An extended optional default account. *Language Acquisition, 9,* 269–300.

Paul, R., & Alforde, S. (1993). Grammatical morpheme acquisition in 4-year-olds with normal, impaired, and late-developing language. *Journal of Speech and Hearing Research, 36,* 1271–1275.

Pollock, J.-Y. (1989). Verb movement, UG and the structure of IP. *Linguistic Inquiry, 20,* 365–425.

Rice, M. L. (2003). A unified model of specific and general language delay: Grammatical tense as a clinical marker of unexpected variation. In Y. Levy & J. Schaeffer (Eds.), *Language competence across populations: Toward a definition of specific language impairment* (pp. 63–95). Mahwah, NJ: Erlbaum.

Rice, M. L., Redmond, S. M., & Hoffman, L. (2006). Mean length of utterance in children with specific language impairment and in younger control children shows concurrent validity and stable and parallel growth trajectories. *Journal of Speech, Language, and Hearing Research, 49,* 793–808.

Rice, M., & Wexler, K. (1996). Towards tense as a clinical marker of specific language impairment in English-speaking children. *Journal of Speech and Hearing Research, 39,* 1239–1257.

Rice, M., Wexler, K., & Cleave, P. (1995). Specific language impairment as a period of extended optional infinitive. *Journal of Speech and Hearing Research, 38,* 850–863.

Rice, M., Wexler, K., & Herschberger, S. (1998). Tense over time: The longitudinal course of tense acquisition in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 41,* 1412–1431.

Roberge, P. (1994). On the origins of the Afrikaans verbal hendiadys. *Stellenbosch Papers in Linguistics, 28,* 45–81.

Roberts, J., & Rescorla, L. (1995). Morphological acquisition and SLI: Evidence from children with expressive language delay. *Boston University Conference on Language Development Proceedings, 19,* 475–486.

Rom, A., & Leonard, L. B. (1990). Interpreting deficits in grammatical morphology in specifically language-impaired children: Preliminary evidence from Hebrew. *Clinical Linguistics & Phonetics, 4,* 93–105.

Rose, Y., & Royle, P. (1999). Uninflected structure in familial language impairment: Evidence from French. *Folia Phoniatrica et Logopaedica, 51,* 70–90.

Schütze, C., & Wexler, K. (1996). Subject case licensing and English root infinitives. *Boston University Conference on Language Development Proceedings, 20,* 670–681.

Southwood, F. (2005). A comparison of the responses to three comprehension and three production tasks assessing the morpho-syntactic abilities of Afrikaans-speaking preschoolers. *Per Linguam, 21,* 36–59.

Southwood, F. (2006). An investigation of the morpho-syntactic abilities of Afrikaans-speaking preschoolers. *South African Linguistic and Applied Language Studies, 24,* 35–55.

Southwood, F. (2007). *Specific language impairment in Afrikaans: Providing a Minimalist account for problems with grammatical features and word order.* Utrecht, the Netherlands: Landelijke Onderzoekschool Taalwetenschap.

Southwood, F., & Russell, A. F. (2004). Comparison of conversation, freeplay, and story generation as methods of language sample elicitation. *Journal of Speech, Language, and Hearing Research, 47,* 366–376.

Stark, R. E., & Tallal, P. (1981). Selection of children with specific language deficits. *Journal of Speech and Hearing Disorders, 46,* 114–122.

Thordardottir, E. T., & Weismer, S. E. (1998). Mean length of utterance and other language sample measures in early Icelandic. *First Language, 18,* 1–32.

Unsworth, S. (2005). *Child L2, adult L2, child L1: Differences and similarities: A study on the acquisition of direct object scrambling in Dutch*. Utrecht, the Netherlands: Landelijke Onderzoekschool Taalwetenschap.

Van der Lely, H. K. J., & Ullman, M. (1996). The computation and representation of past-tense morphology in normally developing and specifically language impaired children. *Boston University Conference on Language Development Proceedings, 20,* 816–827.

Wexler, K. (1994). Finiteness and head movement in early child grammars. In D. Lightfoot & N. Hornstein (Eds.), *Verb movement* (pp. 305–350). New York, NY: Cambridge University Press.

Wexler, K. (1998). Very early parameter setting and the unique checking constraint: A new explanation of the optional infinitive stage. *Lingua, 106,* 23–79.

Wexler, K., Schaeffer, J., & Bol, G. (2004). Verbal syntax and morphology in typically developing Dutch children and children with SLI: How developmental data can play an important role in morphological theory. *Syntax, 7,* 148–198.

Wexler, K., Schütze, C., & Rice, M. (1998). Subject case in children with SLI and unaffected controls: Evidence for the Agr/Tns omission model. *Language Acquisition, 7,* 317–344.

Wilsenach, C. (2006). *Syntactic processing in developmental dyslexia and in specific language impairment: A study on the acquisition of the past participle construction in Dutch* (Dissertation Series 128). Utrecht, the Netherlands: Landelijke Onderzoekschool Taalwetenschap.

Received December 30, 2007

Revision received June 12, 2008

Accepted June 15, 2009

DOI: 10.1044/1092-4388(2009/07-0286)

Contact author: Frenette Southwood, Department of General Linguistics, Stellenbosch University, Private Bag X1, Matieland 7602, Stellenbosch, South Africa.
E-mail: fs@sun.ac.za.

Appendix A. Examples of Afrikaans constructions.

(1) Ek sal/wil/kan/moet/mag speel
I will/want.to/can/must/may play-INF
"I will/want to/can/must/may play"
(2) Ek/Ons/Jy/Julle/Hy/Sy/Dit/Hulle/Die kat(te) sit
I/we/you-SGL/you-PL/he/she/it/they/the cat(s) sit-PRESENT
"I/We/You/You/He/She/It/They/The cat(s) sit(s)"
(3) Ek/Ons/Jy/Julle/Hy/Sy/Dit/Hulle het alles
I/we/you-SGL/you-PL/he/she/it/they have-PRESENT everything
"I/We/You/You/He/She/It/They have/has everything"
(4) Ek/Ons/Jy/Julle/Hy/Sy/Dit/Hulle is vrolik
I/we/you-SGL/you-PL/he/she/it/they be-PRESENT cheerful
"I am/We are/You are/You are/He is/She is/It is/They are cheerful"
(5) Gister eet ons pastei
yesterday eat we pie
"Yesterday we ate pie"
(6) Die kinders het gesit
the children have sit-PAST PART
"The children sat"
(7) Hulle het dit vermy/ontken/erken/begryp
they have it avoid-PAST PART/deny-PAST PART/admit-PAST PART/grasp-PAST PART
"They avoided/denied/admitted/grasped it"
(8a) Hy het gesit en slaap
he have sit-PAST PART and sleep-INF
"He was (sitting and) sleeping" / "He neglected to do what he was supposed to"
(8b) Hy het sit en slaap
he have sit-INF and sleep-INF
He was (sitting and) sleeping" / "He neglected to do what he was supposed to"
(9a) Sy wil/moet/kan swem
she want.to-PRESENT/must-PRESENT/can-PRESENT swim-INF
"She wants to/must/can swim"
(9b) Sy wou/moes/kon swem
she want.to-PAST/must-PAST/can-PAST swim-INF
"She wanted to/had to/could swim"
(10a) Sy wil/moet/kan geswem het
she want.to/must/can swim-PAST PART have
"She wanted to/had to/could swim"
(10b) Sy wou/moes/kon geswem het
she want.to-PAST/must-PAST/can-PAST swim-PAST PART have
"She wanted to/had to/could swim"

Note. INF = infinitive; PAST PART = past participle.

Appendix B (p. 1 of 2). Selected ungrammatical Afrikaans constructions produced by the participants.

(11) nou's jy op die perdjie ry
now.be-CONTR you-SGL on the horsie ride
Target: nou ry jy op die perdjie
now ride you-SGL on the horsie
"Now you are riding on the horsie"
(12) die's al die mense wat kom by ons kom kuier
these.be-CONTR all the people who come at us come visit
Target: die's al die mense wat by ons kom kuier
these-be-CONTR all the people who at us come visit
"These are all the people who are coming to visit us"
(13) gaan hulle hamers gaan nou kry
will their hammers will now get
Target: gaan hulle hamers nou kry
will their hammers now get
"Will now get their hammers"
(14) dit moet hier in die kas is
this must here in the cupboard is
Target: dit moet hier in die kas wees
this must here in the cupboard be-INF
"This must be here in the cupboard"
(15) sy gaan ons nie nou weer te pla nie
she will us not now again to bother not
Target: sy gaan ons nie nou weer pla nie
she will us not now again bother not
"She will not bother us again now"
(16) hulle altwee het op 'n blou bed
they both have on a blue bed
Target: hulle altwee het op 'n blou bed geslaap/gelê
they both have on a blue bed sleep/lie-PAST PART
"They both slept/lay on a blue bed"
(17) soom haar kou het
so her chew have
Target: so haar gekou het
so her chew-PAST PART have
"Chewed her like this"
(18) hulle seergekry
they sore.get-PAST PART
Target: hulle het seergekry
they have sore.get-PAST PART
"They got hurt"
(19) want hulle het al paar keer shock het
because they have already few time shock have
Target: want hulle het al 'n paar keer geshock
because they have already few time shock-PAST PART
"Because they have already shocked themselves a few times"
(20) OK nou die kinders eet
OK now the children eat
Target: OK nou moet die kinders eet
OK now must the children eat
"OK, now the children must eat"
(21) hy jy bed gesteel
he you-NOM bed steal-PAST PART
Target: hy het jou bed gesteel
he have your bed steal-PAST PART
"He stole your bed"

Appendix B (p. 2 of 2). Selected ungrammatical Afrikaans constructions produced by the participants.

(22) dié my yskas
this my fridge
Target: dié is my yskas
this is my fridge
"This is my fridge"
(23) hierso is jou klere jou
here be your-SGL clothes your-SGL/you-OBLIQUE-SGL
Target: hierso is jou klere
here be your-SGL clothes
"Here are your clothes"