
The Awareness of Referential Cohesion in Children With and Without Language/Learning Disabilities

La conscience de la cohérence référentielle d'enfants atteints ou non de troubles du langage ou d'apprentissage

by • par

Phyllis Schneider, PhD

University of Alberta,
Edmonton, Alberta

Barbara Williams, MSc

Special Education Technology,
Vancouver, British Columbia

Maya Hickmann, PhD

Laboratoire Cognition et Développement,
Paris, France

ABSTRACT

This study investigated the metalinguistic abilities of school-aged children with and without language/learning disabilities, specifically their reactions to anomalies in referential cohesion resulting from inadequate referent introduction in three tasks: retelling stories, repeating individual sentences of stories, and judging the adequacy of stories. Although children in the language/learning disabilities group exhibited some metalinguistic awareness of referential cohesion, fewer explicitly objected to the use of definite determiners for referent introduction in comparison to children with no disabilities. Such a difference in awareness might account for differences in referential cohesion previously reported in the literature. However, the fact that some children in the language/learning disabilities group detected inadequate pronominal referent introductions suggests that they are in the process of developing metalinguistic awareness of discourse cohesion.

ABRÉGÉ

Dans cette étude, on a étudié les compétences métalinguistiques d'enfants d'âge scolaire atteints ou non de troubles du langage ou d'apprentissage, en particulier leurs réactions à des anomalies de cohérence référentielle attribuables à l'introduction inappropriée de référents dans trois tâches : répéter des histoires, répéter des phrases isolées dans des histoires et juger de la pertinence des histoires. Bien que les enfants du groupe ayant des troubles du langage ou d'apprentissage aient manifesté une certaine conscience métalinguistique de la cohérence référentielle, peu d'entre eux s'opposaient à l'utilisation de facteurs déterminants précis pour introduire des référents par comparaison avec les enfants n'ayant aucun trouble. Cette différence en matière de conscience pourrait correspondre aux différences à l'égard de la cohérence référentielle précédemment signalées dans la littérature. Le fait que certains enfants du groupe ayant des troubles du langage ou de l'apprentissage aient décelé des introductions inappropriées de référents pronominaux laisse toutefois présager qu'ils sont en train d'acquérir une conscience métalinguistique de la cohérence du discours.

KEY WORDS

metalinguistic awareness • narratives • cohesion • language/learning disabilities

In recent years, research with normally-developing children has revealed a gradual development in the ability to produce cohesive narratives (Bamberg, 1987; Bennett-Kastor, 1980; Hickmann, 1987; Karmiloff-Smith, 1980; Klecan-Aker & Lopez, 1985; Peterson & Dodsworth, 1991; Villaume, 1988; Warden, 1976, 1981). Narrative cohesion depends in part on the use of referring expressions to introduce characters, objects, places, and events in stories (Halliday & Hasan, 1976). Younger children do not consistently use referring expressions in ways that contribute to narrative cohesion; for example, they often introduce characters in stories with definite nominals (e.g., *the cat*) or even pronouns (e.g., *it*), which are appropriate for subsequent mention after introduction, but not as the first mention of a referent (Hickmann, 1995).

It is possible that metalinguistic awareness could be a factor in lower levels of referential cohesion, in that greater awareness could make it easier to keep track of referents in a story (e.g., whether they have been introduced yet, and how recently). Hickmann and Schneider (1993) examined children's awareness of referential cohesion. They found that 5-, 7-, and 10-year-old children could repair cohesion when retelling stories that had contained inappropriate cohesive devices (such as *the bicycle* or *it* used to introduce a referent) and when repeating sentences with such devices in the context of a story. Only the 10-year-olds, however, demonstrated an ability to detect and comment explicitly on inappropriate cohesion. These findings suggest that while younger children have some rudimentary degree of metalinguistic awareness that allows them to repair when retelling



and repeating stories, they lack a more conscious degree of awareness required to make explicit cohesion judgments.

Children with language and learning disorders have been shown to provide lower levels of linguistic cohesion, including referential cohesion, when telling or retelling stories, as compared to age-matched children without language or learning problems (Caro & Schneider, 1982; Liles, 1985; Ripich & Griffith, 1988; Roth & Spekman, 1986¹). They have also been described as having less metalinguistic awareness of some aspects of language, such as word and sentence segmentation and judgments of syntactic form as compared to age- or mental-age-matched children (Kamhi, 1987; Kamhi & Koenig, 1985; Kamhi, Lee, & Nelson, 1985; Liles, Schulman, & Bartlett, 1977; Rubin, Kantor, & Macnab, 1990). A few studies have examined awareness of discourse features in children with language impairments and/or learning disabilities. Studies of heterogeneous groups of children with learning disabilities have found them to be less adept at adjusting their language to meet the needs of their listeners, although this problem seems to be due to language limitations rather than to lack of awareness of the need to adjust (Donahue, 1991). Meline and Brackin (1987) found that children with language impairments tended to blame the listener rather than the speaker in cases of misunderstanding, when in fact the speaker had not provided sufficient information about the intended referent; the authors attributed this to a lack of metalinguistic awareness. Children with language disorders request clarification of ambiguous messages less often than nondisordered age-matched children (Skarakis-Doyle & Mullin, 1990), although their nonverbal gestures suggest "rudimentary awareness" of the ambiguity (Skarakis-Doyle, MacLellan, & Mullin, 1990).

Thus children with language and learning disabilities have been found to have difficulty with both referential cohesion and awareness of several aspects of language, including discourse. Their metalinguistic awareness of referential cohesion itself has not previously been investigated.

Using a modified version of Hickmann & Schneider's (1993) experiments, the current study investigated the metalinguistic awareness of the cohesion function of referring expressions on the part of children with language/learning disabilities, specifically their treatment of noncohesive texts when retelling stories, repeating isolated sentences extracted from stories, and judging the adequacy of stories. Children with language/learning disabilities, aged 8;6–11;0, and an age-matched group of children with no known disabilities listened to stories of three types: cohesive (target referent introduced with the indefinite determiner *a*), definite nominal (target referent introduced with definite determiner *the*), and pronominal (target referent introduced with pronoun *it*). They listened to these stories in three tasks designed to investigate different levels of metalinguistic aware-

ness. Between-group and within-group differences related to story type were examined for each task.

Methods

Participants

Two groups of children participated in the study. The language/learning disabilities (L/LD) group consisted of 13 children (4 boys and 9 girls), between 8;11 and 10;11 years of age ($M = 9;10$, $SD = 6.9$ mos.), who had previously been identified as having a learning disability in the area of language, and who were receiving services in learning disabilities classrooms. Participants in this group were referred to the study by learning disabilities teachers in the Edmonton Public School System (EPS). To be classified as learning disabled in the EPS, children must have attained an IQ on the Weschler Intelligence Scales for Children-Revised of 100 or above. Thus the learning disabled participants were by definition in the normal range or above on IQ. A standardized language test, the Test of Language Development-2 Intermediate (TOLD-2 I; Hamill & Newcomer, 1988), was administered to provide uniform information on language abilities. Each of the children in the L/LD group attained a score of 6 or below (1.33 SDs below the mean) on one or more subtests of the TOLD-2 I. Three additional children with L/LD were eliminated from the study because their TOLD-2 I subtest scores were all above 6. As a group, participants with L/LD scored particularly low on the Sentence Combining ($M = 5.62$, $SD = 3.1$) and Word Ordering ($M = 6.31$, $SD = 2.69$) subtests.

A group of children in the same age range was used for the comparison group. Children were matched on chronological age rather than on language abilities for two reasons: (a) This is the first study examining awareness of cohesive devices, and thus it is of interest first to see whether the L/LD group differs from their age mates; and (b) there is as yet no adequately normed, standardized test of either cohesion or narratives in general for this age group, and existing tests of language may tap a very different set of language skills which may not be predictive of the ability to understand and use narrative cohesive devices (Williams & Schneider, 1997).

The comparison group consisted of 15 children with no known disabilities (7 boys and 8 girls), in the same age range (range = 8;11–10;11, $M = 9;10$, $SD = 6.8$ mos.). These children were referred by their regular classroom teachers in the same schools attended by children in the L/LD group. Teachers were asked to refer children whom they considered to be average in IQ and achievement who had never been referred for language or learning assessment or services.

Children in both groups were given and passed a hearing screening on the day they participated in the study. All children in the study were white and spoke only English at home.

Materials

Tasks. Three tasks were administered during the session. The first was a retell task, which was designed to reveal how children react spontaneously to stories with disrupted cohesion when their task is merely to retell them. Analyses focused on whether children reproduced or repaired cohesion anomalies in their retellings. In the Hickmann and Schneider (1993) study, children aged 5 to 10 generally produced cohesive narratives even when they retold stories that had not been cohesive. The second was a repeat task, in which the children were asked to repeat parts of stories verbatim. This task was designed to show whether children would make *integrative errors*, as normally-developing children have been observed to do in previous studies (Hickmann & Schneider, 1993; Tyler & Marslen-Wilson, 1978). It was expected that children should make integrative errors during verbatim sentence recall, namely spontaneous changes of inadequate referring expressions to adequate ones, if they are sensitive to discourse functions of different noun phrase forms as well as to the discourse context of the repeated phrase. Analyses focused on whether or not the repetitions were accurate. Third, during a judgment task the children were asked to judge whether stories contained anything "wrong" or "strange". This task was designed to reveal whether children would detect and comment explicitly on anomalies in cohesion when instructed to look for unspecified problems, as older children were able to do in Hickmann and Schneider (1993). Analyses focused on the number and type of explicitly metalinguistic objections to anomalies in cohesion for stories at each level of cohesion adequacy.

Narrative stimuli. Nine stories were used in the present study. Six of them had been constructed for Hickmann and Schneider (1993) and three were constructed in the same way as these original stimuli. Each was constructed according to Story Grammar principles (Stein & Glenn, 1979) and was controlled for number of words, sentences, clauses, and conjunctions. The focus was on three references to a *target referent* (an object, e.g., car, bicycle) in each story. Referring expressions denoting this target were varied to explore children's knowledge of the adequacy of referring expressions.

Three different versions of each story were prepared, which varied in terms of the adequacy of narrative cohesion. In *cohesive* versions, the target referent was introduced adequately with a *N* (e.g., *a bicycle*). In *definite nominal* versions, the target was introduced with *the N* (e.g., *the bicycle*). In *pronominal* versions, the target was introduced with *it*. Thus, referent introductions in both definite nominal and pronominal versions (the *disrupted* versions) were inadequate for the introduction of referents. Example (1) below from one of the stories shows the utterance in which the target was introduced and the referring expression used to introduce it in its three versions:

(1) One day he was walking down the road and he saw

_____ for sale.

Cohesive: *a racecar*

Definite nominal: *the racecar*

Pronominal: *it*

The appendix illustrates these three versions with an entire story. Given the number of tasks and versions, it would not be possible to randomize stories fully if all stories were used in all versions. Thus three stories were assigned to the Retell task, three to the Repeat task, and three to the Judgment task.

Preparation of stimuli for video presentation. Videotapes were produced in which each story was read in each version by an adult (hereafter the story reader), with brief instructions before each version. Videotapes were checked before the study began to ensure that the target referring expressions were clearly enunciated without being stressed. Three story versions were re-taped after reviewing. The use of videotapes for story presentation departs from the methods employed by Hickmann and Schneider (1993), who read each story to each child individually. The use of videotapes rather than live story presentation was intended to ensure that all participants heard identical versions and to eliminate the possibility that references to target referents were unduly stressed in some presentations.

Procedure

Task presentation. For all children, tasks were presented in the following order: The Retell task was administered first in order to see how children retell stories with disrupted cohesion, before the Repeat and Judgment tasks which were designed to make children focus on disrupted portions of the stories and hence should enhance awareness of such disruptions. This order was chosen according to the presumed level of metalinguistic awareness, from least to most likely to evoke awareness, thereby preventing a potential contaminating effect. We assumed that the Retell and Repeat task would maximize metalinguistic awareness in the final task, which would maximize the validity of the Judgment task. Within each task, story types (cohesive, nominal, pronominal) were presented in randomized order.

Stories were presented using a Sony Trinitron Video 8 Combo and Sony Professional Walkman earphones. The child's speech was recorded using a Sony Professional Walkman and Sound Grabber microphone. A single experimenter (not the story reader) served as the sole administrator of all three tasks.

Retell task. Each child was presented with three stories to retell, one in each version (cohesive, definite nominal, pronominal). The child watched the video monitor and listened with earphones to the stories read by the story reader. The use of earphones prevented the experimenter from hearing the story, and therefore made it less legitimate for the child to presuppose knowledge of the story on her part; research has found that the opportunity to presuppose such knowledge results in less explicit use of referring expressions by children (Kail & Hickmann,



1992; Liles, 1985). Instructions on the videotape before each story reminded the child that the experimenter would not hear the story. After each story was presented, the experimenter stopped the tape and asked the child to tell her the story. The next story was then presented until the child had heard and retold all three stories.

Repeat task. Each child was presented with more stories on videotape. After a practice story (in a cohesive version) to familiarize the child with the procedure, each child heard three stories, one of each version (cohesive, definite nominal, pronominal). At three points during each story (i.e., after the first three mentions of the target referent), the story reader said, "GO". The child was instructed to repeat exactly what was said immediately before the reader said "GO". The practice story served to train the child on the correct amount to repeat (one clause). The experimenter stopped the tape after each "GO" signal to allow the child to repeat the clause.

Judgment task. Each child was presented with additional videotaped stories. After a practice story in a cohesive version, each child heard three stories, one of each version (cohesive, definite nominal, pronominal). This time the child was instructed to say "STOP" if there was anything wrong or strange in the story. If the child indicated that there was a problem with the story, the experimenter stopped the tape and asked the child to explain what was wrong. If the child could not explain, the tape was replayed and the child was asked again what was wrong or strange.

Transcription and coding. Stories produced during the Retell task were transcribed in full. In the Repeat task, the child's repetitions were transcribed; for the Judgment task, all of the child's comments about the stories were transcribed. To determine transcription reliability, a second transcriber transcribed data from seven children (22%), four L/LD and three ND; point-by-point transcription reliability was 95%.

All stories from the Retell task were coded according to whether the first mention of the target referent was adequate or not. Each repetition in the Repeat task was coded as accurate or inaccurate. Referring expressions were coded as accurate if they included the same type of referring expression as the original target (e.g., a NP with indefinite determiner: "He saw *a bike*"), and as inaccurate if the referring expression was modified (e.g., from definite *the bike* to indefinite *a bike*). Each story in the Judgment task was coded according to whether it contained one or more metalinguistic objections to the cohesive role of a referring expression (e.g., "I didn't understand what she meant when she said *it*") as opposed to containing only other kinds of objections (e.g., to story con-

tent: "Rabbits can't ride bicycles") or no objections at all (e.g., "There was nothing wrong with it"). All data were initially coded by the first author, who was blind as to group membership of all children until coding was completed. Intercoder reliability was calculated on data from seven children (4 L/LD and 3 ND: 22%) for each task. Point-by-point reliabilities were as follows: Retell, .95; Repeat, 1.00; Judgment, .95.

Design and data analyses. For each task, the research design was a between-groups (L/LD to ND) and within-groups (story version) design. SPSS for Windows, version 6.0 (SPSS, 1993) was used for analysing data. As the data were categorical, the chi square statistic was used for group comparisons, and Cochran's Q statistic, which has approximately a chi-square distribution, was used for within-group comparisons. As the study was intended to be exploratory rather than confirmatory (Huberty, 1987), alpha was set at .05 for each research question, divided by the number of tests for that question (i.e., for each between-group question, $.05 \div 3$ chi square tests = .017; for each within-group question, $.05 \div 2$ Cochran's Q test = .025).

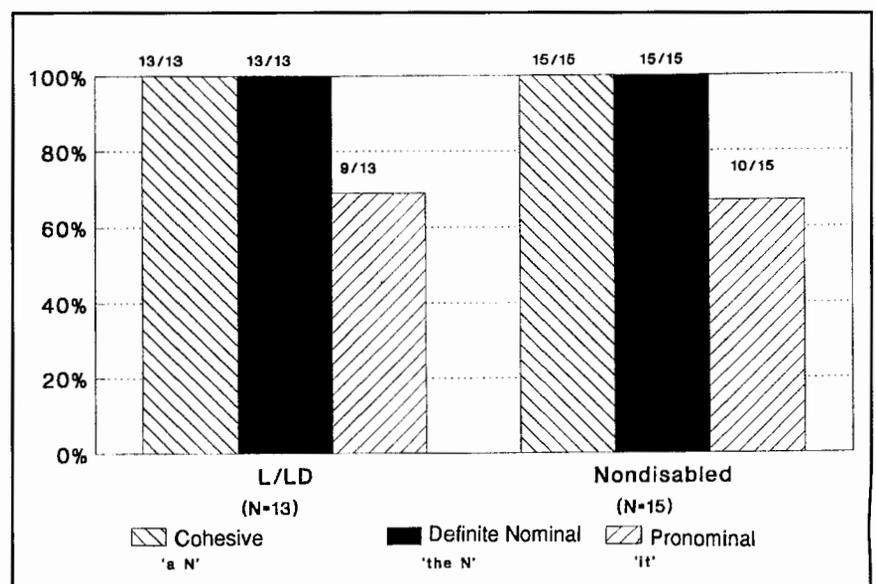
Results

Retell Task

Analyses focused on adequacy of referring expressions used to introduce target referents.

The first major research question for the Retell task was: Is there a difference between the language-learning disabilities (L/LD) and no disabilities (ND) groups in the adequacy of referring expressions used to introduce target referents? Figure 1 dis-

Figure 1. Adequate first mentions of target referents in Retell Task. Data are presented in percentage form, with exact frequencies above each bar.



plays the results for first mentions in the Retell task. There were no group differences in use of adequate first mentions of target referents in any version. In fact, both groups performed at 100% for two of the three conditions.

The second major question was: Within each group, is there a difference across story versions such that first mentions of the target are less often adequate when children hear versions with disrupted cohesion? Both groups were more likely to use an inadequate first mention in pronominal versions (that is, to use either the form that they had heard in these stories, *it*, or a definite article + noun to introduce the target referent) than in cohesive or definite nominal versions; 4 children in the L/LD group and 5 children in the ND group (about one-third in each) did so. This difference among versions was significant for both groups (L/LD: Cochran's $Q [2, N = 13] = 8.0, p = .018$; ND: Cochran's $Q [2, N = 15] = 10.0, p = .006$). The fact that even in the group without learning disabilities some children used inadequate first mentions is somewhat surprising, since children at this age have certainly mastered the use of adequate first mentions. It appears that some children nevertheless retell noncohesive stories without correcting inadequate first mentions.

Repeat Task

The second task, Repeat, was included to investigate whether participants would make integrative errors when asked to repeat sentences verbatim. Once again, analyses focused on referent introductions. In contrast to the Retell task, repetitions were coded for their accuracy rather than for cohesive adequacy per se. The rationale was as follows: If children's repetitions of inadequate NPs were less accurate than their repetitions of adequate NPs, that is, if they transformed inadequate NPs into adequate ones, it would suggest that they were sensitive to some principles of discourse cohesion. Since this task only required verbatim repetition, such a finding would also suggest that children's sensitivity to discourse was fairly automatized.

The research questions for the Repeat task were: Is there a difference between the L/LD and ND groups in the accuracy of repetition of target referring expressions within each version? Within each group, are target referring expressions repeated accurately less often in versions with disrupted cohesion?

Figure 2. Accurate repetition of target first mentions in Repeat Task. Data are presented in percentage form, with exact frequencies above each bar.

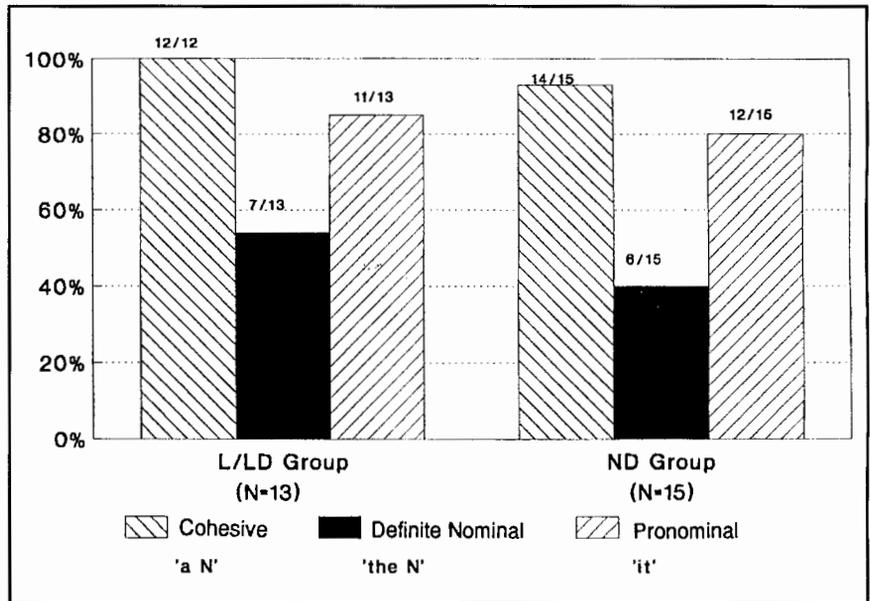


Figure 3. Metalinguistic objections to any mention of the target referent in Judgment Task. Data are presented in percentage form, with exact frequencies above each bar.

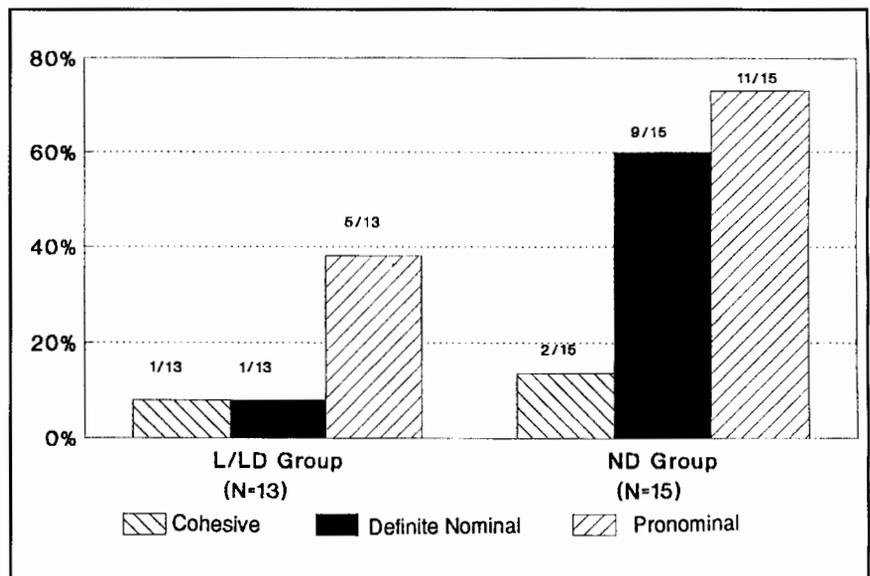


Figure 2 displays the results for first mentions of the target in the Repeat task. There were no group differences in the accuracy with which target first mentions were repeated (p values ranged from .36 to .75). Within both groups, more children repeated first mentions inaccurately in definite nominal versions, that is, repeated the inappropriate first mention *the* as *a*, than in cohesive and pronominal versions (L/LD: Cochran's Q [2, $N = 12$] = 9.33, $p = .009$; ND: Cochran's Q [2, $N = 15$] = 9.46, $p = .009$). All inaccurate repetitions were in the direction of greater cohesion, that is, from forms inadequate for first mentions (*the N*, *it*) to an adequate (indefinite) one.

Judgment Task

Analyses in this task focused on children's objections to target referring expressions. Children often provided several objections to a single story. Since type rather than number of objections was of primary interest, each story was coded as containing at least one metalinguistic objection or not, regardless of how many were made or whether other types of objections were also made. Results for the Judgment task are displayed in Figure 3.

The first research question for the Judgment task was: Is there a difference between the L/LD and ND groups in the numbers of children who make objections to target referring expressions in an explicitly metalinguistic way? There was a significant difference in the number of children making metalinguistic objections for definite nominal versions: χ^2 [1, $N = 28$] = 8.30, $p = .005$. Only 1 of the 13 children in the L/LD group objected to the definite nominal stories, as compared to 9 of 15 ND children. A significant between-group difference in number of children making metalinguistic objections in pronominal versions was not obtained (χ^2 [1, $N = 28$] = 3.46, $p = .06$), although as can be seen in Figure 3, there appears to be a trend towards more nondisabled (11/15) than L/LD (5/13) children producing explicitly metalinguistic objections with these versions. There was no difference in the number of children making metalinguistic objections to cohesive versions (χ^2 [1, $N = 28$] = 0.23, $p = .63$); the number in both groups was low, as would be expected given that these stories were constructed without cohesion problems.

The second research question for this task was: Within each group, are metalinguistic objections more frequent with versions containing cohesion disruptions than with normal versions? For the ND group, metalinguistic objections were in fact more frequent with disrupted versions (ND: Cochran's Q [2, $N = 15$] = 13.40, $p = .001$). This comparison fell short of significance in the L/LD group (L/LD: Cochran's Q [2, $N = 13$] = 5.33, $p = .07$). In the L/LD group, the trend toward a difference was clearly due solely to the greater response to the pronominal versions (5 of 13 children objected as compared to 1 of 13 for cohesive and definite nominal versions), whereas in the ND group, a clear

majority of children objected to both definite nominal and pronominal versions (9 and 11 respectively of the 15 children as opposed to 2 of 15 for cohesive versions).

It was possible that children in the ND group made more metalinguistic objections simply because of a greater tendency to make objections of all kinds. To investigate this possibility, the number of all kinds of objections (excluding statements of "nothing wrong") were compared between the two groups. With none of the story versions was there a group difference in number of objections (see Table 1). Thus the difference in metalinguistic objections to definite nominal versions is not due to a reluctance on the part of children in the L/LD group to offer objections in general.

Table 1. Judgment Task: Number of Objections Made to Stories

	L/LD (N=13) Mean (SD)	ND (N=15) Mean (SD)	t value
Cohesive	1.76 (1.09)	1.73 (1.16)	-.08 ($p = .93$)
Definite Nominal	1.62 (1.33)	2.27 (1.49)	-1.22 ($p = .24$)
Pronominal	1.92 (1.32)	2.47 (1.6)	-.97 ($p = .34$)

Discussion

The current study found both similarities and differences between children with language/learning disabilities and their nondisabled age-mates. We will use the term *repair* to indicate changes that children made to stories in the direction of greater cohesion, such as a change from a definite nominal to an indefinite one. The L/LD and ND groups did not differ significantly in the Retell and Repeat tasks. The children in the L/LD group showed a similar pattern of repairing or preserving disrupted cohesion as the ND group — some children in each group retold stories preserving the inadequate referent introduction *it* while others substituted an adequate referring expression. The two groups were equally likely to repair inadequate first mentions when repeating isolated sentences; in both groups children tended to repair inadequate introductions with *the N* but to repeat accurately inadequate ones with *it*, probably because of the impossibility of knowing the correct lexical content to substitute in the latter case. The groups also did not differ, to a statistically significant degree, in number of children who made explicitly metalinguistic judgments about stories with pronouns as referent introductions. However, a significantly greater number of children without learning disabilities detected and made metalinguistic judgments about pronominal referent introductions. Thus, though some children in the L/LD group exhibited metalinguistic awareness of blatant violations of cohesion, most did not detect more subtle cohesion disruptions.

What is the reason for the discrepancy in metalinguistic awareness in the two levels of disruption for the children in the L/LD group? It is possible that, given the subtle phonetic distinction between *a N* and *the N*, children in the L/LD group made the assumption that "she must have said a N," thus "correcting" the disruption rather than reporting it as an error. This would not be possible with the more salient cases of disruption where *it* was used as a referent introduction. However, the children in the ND group were as likely to object to *the N* as they were to *it* as referent introduction. Thus we would need to postulate that children in the L/LD group were more likely to assume that they had misheard. Meline and Bracken (1987) offer a possible reason in their suggestion that children with learning disabilities may be more willing to blame the listener for misunderstandings due to their own frequent comprehension difficulties. Thus it is possible that the participants in the current study would assume that they had misheard the speaker. This possibility would seem more plausible, however, if the children in the L/LD groups appeared to be reluctant to make objections to stories in general. As we have seen, they did not differ in the overall number of objections made. In fact, 8 of 13 children in the L/LD group objected to the way the experimenter pronounced a word in at least one story version (thus exhibiting some degree of phonetic awareness), as compared to 6 of 15 children in the ND group. They did not appear to assume that they had misheard the stories in these instances. Thus, it appears that a lesser awareness of inappropriate referent introductions with definite nominal forms is a better explanation than any tendency to blame themselves for misunderstandings in the present study.

The present study replicates the findings previously reported by Hickmann and Schneider (1993) for 7- to 10-year-old participants. In the present study, the children in the L/LD group (aged 8;11-10;11 years) performed at a level intermediate to Hickmann and Schneider's 7- and 10-year-old participants. The 7-year-olds did not differ from the 10-year-olds in the number who repeated accurately in the Repeat task, but differences were found between the 7-year-olds and the 10-year-olds in numbers of metalinguistic objections to both definite nominal and pronominal versions. The children in the L/LD group in the present study may be at a level intermediate to the 7- and 10-year old participants in the previous study, in that some in the L/LD group showed metalinguistic awareness in pronominal versions, but only one showed such awareness in definite nominal versions. This awareness of the salient pronominal first mentions, but not of the less salient definite nominal ones, may represent an intermediate step in the development of metalinguistic awareness of discourse cohesion.

What are the implications of these findings for our understanding of children with language/learning disabilities? It appears that awareness of cohesion may be merely delayed in

this group, and we may expect it to increase if and when their general language abilities increase. Further, it appears that, like awareness of other aspects of language (Hakes, 1982), the level of awareness necessary to comment explicitly on disruptions in cohesion develop later than the lower level of awareness necessary to keep track of cohesion in discourse, as evidenced by children's "correction" of disrupted cohesion in the repetition task. The explicit level of awareness needed to make metalinguistic objections in the Judgment task is apparently not necessary for detection or correction of faulty cohesion in simple texts; it is therefore probably not necessary for the construction of cohesive texts either.

These conclusions must be qualified in two ways. Firstly, the comprehension and production of more complex text may be facilitated by metalinguistic awareness of cohesion. As Hakes (1982) pointed out, the ability to make explicit metalinguistic judgments requires more deliberate, controlled processes than does the lower-level awareness related to the ability to talk and understand. It may be that with more complex texts, in which processing demands are increased greatly as compared to the very simple stories used in the present study, a high level of metalinguistic awareness of cohesive devices would be helpful in keeping track of cohesion.

The second consideration qualifying the conclusion that a higher level of metalinguistic awareness is not necessary for construction or repair of texts is the possibility of an interaction between metalinguistic awareness and development (Tunmer & Bowey, 1984). That is, metalinguistic awareness is probably not required for initial development of the ability to understand and construct cohesive texts, but it may facilitate its development and use in more advanced and complex texts. Thus, further research into this area should look at a wide range of texts and task demands to learn the points at which children with language/learning disabilities succeed and fail.

The findings of this study are somewhat limited in their generalization by the fact that there is only limited language information available for the children in the L/LD group, and by the small number of participants in the study. The results are nonetheless informative, since they show subtle differences in an important domain of language skills in this group of children identified as having language/learning disabilities. Further research of this kind is needed to examine the pattern of metalinguistic awareness in children with more severe language impairments.

Please address all correspondence to: Phyllis Schneider, PhD, Speech Pathology and Audiology, University of Alberta, 2-70 Corbett Hall, Edmonton, Alberta T6G 2G4



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Endnotes

1. Note that the first two studies cited chose participants with language impairments or with learning disabilities who had difficulties with language, whereas the last two chose only participants who passed their language criteria; nevertheless, all studies found less effective cohesion in their chosen groups as compared to participants without impairments or disabilities.

2. The N is 12 rather than 13 for this test because one child gave an uncodable (inaudible) response for the cohesive version in the Repeat task.

Appendix

Stimulus Story

1. Once a cat lived near a big road and he was very careless.
2. One day he was walking down the road and he saw _____ for sale.
Cohesive version: **a racecar**
Definite nominal version: **the racecar**
Pronominal version: **it**
3. He liked to drive fast and he wanted to try _____.
Cohesive: **the racecar**
Definite nominal: **it**
Pronominal: **the racecar**
4. So he got all his money and he bought _____.
Cohesive: **it**
Definite nominal: **a racecar**
Pronominal: **a racecar**
5. But on his way home he drove too fast and he smashed it against a tree.
6. He felt bad because he had to get rid of it.

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