SPECIFIC LANGUAGE IMPAIRMENT: DEVELOPMENT OF MORPHOSYNTAX IN KANNADA

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CERTIFICATE

This is to certify that this dissertation entitled ***"Specific Language Impairment: Development of Morphosyntax in Kannada"*** is the bonafide work submitted in part fulfillment for the degree of Master of Science (Speech - Language Pathology) of the student (Registration No. 06SLP013). This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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DECLARATION

This is to certify that this dissertation entitled ***"Specific Language Impairment: Development of Morphosyntax in Kannada"*** is the result of my own study under the guidance of Dr. K. S. Prema, Professor of Language Pathology, Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysore, and has not been submitted in any other university for the award of any diploma or degree.

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CHAPTER I

INTRODUCTION

Language is an essential element for every individual to convey thoughts, ideas in day-to-day communication. If it is imperfect, it affects communication which is commonly seen in developmental language disorders. Specific Language Impairment (SLI) is a condition seen in children with delayed onset of speech and language with no obvious/attributable causes and that generally shows an impairment in communication. Some western studies report that SLI is one of the most common types of developmental language disorder, affecting approximately 7% of Kindergarten children, more likely to be seen in males than females (Tomblin, Records, Buckwatter, Zhang, Smith and O' Brien, 1997).

A traditional definition of SLI is exclusionary in nature and it is defined as a form of developmental language disorder occurring in the absence of mental retardation, sensory deficits, frank neurological damage, serious emotional problems and environmental deprivation (Leonard, 1998).

Children with SLI appear to be developing normally in all aspects except for their receptive and/or expressive language skills. They also demonstrate normal intelligence, normal hearing, no evidence of emotional problem and are free from neurological disorder such as cerebral palsy, seizure disorders.

Children with SLI are significantly delayed in acquiring multiple aspects of language. Deficits including grammatical morphology, phonology, syntax, lexicon and pragmatic skills are observed in children with SLI (Joanisse and Seidenberg, 2003). Children with SLI exhibit other types of deficits also that extend beyond language including problem with working memory (Johnston and Weismer, 1983) and speech perception (Tallal and Piercy, 1974).

There are five components of language which develops in a hierarchy i.e., - phonology, semantics, syntax, morphology and pragmatics. In children with SLI, the development of each of these components are delayed, among which, morphosyntax is the one which is said to be largely impaired.

Need for the study

The development of the five components of language in hierarchy gives us an insight about the linguistic patterns acquired in typically developing children. The same pattern is assumed to be slower in development in children with speech and language disorders. Hence, the present study attempts to trace the development of morphosyntax in children with Specific Language Impairment (SLI) which would give us an insight about the assessment and treatment of the same.

Objectives of the study

To study the development of morphosyntactic pattern (Person-Noun-Gender markers, case markers, negation, tense, conjunctions) in typically developing children and children with Specific Language Impairment in Kannada.

Further the development of the above morphosyntactic patterns in receptive and expressive domains will also be investigated.

Method

Two groups of participants (typically developing group-ST and clinical group-SC) in the age range of 2-5 years were involved in the study. ST consisted of typically developing children and SC consisted of children with Specific Language Impairment. Both expression and

comprehension of morphosyntactic patterns (Person-Noun-Gender markers, case markers, negation, tense, and conjunctions) were investigated.

CHAPTER II

REVIEW OF LITERATURE

The term "Specific Language Deficit" was first given by Stark and Tallal (1981) while Johnston and Ramsted (1983) preferred the term – "Language Impairment". The term "Specific Language Impairment" was used by Leonard (1981) along with its abbreviation SLI. It is the most widely adapted term at present, especially in clinical and research literature.

(a) *Causes of SLI:*

The causes of SLI are likely to be multifactorial. But none of the causes are clinically established to support SLI and most of them remain unknown. Rice at al (1996) studied the three major issues on the causes of SLI – (a) sex/gender as a risk factor, (b) How specific is sex/gender influence on language performance? (c) Family history as a risk factor. Family study, epidemiologic study and twin study was done to investigate these issues.

- Genetic studies

Over the past decade evidence has been collected to support familial aggregation in SLI (Brustomicz, 1996, Lehey and Edwards, 1996; Tallal Ross and Curtis, 1989; Tomblin, 1989; Van der Lely and Stollwerck, 1996). Tallal, Hirsch, Realpe – Bonilla, Miller, Brzustowicz, Bartlett and Flax (2001) ruled out genetic probands in SLI. Two groups of subjects, a proband group consisting of students receiving school speech/language services for SLI and a comparable non-impaired control group and their families were included in the study. SLI probands in this study had a positive family history of language impairment. This study showed a significant correlation of the number of parents affected in each family.

Tallal et al (2001) support previous studies related to family aggregates in genetics and reported language impairment in a family including parents and siblings of SLI. Bishop and Edmundson (1986), Robinson (1987), Tallal, Ross and Curtis (1989) demonstrated a significantly increased frequency of affected primary and secondary relatives in language impaired as compared to control children.

- Environmental factor

There is little evidence pointing to environmental factor, biological or experiential factors associated with SLI. One factor examined has been parental language input. Although it is not possible to find evidence proving that language exposure is not a contributor, there remains little convincing evidence in support of the alternate claim that inadequate language experience contributes substantially to SLI (Bishop, 1992; Leonard, 1987).

- Neuroanatomical correlates

SLI is defined as a language deficit without evidence of frank neurological impairment. But this does not mean that there is no physical evidence associated with the language problem. There are few reports on brain structure and function in children with SLI.

Landau, Goldstein and Kleffner, (1980) conducted an autopsy on 8 brains of male children who had severe language problems, revealed bilateral cortical atrophy in the perisylvian region, extending from the central sulcus into the occipital lobes. Gyri in this region were abnormally small and increased in number relative to normal. Microscopic examination also revealed degeneration of the medial geniculate nuclei and cerebral peduncles. The child was multiple handicapped, so that it was difficult to generalize with other cases of developmental language disorder.

Thus, the recent research supports that there is a definite genetic and environmental influence on children with SLI. Rice et al (1996) proves that (a) males are more liable for SLI than females; (b) there is a definite influence of gender factors on language performance in children with SLI, (c) the liability for SLI increases substantially as a function of family relationship and in particular genetic relationship. Collectively, these data suggest that a genetic etiology is an important aspect of an etiologic account of SLI and support further efforts to identify the particular nature of this genetic contribution to SLI.

Morphosyntax

Morphosyntax is defined as the study of grammatical categories or linguistic units that have both morphological and syntactic properties.

Grammatical morphology pertains to the closed-class morphemes of the language, both the morphemes seen in inflectional morphology (e.g.: "play*s*", "play*ed*") and derivational morphology (e.g.: "fool", "fool*ish*"), and function words such as articles and auxiliary verbs. Grammatical morphology shares the characteristic of representing a sort of ivy growing up between and upon nouns and verbs. The division between syntactic structure and grammatical morphology is somewhat artificial. For example, auxiliary verbs are needed for framing wh-questions using the passive voice. In turn, the form that pronouns take is dictated by their structural position. Pronouns serving as the object of the verb assume the accusative case, for example, (*Mary saw him* and not *Mary saw he*). These interrelationships make it clear that problems with grammatical morphology will have ramifications for syntactic structure and vice-versa.

Acquisition of Morphosyntax in typically developing children

The development of language is very complex in children. By one year of age, children produce one – word utterances, which is evolved from the pre-linguistic stage (babbling, cooing etc). Although one word utterances continue to occur, toddlers may begin to combine words into two-word utterances around 18 months of age. At one time, it was thought that in advancing to two word utterances, toddlers immediately achieved correct word order or grammar. Characteristics defining true two word utterances would include the production of true two words, no distinct pauses between the two words and a single intonational contour that envelops both words as in adult phrases.

The transition between single-word and two-word utterances occurs at around 18 months of age (Owens, 1996; Reich, 1986). During this transition toddlers may struggle through trial and error to produce more than one word. The forms of toddlers various attempts at expanding their single-word utterances have been described as transitional phenomena (Dore et al., 1976; Owens, 1996; Reich, 1986). The transitional utterances from 2 to 5 years of age are as follows.

a) Two to three years

Word combinations are primarily used in this stage. The child has beginning phrase and sentence structure. The average Mean Length of Utterance is 2.0- 4.0.The child combines three or four words in subject + verb + object format (e.g.: “Mommy wash clothes”). Telegraphic speech is usually used here. Most sentences are incomplete. The child expresses negation by adding “no” or “not”. The child frequently asks yes-no question and wh- questions. “Why” is the favorite question in this age.

b) Three to four years

Children in this age use simple (regular) plural forms correctly. For example, they accurately say boys, cows etc. Irregular plural forms also emerge. For example, 'feet' instead of 'foot', 'mice' instead of 'mouse'). Consistent use of "is", "are", "am" in sentences are also evident in this stage. The child uses contracted forms of modals (e.g.: can't, won't). The possessive marker /s/ is consistently used (amma's sari, anna's book). The reflexive pronoun "myself" emerges between 43 to 48 months of age.

c) Four to five years

A child consistently uses "could, would" in sentences. Irregular plurals (eg: feet, women) and comparatives (eg: "shorter, faster") are used consistently.

Thus, major linguistic development are seen in aspects of different word combinations, plurals, pronouns in children of age between 2-5 years. This linguistic development also follows a developmental order and this present study focuses on the linguistic development of various morphosyntactic aspects like conjunctions, negation, case markers, PNG (person-number-gender) markers and tenses in children with Specific Language Impairment between 2 – 5 years of age learning to speak Kannada, a south Indian language.

Conjunctions

Conjunctions are class of connectors that indicate the relationship between joined parts of an utterance. The two general classes of conjunctions usually identified are coordinate and subordinate conjunctions. The distinctions between these types are not always clear.

i) *Coordinate conjunctions* join two separate units in a manner that gives them equal emphasis. The three conjunctions generally used are *and, but,* and *or*. *Not, than, as well as, rather than,*

like, along with correlative pairs such as *either-or* and *both-and* are also used to join together units that have the same explicit or implied structure.

Ex: she washes dishes *and* he dries them.

I wanted a roll, *not* bread.

Kathy *or* Tom will go.

Maria is tall *like* Tanya.

ii) *Subordinate conjunctions,* like coordinate conjunctions join clauses together to make them into single sentences. Subordinate conjunctions join only clauses, and always in such a way as to make one of them the main clause and the other subordinate to the main clause. These include *because, if, whether,* and *although*. Others in this group are adverbs or prepositions or both (eg: *since, before, so, when, until).*

Ex: she left *because* it was dark.

Since you are here, have some fruits.

Don't go *until* you see this.

I did it *like* you told me.

Conjunctions can occur either in between noun phrase (NP) or verb phrase (VP). In NP conjunction, the coordinating members occupy the same level of structure ie, subject in the underlying sentences. In Kannada, verbal participle constructions are also co-ordinations of VP's. However, they vary in terms of their syntactic forms.

NP conjunctions in Kannada are

a) Both /u:/ and /mattu/ occurring together

b) Only /mattu/ occurring in a sentence

c) Only /u:/ occurring in a sentence

d) Only a pause occurring where the conjunctive particle is not overtly present.

Other coordinators in Kannada are – /athava/, /a:dare/, ildidre/.

Studies are scarce regarding the development of coordinators because they are considered as function words rather than content ones. Katz and Brent (1968) provided some information about the comprehension and production of connectives *because, then, therefore, but, although* and *and*. Their data were based on a corpus of spontaneous speech. Some of the data clearly suggested that the meaning of *because, then* and *therefore* changes between 1st and 6th grade. While the first grader may use these words in his spontaneous speech, it appeared that the temporal relations of *because* are better understood than the causal ones, and the younger children did not seem to have more than a sequential, as opposed to causal, meaning for *because*. All the three words (*because, then* and *therefore*) were used as if they were marked semantically as then, with no causal relations implied. In addition, when the connectives like *but* and *although* were used, children in the first grade showed little evidence of comprehending such constructions. Finally a developmental trend was observed revealing an increase from grade 1 to 6 in the preference for the linguistic order of clauses to mirror the temporal order of cause and effect events. These results reflect a general cognitive developmental awareness of cause and effect by the older children and, at a somewhat more abstract level, may reflect the same kind of perceptual linguistic interrelation.

Menyuk (1969) reported that the technique of conjunction had been well accomplished for most children by 3 years of age. Nursery children were using (42% of the total group) correctly all aspects of conjunction. 81 % of grade 1 students were using correct conjunctions, although

some errors in tense sequencing were still made by 35 % of them. Conjoining with *and* was produced by all members of the nursery group.

Bloom (1970) reported that the earliest forms of conjunction seem to occur merely by juxtaposing the words together around 2 years. This seems to be the primal base upon which conjunction is built.

Nelmark and Slotmick (1970) studied connectives *and* and *or*. Children from 3rd to 9th and college students were selected and experiment was specifically designed to study *and* and *or*. Only college students achieved success on majority of items. Children in grade 9 were better compared to 3rd grade children. Analysis of the errors revealed that most of the children interpreted *or* as *and*.

Sreedevi (1976) reported that coordinate constructions were not present in the spontaneous speech sample of 2 plus year old Kannada speaking children.

Negation

Negative is considered as a formant which combines with parts of the sentence to constitute negation in sentence (Klima and Bellugi, 1966). If a morpheme negative is present in the deep structure of a sentence then by a series of transformations the sentence will be realized as a negative sentence.

Some of the negative markers in English are '*not*' and a small set of negative words including the negative pronouns '*nobody*' and '*nothing*', the negative determiner '*no*', the negative adverbs '*never* and *nowhere*'.

Klima and Bellugi (1966) indicate that the syntactic expression of negation in children's speech passes through three stages.

"Negatives in the early stage (stage I) do not occur in the nucleus of the sentence nor there are auxiliary verbs. The element which signals negation is *no* or *not* and this element either precedes or follows the rest of the utterance.

Ex: No singing song

Is this cap? No.

These sentences consist largely of nouns and verbs without indications of tense and number. Inflections, prepositions, articles, adjectives, adverbs and auxiliary verbs rarely occur. At this stage, there is no clear evidence that the child even understands the negative embedded in the auxiliary of adult speech without atleast some reinforcement. In this stage, the child employs extremely limited means for negative sentences, but in subsequent periods, there may be an initial sentence adverb *no*, which is not a sufficient or necessary part of sentence negation.

In period 2, the basic structure of a negative sentence may be represented as,

S -→ NP – (NEG) – VP

where the formant negative has possible lexical representatives as '*can't, don't, not*' and occasionally '*no*'. The auxiliary verbs can be thought of as occurring in the speech of the children only when accompanied by a negation. Since it is a fact that the auxiliary verbs do not occur in questions or declarative utterances at this stage, the shape of the sentence at this stage is as follows.

Neg→ no

Not verb Negation → can't

Verb Negation don't

where the particular selection of the negative is determined by the main verb with '*don't*' and '*can't*' restricted to occurrences before instances of nonprogressive main verbs. The negative element is also found within the sentence, but not connected to an auxiliary verb, as in '*He no bite you*'.

In the period 3, the auxiliary *do* and *be* appear in declarative sentences and questions as well as in negative sentences.

S → Nominal – Aux – predicate main verb

Aux → tense – v Aux – Negation

v Aux → do

can

be

will

where *be* is restricted to predicate and progressive and is optional, *can* and *do* are restricted to nonprogressive main verbs.

Authors have not reported on the use of negative adjectives and it may be because they did not appear in the language of their three children of 2 ½ years old. Menyuk (1969) in her study of 4-7 year old children found aspects of negation developing in stages similar to those of Klima et al (1966).

Bloom (1970) distinguished three aspects of negation in German and English languages.

1) Non existence refers to the case for which the object referred to no longer exists. Ex: 'No more'.

2) Rejection, where the child refuses some aspect of the environment. Ex: 'No dirty shoes'.
3) Denial, in which a child denies that something asserted.

Wode (1977) proposed 4 early stages for the acquisition of negation.

Stage 1: One word negation – '*no*'

Stage 2: Two or more word negation – '*no more*'

Stage 3: Anaphoric negation – *'no, outside, no, I want to go outside'*

Nonanaphoric negation – *'no close I can't close the box'*

Stage 4: Intrasentential negation – *'I can't open it'.*

Sreedevi (1976) while studying the aspects of acquisition of Kannada by 2+ year old children found that negative transformations employing mere addition of 'll', 'ill' and 'be:da' are acquired earlier than other types of negative morphemes transformations.

Prema (1979) reported that the structure of the negative sentences in 5 – 6 year old Kannada speaking children is similar to the adult form. Negative particles like /illa/, /alla/, /beda/ are used in adult form, but bound forms are very few.

Roopa (1980) reported that the negative marker /nahi/ in Hindi in the preverbal position of a sentence is indicative of negation in 4-5 year old Hindi speaking children, but word negations were not found.

Case marker

The basis of case grammar is meaning. The semantic aspect of language assists us in "making sense" of sentences. The meanings of words and how words are related to each other

affects our understanding of sentences. Some words, because of their underlying meanings, cannot go together inspite of the grammatical roles they fill.

Ex: The girl washed the car. The word tree cannot be substituted here though both words are nouns. Specifically, the girl can execute the verb, the tree cannot.

The categorical unit, the noun phrase in this semantic relationship, also carries the potential for modifiers as well as an optional preposition. In the example, the noun phrases (*the girl, the car*) could have carried modifiers (*tall, young, and old, blue, etc*).

According to Fillmore (1968), there are 7 types of case markers

1) Agentive, where the initiator of the action is indicated by the verb. Ex: *Mary* baked a cake.
2) Dative in which the animate is affected by the action or state indicated by the verb. Ex: Bill gave *Mary* a present.
3) Experiencer, the animate who experiences an event or internal state. Ex: *Mary* felt the cool breeze.
4) Facitive, where an object or being that results from action is indicated by the verb. Ex: Bill assembled the *toy.*
5) Instrumental, where the object is used in the action indicated by the verb. Ex: Bill tightened the bolt with a *wrench*.
6) Locative in which the location of the action or state indicated by the verb. Ex: Mary's car is in the *garage*.
7) Objective, where the object or being affected by the action is indicated by the verb. Ex: Bill painted the *house*.

In Kannada, there are 6 types of case markers as described by Nayak (1967).

1) Accusative: these are forms with zero morph that are identical with nominative form (a noun stem occurs as a subject lacking case suffix). /–anna/ is used to depict the accusative form of case marker. Ex: marav annu kadidenu ("I cut the tree")

2) Instrumental: /--inda/, /--linda/, /--agenda/ are used to denote the instrumental form. Ex: “mane yinda” (from the house), “kalin inda” (from the legs).
3) Dative: allomorph /--kke/ /--ke/ occurs after neuter nouns with final /a/, /--ge/ occurs elsewhere. Ex: “mara kke”(to the tree), “tayi ge”(to the mother).
4) Genitive: -- a is the genitive morpheme considered here. The /– a/ occurs only after stem vowels (the inherent final vowel of a stem, which is part of the root and not merely added for a citation form). Ex: “hudugan a” (of the boy, boy’s), “hudugi ya” (of the girl, girl’s).
5) Locative: /--age/, /--alli/ is used after neuter nouns. Ex: “mane yalli” or “manage” (at/in the house), “Kaveri yalli” (at Kaveri).

PNG markers

Pronouns are a group of forms (eg: *he, she, they*) that can replace nouns or entire noun phrases. The substitution process is called as pronominalization. Through this process pronouns become equivalent to the words they replace. In most cases, pronoun usage is based on anaphoric reference, in which pronoun refers to a person or thing. For example, speakers generally do not use the personal pronoun ‘*he*’ until they have mentioned who it represents, as in *John ran away because he was scared.*

Personal pronouns, the most complicated forms, are used to replace nouns referring to persons. Pronouns can take various forms, depending on the context. Personal pronouns vary depending on the number, person, gender and case. Reflexive pronouns are forms that “reflect” back on the preceding subject of a sentence, as in *When I looked in the water, I saw myself.* Demonstrative pronouns include the demonstrative forms, *this, that, these* and *those,* which replace nouns rather than modifying them. Ex: *That* is mine. Indefinite pronouns are compound words composed of *any, every, no,* and *some* combined with *one, thing, place or body*. They are

named indefinite for the fact that they do not have a specific referent, as in *Bring me something to drink.*

The pronoun system is complex and confusing. Therefore, it is not surprising that pronouns develop slowly and variably in preschoolers. The earliest forms which occur in stage I are *this, that, it*. Most personal pronouns emerge after stage II. Subjective pronouns (*I, you, he, she, they*) tend to be mastered earlier. Next, objective pronouns (*me, him, her, them*) are mastered. The possessive pronouns (*his, her, theirs*) are acquired later. The first person forms (*my, mine*), are acquired much earlier. The last pronouns to be achieved are the reflexive pronouns (*myself, himself, herself, themselves*) are acquired much later after stage V.

As preschoolers attempt to use pronouns some common substitutions occur. Most commonly, preschoolers substitute the objective for the subjective case (eg: *me/I, him/he, her/she, them/they*). With the exception of reflexive pronouns, most pronouns are mastered by approximately 5 years of age.

Person	Subjective	Objective	Possessive
First	I, we	me, us	Mine, ours
Second	You	You	Yours
Third	He, she, they, it	Him, her, them, it	His, hers, its, theirs

Table1: English personal pronoun system

In Children with SLI are slow to develop certain pronominal forms. Reports of difficulties with accusative pronouns (e.g.: *Don't push me; Mommy kissed him*) are scarce. Schelletter (1990) used a measure that assigned developmental scores to different indefinite and personal pronouns. The pronouns used by 9 year old children

with SLI were dominated by earlier developing forms, in contrast to those used by seven year old controls. The pronouns used by the children with SLI more closely resembled the pronouns used by five year olds. Later developing forms such as *anything*, *everybody* and *herself* were used relatively infrequently if at all.

Nominative case pronouns (e.g.: I, he, she, they) have received the greatest attention from investigators. Loeb and Leonard (1988), Leonard (1982a), Lee (1966) and Menyuk (1964) all reported instances of Accusative for nominative case pronouns (e.g.: *Him eating popcorn*) that seem higher in frequency than is reported for younger normally developing children. Loeb and Leonard (1991) compared the nominative case pronoun use of preschoolers with SLI and MLU controls, and found greater use of accusative for nominative forms by children with SLI. Moore (1995) repots that hen five year olds with SLI in her study made a greater number of pronominal case errors than did age controls, but not more than a group of three year olds matched according to a measure of syntactic development. In longitudinal studies done on children with SLI, Eyer and Leonard (1995) repots that there were many instances of accusative pronouns in place of nominative pronouns were noted. Early in the study, this pronoun use occurred in sentences with no verb morphology (e.g.: *Me put that up; Me like doughnut place*). By the end of her study, this pronoun pattern was still evident even though verb morphology was more extensive.

Moore (1995) reported that case errors involving the third-person feminine pronoun (eg: *her sleeping*) were common than those involving the masculine (e.g.: him going). This finding was explored in greater depth by Ogiela (1995). Of particular interest was the pattern of substitution error as a function of the degree to which the nominative, accusative and genitive forms of the same person and gender shared phonetic material.

She also reported that these children were more likely to produce *her* in contexts requiring *she* than to produce *him* or *he*. Also, in occasional instances in which a nominative pronoun replaced an accusative form.

Tenses

Tense is used to show the relation between the action or state described by the verb and the time, which is reflected in the form of the verb. There are two basic tenses in English; the present tense and the past tense. The present is like the base form, although the third person singular adds /-s/. Regular verbs add /*-ed* /or /*–d*/ to show the past tense, while irregular verbs change in many different ways, or not at all in some cases.

Regular past Tense inflections

The term regular suggests that it always takes the same basic form, *-ed*. However, there are, again, three phonologically based allomorphs, */-d/* (leaned), */-t/* (worked) and */-id/* (painted), which depend on whether the preceding consonant is voiced, voiceless or as /t/ or /d/.

The primary meaning of past tense is "earlierness" (Brown, 1973). In this sense, past tense simply refers to an event that occurred prior to the time of the utterance. The earliest past tense verbs were irregular forms referring to common daily activities – *ate, sat, ran* and so forth. Once the regular inflection appears, it generalizes to the irregularize past tense words. Eventually, the irregular and regular forms are mastered.

Third person present tense singular inflection

The regular third person present tense singular verb inflection, */-s/*, and its irregular counterpart are achieved earlier. Here, the regular inflections includes three allomorphs, */s/* (eg: *She hop<u>s</u>*), */-z/* (eg: *He run<u>s</u>*) and */iIz/* (eg: *She wash<u>es</u>*), which follow the same phonological patterns as the possessive and plural inflections. The irregular forms are limited to verbs such as do/does and

have/has. These verb forms are required by English grammar when the subject of the sentence is in the third person. Most sentences in which the inflections are required include the subject and verb in its present tense. Ex: *He runs fast* and *He run fast*; although the latter sounds strange, it carries no less information.

The regular inflection is mastered earlier than the irregular forms. Common observation is that the regular inflection is overgeneralized with several other regular versus irregular distinctions. As a result, preschoolers may be heard to produce such variations as, *He sure doos good, huh?*

In Kannada, the suffix which forms the present-future stem has two allomorphs –utt-, -utta-/-t-, -ta-. This suffix takes personal suffixes. Usually the future or the habitual present are denoted by this suffix. Sometimes it denotes momentary present also.

bar- "to come": barutta-/batta – "coming"

baruttane/battane "he comes, he will come"

baruttale/battale "she comes, she will come"

For past tense, the personal suffix –t, -d, -i are prinicipal allomorphs. Generally, -i- occurs in bare stems as well as before the singular neuter suffix. The past tense also forms bare stems, past participles and contingent stems.

Mad (u) "to do": madidenu/madde "I did"

For future tense, the suffix used is /-uv/, which is added to the verb base. Participles are also formed with this suffix.

bil- "to fall": biluvenu "I will fall"

kel- "to listen": keluvenu "I will listen".

Tense marking in children with SLI

Rice et al (1995) designed to test the predictions of an extended period of optional infinitives, OI (the first stage of acquisition of infinitives, the only verb forms) for English speaking children

with SLI. These predictions focussed on optional tense marking and two related properties: knowledge of the contexts where finiteness is to be expressed in sentences and AGR (verb agreement marking) marking on finite forms of verbs. The morphemes investigated *were ' –s, -ed, -be* and *do'* forms. The main findings were in the following: For each of the morphemes, as predicted, children in the SLI group showed a lower level of use in obligatory contexts than children in either of the two control groups. Although their age peers used these morphemes in 90 % or more of the required contexts, children with SLI used them in only 25 % - 48 % of the required contexts. Younger, nonaffected children at equivalent mean lengths of utterance had percentage values in between the SLI and age-matched groups, 45%-70%. Eventhough children in the SLI group had a high probability of omitting tense marking, possible errors of use were very rare and when a finite form was used, it was likely to the verb form specified by the number and person features on the subject. Tense marking is an optional, underspecified area of the grammar for affected children, an underspecification of the same sort as apparent for younger normally developing children but markedly extended in the older children with SLI.

Past Tense pattern in children with SLI

Leonard, Bortolini, Caselli, McGregor and Sabbadini (1992), Leonard, Eyer, Bedore, and Grela (1997) and Oetting and Horohov (1997) reported that children with SLI did not differ from MLU controls in the use of irregular past forms even though they showed lower percentages of use for the regular past *–ed*. Johnston, Miller, Tallal and Curtiss (1994) also found that chidren with SLI were similar to younger controls in their use of irregular past; however, they also found no differences for regular past. The groups were matched on the basis of scores on an expressive language test that focused on grammatical morphology as well as syntactic structure.

Oetting and Horohov (1997) compared to the regular and irregular past use of 6 year old children with SLI, age controls, and MLU controls. The children with SLI were similar to the

MLU controls in their use of irregular past, but used regular past forms with lower percentages. The children with SLI were most limited in their use of regular past with words of low frequency of occurrence. The regular past use of both the children with SLI and MLU controls was influenced by the phonological characteristics of the verb.

Moore and Johnston (1993) asked whether the difficulties with past forms in 5 year old children with SLI derived exclusively from the fact that past time must be marked on the verb. They devised tasks in which children were obligated to complete sentences with past verb morphology (regular or irregular) or with a temporal adverb such as *yesterday* or *last night*. The children with SLI resembled a group of 3 year old controls in their use of past forms and a group of 4 year olds in the use of temporal adverb. The greater difficulty with past verb forms was probably due to special difficulties with verb morphology rather than notions of time.

Summary

1) The first morphological distinction is number at 1.10 years followed by diminutive of nouns. The imperative with its immediate expressive character also appear very early.
2) Classes based on relational semantic criteria – cases, tenses and persons of the verb – emerge later than those with concrete reference.
3) Noun endings indicating abstract categories of quality and action continue to be added until as late as seven. The only noun suffixes learned before three are those of clearly concrete or emotive reference.
4) Finally grammatical gender is responsible for what is perhaps the most difficult. At first the child uses the feminine past tense ending for almost all nouns regardless of their gender markings even though he knows they are semantically masculine (ex: /papa/).

5) Later the child starts the usage of masculine past tense for many nouns that are semantically feminine. The verb inflection is simply not treated as having semantic context. The child will first use one stereotyped case ending for all nouns in that case regardless of gender.

SLI children often show markedly different linguistic characteristics from one another. However, many SLI children are characterized by varying degrees of morphological & grammatical impairments in the comprehension & expression of language (Bishop et al, 1994). Within this group potentially important differences exist. For example, SLI child may present with or without severe articulatory or phonological impairment, or without an impairment in the comprehension of language. More significantly, many of the children who present with this general pattern of language impairment is more at the area of morphosyntax which is mainly seen at 3-4 years of age.

Earlier studies had suggested that during the period of development, lexical acquisition in children with SLI was slow. Measures obtained from these children one year later indicated that they still exhibited significant language. At this point, however, the acquisition of morphosyntax appeared to be their obstacle.

Dollaghan (1987) seems to have been the first to apply a fast-mapping paradigm to the study of children with SLI. She studied a group of 4 to 5 year old children with prominent deficits in the production of morphosyntax. The children were found to be comparable with a group of age controls in correctly associating the nonsense name *koob* with an unfamiliar object on a comprehension task. However, the children with SLI performed below the level of the control children in their production of this word.

Rice, Buhr and Nemeth (1990) employed a task in which five unfamiliar names from each of the categories of objects, actions, attributes, and affective states were presented to five year old

children with SLI in a television story format. The words were incorporated into stories and appeared ten times each. The children with SLI showed poorer overall mapping ability on a comprehension task than did both age controls and MLU controls. The names of actions were especially difficult for each group of children.

Verbs differ widely in the types of meanings they convey. Thus, it is possible that differences between children with SLI and controls might have as much to do with the distribution of the types of verb meanings employed in the study as with the fact that they were verbs. Kelly and Rice (1994) obtained preliminary evidence of this type by examining children's preferences for interpretation of novel verbs enacted in videotaped scenes. The distinction between change-of-state verbs (e.g.: *break*) and motion verbs (e.g.: *jump*) was of primary interest. Novel actions corresponding to these meaning types were presented simultaneously on a split screen, and the children heard nonsense words presented in a short sentence frame that was not biased toward either type of meaning. The children selected the scene that they felt corresponded to the sentence. In another condition, the children labeled the scenes. A group of five-year-olds with SLI and a group of MLU controls showed no preference according to meaning type. In contrast, a group of age controls showed a clear preference for a change-of-state interpretation.

Optional infinitives (OI)

Wexler (1994) has shown that there is a stage in the development of typically developing children in which they do not obligatorily mark tense in main clauses but in which they know the grammatical properties of finiteness. This is known as optional infinitive stage. In non-English language young children sometimes use infinitival forms of verbs where they should use finite forms. Ex: samples from French-speaking children yield declarative utterances in which the main verb is an infinitive such as:

Voir l' auto papa.

See (-finite) the car of daddy.

During the same stage of infinitival use, the children show that they know about the related linguistic processes that apply to finite verbs. Ex: in French (Weissenborn, 1994) even every young child knows that finite verbs precede the negative marker, *pas*, as in utterances such as

ll est *pas* mort

He is (+ finite) not dead

and that non finite verbs follow *pas*, as in utterances

pas manager la poupee.

Not eat (-finite) the doll.

This OI stage in typically developing children, at the initial emergence of their grammar is an important principle of morphosyntax.

Children with SLI use certain grammatical forms in contexts where those forms are obligated in the adult grammars. This is well documented for –s, -ed, and, to a lesser extent, be forms (Bishop, 1992; Leonard, 1989; Rice, 1991). The OI account raises the possibility that these facts are a part of the same underlying phenomenon, that of an EOI (Extended Optional Infinitive) stage in the morphosyntax of children with SLI. If children with SLI are adhering to the linguistic constraints that guide normative acquisition of morphosyntax, then we would expect that they, too, would demonstrate an OI stage. What would distinguish them would be

a) A later-than-expected emergence (ie, first uses) of the targeted grammatical forms
b) Once finiteness emerges, a lower-than-expected optional use of finite forms in contexts where the adult grammar requires finiteness and
c) A longer-than-expected period of OI, perhaps into adulthood.

Linguistic theory

The following are the linguistic theories pertinent to Specific Language Impairment which supports that the morphosyntax of children with SLI is impaired.

The surface hypothesis

Leonard and his colleagues (Leonard, 1989, 1992b; Leonard, McGregor and Allen, 1992; and Grela 1997) proposed an account of the grammatical morpheme limitation of English-speaking children with SLI that has been termed the surface hypothesis because of its emphasis on the physical properties of English grammatical morphology. This account assumes a general processing capacity limitation in children with SLI but assumes also that, in the case of English this limitation will have especially profound influence on the joint operations of perceiving grammatical morphemes and hypothesizing their grammatical function.

Upon reviewing the literature, Leonard (1989) observed that most of the closed class morphemes that distinguished English specking children with SLI from their MLU controls were morphemes of short relative duration. These included the third person singular –s and past tense *–ed* inflections, possessive '*s*, articles, copula and auxiliary *be* forms, infinitival *to*, and the complementizer *that*. In contrast, the progressive *–ing* seemed least likely to produce differences between children with SLI and MLU controls.

According to the surface hypothesis, children with SLI are capable of perceiving word final consonants and weak, nonlengthened syllables, but they have limited processing capacity – best thought of in terms of reduced speed of processing - that is severely taxed when such challenging forms play a morphological rule. That is, when these forms are separate morphemes, the child must perform additional operations, such as discovering the grammatical functions of the forms and placing the forms in the proper cell of a morphological paradigm. It is assumed that the additional operations combined with the

brevity of the morphemes will result in morphemes sometimes being processed incompletely and hence requiring a greater number of exposures before these brief grammatical forms are established in the grammar.

The additional operations assumed when a form plays a morphological role are essentially described by Pinker (1984) in his proposal of how children build paradigms. A paradigm is a matrix representation of a set of related morphemes. Paradigm contains cells, each representing a conjunction of levels of different dimensions. Thus, a paradigm may contain the dimensions of NUMBER and PERSON, with the levels of singular and plural, and first, second, and third person, respectively. Paradigms are not limited to inflections; freestanding closed-class morphemes such as auxiliaries and articles are also assumed to enter into paradigms.

According to the surface hypothesis, these additional operations can cause problems, given the reduced speed of processing in children with SLI. For example, under typical conditions, these children can detect the final consonant in both laugh and laughed. However, the extra operations required in analyzing the latter increase the likelihood that it will be reduced to its bare-stem counterpart. Consequently, English speaking children with SLI will require a greater number of encounters with each inflected form before a sufficient number of these exposures can be fully computed and properly placed in paradigms.

According to Leonard (1989), this slow development of grammatical morphology in English-speaking children with SLI has negative consequences elsewhere in the grammar. For example, passives should be especially late in making their appearance in these children's speech, for the morphemes needed to identify that these sentences are not in canonical subject-verb-object order are brief in duration. In addition, to the extent that children make use of surrounding closed-class morphemes to determine the grammatical

category of new words (eg: *-ed* suggests a verb, the suggests a noun), the lexical development of children with SLI will proceed slowly.

Missing features

In the missing feature hypothesis, Gopnik (1990a, 1990b) claimed that SLI grammar is unusual in that it is missing the notion of obligatory marking of grammatical features. This theory also claims that such grammatical features are not represented underlyingly in Universal Grammar in conjunction with the rule-governed behaviour of unimpaired speakers. These features include number, gender, animacy, mass/count, tense and aspect. This claim does not entail that grammatical features will never be marked out, but rather, that their marking will be perceived as totally optional by SLI individuals. Thus, marked forms will be interspersed with unmarked forms in their speech, and they will not be reliable in judging the absence of these morphemes in grammatically judgement tasks.

Impaired morphological rule

Gopnik's more recent hypothesis (Gopnik, 1994), the missing rule hypothesis, stated that the ability to construct implicit rules is impaired in children with SLI. This hypothesis postulated that such individuals are able to compensate for this kind of deficit by learning the forms in questions as unanalyzed lexical items and by using explicitly learned rules. This prediction meant that individuals with SLI will not recognize that inflectional markings are obligatory and that they will have problems with producing the correctly inflected forms of nonsense words. These inabilities should be reflected in their online processing. Furthermore, Gopnik's hypothesis predicted that characteristic errors in the misapplication of explicit rules will occur. For instance, forms that encode conceptually tangible information, such as, plural, will be easy to learn lexically, but forms that mark less

conceptually tangible information, like agreement, will be much more difficult to learn. It is therefore, hypothesized that when semantic information carried out by these morphological markers is not obligatorily represented, individuals with SLI are likely to use explicit words to carry the important semantic meanings. In this way, the missing rule hypothesis would account for use of overt pronouns to mark person, pattern of lexical searching and omission of obligatory inflections on both noun and verbs.

These theories suggest that the morphosyntax in children with SLI is impaired which is mainly supported by missing agreement theory by Gopnik, (1990).

Summary on morphosyntax of children with SLI:

The grammatical errors in children with Specific Language Impairment are well documented for –s, -ed and to a lesser extent, 'be' forms (Bishop, 1992; Leonard, 1989; Rice, 1991). The error or delay or deficits of morphosyntax in children with SLI seen are:

- A later than expected emergence (first uses) of the target grammatical forms
- Once finiteness emerges, a lower than expected optional use of finite forms in contexts where the adult grammar requires finiteness and
- A longer than expected period of optional infinitive perhaps into adulthood.

Predictions that apply to –s, -ed, 'be' and 'do' are as follows:

1. For –s and –ed marking on lexical verbs, bare stems (that is, the nonfinite form of the verb) may optionally be used where inflected forms are required.

2. For –s, in contexts other than third person singular, there will be no overt marking, that is, "they walks" is predicted to not be a productive error.

3. –ed will be restricted to past tense context.

4. Auxiliary do may be omitted.

5. Auxiliary and main verb ‘be’ may be omitted.

6. When ‘be’ and’ do’ forms are used in contexts where the adult grammar requires a finite form, children will give correct agreeing forms.

In recent research, it is opined that these morphosyntactic features or the language structure and form can be analysed manually or using softwares. One such software is **S**ystematic **A**nalysis of **L**anguage **T**ranscripts **(SALT).**

SALT, the **S**ystematic **A**nalysis of **L**anguage **T**ranscripts developed at Language Analysis Lab, University of Wisconsin-Madison (2006), is a computer program designed to analyze and interpret language samples from one or more speakers during a communicative interaction. Language sample analysis has long been held as a valid indicator of expressive language performance in children. Several factors, however, have limited its general use including a lack of standardized procedures for eliciting language samples, validated measurement categories, normative data, and relevant interpretation strategies. Analyses of data obtained from these research projects on school children have lead to the development of standardized language sampling procedures, language sample norms and interpretation strategies that can be used in the evaluation process for determining the existence of a handicapping condition in expressive language. These data also have direct implications for determining special education program intervention strategies and in monitoring student progress. The SALT program provides clinicians and researchers with the means to transcribe language samples into a common format and to compute a series of general analyses of lexical, syntactic, semantic, morphosyntactic, pragmatic, rate, fluency, and error categories.

Thus, the speech samples obtained in this study has been analyzed on morphosyntactic features such as negation, conjunction, case markers, tenses and PNG markers with the help of SALT software.

NEED FOR THE STUDY

There have been several studies done on acquisition of various language components in normal children but not much in children with SLI. Thus, it is necessary to understand the development of various language components in children with SLI that would give a deep insight about the problem. This would help us in the assessment and management of the same. The study of development of morphosyntactic structures (both comprehension and expression) would help us in the assessment as well as the treatment aspect in case of children with Specific Language Impairment.

OBJECTIVES OF THE STUDY

- To study the development of morphosyntactic pattern (Person-Noun-Gender markers, case markers, negation, tense, conjunctions) in typically developing children and children with Specific Language Impairment in Kannada.

Further the development of the above morphosyntactic patterns in receptive and expressive domains will also be investigated.

CHAPTER III

METHOD

The objective is to study the development of morphosyntactic patterns (in both comprehension and expression) in children with Specific Language Impairment in Kannada.

Participants

Two groups of participants – Control group (Group I) and Experimental group (group II) in the age range of 2-5 years were involved in the study. Each group consisted of 5 participants with their mother tongue as Kannada. Typically developing children were considered under group I and children with Specific Language Impairment under group II.

For group I (*Table 2*), Participants were selected from nursery, pre-primary schools, baby sitting centers, play house and for group II (*Table 3*), Participants were chosen from the Department of Clinical Services at the All India Institute of Speech and Hearing, Mysore. Participants in group I was screened with a 10 point disability checklist developed by WHO to rule out if there was any other associated problem (*Appendix 1*) typically developing children. For selection of participants under group II, an inclusionary criterion as given in *Appendix 2* was considered.

Name of the subject (ST)	Age/sex
ST1	2 years/female
ST2	2 ½ years/female
ST3	3 years/female
ST4	4 ½ years/female
ST5	5 years/female

Table 2: Participants of group I (typically developing children)

where ST indicates subject in typically developing group.

Name of the subject (SC)	Age/sex
Sukruthi	3 years/female
Dhanalakshmi	3 ½ years/ female
Vishwas	3 ½ years/male
Shashank	3.11/male
Krishna	4 years/male

Table 3: Participants of group II (children with SLI)

where SC indicates subjects in clinical group

Procedure

Expression

Speech and Language samples of the participants were audio recorded using a digital recorder. The samples were collected individually for thirty minutes duration (10 minutes for each task) [1] . The recording was done in therapy rooms of the All India Institute of Speech and Hearing, Mysore, children's home and in school set up. There were three tasks to elicit the speech sample.

1) *Description of pictures*: The stimulus used to elicit speech and language was a series of pictures taken from UNICEF manual (pictures were chosen in such a way that all the five aspects – tenses, case markers, PNG markers, conjunctions and negation could be elicited). The picture was shown to the child and he/she was asked to describe the picture shown. Cues were given by the examiner or the mother for initiation of utterances. The samples were audio recorded with the help of a digital recorder.

2) *Free play/ a structured play:* A structured play situation was created e.g.: a small birthday party event or a classroom was created and the child was expected to enact or describe about the situation. Cues were given by the examiner or the mother for initiation of utterances. This sample was audio recorded with the help of a digital recorder.

3) *Interaction of mother and child:* A common situation of mother feeding snacks or the food to the child was sampled. The general conversation between the mother and the child about the food or the snacks was audio recorded. A digital recorder was used for audio recording the sample

[1] The duration of the sample was increased if the verbal output is not adequate.

Comprehension

Pictures of the five morphosyntax aspects - tenses, case markers, PNG markers, conjunctions and negation were taken from the UNICEF 'With a little bit of help, Early language training kit" to check for comprehension. 10 pictures in each morphosyntactic aspect were selected as stimuli. The children were asked to point to the correct picture when he/she was asked for. A total of 50 pictures were used to check the comprehension of these specific morphosyntactic aspects.

Scoring for comprehension ability

A correct response was given a score of 'one' and incorrect response a score of 'zero'. 70 % criterion was used to consider that a particular morphosyntactic aspect is acquired i.e., a particular aspect of morphosyntax was considered as acquired only when 70 % correct responses are obtained. Specific errors exhibited by the child were noted.

Analysis

The speech samples were transcribed using broad International Phonetic Alphabet and fed into SALT software for analysis. The data obtained was analyzed.

1) The speech samples of all children in each group were combined. The whole data was classified into different morphosyntax types – tenses, negation, conjunction, PNG markers and case markers.
2) Developmental order among the aspects five aspects of morphosyntax are chosen, in the age range of 2-3, 3-4, 4-5 are discussed in both typically developing group and clinical group.
3) The deviant utterances present in children with SLI (clinical group) are described and discussed.

CHAPTER IV

RESULTS AND DISCUSSION

Ten children – five typically developing children and five children with specific language impairment in the age range of 2- 5 years were studied. The speech samples (description of pictures, narration and mother child interaction) were recorded from all the ten children. The samples were analyzed for five aspects of morphosyntax (tenses, negation, conjunction, PNG markers and case markers) and also with regard to the order of acquisition of each of the above five aspects.

Results of the study are presented under the following categories:

I. Development of morphosyntax in typically developing children
II. Development of morphosyntax in children with SLI
III. Deviant utterances seen in children with SLI.

I. Development of morphosyntax in typically developing children

Five subjects were involved in typically developing group in the age range of 2-5 years indicated as ST1, ST2, ST3, ST4 and ST5. The speech samples of the five children analyzed are presented below.

(i) Negation

Negative is considered as a formant which combines with parts of the sentence to constitute negation in sentence (Klima and Bellugi, 1966). If a morpheme negative is present in the deep structure of a sentence then by a series of transformations the sentence will be realized as a negative sentence.

ST 1

ST1 was 2 years of age and she did not use any specific structure for negation, but used more of nonverbal response for negating (head nod horizontally indicating 'No'). Other than nonverbal responses, no specific structure for negation was seen in her speech sample.

(M – Mother, C – Child, E – Examiner).

Sample illustration

M bikki be:ka ninge?

C (used non-verbal response to indicate no).

The negative particle forms were not observed in her speech sample.

ST 2

ST2 was 2 ½ years of age and the structure of negation used by her was /illa/ and /beda/. But most of the time, the nonverbal response was used for negating (non-verbal response mainly included nodding of head horizontally). Negation may be realized as either as a free or bound form (ie) suffix. In her speech, negation was realized as /be:da/ (modal negative) and /illa/ to indicate non-existence.

Sample illustration

M har ith annange biscuit kodla?

C ":hm, be:da" (along with head nod for no).

M illi anna oduthaidhane alva?

C "illa" (this was the correct expression).

ST 3

ST3 was 3 years of age and the structure of negation used by her was /illa/ and /be:da/. But most of the time, the nonverbal response was given for negating (non-verbal

response mainly included nodding of head horizontally). In ST3's speech, negation was realized as /be:da/ and /illa/.

Sample illustration

M i biscuit hesaru gotha ninge.

C "illa"

M mari i biscuit colour enu ma?

C "hm, gothilla nange" (verb + negative)

C "akka biscuit be:da" (don't give biscuit to akka).

C "table mele illa".

ST 4

ST4 was 4 ½ years of age and the structure of negation used by her was /illa/ and /be:da/. In her speech, negation was realized as a suffix like /be:da/ and /illa/.

Sample illustration

C beda ma i biscuit beku akka du''.

M am l kodthini a itha.

C illa i:ga beku'.

C amma parle-G beda, ide sa:ku, chennagide''.

ST 5

ST5 was 5 years of age and the structure of negation used by her was /illa/ /be:da/, /□ll□/ appropriately In her speech, negation was realized as a speech like /be:da/, /illa/, /□ll□/.

Sample illustration

M e tu biscuit beku ninge ?

C ondu be:ku, be:da mu:ru be:ku. (modal negative)

M a ithu ondu kodthini.

C hm, be:da mu:ru be:ku.

C “anna illa ma, appa thakondidru”. (Indicates non-existence)

C amma alla, appa koduthare. (Indicates emphatic negative)

To summarize the development pattern in negation, the pattern changed from simple non-verbal gesture to simple negative forms like /illa/ and /be:da/. One subject, ie, ST5 used /alla/ also. The 2 year old child used more of nonverbal mode for negating and 5 year old used the II second stage (can’t, don’t) of negative forms given by Klima and Bellugi (1966). Emphatic negative pattern was also observed in typically developing children.

(ii) Conjunction

Conjunctions are class of connectors that indicate the relationship between joined parts of an utterance.

This can occur either between two noun phrases (NPs) or between two verb phrases (VPs).

ST 1

ST1 did not use any conjunctions like /matte/, /amele/, /adare/. She was not able to comprehend the conjunction too, this means to say that she did not start acquiring this feature also.

Sample illustration

C bassu (pause) lally (when she was asked to describe a picture, lally/lorry).

ST 2

ST2 did not use any conjunctions like /matte/, /amele/, /adare/, but she did use once with repetition during mother child interaction.

Sample illustration

M ni:ru amele kodthini ma

C "ni:ru am l ".

/am l / here was used as an imitation response.

ST 3

ST3 not use any conjunctions like /matt e/, /am l /, /a:dare/, but she did use once /am l / with repetition during mother child interaction.

Sample illustration

M am l a:ta a:du ajitha.

C "sa:ku, am l no:du" (enough, will see later was said as enough see later).

ST3 used the conjunctions meaningfully, but appears to have used it as time adverb. This means to say that she was in the stage of acquisition of conjunctions.

ST 4

ST4 did use conjunctions like /matt e/, /am l / appropriately but not always. Sometimes pause also was used a construction here.

Sample illustration

C akkang am l kodi. (it is used as time adverb)

C illi thatte, gasu matt e sapoonu id e. (it is used as noun conjunctions)

ABC matt e kannada pictures.

ST 5

ST5 did use conjunctions like /matt e/, /am l /, /a:dare/ in appropriate syntactic context. This means to say that the morphosyntactic feature conjunction is acquired in her speech to a greater extent when compared to other young children.

Sample illustration

M ond u biscuit thinno:du, i ta a:dare mu:ru kodthini ajitha.

C am l nange mu:ru kodu be:ku.

C anna matt e appa bye hogthidhare. Road alli ca:ru matt e bassu matt e tempo nodthaidhare (noun conjunctions)

C school alli A, B, C, D matt e a, a:, i, i: helkoduthare.

am l am l rhymes helkoduthare.

To summarize, like in negation, a clear developmental pattern is seen in conjunctions also, where pause was initially used as a conjunction and as the age increased noun phrase conjunctions are used whereas verb conjunction is used as time adverb.

(iii) Case markers

The basis of case grammar is meaning. The semantic aspect of language assists us in "making sense" of sentences. The meanings of words and how words are related to each other affects our understanding of sentences.

ST 1

No explicit case marker is used by ST1.

ST 2

No explicit case marker is used by ST2.

ST 3

No explicit case marker is used by ST3.

ST 4

Case marker was used, but not always.

Sample illustration

C v thu skool indha barva:ga thakondidhini lva, adhe idhu.

amma magu ge hallu ud uthaidhare.

no:vu a:kthaide annage.

skool ge amma d othe hogthini.

She used more of dative (/-ge/) and instrumental (/-inda/) type of case markers.

ST 5

Case markers were well used by her.

Sample illustration

C mane jalli amma, na:nu matt e anna''.

C "ka:l alla, mai ge odithare".

C "allindha natkondu barthini".

She used locative, instrumental and dative marker very frequently in speech, this suggests that these types of case markers are acquired earlier than the other types.
This suggests that the case marker is acquired by around 5 years of age.

To summarize the case marker feature, younger children did not use any case markers, only direct content words are used. As the age increased(around 4 ½ years), the case marker usage increased, initially more of dative markers were used followed by locative and instrumental type of case marker.

(iv) Tense

Tense is used to show the relation between the action or state described by the verb and the time, which is reflected in the form of the verb. There are two basic tenses in English; the present tense and the past tense. The present is like the base form, although the third person singular adds /-s/. Regular verbs add /-*ed* /or /–*d*/ to show the past tense, while irregular verbs change in many different ways, or not at all in some cases.

ST 1

ST1 did not exhibit distinction between various tenses. The child deleted the suffix used for the tense marker. She did not use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

M: nenne jelli hogidhvi?

C: “ho:gi”.

M: ajithu appa javaga bartha:re?

C: “appa ba.”

The difference between the mother’s and child’s utterances can be seen here. The child condensed the answer to the question (she just answered in 2 word phrases) and also she was slowly moving from one to two word utterances.

ST 2

ST2 does not exhibit distinction between various tenses. She does not use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

M: park hogidya nenne?

C: “park:”

C: park a:ta’’

ST 3

ST3 does not exhibit distinction between various tenses. She employs present tense suffix most of the times, also the simple verb root with tense marker was sometimes deleted, but at times she did use the appropriate tense markers with the help of mother/clinician. She used more of present continuous forms. She does not use tense forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

"amma magu nodthaidhare" (amma is seeing the child).

"pa:pu ha:lu kudithidhe" (baby is drinking milk).

ST 4

ST4 does exhibit distinction between various tenses. She used more of past tense and present tense. She had confusion for future tense though she used it correctly sometimes. She did use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

C na:le hogthini alli.(I will go there tomorrow).

C nenne skool illa (No school yesterday, this sentence was supposed to be "No school tomorrow", she had similar confusions).

ST 5

ST5 does exhibit distinction between various tenses. She used the past tense, present and future tense appropriately, there was no confusion exhibited by her. She did use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

C “i:ga solpa amele ad i manege hogthini, ivatu skool illa adhukke”

C “skool na:le hogthini”.

To summarize the tense feature, initially children used more of present tense suffixes for any form of tense or the tense marker was sometimes deleted. The developmental pattern for tense markers was well differentiated with ST5 (5 years) was able to use the tense markers appropriately.

(v) PNG markers

Pronouns are a group of forms (eg: *he, she, they*) that can replace nouns or entire noun phrases.

ST 1

Sample illustration

C: “pa:pu bikki be:ku” (along with the action of give) – baby wants biscuit.

She referred herself as a “papu” (baby).

Gender

ST1 did not use any suffixes to distinguish masculine and feminine genders.

Number

ST1 did not use any suffix to indicate the numerals or singular number affix.

ST 2

The concept of self (“me”, in Kannada na:nu) was acquired, but other forms were not present in her speech.

Sample illustration

M $id^{h}u$ jaru? (When shown a picture of a mother cooking in kitchen room)

C u:ta madthi.

M id^{h}u jaru? (When shown a picture of baby drinking milk)

C na:nu, na:nu (she was very excited to say, ‘me’, ‘me’)

Gender

ST2 did not use any suffixes to distinguish masculine and feminine genders.

Number

The singular number affix is used, but with regards to plural in nouns, ST2 did not use the plural suffix at all. She distinguishes little and more, but numerals are not attached. There was emergence of quantity terms, but not number markers.

ST 3

ST3 used more of personal pronouns.

Sample illustration

C: amma adu kodu thinthini.

“ba:tu odithare”.

“akka ni:ru hakidhare”.

First subjective form of pronoun was acquired, but the third person singular was an imitation response. Those were not well acquired.

Gender

ST3 did use suffixes to distinguish masculine and feminine genders, but was very inconsistent and used it only few times.

Sample illustration

C “anna odhu (pause) thane.”

“akka ta:ta hogthale”.

Number

The singular number affix is used, but with regards to plural in nouns, subject did not use the plural suffix at all. She distinguishes one, two, three and more, but numerals are not attached.

"ondhu eradu bekku ide"(two cats are there – by pointing to the picture).

ST 4

ST4 used more of personal pronouns. Acquisition of third person singular was also seen in this child.

Sample illustration

"packet nange kodu".

,'kodu nan itkolthini"

"appa malkondavare"

"ivaru malkondidhare"

"nanna skool hesaru"

Gender

ST4 was able to distinguish and use the masculine and feminine gender markers correctly.

Sample illustration

C "illi dodda anna malkondidhane".

"hudugi a:ta adthaidhale".

Number

The singular number affix is used and with regards to plural in nouns, subject uses the plural suffixes correctly, but sometime needed a prompt to use it correctly. She distinguishes one, some and many and numerals were also attached in her speech.

Sample illustration

C “na:kku biscuit ide”.

ST 5

Her usage of these PNG markers was very good.

Sample illustration

C “amma sa:ru madthidhare”.

C “missu ko:lu itkondu odithare”.

E jake odithare?

C “na:nu galatte madthini, adhukke odithare.”

The use of pronouns in her speech is very common and also uses it appropriately.

Gender

ST5 used suffixes to distinguish masculine and feminine genders, but missed out sometime.

Sample illustration

C “huduga ni:ru kudithidhane.”

C “avalu school ge hogthidhale.”

Number

The singular number affix is used, but with regards to plural in nouns, subject uses the plural suffixes. She distinguishes one, some and many and numerals are also attached.

Sample illustration

C “amma annange one biscuit kodu, nange mu:ru beku”.

To summarize, in case of PNG markers, initially their own names were used to indicate the personal pronoun, later this was developed into personal pronoun (na:nu) along with possessive markers followed by development of third person singular. Again there is a specific order seen in the development of PNG marker and the development across children can be well differentiated.

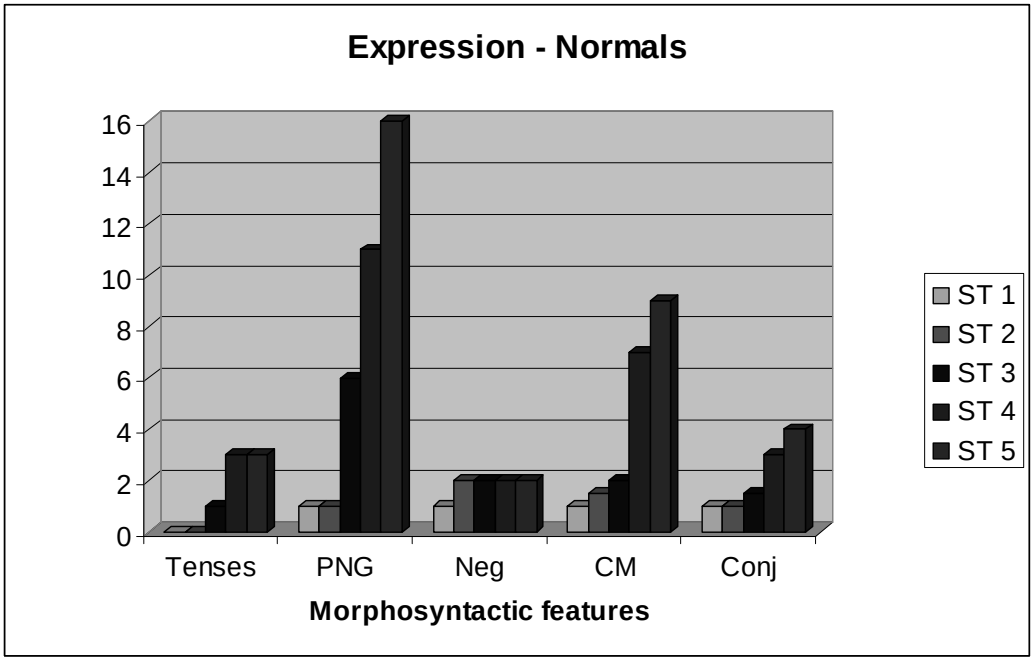

Figure 1: Mean scores for expression in typically developing children

In general, in typically developing children, it can be seen that the features are acquired to a certain extent at 4-5 years of age and by 5 years the child is able to use the linguistic

markers and forms correctly though the mastery of the forms and markers are not achieved by 5 years of age. It is interesting to see that the development of these features starts very early in childhood by 2 years of age. This is in consonance with Klima and Bellugi's (1966) study, where they have investigated the development of various linguistic forms and reports that most of the acquisition takes place early in childhood and the usage of various forms are seen during preschool age. From figure 1, it can be observed that there is a clear development seen from 2 to 5 years of age in all the aspects except for negation. The 2 ½ and 5 year old children used same type of negative forms such /be:da/ or /illa/. This negative form was commonly used by all children. PNG marker is the feature which is markedly acquired in all the children. The developmental order seen in typically developing children are PNG markers, Case markers, Tenses, Conjunction and Negation.

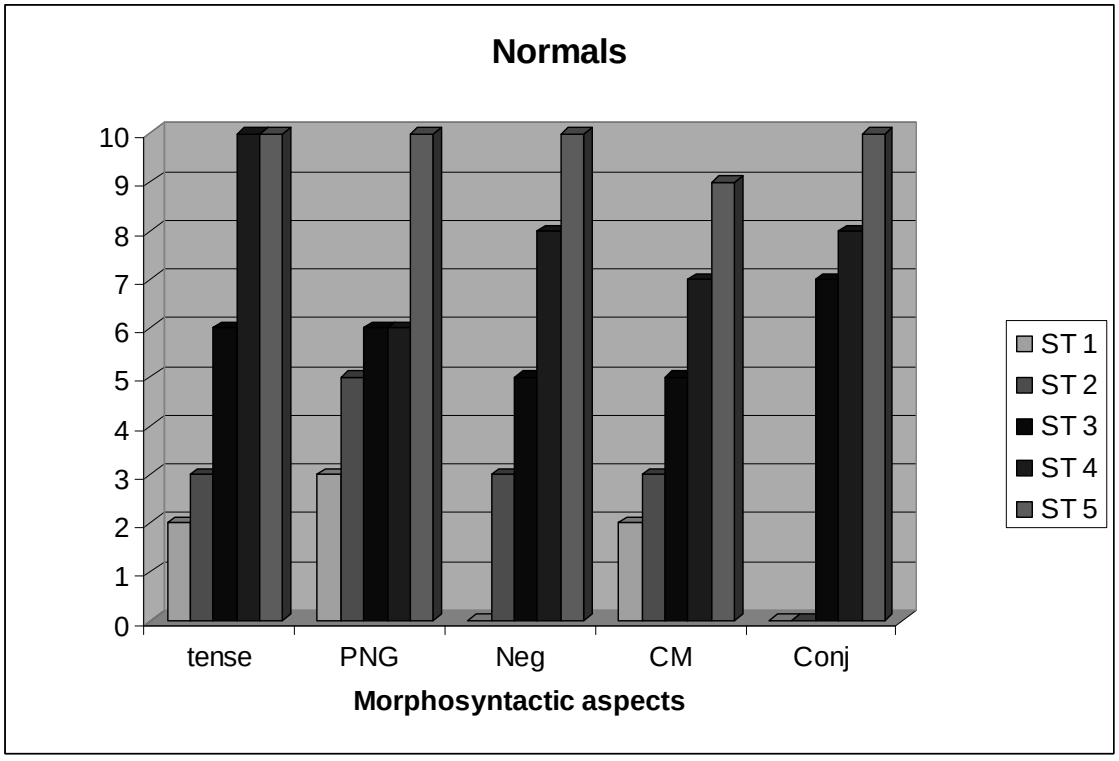

Figure 2: Mean scores for comprehension in typically developing children

From figure 2, it can be observed that the ST5 (5 year old) child has acquired almost all the aspects. Also, there is a clear developmental pattern seen from ST1 to ST5 in all parameters, however, comprehension of conjunction is not observed in ST1 and ST2. The mastery of comprehension of these morphosyntactic features appears to go beyond 5 years of age.

Name	Age/sex	Morphosyntactic features				
		Negation	Conjuncti-on	Case markers	Tense	PNG Markers
ST 1	2/F	No	No	No	No	No
ST 2	2 ½ /F	No	No	No	No	No
ST 3	3/F	No	No	No	No	No
ST 4	4 ½ /F	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
ST 5	5/F	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Table 4: Development of morphosyntactic feature in typically developing children

To summarize, the comprehension of the morphosyntactic features are acquired first than the expression as in any other language development. In table 4, "Yes" indicates that the particular morphosyntactic feature is acquired and "No" indicates that the particular morphosyntactic feature is not acquired. It can be inferred that all the morphosyntactic features are acquired by both ST4 and ST5, which means to say that the development of linguistic forms and markers starts at 2 years and they are developed to some extent by 4 years of age. This again supports Klima and Belugi's (1966) study, who reports that that the development of grammatical markers takes place early in the childhood and is used by preschoolers to some extent.

II. Development of morphosyntax in children with SLI

Five children with SLI in the age range of 2-5 years were involved in this group (clinical group) indicated as SC1, SC2, SC3, SC4 and SC5.

(i) Negation

SC 1

SC1 was 3 years of age and she did not use any specific structure of negation. But most of the time, the nonverbal response was given for negating (non-verbal response mainly included nodding of head horizontally). Negation may be realized as either as a free or bound form (ie) suffix.

Consistently, the child used non-verbal response for negating.

Sample illustration

M ni:ru beka?

C non- verbal response for “No”.

M gombe bedva?

C non- verbal response for “No”.

SC 2

SC2 was 3 ½ years of age and the structure of negation used by her was /illa/ and /be:da/ accompanied with a head nod. In her speech, negation was realized as /be:da/ and /illa/.

Sample illustration

C “kempu batte, idhu be:da” (I need red dress, don’t need this. The actual colour of the dress was black and not red).

C “i ta illa” (I don’t like this, pointing to the actual red dress).

SC 3

SC3 was 3 ½ years of age and the structure of negation used by him was /beda/. This was the constant negative structure used by him in place of /illa/ also. /be:da/ was the only negating structure found in his speech sample.

Sample illustration

"anna bat be:da, na:nu" (Don't give the bat to brother, I need is said as I don't want brother's bat, need mine.)

" bikki i ta be:da" (I don't like biscuit is said as I don't want biscuit).

Have used /be:da/ for /illa/, which means that SC3 has no differentiation of simple negative and modal negative.

SC 4

SC4 was 3.11 years of age and the structure of negation used by him was /illa/. He used /illa/ consistently to negate and did not use any other structures like /be:da/ and /alla/. Negating form used by him was /illa/.

Sample illustration

"gombe illa" (No doll was used for I don't need doll).

"class illa" (No class was used correctly).

SC 5

SC5 was 4 ½ years of age and the structure used for negating was /illa/. But at times, nonverbal response was given for negating (non-verbal response mainly included nodding of head horizontally). In his speech, the structure used for negation was /illa/.

Sample illustration

M idhu jyavu colour?

C “white, yellow, geen”

M idhu?

C “hm, (child thinking), illa”.

M “purple”.

The child was supposed to reply ‘gothilla’ (I don’t know) for which he has used ‘illa’ (No).

To summarize the use of negation in children with SLI, children mainly used simple negative forms “illa” which was reported as Ist stage in Klima and Bellugi’s study. They substituted /illa/ for /be:da/, /alla/ and /gothilla/. SC5 also had this confusion in using the correct negative form. ST2 also had confusion and used /be:da/ for /illa/. This could be confusion among the negative particle forms or rather the child was not exposed to this feature.

(ii) Conjunction

Conjunctions are class of connectors that indicate the relationship between joined parts of an utterance. This can occur either between two noun phrases (NPs) or between two verb phrases (VPs).

SC 1

SC1 did not use any conjunctions like /matt e/, / am l /, /a:dare/. The child was not aware of the concept of conjunction.

SC 2

SC2 used conjunctions like /am l /, but did not use other types like /matt e/, /a:dare/. The consistency of /am l / was more.

Sample illustration

C “ajji (pause) amele lachu”. (lachu and grandma, lachu is her name)

C “bale am l cippu (bangles and clip)”.

SC 3

SC3 did not use any conjunctions like /matt e/, /am l /, /a:dare/, but a pause was used in between the words.

Sample illustration

“amma appa (pause) magu”.

This means to say that he was in the stage of acquisition of conjunctions, as pause is also considered as a type of conjunction.

SC 4

SC4 did not use any specific structure for conjunction, but used he imitated /amele/ and /matte/ twice each when the mother uttered these during mother child interaction.

Sample illustration

“bown matt e ka:pi color” (brown and coffee colour which was an imitation response).

“appa am l amma am l na:nu” (father and mother and myself, which was exact repetition of his mother’s speech).

SC 5

SC5 did use conjunction like /am l / but did not use other kinds of conjunctions like /matt e/, /a:dare/. This means to say that he is in the stage of acquisition of conjunctions.

Sample illustration

C “happy birthday”

C “mummy chocolate koduthare, hm”.

M “matt e”.

C “hm”,

M am l .

C “am l giftu koduthare”.

To summarize, the use of these constructions in their speech was slowly developing. Mainly noun phrase conjunction was used as seen in typically developing children. with better exposure to language, the better usage of these constructions are seen.

(iii) Case markers

The basis of case grammar is meaning. The semantic aspect of language assists us in “making sense” of sentences. The meanings of words and how words are related to each other affects our understanding of sentences.

SC 1

No explicit case marker is generally used.

SC 2

Case marker was explicitly used by her.

Sample illustration

“bikki ad i ge”.

“caru man alli ide”.

It is seen that she uses more of dative(/-ge/) and locative (/-alli/) type of case markers and other types of case markers was not achieved at all.

SC 3

Case marker was occasionally used by SC3.

Sample illustration

"ad i man ge" (to grandmothers house)

Only dative (/-ge/) type of case markers was used bye her.

SC 4

No explicit case marker is generally used by SC4.

SC 5

No explicit case marker is generally used.

To summarize, the dative type of case marker was used like the typically developing group, but the age in which this marker started acquiring was different among two groups. This use of case marker again was influenced by the language exposure and the formal speech and language treatment. SC2 and SC3 subjects used the case markers whereas other children did not.

(iv) Tense

Tense is used to show the relation between the action or state described by the verb and the time, which is reflected in the form of the verb. There are two basic tenses in English; the present tense and the past tense. The present is like the base form, although the third person singular adds /*-s/*. Regular verbs add /*-ed* /or /*–d*/ to show the past tense, while irregular verbs change in many different ways, or not at all in some cases.

SC 1

SC1 does not exhibit distinction between various tenses. She employs sometimes present tense suffix, but very rarely. She does not use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

C “anna bidhu” (anna fell down)

C “bekku kudi” (cat is drinking)

SC 2

SC2 does not use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

“anna odhuthidhane” (anna is reading)

“lat u ha:lu kudi.” (lachu drinks milk)

“anna ba:tu a:dthidhane” (anna is playing bat)

SC 3

SC3 does not exhibit distinction between various tenses. He rarely employs present tense suffix, but uses present tense forms like /i:ga/. He use the forms such as ivattu (today), i:ga (now) and na:le (tomorrow) with the time sense very rarely with mothers help, when used he exhibits a confusion between past and present tense, but uses present tense most of the times.

Sample illustration

“i:ga biscuit thini”(I had biscuit yesterday is said as now I had biscuit).

This means to say that he is in the acquisition stage of tenses, but exhibits confusion among the tenses and finding it difficulty to understand the concept also. The most existing present tense form in his speech sample is /i:ga/.

SC 4

SC4 does not exhibit distinction between various tenses. He employs a constant tense form na:le (tomorrow) for today, tomorrow and yesterday.

Sample illustration

E “skool idja iv thu?”

C “hm, na:le”. (His target response was today, for which he has substituted na:le – tomorrow)

He comprehended the tense form and marker, but was not able to express. Exhibited lots of confusion when he had to use the forms and tense marker in expression. This means that the tense form is acquired by the child but he was confused in using the same. The tense markers were not acquired.

SC 5

SC5 did not exhibit distinction between various tenses. Most of the times, he employed present tense suffix, in few instances, he employs the simple verb root with tense marker deleted. He does not use the forms such as iv ttu (today), i:ga (now) and na:le (tomorrow) with the time sense.

Sample illustration

“anna odhudhidhidhare” (anna is reading the book)

“bekku ha:lu kudidhidhe” (cat is drinking milk)

“amma sa:ru maddhidhare” (amma is cooking).

Only present tense markers were seen in his speech.

To summarize the tense feature, children either used present tense suffixes or deleted the tense marker itself most of the times. This was seen in typically developing children also but

the development of tense markers in clinical group are slow when compared to the other group. Children exhibited more of confusions in using these tense markers inspite of the knowledge about various tense markers. Therefore, no specific developmental pattern in tense was obtained.

(v) PNG markers

SC 1

Pronouns are a group of forms (eg: *he, she, they*) that can replace nouns or entire noun phrases.

PNG markers are not developed in her speech.

Gender

SC 1 did not use any suffixes to distinguish masculine and feminine genders.

Number

The singular number affix is used, but with regards to plural in nouns, subject does not use the plural suffix at all. She distinguishes little and more sometimes, but this result is not very consistent.

SC 2

For subjective pronoun she uses 'lat u' (her name). He, she etc is not well achieved rather uses anna (brother), akka (sister) to indicate different genders.

Gender

SC2 was able to distinguish masculine and feminine genders, by using specific Kannada forms like anna and akka and not v nu and v lu. The concept of v nu, v lu was not acquired; rather she was able to use the gender marker at the end of the sentence.

Sample illustration

"akka odhuthidhane" (akka is reading)

"anna batu a:dthidhane" (anna is playing bat)

This cannot be called confusion because the child is not aware of "avalu" (female marker) and the male gender marker was achieved because the mother taught the marker as she had a brother.

Number

The singular number affix is used, but with regards to plural in nouns, subject does not use the plural suffix at all. She distinguishes little and more, but numerals were not attached.

SC 3

SC3 expresses himself by his name only. Rarely uses third person singular like /avanu/ (he), /avalu/ (she).

Sample illustration

"Vichas d a:na"

The speech sample suggests that the child is in the acquisition stage of PNG markers.

Gender

SC3 did not use any suffixes to distinguish masculine and feminine genders.

Number

The singular number affix is used, but with regards to plural in nouns, SC3 does not use the plural suffix at all. She distinguishes one, some and many sometimes, but numerals are not attached.

Sample illustration

"amma d asthi be:ku" (amma I need more).

SC 4

It was interesting to see that the child acquired the third person singular "they" (avaru in Kannada). "avaru" was used in place of first person and second person singular also.

Sample illustration

" v ru ni:ru ha:kki" (they put water which was supposed to be avalu - she).

Gender

SC4 did not use any suffixes to distinguish masculine and feminine genders. He used third person singular consistently in place of the gender markers. He was able to indicate /huduga/ and /hudugi/, but he exhibited lots of confusion.

Number

The singular number affix is used, but with regards to plural in nouns, subject does not use the plural suffix at all. Can express in numerals like ondhu, eradu, but no specific marker is used.

Sample illustration

"ondhu bikki".

SC 5

Sample illustration

M jaru nithidhare?

C "anna nithidhidhare".

C "anna a:ta a:dthidhane".

Gender

SC5 used suffixes to distinguish between masculine and feminine genders.

Sample illustration

C "anna bidhigidhane".

C “odhu dhidhale.”

This gender marker was consistently used by him.

Number

The singular number affix is used, but with regards to plural in nouns, SC5 does not use the plural suffix at all. He distinguishes one and many, but numerals are not attached.

To summarize, PNG markers were the one maximally used by these children, but they exhibited lots of confusion in gender and number markers which is typically seen in children with SLI. PNG marker was the first morphosyntactic feature to be acquired in these children.

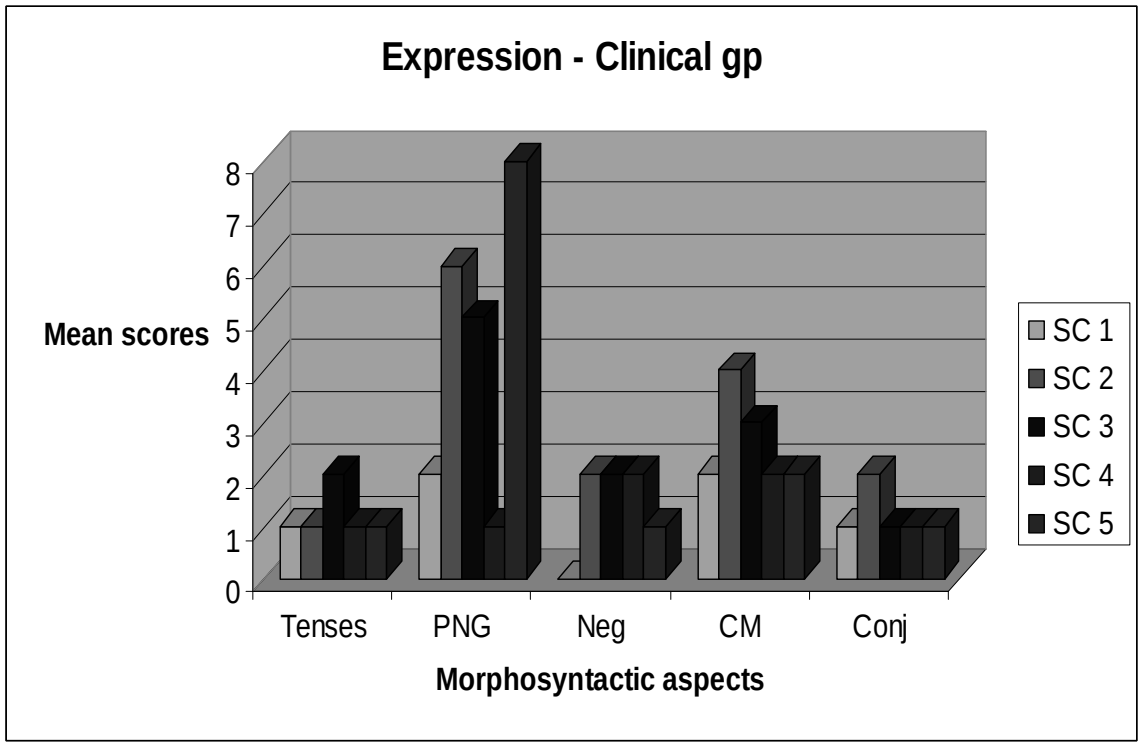

Figure 3: Mean scores for expression in children with specific language impairment

In children with SLI, it is observed that the acquisition of features is very slow when compared to typically developing children. The PNG markers were the one majorly developed in these children followed by case marker, but had lots of confusion and produced significantly fewer pronouns and in particular fewer third person singular pronouns. This supports the study done by where in they found by Rice et al (1995) that the children with SLI produced fewer pronouns and had fewer third person singular pronouns. No clear developmental order was seen in these children, this may be because of the influence of explicit speech and language treatment and exposure by clinicians and parents. No specific usage of markers and forms are seen as in typically developing children. More problems were seen in tenses as inferred from figure 3. This is because children either used present tense suffixes or there was omission of tense markers most of the times. Rice et al (1995) stated that children in the SLI group had a high probability of omitting tense marking. Tense marking is an optional, underspecified area of the grammar for affected children, an underspecification of the same sort as apparent for younger normally developing children but markedly extended in the older children with SLI. Commonly, most of the grammatical markers or the function words are omitted. This supports the missing agreement hypothesis which states that the SLI grammar is unusual in that it is missing the notion of obligatory marking of grammatical features. These features include number, gender, animacy, mass/count, tense and aspect.

Also, the children exhibited major confusion in tense markers and gender markers which is typically seen in children with SLI. They developed dative type of case markers compared to other types and this is in consonance with the typically developing children. Even in typically developing children, dative was developed initially.

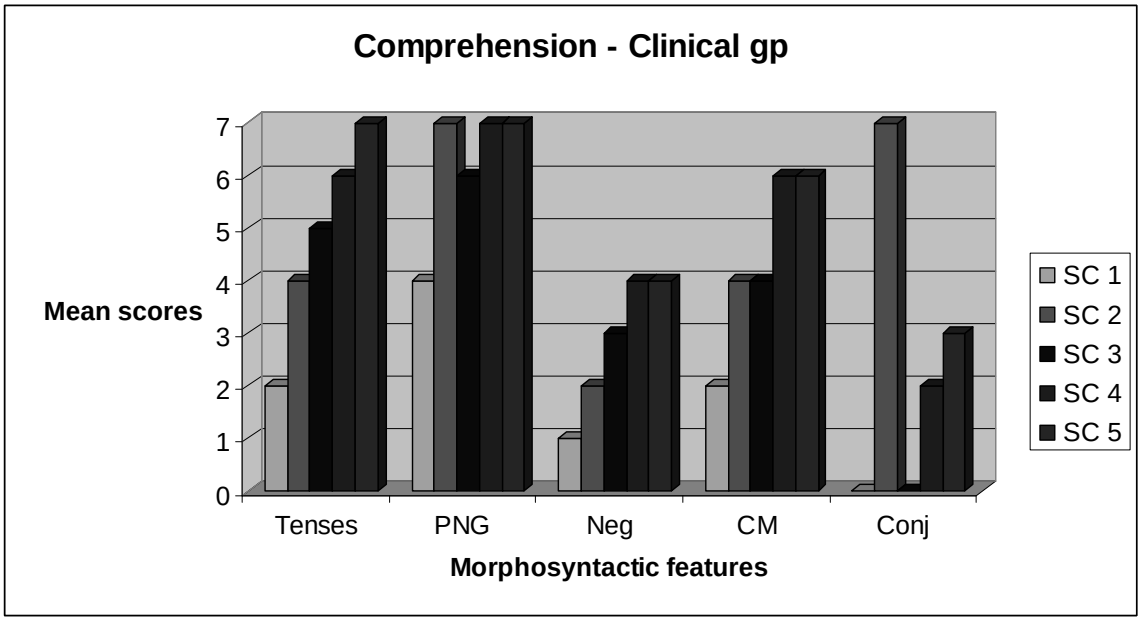

Figure 4: Mean scores for comprehension in children with specific language impairment

From figure 4, it can be inferred that there is a clear development pattern seen in case of tenses, negation and case marker from SC1 to SC5. In SC5 (4 ½ years), the tense and PNG marker are achieved according to the 70 % criterion selected for the study. In SC2 (3 ½ years), the features PNG and conjunction are acquired. It is interesting here to see that the feature conjunction is acquired in 3 ½ year old child. This may not reliable because there would have been other cues the child used to point to the correct picture which other children has not used. Tallal et al (1991) reports that that children with SLI miss out several cues present in the target word, but few of them respond with the help of certain cues which is not even perceived by the adult. This was an interesting point from her study. Even in comprehension, the children exhibited confusion in tense markers and gender markers. No specific conclusion can be made as there is no specific developmental pattern seen, although, comprehension is better than expression in all five morphosyntactic features.

Name	Age/sex	Morphosyntactic features				
		Negation	Conjuncti-on	Case markers	Tense	PNG markers
SC 1	3/F	No	No	No	No	No
SC 2	3 ½ /F	No	No	No	No	**Yes**
SC 3	3 ½ /M	No	No	No	No	No
SC 4	3.11/M	No	No	No	No	**Yes**
SC 5	4 ½ /M	No	No	No	**Yes**	No

Table 5: Development of morphosyntactic features in children with SLI

Table 5 indicates a summary of the development of morphosyntactic features in children with SLI, where "Yes" indicates that the particular feature is acquired and "No" indicates that the particular feature is not acquired. Here, the results shows that the PNG marker is acquired by SC2 and SC4, that is by 3 ½ and 3.11 year old children and tense is acquired in SC5, 4 ½ year old subject. A well definite conclusion cannot be made from the study. Rice et al (1994) states that the comprehension and expression is affected in children with SLI, but comprehension is always better than expression.

III. Deviant utterances present in children with SLI

Children with SLI had certain deviant utterances when compared to typically developing children and the development order for the groups.

Typically developing group (ST)	Clinical group (SC)
PNG markers	PNG markers
Case markers	Case markers
Negation	Negation
Conjunction	Conjunction
Tense	Tense

Table 6: Order of development of morphosyntactic features in both ST and SC groups.

Table 6 indicates that, the order of development for both typically developing group (ST) and clinical group (SC) are similar, but the SC group presents with deviant utterances when compared with the ST group. This is quite interesting and it very well suggests that the developmental pattern in children with SLI is similar to the typically developing group, but their development is slower as suggested by Leonard (1989) and Rice et al (1994).

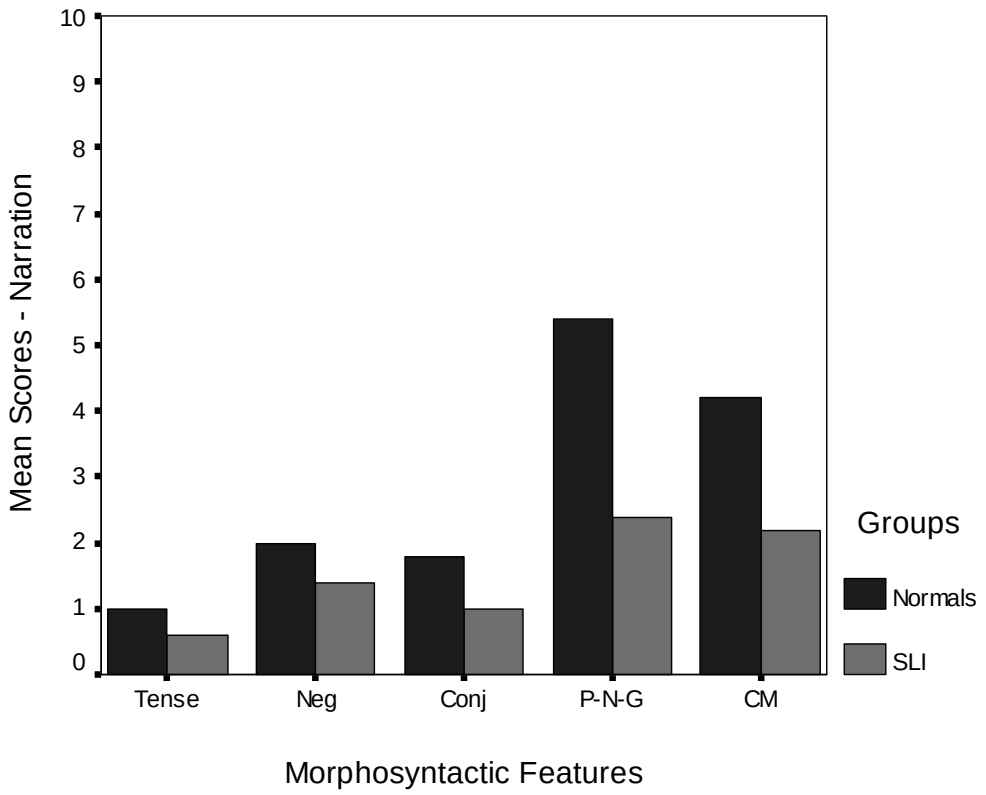

Figure 5: Mean scores of development of morphosyntax in typically developing group and clinical group

From figure 5, it can be inferred that in case of the tense feature, majorly it was the present tense which was used more than the past and future tense. They also omitted the tense marking most of the times which is typically seen in these children (Rice et al, 1995). This group exhibited lots of confusion in using the tense markers which was not seen in typically developing group. Rice et al (1995) stated that they have difficulty in using the correct tense markings and agreement marking on finite form of verbs.

In case of negation, this feature was not well established in typically developing group also. They used /illa/ and /be:da/ for negating. This is generally said to exist after 5 years of age. The negating structure used by children with SLI is on imitation, was also used meaningfully in certain context. Few children also used non-verbal response to indicate negation.

In case of conjunction, this group mainly used conjunction on imitation, majorly used types were /matte/ and /amele/, /a:dare/ was not used by any children. Bloom (1970) reported that the earliest forms of conjunction seem to occur merely by juxtaposing the words together around 2 years. This seems to be the primal base upon which conjunction is built. This was absent in these children and this developed much later in their speech.

PNG markers were maximally used by these children. They picked up these markers faster during intervention, but two or three of these children exhibited a greater confusion in using the PNG markers. All children found it very difficult to acquire the number marking, none of them were using appropriate plural suffixes, this means to say that they are developed later after 5 years of age. In typically developing children also, the PNG markers were achieved earlier than the other features.

Case markers were also acquired comparatively earlier. It was interesting to observe that they used dative and locative type of case markers more than the other types. Again, two of the children omitted these case markings (/-indha/, /-alli/, /-ge/). The sentence structure was used without any case marker which results in misinterpretation of meanings by the listener.

Thus, the developmental order is different from typically developing children. All these children are in the process of acquisition of these features as they are used at times though there is a difficulty in using these markers. Their utterances are deviant when compared with typically developing children as given by Leonard (1989) and Bishop (1991).

CHAPTER V

SUMMARY AND CONCLUSION

An attempt was made in this study to describe some of the morphosyntactic patterns of 2- 5 year old children. Five typically developing children (typically developing group - ST) and five children with SLI (clinical group - SC) were selected for the study in the age range of 2-5years. All were Kannada speaking children.

Speech samples were collected from each child for 30 minutes (10 minutes of each expressive task). Elicitation tasks were also used when needed. The obtained speech samples were transcribed using International Phonetic Alphabet and fed into SALT software for analysis where, each morphosyntactic aspect was analyzed.

The speech samples of all children in each group are analyzed. The sentence structure used by children was classified into five morphosyntactic aspects.

The results are analyzed for:

i) Development of morphosyntax in typically developing children

ii) Development of morphosyntax in children with SLI

iii) Combined results of both the groups and the deviant utterances.

The following inferences were drawn from the present study of 2-5year old children.

Typically developing group (ST)

a) The root form of the word is acquired earlier than the acquisition of word with affixes.

b) The children acquire the basic types of sentence patterns namely nominal and verbal at the earlier ages.

c) Distinction between noun and verb was observed at early ages.

d) Among the pronouns, first person singular, second person singular and third person neuter singular are acquired earlier.

e) Single verb roots are acquired earlier than the compound verb roots.

f) Present and past tense forms are acquired earlier than the future tense forms (present tense appears earlier than the past tense).

g) Affixes are achieved earlier than the inflection of the verbs for number and gender. The verbs are inflected for singular first person and imperatives earlier than the verbs inflected for singular third person and plural third person. Among the gender distinctions, the neuter gender is distinguished between masculine and feminine first. Later the children distinguish between masculine and feminine genders.

h) Gender and number markers are used occasionally.

i) First, the expression of case relations is done without using explicit case markers.

j) No hierarchy was observed in the emergence of explicit case markers, but use of dative and locative type of case markers was frequent.

k) /matte/ and pause are the noun phrase conjunctions used by these children (acquired by 4-5 year old children).

l) All the noun phrase and verb phrase conjunctions are not acquired by 2-5 year old children.

m) /u/, /o/ and /adhere/ as noun phrase conjunctions are not used.

n) /a:mele/ which is an adverb is used as noun phrase conjunction.

o) The children seem to acquire many complex forms involving complex transformational steps through imitation.

p) In general, there is a regularity and order in the acquisition of grammatical and transformational characteristics among all the children. This regularity may be broadly the same for all the children, although each child may have its own variation within the overall regular framework.

q) Free negative markers like /alla/, /illa/, /be:da/ are found in childrens' speech but negative suffixes that occur with modal auxiliaries and other main verbs are not yet acquired.

r) Comprehension of negative suffixes are not developed but when the same meaning is interpreted in simplified manner children comprehend them.

s) All the basic interrogatives markers in yes/no and Wh – type questions are found in children's speech.

Clinical Group (SC)

a) In clinical group (SC), Free negative markers like /illa/, /be:da/ are found in childrens' speech but negative suffixes that occur with modal auxiliaries and other main verbs are not acquired in children with SLI.

b) Pause is the major type of NP conjunction used. More of imitation responses for NP conjunction /mathe/ are seen.

c) /u/ and /o/ as noun phrase conjunctions are not used.

d) /a:mele/ which is an adverb is not used as noun phrase conjunction, but imitation responses are seen for /a:mele/.

e) In general, there is no specific regularity and order in the acquisition of grammatical and transformational characteristics among all the children.

f) Present and past tense forms are acquired earlier than the future tense forms (present tense appears earlier than the past tense). Tense markers are not consistent in childs speech with person markers.

g) Tense markings like /idhane/, /idha/ are missing in their utterances. They get confused with these tense markings and use more of present tense forms. Future tense are not developed in their speech.

h) The expression of case relations is done without using explicit case markers (case markers are missed out).

i) More of dative markers are used.

j) Uses of pronominal suffixes are less and third person singular are more.

k) The children could distinguish between masculine and feminine genders, but inconsistency are exhibited for the same. Used a feminine gender marker for masculine and vice-versa. Gender and number markers are used sometimes indicating the instability in the speech of the children.

l) Comprehension of all these morphosyntactic aspects is better than expression.

m) Both quantitative (SALT) and qualitative (descriptive) analysis revealed similar results in all the five morphosyntactic aspects.

To summarize, there was no significant difference in typically developing group and children with SLI, but there are lots of missing agreement markings and inconsistencies exhibited by the clinical (SC) group. Those missing agreements were seen mainly with reference to case markers, PNG markers and tenses, whereas, these missing agreements are not seen in typically developing group (ST) group. There is no specific order of regularity in the acquisition of grammatical and transformational characteristics among the children. Conjunctions and negations are not used well by children in both the groups. Simple forms of negative suffixes are used. Noun phrase conjunctions are mainly used than other types. The missing agreement hypothesis supports the missing agreement markings seen in the SC group. There is a specific regularity and order in the acquisition of grammatical and transformational characteristics among typically developing children.

Implications of the study

→ This kind of descriptive study helps to understand better the language used by normal children.

→ Knowledge of normal development of language processes helps in the identification and proper diagnosis of linguistically retarded children.

→ Such description of language used by normal children helps in planning therapy for deviant children of equivalent ages.

→ Early identification through morphosyntactic abilities helps us in taking up early remedial measures.

Future directions

→ A longitudinal study between the typically developing children and other language disorders should be conducted.

→ Such studies should be undertaken in different Indian languages to help plan therapy for children from different linguistic background.

→ Comparison of linguistic development in normal and different linguistically deviant children would be helpful for evaluation and diagnostic purposes.

→ A wide age range can be considered for the study.

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Appendix 1

10 point disability checklist (WHO)

1) *Compared with other children did the child have any serious delay in sitting, standing or walking?*
2) *Does the child speak at all?*
3) *Can the child make himself understand words, can he say recognizable words?*
4) *Does the child have difficulty seeing?*
5) *Does the child have difficulty hearing?*
6) *When you ask the child to do something, does he seem to understand what you are saying?*
7) *Does the child have any weakness or stiffness in the limbs/ difficulty in walking or moving his limbs?*
8) *Has the child often had fits, become rigid or lost consciousness in the last 6 months?*
9) *Has the child had any other serious accidents / illness?*
10) *Compared with other children of his age, does the child appear in any way backward, slow or dull?*

Appendix 2

: Inclusion Criteria for selection of participants for Group II

Language scores	Language difference between the receptive and expressive language age scores must be 12 months. CLiPS (Computerized Linguistic Protocol for Screening, Anitha, 2003) will be used to check the language ability
Non verbal IQ	Performance IQ of 85 or higher CMMS(Columbia Mental Maturity Scale) will be used
Hearing	Pass screening at conventional levels (using audio scope) or hearing screening at the Department of Audiology, AIISH
Otitis media with effusion	No recent episodes based on case history
Oral structures	No structural abnormalities-OPME by investigator
Neurological dysfunction	No evidence of seizure disorders, cerebral palsy, brain lesions, not under medication for control of seizures