EXPRESSIVE BOUND MORPHEMES IN MALAYALAM SPEAKING CHILDREN WITH SPECIFIC LANGUAGE IMPAIRMENT

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Abstract

The present study aimed to investigate the emergence of expressive bound morphemes in 10 children, aged 3-8 years, with Specific Language Impairment (SLI) as compared to 10 chronological age (CA) controls. All the participants had a verbal repertoire of two-word phrases and were monolingual speakers of Malayalam. Expressive use of six different inflectional suffixes of Malayalam- 1./kaɭ/-Plural, 2./e/-Accusative, 3./il/-Locative, 4./uʈe/-Genitive, 5./kkə/ & /nə/-Dative case markers and 6./um/-Conjunction was examined using elicited Sentence Imitation Test in Malayalam (SIT-M) developed from our earlier research. Results revealed that performance of SLI group was significantly ($p<0.05$) poorer than the CA group, suggestive of underlying morphological deficits. However, both the groups exhibited relatively better scores on Locative /il/, Dative /kkə/ & /nə/ case markers and Plural /kaɭ/ than Conjunction /um/, Accusative /e/ and Genitive /uʈe/ case markers. Implications for morphological assessment and treatment in Specific Language Impairment are also discussed.*

Key Words: *Bound Morphemes, Specific Language Impairment (SLI), Sentence Imitation*

Specific language impairment (SLI) is characterized by marked deficits in the use of grammatical inflectional morphology (Leonard, 1998; Bedore & Leonard, 1998; Crago & Gopnik, 1994; Oetting & Rice, 1993; Rice & Wexler, 1996; Marchman, Wulfeck & Ellis Weismer, 1999). Morphosyntactic impairments in SLI have been reported to be linguistic in nature (Clahsen, 1989; Muller, 2005). Early signs of SLI include omission of inflectional suffixes, articles, propositions and conjunctions. Hence, their verbal repertoire may be limited to short agrammatic sentences with specifically impaired function words. Furthermore, research on SLI has received much attention regarding the possible markers that can differentiate between individuals with and without language disorders (Conti-Ramsden & Windfuhr, 2002).

Clinician-designed, structured grammatical tasks are valuable tools to determine expressive morphological difficulties in these children. They would aid in the assessment of morphemes that are not commonly found in normal conversation or discourse. In a recent study on SLI by Christensen & Hansson (2012), sentence completion and sentence repetition tasks were used to explore the past tense inflection of Danish. Likewise, Bedore (2001) assessed morphosyntax, using structured probes and spontaneous speech, in native speakers of Spanish. On the contrary, Seeff-Gabriel, Chiat & Dodd (2010), who developed Sentence-imitation Test-61 (SIT-61), delineated the practical advantages of sentence imitation over spontaneous speech as a means of assessing expressive language skills.

Therefore, Sentence Imitation Test in Malayalam (SIT-M, Treasa & Shyamala, 2013) was developed by the authors in our earlier research on emergence of expressive grammatical morphology in 120 Malayalam speaking typically developing children. Use of sentence imitation task to elicit inflectional grammatical morphemes suffixed to nouns was employed in SIT-M as nouns are more concrete and have a processing advantage over verbs (Colombo & Burani, 2002). There is also accumulating evidence that children with SLI and typically developing children performed better on noun morphology than on measures of verb morphology (Conti-Ramsden & Windfur, 2002).

Research on language acquisition in various Indian languages has been reported in the literature. Shyamala and Basanti (2006) explored the developmental milestones of language acquisition in Kannada and Hindi-speaking children. Asher & Kumari (1997) reported that syntactic and semantic functions of noun phrases in Malayalam are expressed mainly by bound case suffixes and postpositions. Highly agglutinative languages such as Dravidian languages have no prefixes and infixes for words. Words are usually formed by adding suffixes to the root word serially. Age and gender differences in the development of plurals in typically developing

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Malayalam speaking children was researched upon by Thomas, Rachel, Paul and Kumaraswamy (2013). However, there is paucity of research comparing the acquisition of various morphemes of Malayalam language.

In the Indian context, research on emergence of inflectional morphology is in its infancy. Furthermore, there is a dearth of studies on the pattern of deficits in productive use of different suffixes in SLI. Hence, the present study was carried out to examine specific expressive bound morphemes (Plurals, Case markers & Conjunctions) of Malayalam in children with Specific Language Impairment (SLI) as compared to age-matched controls (CA), using SIT-M.

Method

Participants: Participants were 10 children, aged - years, diagnosed with Specific Language Impairment (SLI; N=10) according to DSM-IV and ICD-10 criteria and 10 age-matched children learning language typically. Language was assessed using Three Dimensional Language Acquisition Test (3D-LAT, Herlekar & Karanth, 1993) and Comprehensive Language Assessment Tool for children (CLAT, Navitha & Shyamala, 2009). All the participants had a verbal repertoire of two-word phrases and were monolingual speakers of Malayalam.

Task design and stimuli: The elicited Sentence Imitation Test in Malayalam (SIT-M), developed in our earlier research on emergence of expressive grammatical morphology in 120 children with typical language development aged between 3-6 years, was employed to assess expressive grammatical morphology. The digitized stimuli included 60 simple sentences with pictures that examine six different inflectional bound morphemes of Malayalam: /kaɭ/-Plural, /e/-Accusative, /il/-Locative, /uṯe/-Genitive, /kkə/ & /nə/-Dative case markers and /um/-Conjunction.

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In SIT-M, the picture stimulus was delivered using power-point presentation with the corresponding sentence presented through headphones. The participant was seated viewing laptop monitor and was instructed to repeat the sentence heard on slide show of the stimuli. For those children who did not cooperate to put on headphones or those who got distracted from the task by wearing headphones, testing was done in free field. The maximum score for sentence imitation task was '60'. A score of '1' was allocated for correct response; score of '0' was assigned for incorrect response/ omission of morphemes and a score of 0.5 was allocated for 50% correct response.

Procedure: Data was collected from Institute of Cognitive and Communicative Neurosciences (ICCONS), Kavalappara, Shoranur, Kerala after obtaining written informed consent from the parents/caregivers and the institution authorities. All the data was video recorded for response analysis and was analyzed by three experienced Master's degree holders. It was subjected to inter-judge reliability using (Cronbach's $\alpha > 0.8$) indicative of good inter-judge reliability across all participants. The data obtained was subjected to further statistical analyses using independent samples t-test.

Results and Discussion

The mean and standard deviations obtained by the SLI (N=10) and CA group (N=10) for the six target morphemes are shown in Table 1. Examining the two groups data reveals that the mean of the CA group is higher than the SLI group, thus supporting the notion that SLI exhibits morphological impairment. The variability of the SLI groups is higher than the CA group.

Table 1: Mean and SD scores of SLI and CA groups for six morphemes

Group		/kaɭ/	/e/	/il/	/uṯe/	/kkə/	/um/
SLI	Mean	4.2	3	7.1	2.4	4.5	4.4
	SD	3.96	2.53	3.63	3.16	3.34	3.05
CA	Mean	9.8	8.8	9.9	8.7	9.9	8.65
	SD	0.42	2.25	0.31	2.11	0.31	1.51

Table 2: Comparison of morphemes (M) across SLI & CA group

Independent t-test (df=18)	/kaɭ/	/e/	/il/	/uṯe/	/kkə/	/um/
t-value	-4.44*	-5.41*	-2.43*	-5.23*	-5.09*	-3.95*

*p<0.05

An independent samples t-test (see Table 2) was run to determine if there were differences in expressive bound morphemes between the two groups. Levene's test for homogeneity of variances was significant ($p<.05$) for morphemes /kaɭ/, /il/, /kkə/ and /um/ while it was not statistically significant ($p>.05$) for morphemes /e/ and /uʈe/. Hence, homogeneity of variances was assumed for the morphemes /e/ and /uʈe/. Equal variances were not assumed for morphemes /kaɭ/, /il/, /kkə/ and /um/. Results of independent samples t-test revealed that SLI group performed significantly ($p<.05$) poorer than the CA group for all the target morphemes suggestive of underlying morphological deficits. This is in agreement with the past literature (Eadie, Fey, Douglas & Parsons, 2002 in English; Lukács, Leonard & Kas, 2010 in Hungarian language) that children with SLI demonstrate difficulty with the productive use of various bound morphemes as compared to age-matched controls.

However, both the groups had exhibited relatively better scores on morphemes /il/, /kkə/, /nə/ and /kaɭ/ than /um/, /e/ and /uʈe/. The findings suggest that the acquisition process may operate on innate principles that predispose the children to follow similar patterns. Furthermore, the difference in scores obtained for the third morpheme /il/ across the two groups was found to be less (see Figure 1) while all the other morphemes differed significantly ($p<0.05$). Thus, plurals, conjunctions and case markers-accusative, genitive and dative could be used to differentiate children with and without SLI in Malayalam language.

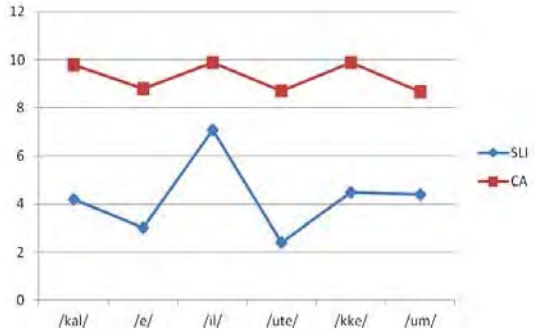

Figure 1: Mean scores for the target morphemes across groups

The findings from this study lend some support for using sentence repetition with picture context as a tool to evaluate expressive grammatical morphology in SLI. There is also corroborative evidence on elicited sentence imitation as a language sampling procedure (Haniff & Siegal, 1981; Schwartz & Daly, 1976) to facilitate goal-specific assessment of children with language impairment.

Summary and Conclusions

Emergence of six expressive bound morphemes in a small sample of Malayalam speaking children with SLI was explored in the present study. The authors found elicited Sentence Imitation Test in Malayalam (SIT-M) to be useful in examining the target expressive bound morphemes. Results revealed that performance of SLI group was significantly ($p<0.05$) poorer than the control group, indicative of expressive bound morpheme deficits. Nevertheless, both the groups obtained higher scores on Locative /il/, Dative /kkə/ & /nə/ case markers and Plural /kaɭ/ than Conjunction /um/, Accusative /e/ and Genitive /uʈe/ case markers. This suggests the need for specific morphological intervention in SLI especially for conjunctions and case markers. Additional investigations in larger samples of SLI and other childhood language disorders are needed in order to better understand the pattern of morphological deficits relative to the age-matched controls. Future research on expressive bound morphemes in other Dravidian languages is recommended.

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