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The use of grammatical morphemes reflecting aspect and modality by children with specific language impairment*

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ABSTRACT

Children with specific language impairment (SLI) have well-documented problems in the use of tense-related grammatical morphemes. However, in English, tense often overlaps with aspect and modality. In this study, 15 children with SLI (mean age 5;2) and two groups of 15 typically developing children (mean ages 3;6 and 5;3) were compared in terms of their use of previously studied morphemes in contexts that more clearly assessed the role of aspect. The children's use of less frequently studied morphemes tied to modality or tense was also examined. The children with SLI were found to use *-ing* to mark progressive aspect in past as well as present contexts, even though they were relatively poor in using the tense morphemes (auxiliary *was*, *were*) that should accompany the progressive inflection. These children were inconsistent in their use of third person singular *-s* to describe habitual actions that were not occurring during the time of their utterance. However, the pattern of the children's use suggested that the source of the problem was the formal tense feature of the inflection, not the habitual action context. The

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children's use of modal *can* was comparable to that of the typically developing children, raising the possibility that the modality function of possibility had been learned without necessarily acquiring the tense feature of this morpheme. These children's proficiency with *can* suggests that their bare verb stem productions should probably not be re-interpreted as cases of missing modals. Together these findings suggest that the more serious tense-related problems seen in English-speaking children with SLI co-occur with a less impaired ability to express temporal relations through aspect and modality.

INTRODUCTION

A common finding in the literature on English-speaking children with specific language impairment (SLI) is that these children show extraordinary difficulty using grammatical morphemes pertaining to tense (e.g. Rice, Wexler & Cleave, 1995; Leonard, Eyer, Bedore & Grela, 1997). These morphemes include copula and auxiliary *is*, *are*, and *am*, regular past *-ed*, and third person singular *-s*. Children with SLI are not only below age level in their use of these morphemes; they also use these morphemes with lower percentages in obligatory contexts than do younger, typically developing children matched according to mean length of utterance (MLU). Recent studies suggest that children's use of these morphemes may serve as a clinical marker of language impairment. For example, both Bedore & Leonard (1998) and Rice (1998) found that a measure based on the use of these morphemes shows good sensitivity and specificity in distinguishing children with SLI from their same-age peers.

Although the focus on tense is highly appropriate, there is reason to expand the scope of study to other verb morphemes, and to extend the range of contexts in which children's use of more frequently studied morphemes is examined. The rationale for further investigation is that, in English verb morphology, there is significant overlap among tense, aspect, and modality. This fact has led to considerable research on young normally developing children's interpretation of grammatical morphology (e.g. Bloom, Lifter & Hafitz, 1980; Weist, Wysocka, Witkowska-Stadnik, Buczowska & Konieczna, 1984; Shirai & Anderson, 1995; Wagner, 2001). Because of the unclear boundaries among tense, aspect, and modality, there is the possibility that problems experienced by children with SLI that are assumed to be tense-related may, in fact, be aspect-related. Conversely, in might be the case that these children's facility with particular modality-related morphemes may mean that these morphemes are less dependent upon tense than previously believed. Following a brief review of the grammatical functions of several verb-related grammatical morphemes of English, we discuss the potential challenge that each morpheme might pose for children learning

the language. We then turn to the description of a study designed to shed additional light on this question.

The verb morphemes -ing*, auxiliary* was/were*, third singular* -s*, and the modal* can *in adult grammar*

Progressive -ing. In the adult grammar, progressive aspect is expressed through use of *-ing*. For example, in the utterance *She was watching television when the phone rang*, the speaker intends to convey that the act of watching television was ongoing when a second event (the ringing of the phone) occurred. However, auxiliary *be* + *-ing* is also the default form used in English to describe activities in the present, even when the emphasis is not on the continuous nature of the activity. When describing a picture of someone running, for example, a speaker might produce the utterance *The boy is running* as a simple description of the action, with no intention to emphasize the continuous nature of the action, as would be suggested by descriptions such as *The boy is still running* or *The boy is just running and running*. In many other languages, present tense verb forms serve as the default; the present progressive would be used only if the speaker wished to emphasize the continuous nature of the action (Comrie, 1976).

Structural descriptions of the inflection *-ing* have varied somewhat, even in work within the same general theoretical framework, such as principles and parameters. Radford (1997) proposed that *-ing* might be adjoined to the verb within the VERB PHRASE (VP), and thus not associated directly with any functional category. However, Hyams (1996) has assumed that *-ing* is represented within an ASPECT PHRASE, a functional phrase that dominates VP in the structural tree.

Auxiliary was/were. In the adult grammar of English, the past progessive is formed through inclusion of auxiliary *was* or *were* along with the verb inflection *-ing*. These auxiliary forms are assumed to carry both tense (compare *is* and *was*, *are* and *were*) and agreement (compare *was* and *were*) features. Within the principles and parameters framework, these features reside in the functional category INFLECTION (INFL). For variations of this framework that employ separate TENSE (T) and AGREEMENT (AGR) functional categories, it is assumed that the feature [past tense] appears in T and [third person] and [singular] (*was*) or [plural] (*were*) resides in AGR (Radford, 1997).

Third person singular -s. The third person singular *-s* verb inflection is often used with stative verbs, as in *Bob likes ice cream* and *Kristen knows that man*. When used with action verbs, the inflection *-s* can serve several different functions (e.g. Quirk & Greenbaum, 1973). This form is often used to refer to habitual or generic (timeless) activities such as *Jenny walks to school* and *The girl runs fast*, respectively. It can also be used to express particular events

in the future, as in *If he takes out his accordion, I'll leave*. Finally, the inflection *-s* is adopted for commentary, as in *Smith fakes the handoff and drops back to throw*.

Although third person singular *-s* is referred to as a present tense inflection, this designation is a better descriptor of its form than of its function. In the commentary context, the inflection clearly applies to actions taking place at the time of the utterance. However, this is often not true for the other uses of this inflection. For example, the utterances *Jenny walks to school* and *The girl runs fast* are quite likely to occur during moments when the actions to which they refer are not even taking place. When *-s* is used with stative verbs, as in *Bob likes ice cream*, the proposition is true in the present, but the speaker is probably not intending to single out the present (that Bob likes ice cream right now). Indeed, the utterance might have been produced with a future act in mind (e.g. buying ice cream so Bob can eat it after dinner). Of course, for uses such as *If he takes out his accordion, I'll leave*, the reference is clearly to a future, rather than to a present event.

According to the principles and parameters approach, the *-s* verb inflection carries the features [present tense], [third person] and [singular] in inflection (INFL). For the variations within this framework that employ separate T and AGR categories, this inflection checks its [present tense] feature in T and its [third person] and [singular] features in AGR (Radford, 1997).

Modal can. The modal auxiliary verbs of English are used to express semantic notions such as ability (*Birds can fly*), possibility (*He can use the ladder to get up there*), and permission (*You can go outside and play now*) (Quirk & Greenbaum, 1973; Bybee, 1985). Traditionally, modal verbs have been divided into epistemic modality (the qualification of a proposition based on factual knowledge, as in *This must be Stella's coat*), and deontic modality (the qualification of a proposition based on reference to norms, as in *You must be quiet!*). However, Pea, Mawby & MacKain (1982) argue for a third modality – dynamic modality – which deals with personal ability to accomplish acts, as in *She can move that*. Whether considered from the standpoint of semantic notions such as ability or permission, or in terms of modalities such as deontic or dynamic, the same modal auxiliary verb can often serve more than one function. In the present study, we focus on the modal *can* given its pervasive use in the speech of children and adults.

The modal auxiliary verb serves as the finite verb in English sentences. In the principles and parameters framework, the modal *can* originates in INFL (or T, when T and AGR are assumed rather than INFL) and carries the [present tense] feature (Radford, 1997).

Children's potential (mis)interpretations of the morphemes

Progressive -ing. Studies of normally developing English-speaking children reveal that *-ing* is among the first inflections to appear in these

children's speech (Brown, 1973). The early appearance of this form frequently occurs with verbs whose lexical aspect (or Aktionsart) is consistent with progressive aspect (see Weist, in press for a recent review). For example, Bloom *et al*. (1980) found that children were more likely to use *-ing* with activity verbs that refer to events that can be extended in duration.

Given the function of *-ing* in adult use and the fact that this form appears so early in children's speech, it would be reasonable to conclude that progressive aspect constitutes an early attainment in English child language. Through a series of experiments, McShane & Whittaker (1988) demonstrated that children ages 3;4 to 3;11 have started to employ *-ing* in past progressive contexts, suggesting an adultlike interpretation of the function of this inflection. However, for younger children, evidence is limited. Along with the possibility that progressive aspect is acquired at an earlier age, two alternative possibilities should be considered. After reviewing the available evidence, Li & Shirai (2000) suggested that children's early use of *-ing* reflects an attempt to describe actions in progress at the time of speaking. Such usage might represent a restricted form of progressive aspect, one that is closely linked to activities in the present.

Another possibility is that, during the initial stages of verb inflection use, children use *-ing* to mark finiteness, unlike in languages such as Italian, where present tense inflections are used (Hyams, 1992). This raises the possibility that children might misanalyse *-ing* as an unmarked form for present tense rather than for progressive aspect. Such a view is plausible given the use of auxiliary *be* + *-ing* in the child's input as the default form in descriptions of activities in the present, unlike other languages where simple present tense inflections would be employed in the same contexts and progressive inflections would be reserved for emphasizing activities whose ongoing nature is especially relevant to the point being communicated. This interpretation is less parsimonious than the alternatives because a tense marker – the auxiliary *be* form that accompanies the *-ing* inflection – also appears in the child's input, which could prompt the child to interpret *-ing* as something other than a tense form. However, it is also plausible that children treat *be* … *-ing* as a redundant discontinuous morpheme (see Slobin, 1973 for examples in other languages), or the precise grammatical roles of the auxiliary forms are not yet deciphered due to the fact that they simultaneously express person, number, and tense.

This issue is especially relevant for children with SLI. The *-ing* inflection is among the first to appear in the speech of children with SLI, yet their use of this inflection without an accompanying auxiliary form seems to be especially protracted (Cleave & Rice, 1997). Although the most straightforward interpretation of this finding is that these children have extraordinary difficulty with the tense (and/or agreement) associated with the auxiliary form, we cannot rule out the alternatives noted above until it can be demonstrated that *-ing* is interpreted appropriately by these children.

In this study, we examine children's use of *-ing* in past progressive as well as in present progressive contexts. If children with SLI show considerable use of this inflection even when the event is no longer occurring, it would be reasonable to assume that these children do not treat *-ing* as an unmarked present form or as a present progressive marker, but rather use it to express progressive aspect in general.

Auxiliary was/were. The inclusion of past progressive contexts in this study should make an additional contribution; in such contexts, the auxiliaries that accompany *-ing* take the form of *was* and *were*. These auxiliary forms are seen in typically developing children's speech by age three years (e.g. McShane & Whittaker, 1988). However, relatively little data are available on the use of such forms by children with SLI. Although early studies suggested that these auxiliary forms appear later than auxiliary *is* and *are* in the speech of children with SLI (Ingram, 1972), we are not aware of any studies that have compared children with SLI and typically developing peers in terms of the consistency with which auxiliary *was* and *were* are used in obligatory contexts. Because *was* and *were* involve tense, children with SLI should use these auxiliary forms less consistently than do younger normally developing children matched for MLU.

Third person singular -s. Its designation as a present tense form notwithstanding, the third singular *-s* inflection is acquired by typically developing English-speaking children at a later age than present tense inflections are acquired by children acquiring many other languages. For example, relative to English, present tense inflections appear at earlier ages in Romance languages (e.g. Italian, see Caselli, Leonard, Volterra & Campagnoli, 1993), and even in Germanic languages that show a developmental period during which bare stems and infinitives pre-date inflected forms (e.g. Dutch, see Wijnen, Kempen & Gillis, 2001). Young typically developing children appear to use third singular *-s* with stative verbs before applying this inflection to other types of contexts (Clark, 1996). When applied to actions, this inflection seems most likely to be used with verbs that can be extended in duration but have an endpoint, as in *It fits* (Bloom *et al.*, 1980).

Young children's use of third singular *-s* is frequently studied through analysis of spontaneous speech samples. In most spontaneous speech studies that look beyond children's initial use of this inflection, distinctions have not been made in terms of the types of speaking contexts in which the form is used. However, a few studies that have made use of experimental materials (probes) have examined the use of this inflection in more circumscribed contexts. For example, Schütze & Wexler (2000) examined young typically developing children's use of third singular *-s* to describe habitual activities performed by toy characters. The children in their study, ages 2;2 to 3;11, readily applied third singular *-s* in these contexts, though they were below mastery levels in terms of consistency.

When young children fail to produce third singular *-s* in obligatory contexts, they usually produce a bare stem. Within the OPTIONAL INFINITIVE ACCOUNT of Wexler (1994) and the more recent AGREEMENT/TENSE OMISSION MODEL (ATOM) of Wexler, Schütze & Rice (1998), these bare stems are assumed to be nonfinite verbs. According to ATOM, the absence of *-s* could reflect a verb that specifies only tense, only agreement, or neither. For example, if a child says *She like her new bike* in a context requiring *likes* in the adult grammar, tense is assumed to be absent. However, agreement is presumably specified, by virtue of the presence of the nominative case pronoun *she*. In the framework employed by ATOM, nominative case is licensed by specification in AGR; when AGR is unspecified, nominative case is not licensed and the default *her* would be expected.

Although it is certainly reasonable that young children's failure to use third singular *-s* can be related to tense, the fact that the functions of this inflection are so diverse suggests that part of the difficulty could be related to children's confusion over where its boundaries of application begin or end. Indeed, linguists have also puzzled over this issue. For example, Giorgi & Pianesi (1997) have proposed that in English, use of third singular *-s* to express habitual actions requires an underlying quantificational feature associated with a generic operator – grammatical machinery that is not required in languages such as Italian.

English-speaking children with SLI have considerable difficulty in the use of third person singular *-s*. This weakness is often attributed to the children's limited command of tense (Rice *et al.*, 1995). However, recent evidence suggests that for certain other languages, present tense is less problematic than past tense for many children with SLI. For example, in Swedish (Hansson, Nettelbladt & Leonard, 2000), children with SLI seem to use present tense inflections as proficiently as younger MLU control children, even though these same children with SLI use past tense inflections less frequently than their MLU controls. There is precedence, therefore, for assuming that inflections associated with present tense need not be as difficult as those associated with past tense for children with SLI. In English, one source of difficulty for children with SLI could be the kinds of contexts in which third singular *-s* is used.

A review of the literature on SLI in English does not resolve this matter. Many studies have employed spontaneous speech samples, with no distinctions made among the different kinds of uses of the verb inflection *-s* that may have been involved. Other studies have employed experimental probes. The verbal context used for these probes has often supported a generic or habitual interpretation. An example from Rice *et al.* (1995) is: 'This is a fire fighter. If I'm a teacher and I teach, he's a fire fighter so he …' (p. 855). Leonard *et al.* (1997) provided the example: 'In the summer the boys play baseball and the girl …' (p. 753). These probes employed pictures, and often the action

associated with the referent character was actually depicted (e.g. a girl was swimming in the example from Leonard *et al.*, 1997). Thus, it is not clear if the children's use reflected a generic or habitual function, or was an attempt to provide a commentary of the observed depicted events.

In the present study, we examine the children's use of third singular *-s* in habitual action contexts when the referent action was not occurring. In these contexts, the present tense feature of *-s* is formal, not functional. If children with SLI have difficulty with this inflection because they fail to relate its formal feature of present tense to some of the non-present functions of this morpheme, they should show limited or no use of third singular *-s* in these (non-present) habitual action contexts.

Modal can. Considerable investigative attention has been directed toward typically developing children's acquisition of modal verbs. Because the modal *can* figures so prominently in early modal development, it has often received special attention. Based on data examined by Wells (1979), Kuczaj (1982), and Richards (1990), *can* usually emerges earlier and is used more frequently than other modals except the negative form *can't*. It seems to appear in declaratives earlier than in questions, and appears with a variety of main verbs at an early age. In declaratives, the modal *can* is used most often to express the notion of ability, though in many cases this use lies somewhere on a gradient between ability and circumstantial possibility (Richards, 1990). Kuczaj (1982) found that *can* was the first modal verb to be used by children to express these notions.

Few studies have looked at *can* from the standpoint of its status as a tense-related form. This tendency may stem from tradition. In Brown's (1973) ground-breaking work, the tense-related morphemes of third singular *-s*, past *-ed*, irregular past, and copula and auxiliary *be* were examined in terms of percentage of use in obligatory contexts. Brown was not confident in the reliability with which obligatory contexts for modals could be identified, and consequently this morpheme type received less emphasis.

Relatively little is known about the use of *can* by children with SLI. Some of the studies that have examined this morpheme were restricted to frequency counts. From these studies it appears that children with SLI use modals less frequently than same-age peers, and *can* seems to be the modal most frequently used (Leonard, 1995). In a *post hoc* analysis of children's utterances during a problem-solving task, Sturn & Johnston (1999) reported that children with SLI showed greater use of the modal *can* to express the notion of possibility than did a group of typically developing children who were approximately one year younger.

The *post hoc* findings of Sturn & Johnston (1999) are especially interesting in light of current linguistic frameworks that treat *can* as a morpheme with the [present tense] feature. If, in fact, children with SLI are able to use modals such as *can* at levels of consistency that match those of typically

developing children with similar MLUs, it might be argued that these children learn to express the modality functions of *can* (e.g. possibility) prior to learning its tense function. We examine this issue in the present study.

Examination of the use of modals such as *can* might also help in the interpretation of bare verb stems in children's speech. For example, according to Rice, Wexler, and their colleagues (e.g. Wexler, 1994; Rice *et al.*, 1995), children's productions of bare stems such as *Mommy drive to work* are instances in which the children intended to produce an infinitive, rather than cases in which the children had present tense third person singular *-s* in mind but failed to produce it. An alternative interpretation offered by some investigators is that a substantial number of these bare stem productions constitute instances in which the children failed to include a modal in their utterance (Ingram & Thompson, 1996). For example, rather than saying *Mommy can drive to work*, the children produced *Mommy drive to work*. The difficulty in distinguishing obligatory contexts for third singular *-s* from cases in which *can* was omitted has been noted at least since Brown's (1973) classic study.

According to Hoekstra & Hyams (1998) close inspection of the contexts of bare stem use in the speech of young English-speaking children suggests that only about 13% of these productions could have a modal interpretation. To our knowledge, information of this type is not available for children with SLI. However, in the present study, we approach this issue in a different manner. A good test of the plausibility of the 'omitted modal' interpretation would be an assessment of children's consistency in using *can* in appropriate contexts. If children rarely omit *can* yet often fail to use third singular *-s*, it would not seem likely that the missing modal interpretation for bare stem verbs has much generality.

In the present study, then, we seek to determine: (1) whether children with SLI interpret *-ing* as a progressive inflection that is independent of tense or, instead, as an unmarked form for present tense or an inflection to mark actions currently in progress; (2) whether the auxiliaries *was* and *were* are as problematic for children with SLI as other forms requiring tense; (3) whether children with SLI have unusual difficulty with third singular *-s* when this inflection marks habitual actions not taking place at the time of speaking; (4) whether children with SLI have less difficulty with the modal *can* than with other tense-related morphemes; and (5) whether the children's use of or difficulty with *can* supports the interpretation that bare verb stem productions are the result of omission of modals rather than omission of verb inflections. As in earlier studies, children with SLI are compared to both typically developing same-age peers and younger normally developing children matched according to MLU. Along with the group comparisons, the profile of use across morphemes and contexts shown by each group will have special importance.

METHOD

Participants

Forty-five children participated in the study. There were 15 children in each of three participant groups. Fifteen of the children had been diagnosed as exhibiting SLI and were receiving language intervention at the time of the study. These children ranged in age from 4;6 (years; months) to 6;7. All of the children scored more than 1·5 *S.D.* below the mean for their age on both the Structured Photographic Expressive Language Test-II (SPELT-II, Werner & Kresheck, 1983) and the finite verb morphology composite (FVM, Leonard, Miller & Gerber, 1999). The FVM composite is a composite measure of the children's production of regular past *-ed*, third person singular *-s*, and copula and auxiliary *is/are/am* in spontaneous speech. Each of the children with SLI showed an age-appropriate score on the Columbia Mental Maturity Scale (CMMS, Burgemeister, Blum & Lorge, 1972), a test of nonverbal intelligence. Scores on this test ranged from 88 to 118 ($M = 102{\cdot}87$). All children passed an oral motor screening and a hearing screening. Each child demonstrated the ability to produce word-final [s] and [z] with at least 80% accuracy in monomorphemic contexts on a picture naming test of 27 items. An inspection of the children's spontaneous speech revealed the ability to produce each of the consonants required for the remaining morphemes of interest (e.g. word-initial [k], word-final [n]) with the exception that many of the children produced a non-rhotacized rendition of post-vocalic [r]. None of the children had a history of seizures or showed any evidence of neurological impairment.

The children in the other two participant groups were normally developing (ND). Fifteen of these children ranged in age from 4;4 to 6;8. These children were highly similar to the children with SLI in age, and are hereafter referred to as the ND-A children. Each child in this group was within two months of age of a child in the SLI group. These children scored within 1 *S.D.* of the mean for their age on the above measures, passed a hearing screening, and exhibited the ability to use each of the consonants noted above.

The remaining ND children were younger and ranged in age from 2;8 to 4;11. These children were highly similar to the children with SLI in MLU, and are hereafter referred to as the ND-MLU children. The MLU of each child in the group was within 0·2 morphemes of the MLU of a child in the SLI group. The ND-MLU children scored within 1 *S.D.* of the mean for their age on the language and nonverbal cognitive measures. Because most of the children in this group were too young to be administered the SPELT II, their appropriate scores were based on the U.S. standardization of the Reynell Language Development Scales (Reynell & Gruber, 1990). Some of the children in the ND-MLU group were also too young to be given the CMMS. These children showed age-appropriate scores on the Leiter

TABLE 1. *Mean ages and MLUs (with* S.D.*) for the three groups of children*

	SLI	ND-A	ND-MLU
Age in months	62·00 (9·97)	62·87 (9·88)	42·40 (8·44)
MLU in morphemes	4·24 (0·50)	5·03 (0·58)	4·22 (0·58)

International Performance Scale – Revised (Roid & Miller, 1997). All of these children passed a hearing screening and showed the ability to produce the consonants described above. Table 1 provides a summary of the ages and MLUs of the three groups of children.

Materials and procedure

Tasks were selected for each grammatical morpheme type of interest: (1) past progressive *was/were* + *-ing*; (2) present progressive *is/are* + *-ing*; (3) third person singular *-s* in habitual action contexts; and (4) modal *can* in ability/possibility contexts. The order of presentation of the four tasks was counterbalanced across the children in each group, with the added stipulation that the two progressive tasks be separated by one week. The past progressive task was adapted from the work of McShane & Whittaker (1988). Sixteen items were employed, each designed to elicit a different verb. The verbs selected were: *cry*, *dance*, *draw*, *drive*, *fly*, *march*, *rake*, *ride*, *rock*, *run*, *sing*, *skate*, *sleep*, *slide*, *sweep*, and *swim*. The lexical aspect of each of these verbs was compatible with progressive aspect, as each action could be sustained, and the endpoint of the action was not sharply defined (in contrast with, e.g. *fall* or *hit*).

A puppet show theatre was used to present the actions. The child and an assistant were seated on one side of a table on which the theatre was supported. The experimenter was seated on the other side of the table, behind the stage curtain. The child was introduced to a puppet, Sleepy Bear (manipulated by the assistant), and was told that Sleepy Bear wanted to watch some 'shows' but sometimes fell asleep during the shows and needed to be told what had happened.

Each show constituted an item. The experimenter selected the toys and props for the show and began the action. The assistant then opened the curtain. The experimenter performed the action with the toys for 12 seconds (e.g. having Ernie sing into a microphone and sway, as a recording of 'Rubber Duckie' was played). After 12 seconds, the assistant closed the curtain. As the curtain was opening, Sleepy Bear fell asleep, and woke up only after the curtain had closed. Sleepy Bear then said to the child: 'I fell asleep. Tell me about that show'. After the child provided Sleepy Bear with a description of the show, Sleepy Bear thanked the child, and the assistant conversed with the child as the experimenter prepared the next show.

The present progressive task was identical to the past progressive task except that the puppet Shy Turtle was used instead of Sleepy Bear. The child was told that Shy Turtle liked to hear about shows, but was so shy that he would hide in his shell as the show was going on. As the curtain opened and the action was being performed, Shy Turtle said to the child 'I'm afraid to look but please tell me about the show'. The action continued with the curtain opened until the child provided the description of the show. Shy Turtle then thanked the child, the curtain closed, and the experimenter prepared the toys and props for the next show.

The third singular *-s* task was adapted from Schütze & Wexler (2000). Sixteen items were used for this morpheme. The verbs for these items were: *bark*, *comb*, *count*, *climb*, *cry*, *drink*, *drive*, *eat*, *hide*, *laugh*, *read*, *ride*, *run*, *swim*, *take* (*a nap*), and *yell*. The assistant introduced the child to Shy Turtle (or re-introduced the child to Shy Turtle, depending on the order of administration). The child was told that some characters (manipulated by the experimenter) would appear and tell the child and Shy Turtle about things they do. However, Shy Turtle might hide in his shell when the characters appear and the child might have to answer Shy Turtle's questions about what the characters do. An example of an item is seen in (1).

(1) Troll: (to child) Can you give me my comb?
(child gives comb to troll)
Troll: Thank you. I comb my hair every morning (combs his hair)
Shy Turtle: Oh-oh, I didn't see. What does he do every morning? He …
Child: combs his hair

It can be seen that the children's descriptions of the habitual action took place after the action had been performed.

Five items were used for the modal *can* task. The contexts devised for each item supported both an ability and a possibility function. Again, the puppet show theatre was used, with the assistant seated next to the child, and the experimenter seated behind the curtain arranging the toys and presenting the scenarios. The child was introduced to the doll Ken and was told that Ken was going to talk about the shows that will be presented. It was then pointed out that Ken forgot his glasses and therefore might not see very clearly. The child was asked to help with the description. For each item, the assistant opened the curtain and the experimenter acted out the show with toys and props. A problem requiring a solution was shown, Ken seemed confused about how the problem could be solved, and the child was asked for the solution. For example, for one item, a cat was up in a tree calling for help. A police officer arrived, and said, 'oh no'. A ladder was lying on the ground next to the tree and the police officer. Ken said: 'The policeman wants to get

the kitty down. But I don't think he can get up that high'. The child was then asked 'What do you think?' As in this example, all of Ken's descriptions contained *can* in the sentence preceding the question 'What do you think?' However, the solution required the child to use *can* in combination with lexical items not used by Ken. The items were designed to elicit the use of *can* with the verbs *call*, *climb*, *dig*, *fly*, and *move*.

Scoring

The first step in scoring was to examine the data and exclude any utterance that did not contain an appropriate context for the target morpheme. These were comments about the character that did not include the action (e.g. *The puppies have cars* for a present progressive item), irrelevant comments (e.g. *I have one of those!*), or indications of not knowing how to describe the action (e.g. *I don't know*).

The scoreable responses to the past progressive and present progressive probes were examined in two ways. First, we determined whether the inflection *-ing* was used. Specifically, the percentage of scoreable responses containing *-ing* was calculated. For this measure, the inclusion or accuracy of the auxiliary in the response was not considered. It should be noted that this percentage did not necessarily reflect percentage correct. For the past progressive items, a response such as *Ernie sang* rather than *Ernie was singing* is not inappropriate. Rather, we considered this percentage merely the percentage of relevant utterances for which the children selected the *-ing* inflection.

The second measure that applied to the past progressive and present progressive probes was the percentage of use of *was/were* and *is/are* in obligatory contexts. A context was considered obligatory if the main verb was inflected with *-ing*.

For the third singular *-s* probes, responses constituting obligatory contexts for these inflections were noted and the percentage of contexts containing the inflection was calculated. In cases where the child produced an alternative verb requiring *-s* (e.g. *screams* instead of *yells*), the response was considered scoreable.

For the modal *can* probes, we examined all responses that contained an uninflected main verb and determined whether the main verb was preceded by a modal. For example, the responses *He climb up the ladder* and *He can climb up the ladder* were both considered appropriate contexts for *can*; only the latter, of course, was scored as appropriate. When constructing items appropriate for the ability and possibility functions of *can*, it became clear that responses employing the modal *could* would also be appropriate (as in *He could climb up the ladder*). Utterances of this type differ from those containing *can* only in their emphasis on possibility, though ability is nevertheless

TABLE 2. *Percentages of use of* -ing *on the present progressive and past progressive probes by the three groups of children*

	SLI		ND-A		ND-MLU	
	Pres.	Past	Pres.	Past	Pres.	Past
Mean	96·40	82·80	99·53	79·07	95·13	89·27
(*S.D.*)	(8·63)	(22·71)	(1·81)	(31·48)	(17·26)	(12·98)

implied. Accordingly, we analysed the data in two ways. For one analysis, productions of *could* were excluded; thus, they were treated as neither correct nor incorrect. For a second analysis, these were scored as correct, on the grounds that they constituted appropriate modal auxiliary usage.

RESULTS

Progressive -ing

The first analysis concerned the children's use of *-ing* in the present progressive and past progressive probes. For this measure, the children were credited with *-ing* even if they failed to use the auxiliary verb. A mixed model ANOVA was employed with group (SLI, ND-A, ND-MLU) as a between-participants variable, and probe type (present progressive, past progressive) as a within-participants variable. Arc-sine transformations were applied to the percentage data. The three groups of children did not differ, $F(2, 42) = 0{\cdot}17$, $p = 0{\cdot}846$. However, a main effect for probe type revealed that the children used *-ing* to a greater degree in the present progressive context than in the past progressive context, $F(1, 42) = 22{\cdot}64$, $p < 0{\cdot}001$. There was no participant group by probe type interaction, $F(2, 42) = 0{\cdot}63$, $p = 0{\cdot}535$. A summary of the findings appears in Table 2.

From Table 2, it can be seen that all three groups of children used *-ing* to a high degree in the present progressive probes. The few exceptions were productions of a bare stem (e.g. *Ernie drive*). Use of *-ing* in the past progressive probes was also impressive, though exceptions were more likely than in the present progressive probes. These were usually productions of a past tense form (e.g. *Elmo sang*). For the children with SLI, the mean percentage of items showing past tense use was 8·47 (*S.D.* = 18·32). For the ND-MLU and ND-A groups, these values were 9·20 (*S.D.* = 12·41) and 19·47 (*S.D.* = 29·51), respectively. Despite the numerical advantage favoring the ND-A children, the differences among groups in the use of past tense was not significant, $F(2, 42) = 1{\cdot}36$, $p = 0{\cdot}269$. The few remaining non *-ing* productions were bare stems (*M*s for SLI = 8·73, ND-MLU = 1·53, ND-A = 1·46). In each group, only one-third to one-half of the children used any past tense forms or bare stems. The remaining children produced *-ing* exclusively.

Because the lexical aspect of the verbs selected for the past progressive probes was highly compatible with progressive aspect, it was possible that the children simply treated *-ing* as part of the verb itself, rather than as an inflection that modulated the sense of the verb. To evaluate the feasibility of this possibility, we inspected the children's responses to verbs in the third singular *-s* probe that were the same as those used in the past progressive probe. Six verbs appeared in both probes. Only two of the 15 children with SLI produced any of these verbs with *-ing* during the third singular probe. Each of these children produced two of the verbs with *-ing* and the remaining four verbs with either *-s* or as a bare stem. Similar findings obtained for the two groups of normally developing children.

It seemed possible that the children's use of *-ing* in the past progressive probes was related to their ability to use auxiliaries in progressive contexts. That is, if children were already producing *is* and *are* along with *-ing* in the present progressive, they may have already reached the point of learning that the auxiliary marked tense and *-ing* marked progressive aspect. For the children who had not yet begun using auxiliaries in a large number of obligatory contexts, on the other hand, *-ing* might still have served as a present tense marker. We examined this possibility by identifying those children with SLI with only limited or no use of *is* and *are* in the present progressive probes. Two children with SLI showed 0% use of *is* and *are* in the present progressive probes. Yet these children used *-ing* for 58 and 100% of the items on the past progressive probes. Three additional children with SLI showed between 6 and 13% use of *is* and *are* in the present progressive probes. These three children used *-ing* for between 85 and 100% of the items on the past progressive probes.

Auxiliary is/are, was/were

The first set of analyses pertained to the children's use of *-ing* on the present and past progressive probes. We also compared the children in terms of their use of the auxiliary forms on these probes. As noted earlier, obligatory contexts were defined as those containing *-ing* in the children's descriptions. Percentages correct in obligatory contexts were then computed, and arc-sine transformed. The ANOVA employed group as a between-participants variable and auxiliary type (*is/are* vs. *was/were*) as a within-participants variable. A significant main effect was observed for participant group, $F(2, 42) = 16{\cdot}51$, $p < 0{\cdot}001$. *Post hoc* least-significant-difference (*L.S.D.*) testing at the 0·05 level revealed that the children with SLI used auxiliaries with lower accuracy than the ND-MLU children who, in turn, used auxiliaries with lower accuracy than the ND-A children. Neither the main effect for auxiliary type, $F(1, 42) = 0{\cdot}01$, $p = 0{\cdot}926$, nor the participant group by auxiliary type interaction, $F(2, 42) = 1{\cdot}93$, $p = 0{\cdot}158$, was significant. A summary appears in Table 3.

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TABLE 3. *Percentages of use of auxiliary* be *forms on the present progressive and past progressive probes by the three groups of children*

	SLI		ND-A		ND-MLU	
	is/are	*was/were*	*is/are*	*was/were*	*is/are*	*was/were*
Mean (S.D.)	55·00 (39·64)	44·27 (38·59)	84·20 (29·22)	97·33 (6·74)	80·53 (26·48)	77·73 (22·63)

The errors on *is/are* and *was/were* items were inspected to determine whether the groups differed in error type. For *is/are*, the great majority of errors by the children with SLI were omissions. Eleven different children in this group showed omissions. However, seven children produced a total of 8 substitutions of *is* for *are*. One child with SLI produced *was* for one *is* item. The ND-MLU children also showed omissions as the most common error type for *is/are* items. Seven children in this group showed errors of this type. Two ND-MLU children produced a total of 2 *is*-for-*are* substitutions. Interestingly, two other ND-MLU children produced a total of 16 productions of *was* for *is* or *were* for *are*. One of these two children participated in the present progressive task (requiring *is/are*) prior to the past progressive task (requiring *was/were*), so this unexpected substitution pattern could not be attributed to task order. Furthermore, for all children, the two progressive tasks were administered one week apart and probes for other grammatical morphemes were administered in the intervening period. The same unexpected pattern was observed in the responses of the ND-A children. Specifically, two ND-A children showed omissions but four ND-A children produced a total of 33 responses of *was* for *is* or *were* for *are*. Again, two of the four children had participated in the present progressive task first, with an intervening period during which other types of grammatical morphemes were assessed.

For *was/were* items, seven children with SLI showed omissions; three of these children omitted the auxiliary in every response. Four children with SLI showed a total of 27 productions of *is* for *was* or *are* for *were*. One of the four children had participated in the past progressive task (requiring *was/were*) one week prior to participating in the present progressive task (requiring *is/are*), and was administered tasks involving other grammatical morphemes in the interim. Five children with SLI produced a total of 9 substitutions of *was* for *were*. In most respects, the ND-MLU children's error pattern resembled that of the children with SLI. Six ND-MLU children showed omissions, and three children in this group showed a total of 6 productions of *is* for *was* or *are* for *were*. Two of these children had participated in the past progressive task prior to participating in the present progressive task. Four ND-MLU children produced a total of

16 substitutions of *was* for *were*. Finally, the ND-A children were highly accurate on *was/were*. Only a single ND-A child showed any omissions. One child produced a total of three substitutions of *is* for *was* or *are* for *were*, and a single child from this group produced one instance of *was* for *were*.

Third person singular -s

The children's use of third singular *-s* was examined with an ANOVA in which participant group served as a between-participants factor. As in the previous analyses, the percentage correct values were arc-sine transformed. A main effect for participant group was found, $F(2, 42) = 35{\cdot}21$, $p < 0{\cdot}001$. *L.S.D.* testing at the 0·05 level indicated that the children with SLI used third singular *-s* with lower accuracy ($M = 41{\cdot}47\%$, *S.D.* $= 29{\cdot}69$) than both the ND-MLU ($M = 89{\cdot}87$, *S.D.* $= 22{\cdot}38$) and ND-A ($M = 96{\cdot}73$, *S.D.* $= 6{\cdot}27$) children. The difference between the two groups of normally developing children did not reach statistical significance. For all children, errors took the form of productions of bare stems (e.g. *eat a cookie*).

Although the children with SLI were less consistent than both groups of typically developing children in their use of third singular *-s*, the percentages of use did not appear sufficiently low to conclude that the speaking context (describing habitual actions that were no longer occurring) was the principal factor responsible for the results. That is, previous studies have reported similar percentage values even though the speaking contexts obligating third singular *-s* in these studies were free to vary. Accordingly, we compared the children's percentages of use on the third singular *-s* probes with their percentages of use of the same inflection in spontaneous speech. We limited our analysis to the children with SLI and the ND-MLU children. All of the children's speech samples contained at least 4 obligatory contexts for third singular *-s*. The percentages of use of third singular *-s* in spontaneous speech were significantly lower for the children with SLI ($M = 43{\cdot}27$, *S.D.* $= 31{\cdot}63$) than for the ND-MLU children ($M = 83{\cdot}53$, *S.D.* $= 21{\cdot}75$), $t(28) = 4{\cdot}06$, $p < 0{\cdot}001$. These percentages were very similar to those obtained for the probe task involving habitual actions. Yet, the spontaneous speech samples contained widely varying contexts for third singular *-s* use. An inspection of the samples for the children with SLI revealed that only 11% of the obligatory contexts for this inflection could reasonably be interpreted to refer to habitual actions (e.g. *My mom always packs me something*). Approximately 35% of the contexts involved the use of stative verbs (e.g. *He likes honey*), and another 30% of the contexts involved the description of actions that were taking place at the time of the utterance (e.g. *It fits*). The remaining contexts described generic (timeless) events (e.g. *You throw it then it sticks*) or were indeterminate (e.g. *He pops out*, where it was not clear if the child was describing the usual action of the toy or was actually demonstrating the

action at the time of the utterance). The number of obligatory contexts was too small for meaningful comparisons of third singular *-s* use across the different functions. However, no obvious differences were apparent from an inspection of the data.

Modal can

Comparison of the three groups' use of modal *can* employed the same type of ANOVA used for third singular *-s*. The first analysis excluded productions of *could* (e.g. *He could climb up the ladder*) from the scoring. A main effect for participant group was not found, $F(2, 42) = 1{\cdot}05$, $p = 0{\cdot}358$. Although the ND-A children's percentages ($M = 94{\cdot}80$, $S.D. = 11{\cdot}05$) were numerically higher than those of the ND-MLU children ($M = 86{\cdot}80$, $S.D. = 26{\cdot}59$) and the children with SLI ($M = 76{\cdot}67$, $S.D. = 40{\cdot}61$), these differences did not reach significance at the 0·05 level. The accuracy levels of the children with SLI and the ND-MLU were statistically similar ($p = 0{\cdot}528$). All errors were productions of the (bare) main verb without a modal auxiliary (e.g. *He climb up the ladder*).

When productions of *could* were treated as correct productions and included in the scoring, ANOVA again revealed no significant difference, $F(2, 42) = 1{\cdot}25$, $p = 0{\cdot}297$. The ND-A children's percentages ($M = 96{\cdot}00$, $S.D. = 8{\cdot}28$) were not significantly higher than those of the ND-MLU children ($M = 87{\cdot}13$, $S.D. = 26{\cdot}47$), or the children with SLI ($M = 76{\cdot}67$, $S.D. = 40{\cdot}61$) and, again, the accuracy levels of the children with SLI and the ND-MLU children were very similar ($p = 0{\cdot}501$). As can be seen from the means, the scores did not change appreciably when *could* productions were included as correct responses rather than excluded from the data. The reason is that most of the children who produced a response of this type also used *can* and never produced main verbs without a modal. Thus, according to the original scoring method, they were already at 100%. Two children with SLI produced one response each using *could* and used *can* for the remaining four items. Three ND-MLU children produced *could* once each; two of these produced *can* for all other items. However, one ND-MLU child had omitted a modal for one item. Hence, this child's score changed from 75% (3 *can*, 1 omission) to 80% (4 *can/could*, 1 omission). Productions of *could* occurred most frequently in the ND-A children's responses. Six ND-A children used *could* at least once. Four of these used *can* for all other items and were thus already at 100%. The remaining two ND-A children had each omitted a modal for one item. Therefore, each of these two children's scores increased from 75 to 80%.

Missing modals vs. missing verb inflections

The inclusion of modals in this study also enabled us to evaluate the possibility that children's failure to produce third singular *-s* might instead

be cases of modal omission. For several of the children with SLI, the differences between *can* and third singular *-s* were striking. Seven of the 10 children with SLI who used third singular *-s* in fewer than 50% of obligatory contexts used *can* in 100% of obligatory contexts. One of these children showed 0% use of third singular *-s*. Only one ND-MLU child used third singular *-s* in fewer than 50% of obligatory contexts; this child, too, showed 100% use of *can*. We also inspected the data from the opposite perspective. Of the five children with SLI who showed omissions of *can*, none used third singular *-s* with 100% accuracy. Only one of the five ND-MLU children and two of the three ND-A children who occasionally omitted *can* used third singular *-s* in 100% of obligatory contexts. Together, these findings suggest that children having difficulty with third singular *-s* were often quite capable in their use of *can*, whereas if they had any difficulty with *can*, they also showed some difficulty with third singular *-s*. The latter observation is especially true for the children with SLI.

DISCUSSION

One of the questions of interest in this study was whether children with SLI interpret *-ing* as an unmarked present tense form, as an inflection that marks actions in progress at the time of speaking, or as a progressive aspect inflection that is independent of tense. We found that the children with SLI who showed no use of auxiliary *is/are* were capable of using *-ing* on the past progressive probes, suggesting that they were probably not interpreting *-ing* as an unmarked present tense form. Furthermore, the widespread use of *-ing* on the past progressive probes by the children with SLI indicates that the inflection *-ing* was not interpreted as a marker limited to actions in progress at the time of speaking. Finally, because *-ing* was rarely or never used during the third singular *-s* probe items involving some of the same verbs, the children were clearly not regarding the inflection *-ing* as part of the verb stem. This set of findings suggests that these children were using *-ing* to mark progressive aspect independently of tense.

It is premature to claim that children with SLI are as proficient as MLU control children in the use of progressive aspect. We deliberately selected verbs whose own lexical aspect was consistent with progressive aspect. It is certainly possible that if a wider range of verbs were employed, the children with SLI would be found to be more restrictive in their use of past progressive. For example, although they might use verbs such as *dance* and *drive* in the past progressive, they might fail to do so with verbs such as *jump* and *kick*. However, even if this is found to be true in future studies, the conclusion drawn here – that *-ing* was not limited to present actions in these children's speech – is not likely to change. Even if the children's ability to use *-ing* was restricted to certain types of verbs, there would be no reason

for them to apply this inflection in past progressive contexts if it was taken to be a present tense marker or a progressive marker only for present events.

A second goal of this study was to determine whether the auxiliaries *was/were* would present children with SLI with the same degree of difficulty that these children seem to experience with the more commonly studied auxiliaries, *is/are*. The children with SLI used both *is/are* and *was/were* with lower percentages than the ND-MLU and ND-A children, but the percentages for these two morpheme types (*is/are* vs. *was/were*) did not differ from each other. The fact that the children with SLI showed relatively low percentages for *was/were* as well as for *is/are* adds to the mounting evidence that tense is an area of special difficulty for these children.

Most of the errors on the auxiliary items were omissions. According to Rice, Wexler, and their colleagues (e.g. Rice *et al.*, 1995), productions such as *The baby crying* constitute instances in which the child selected a nonfinite option (*cf.* the nonfinite clause in the adult utterance *I heard the baby crying*). These investigators also assume that children with SLI have adequate knowledge of tense and agreement, except for the fact that such features are obligatory in main clauses. Yet substitution errors of both tense (*is* for *was*, *are* for *were*) and agreement (*is* for *are*, *was* for *were*) appeared in the data. They constituted approximately 10% of the total responses of the children with SLI. It seems possible that these substitutions, though not the dominant error type, indicate that children with SLI do not have full control of tense and agreement when they select the finite option.

The two ND groups not only showed greater accuracy on auxiliary *is/are* and *was/were* than the SLI group, they also differed from the SLI group in their use of one type of error. Two children in the ND-MLU group and four children in the ND-A group each used *was* and *were* for several items during the present progressive task. Only a single response of this type was seen in the SLI data. Because some of the children showing responses of this type had not yet participated in the past progressive task, these substitutions cannot be readily attributed to task order effects. It is certainly possible that such errors constituted genuine confusion of tense. However, this seems like an unlikely type of confusion on the part of the ND-A children, whose overall abilities were the highest of the three groups.

Another possibility is that when these particular children were providing the descriptions to the turtle puppet (whose head was inside the shell) their focus had shifted away from the events on the stage. By no longer attending to the stage, the children's descriptions were, in a sense, descriptions of events in the past even though the actions were continuing onstage as the children spoke. If this is true, the percentages correct for the ND-MLU children and, especially, the ND-A children, probably underestimated their proficiency with auxiliary *is/are*.

A third goal of the study was to determine whether children with SLI would have special difficulty with third singular *-s* in contexts that support a habitual action interpretation. In the task employed, the actions described by the child were no longer being performed at the time of the utterance. Therefore, this inflection constituted a present tense marker only in the formal sense; its actual function was quite different. We found that the children with SLI were more limited in their use of this inflection than were both the ND-MLU and the ND-A children.

It is true that the habitual nature of the action was established only verbally, as shown in (1) above. That is, the child had seen the character perform the referent action only once and had to infer its habitual nature from the character's statements (e.g. *I comb my hair every morning*) and the follow-up questions (e.g. *What does he do every morning?*). For this reason, it is possible that the children interpreted the description as something other than the description of a habitual action. But if not a habitual action, what? The actions had already been performed, so the children's responses could not plausibly be taken to represent descriptions in the present tense. If the children were responding solely to the past nature of the action and failed to comprehend the key elements of the statements and questions, they might have responded with a past tense production. However, these were not produced. Furthermore, 13 of the 15 children with SLI produced third singular *-s* in one or more of their responses (group mean = 41·47%); this would be an odd choice of inflection if the children viewed the event as one limited to the past.

We cannot rule out difficulties with agreement that may have interfered with the children's use of this inflection. However, an inspection of the children's spontaneous speech samples indicated that most of the children used nominative case on a consistent basis when producing pronouns in subject position. This was true even when third singular *-s* and auxiliary *be* forms were absent from obligatory contexts. According to ATOM, productions of this type (e.g. *He want a hug*, *She going in the house*) are interpreted as instances in which agreement is specified but tense is unspecified. For these children, then, we have no reason to suspect that agreement was an optional element in the children's grammars.

We also believe that the problem cannot be attributed primarily to habitual aspect. The children demonstrated the same kind of inconsistent use of third singular *-s* in the habitual action context of the probes that they displayed in spontaneous speech. Yet in spontaneous speech, habitual action contexts were relatively few in number. If the habitual action context had been viewed by the children as distinctly different from other contexts requiring third singular *-s*, they probably would not have made use of this inflection at all during the task.

These observations lead us to conclude that even though the actions to be described were no longer present, the children with SLI were not confused

about the type of grammatical form that should be selected in their response. Their problem was one of applying this form inconsistently; a problem that they also exhibited in spontaneous speech when, in most instances, contexts other than habitual actions were involved. We assume that the source of this difficulty was the formal tense feature of this inflection rather than its function.

A fourth goal of the present study was to determine whether children with SLI would have less difficulty with the modal *can* than with other morphemes that are assumed to carry tense features in the adult grammar. Unlike other tense-related morphemes we examined in this investigation, the children with SLI used the modal *can* as consistently as did the ND-MLU children.

There seem to be two possible reasons for the relative strength of *can* in the speech of the children with SLI. One possibility is that for the children in the age range studied here, *can* does not have tense status, its presumed presence in the INFL or T node in the adult grammar notwithstanding. True to its classification as a modal verb, *can* conveys notions such as possibility and ability, even when the possible or capable act is not actually performed in the present. Although the modal auxiliaries that express these functions might eventually assume tense features (*cf. can* vs. *could*), the modality functions themselves may not depend on such features. In fact, some linguists have proposed that even in the underlying representations in adult grammar, modals such as *can* reflect a functional category with its own node, distinct from those of the functional categories of tense and agreement (Ouhalla, 1991).

The second possibility is that: (1) modality is represented in a functional category distinct from tense and agreement, and (2) tense was applied inconsistently by the children. Because the specification of present tense would have no surface manifestation in this instance, some of the utterances containing modals might have had modality and present tense specified, whereas others might have had modality with no specification for tense. Future research might be able to test the relative merits of these two possibilities. For example, a task might be employed that taps the children's tendency to express ability and possibility notions in the past as well as the present (*He could find his shoes, but he couldn't find his socks*; *He can find his shoes but he can't find his socks*). Evidence supporting the second possibility (inconsistent specification of tense) might be seen if children are found to alternate between *can* and *could* in past contexts but consistently use *can* in present contexts.

A fifth goal of the study was to evaluate the feasibility that presumed failures to use third singular *-s* may often times reflect instead the omission of modals. Those children in this study who occasionally failed to produce *can* also failed to produce third singular *-s* on a consistent basis. For these children, then, we cannot rule out the possibility that third singular *-s*

problems were actually, in part, modal problems. However, for most of the children, which included the majority of children with SLI, the problems with third singular *-s* cannot easily be attributed instead to difficulties with modals. These children often produced a bare stem in third person *-s* contexts, but produced the modal *can* in most or all contexts in which it was appropriate.

Of course, it is fair to point out that our probe items for third singular *-s* were confined to habitual action contexts, and such contexts might not be the ones in which modals are attempted. However, the children were relatively strong in their use of the modal *can*, and this modal was assessed in the context of ability or possibility. Such modal functions seem to be precisely those that might be expressed in place of a third singular *-s* context in spontaneous speech (e.g. *She can run fast* instead of *She runs fast*). At the same time, we cannot rule out the possibility that modals not assessed in this study (e.g. *will*) are the ones that are actually omitted in contexts mistakenly assumed to require finite verb inflections.

Implications for the study of SLI

For some time, we have known that English-speaking children with SLI do not show a uniform deficit across areas of language. Areas of special weakness can be seen. One of these areas is tense-related grammatical morphology. However, the boundaries of this extraordinary area of weakness have not been clearly delineated. It appeared to us that areas of verb morphology that interact with tense warranted closer attention. Heretofore our knowledge of the status of these morphemes was quite limited. For example, there was clear evidence that children with SLI use the inflection *-ing* relatively early and consistently, but the speaking contexts in which the data were obtained centered on the here and now.

We believe the findings of this study point to a surprisingly steep drop in these children's ability when testing proceeds from areas of aspect and modality to the area of tense. On the past progressive task, the children with SLI were proficient in using verb morphology (*-ing*) to express the temporal contour of an event that was no longer occurring. Although this ability did not require tense, it required reference to a past event and the ability to express information about its internal structure, in this case, its continuous nature. On the modal task, the children with SLI were rather adroit in their ability to describe (through *can*) actions that might be performed. Although the possibility of these actions was supported by the presence of key props (e.g. a ladder) during the presentation of the item, none of the events described by the children had actually occurred. Thus, this type of morpheme use, too, depended on the children's ability to talk about events that were separate from the children's immediate perceptual experience.

The evidence from the third person singular *-s* task can also be interpreted as reflecting a discrepancy between the children's ability with tense and their ability with other notions that interact with tense. However, in this case, the evidence is much less straightforward. Unlike the case for *-ing* and for *can*, the children with SLI used third singular *-s* less consistently than did the ND-MLU children. However, their use of *-s* during the experimental task resembled their use of this inflection in spontaneous speech, in spite of the fact that the experimental task required the children to describe habitual actions that were not occurring at the time of the utterance. In contrast, in spontaneous speech, some of the children's third singular *-s* use reflected commentary on a present action. Other common use of this inflection in spontaneous speech had at least an indirect tie to the present. In particular, when this inflection was used with stative verbs such as *likes* and *sees*, the proposition (e.g. liking ice cream) was true at the time of speaking, even if the purpose of the utterance in some instances was not to describe the present circumstance. However, on the experimental task, the proposition (e.g. the combing of hair referred to in the utterance *He combs his hair*) was not true at the time of speaking. Thus, although the children with SLI were inconsistent in their use of third singular *-s* on the experimental task, they appeared to recognize the appropriate form (*-s*) to employ in the context. If the habitual action context had been the source of the difficulty, the children's use of this inflection should have been closer to zero. For this reason, we suspect that their variability with *-s* could be attributed to the same factor that was in effect in spontaneous utterances involving stative verbs and other non-habitual action contexts, namely, the formal tense feature.

If this interpretation is correct, we can refine our characterization of the uneven profile of language ability exhibited by English-speaking children with SLI. It had been established that these children's tense-related grammatical morphology is often weak relative to other domains of language. However, the results of this study suggest that tense-related morphemes are even weak relative to verb-related grammatical morphemes that interact with tense. These children are not extraordinarily weak in their use of grammatical morphemes to refer to non-present actions. However, when they must employ the formal feature of tense in their utterances, more serious deficits become apparent.

CONCLUSIONS

Several conclusions can be drawn from the present study. First, children with SLI seem to use the inflection *-ing* to express progressive aspect in general. This inflection does not serve as an unmarked present tense form or as a progressive aspect marker for present events only. Second, the auxiliaries *was* and *were* seem to be as problematic as other tense-related forms for children

with SLI. Third, these children apply the third singular *-s* inflection to contexts representing habitual actions that are no longer occurring at the time of the utterance. The children are not proficient in this process; they are less consistent than ND-MLU children in this use. However, their degree of use of *-s* in these contexts relative to their use in spontaneous speech suggests that the formal tense feature of this inflection is more likely to be responsible for this variability than the habitual action context. Fourth, these children's use of the modal *can* does not show the clear deficit seen for other tense-related morphemes, suggesting that these children might initially learn the modality functions of *can* (ability/possibility) without learning its tense feature. Finally, based on the children's use of *can*, we found no reason to suspect that presumed omissions of tense-related inflections are actually omissions of modal auxiliaries. These findings seem to suggest that the more serious tense-related problems exhibited by children with SLI are associated with the formal feature of tense. These children seem less impaired in their ability to express temporal relations that fall more firmly in the areas of aspect and modality.

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