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### Notation conventions

<i>f</i>	female
<i>m</i>	male
A bar above the sign -----	Duration of a specific non-manual marker
-----q	Non-manual <i>yes-no</i> question marker
-----WH	Non-manual <i>wh-question</i> marker
-----N	Non-manual <i>negation</i> marker
-----r	Non-manual <i>relative</i> marker
-----t	Non-manual <i>topicalisation</i> marker
PRO	Pronoun

## CHAPTER ONE: INTRODUCTION

### 1.1 The Kovai signing community

This study explores the functional categories in Kovai Sign Language (KoSL)<sup>1</sup> in the state of Tamil Nadu in southern India. The subjects are a group of home signers who have hearing family backgrounds and are now attending a school named “*Infant Jesus Convent*” situated at Kovai, also known as Coimbatore.

Deaf children are admitted to the school when they are as young as four years old and some are admitted even later. The school imparts education from standard I to XII. Though it intends to instruct deaf children, the teachers who are employed in the school are hearing and they use oral techniques to impart education as they do not know how to use sign language. Apparently, the children are expected to respond orally and they are made to use oral gestures while they interact with the teachers.

But interestingly, the deaf children in the Kovai Signing community have adopted a signing method among themselves using manual articulation which is completely devoid of oral gestures and is unintelligible to the teachers who belong to the hearing community. Yet, this is not a situation unique to the Kovai deaf community. In fact, it has robust similarities with the situation we see in the Nicaraguan Deaf community where the deaf children from hearing families came up with a sign language through interaction with their peers in a public school using the fragments of idiosyncratic home signs they use at home. As a result, sign language emerged spontaneously from the community at first as a pidgin known as *Lenguaje de signos Nicaraguanese* (LSN) and with the second generation of Nicaraguan signers, the language attained the creole status. The creole version is *Idioma de Signos Nicaraguanese* (ISN).

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<sup>1</sup> The term ‘Kovai Sign Language’ KoSL has been coined by the author to refer to the sign system adopted by the children from the Kovai signing community. As we will see that KoSL is an emerged variety of sign language unlike Indian Sign Language (ISL) dialects that are either taught or acquired and are rooted in a well established sign language, the author considers KoSL as a separate variety and not a dialect of ISL.

Therefore the present study has kept in mind the investigation on Nicaraguan Sign Language pioneered by Senghas (1995) with regard to the evolution of sign language among the home signers who integrate into a deaf community in a school situation.

## **1.2 Acquisition of sign language**

Acquisition studies generally assume a population of monolingual native speakers of a language, i.e. the language learners who are exposed to a language right from their birth. But for sign language studies, such a population is difficult to find since only 5-10% deaf children are born to deaf parents and are exposed to sign language from birth. They acquire sign language natively (Singleton and Newport 2004). The remaining 90-95% deaf children are born to hearing parents and are exposed to spoken language with the gestures used by oral-aural language users. The factor that prevents them from receiving any language input at all whether spoken or sign is when hearing parents of deaf children discourage them from using sign language. Due to their inaccessibility to sounds, deaf children are unable to grasp the language pattern of spoken language and are fed with inadequate manually coded spoken language data. As a result, sign language learning starts at a later stage in schools or even much later in their life. Given the situation, it is extremely difficult to confine the study of sign language acquisition to the native signers since they constitute a very small group. Sinha (2012:27) also points out the considerations which one should keep in mind while conducting sign language research. “Sociolinguistic and methodological considerations are of crucial importance in the study of sign language. Due to the differences in the visuo-spatial modality employed in sign, as well as the individual history of sign language acquisition, there exists a continuum in sign language use ranging from Pidgin Sign to Sign Language”.

## **1.3 Scope of the study**

As we saw that KoSL emerged from a group of home signers, this study explores the functional categories in KoSL. Functional categories are grammatical categories which are crucial to any natural language and they provide information about the syntactic structure of a language. In sign languages, the functional categories are represented in the form of non-manual markers (Liddell 1980). The evidence that sign language is a natural language comes from the functional categories that are manifested in the non-manual markers in sign language.

The study also attempts to capture the effect of age on the acquisition of language from the Kovai signing community with respect to the subjects' age of entry into the signing community and the period of exposure to sign language (KoSL). The presence and richness of functional categories in the individual signing of our subjects will allow us to deduce the status of this language in learners who have had early and prolonged exposure to it, as against those who are exposed to it near the end of their childhood and for a shorter period.

In the Nicaraguan signing community, the first generation of signers entered the school when they were 10-15 years old and at this age a pidgin sign language *Lenguaje de Signos Nicaraguerense* (LSN) emerged in them. The second generation of Nicaraguan signers joined the school when they were as young as four years old and arrived at an enhanced creole version of LSN with complex sentence structures referred to as *Idioma de Signos Nicaraguerense* (ISN). Given the comparable situation in KoSL, we aim to test the assumption that the early entrants who had a longer exposure to sign language would employ functional categories more effectively and with greater complexity than the late entrants who had less exposure to KoSL.

The main objective of the study is to describe the current language situation in the Kovai deaf community by examining the functional categories in the individual signing of our subjects. The other objective is to establish the stages of development of grammatical structures in different generation of signers with respect to the age of entry into the signing community and the period of exposure to sign language.

### **1.3.1 Earlier studies in the Indian sub continent**

One of the most prominent sign language studies in the Indian subcontinent is by Zeshan (2000), who looked at the sign languages in the region of India and Pakistan. Zeshan cites earlier studies on ISL and mentions the assumption of "relatedness of sign languages in India, Pakistan and Nepal" on the basis of lexical similarity in the word lists. Since, the sign language varieties used in the two regions were found to have similar lexical units; she merged them and called it Indo-Pakistani Sign Language (IPSL). Lexical similarity on the basis of 15 signers in the cities of New Delhi and Karachi was quantified at 76% and between Bangalore and Karachi at 63% (Zeshan, 2000; Woodward, 1993).



Perhaps, Zeshan's assumption for one Indian Sign Language was based on lexical similarities between the two varieties, and little was said about similarities in terms of grammatical units. Zeshan found the task of dividing texts or isolating sentences from the discourse challenging, since the signing by subjects was done with great speed which made processing and analyzing linguistic structures difficult. Though Zeshan discusses the use of many grammatical categories like imperatives, negation, affirmatives, referential index for pronouns and some other aspects from her data, she repeatedly admits that she was unable to cope up with the signing speed of the subjects to process sentences except for negative and affirmative structures. She further adds "Considering the kind of data available for IPSL, it is particularly difficult to draw reliable conclusions about syntax" (Zeshan 2000:87). Given the situation, the notion of single ISL based only on lexical similarities needs further investigation.

Considering the regional and local dialects of ISL, apart from IPSL, the two varieties from India and Pakistan which were found to be identical, these dialects can possibly have variation among themselves lexically as well as functionally. As we discuss the possibilities, we also bring in evidence from KoSL and ISL data from Hyderabad. The former is a variety emerged from a deaf community in a school as we discussed earlier in section (1.1) and the latter is a dialect of ISL found in Hyderabad taken for our pilot study.

From our earlier sections on language learning situations in deaf children, we see that the major population of deaf children is mostly exposed to the gestural form of spoken language or taught using oral methods and have been encouraged to lip read. As a result, there are situations where we see these oral methods having an impact on their signing. Though a sign language is not derived from any spoken language, the influence of spoken language surfaces at some point or in some aspects as the majority group is the hearing population. This is witnessed in their 'mouthing' as mentioned by Hendriks (2008) which is an oral gesture for words taken from the spoken language of the region that forms an integral part of the signing (see chapter 4, part B section 4.5.2). For lip reading and mouthing, the spoken language of that region plays a major role in processing them. Therefore we can expect lexical

differences among the ISL dialects as there are 780 languages spoken in India (<http://www.newindianexpress.com/nation>).

From our main study on KoSL and pilot study on the ISL data from Hyderabad, we see there are differences between these two varieties in the use of functional categories. We cite two such differences in the manual and non manual marking of plurality and relative clause formation. The plural marker in KoSL is an index finger pointed to the addressee and kept at consecutive points or a flat handshake moved in an orbital motion whereas in the ISL (Hyderabad dialect), plurality is indicated by a rotation made with wrist toward the index. For relative clause formation, the non-manual marker in KoSL is widened eyes whereas in the ISL dialect in Hyderabad, it is a raised or lowered eyebrow accompanied by a head movement. This scenario strongly contests the concept of one single Indian Sign language in India. It is not necessary that ISL varieties have lexical similarities and identical grammatical forms across varieties; rather it can vary structurally or even culturally given the diversity of India. Sinha (2012:38) also mentions, "...however, as not only are there many unrelated sign languages, even those sign languages that share linguistic ancestors, are distinct from each other. For example, even though ASL and French Sign Language have a common origin in Old French Sign Language, yet today they are today mutually unintelligible".

#### **1.4 The design of the study**

As functional categories are crucial in determining the richness of grammar in any natural language, we investigate the presence of functional categories in KoSL through which the grammatical operations are brought to light.

As mentioned earlier, the main study was conducted at "Infant Jesus Convent" in Kovai. Before the main study, the researcher conducted two pilot studies; pilot study one in Hyderabad and pilot study two in Tamil Nadu.

Pilot one was undertaken as an exercise to elicit and identify the functional categories that are usually manifested in the non-manual markers in sign language, reported in studies elsewhere. The study was conducted on adult signers who use the Hyderabad dialect of ISL. We used structured elicitation method to elicit data in sign language. A questionnaire consisting of English sentences instantiating the functional categories

such as pronominals and reflexives, yes/no question elements, tense markers, agreement markers, relative clause constructions and determiners was carefully constructed for the study (see appendix 1).

Pilot two was a trial on the methodology for data elicitation used in the main study. Here it was undertaken on hearing children who are native speakers of Tamil. They are of the same age group (between 10 and 17) as our deaf subjects. This study gave us an insight into the language abilities of hearing subjects that our methodology succeeded in eliciting, pertinent to the age group of our deaf subjects, as a baseline for an informal comparison of the two groups.

The main study examined the presence of functional categories in KoSL and captured the effect of age on the acquisition of language. It was undertaken on 11 deaf children whose age ranged from 10 to 17. We chose our subjects in such a way that the group included both children who joined the school before 10 years of age (early entrants) and after 10 years of age (late entrants) and they had at least one or two years of exposure to KoSL. The institution gave the researcher permission to interact with the subjects for an entire day; hence the language of all the 11 subjects could be studied within a single day.

For the main study, the task chosen was a free narrative. Unlike pilot one which used targeted instructions to elicit particular functional categories, in the main task, more informal and free ranging method of elicitation was used. The reason is that, in pilot one, we found that the signing by the subjects was confined to the patterns (i.e. word order) of the given English-input sentences. The subjects translated the English sentences in sign language keeping the sentence structure intact. We found there was lack of spontaneity in their signing. Since the structured elicitation method used in pilot one manipulated the sign language output, we opted for the picture book narration method used in pilot two which was found feasible to elicit free narratives for our main study.

We used a picture book to elicit narratives in sign language instead of video clips as used in the Nicaraguan study. There were two specific reasons why picture books were preferred to video clips. The pictures which acted as a trigger for signing, were available throughout the period of signing, and helped the signers refer back to the

picture if necessary, and this enables the signers to dwell on the pictures for a longer time to comprehend or make connection between pictures. Whereas video clips stay on the screen for a brief while, and would not enable signers to refer back to them. Playing the video backward and forward is tedious and dilatory. Also, as mentioned by Senghas (1995), power failures during the study affected the data gathering. Therefore, we preferred picture books to video clips.

The narratives were elicited using an excerpt from ‘Amar Chitra Katha’ picture books for children (see appendix 2). It is a popular comic book series containing Indian stories from great epics, history and mythology. These books are available in several Indian languages as well as in English. A Tamil version of the book was chosen for our study because the school utilizes Tamil as the medium of instruction. The pictures in each page of the book were supported by dialogues in written Tamil. As per the information we received from the teachers in the school, the subjects were expected to read and comprehend the written language given in the excerpt.

The study was conducted on each subject in the presence of other subjects and not in isolation. As we found some of our subjects unable to read and comprehend the written dialogues in the excerpt, the examiner made them sit with the other subjects (who have understood the story) to observe their narration. We are justifying this method in chapter 3 by comparing it to the technique of the elicited imitation task to show that children’s spontaneous production of language does not imitate adult model rather it reflects children’s internalized grammar. Therefore there is no contamination.

For the data analysis, the subjects were grouped into A, B, C and D based on the age of entry into the signing community and the period of exposure to sign language. As mentioned earlier, in group A, we have the early entrants who have the maximum exposure to KoSL followed by groups B, C and D. In group D, we have the late entrants who have the least exposure to KoSL.

The data analysis considered only the sentences that bear functional elements.

The use of functional categories was examined among subjects who are of comparable age within a group and the rate at which each group employs functional categories is compared with the other groups.

### 1.5 An overview of the results

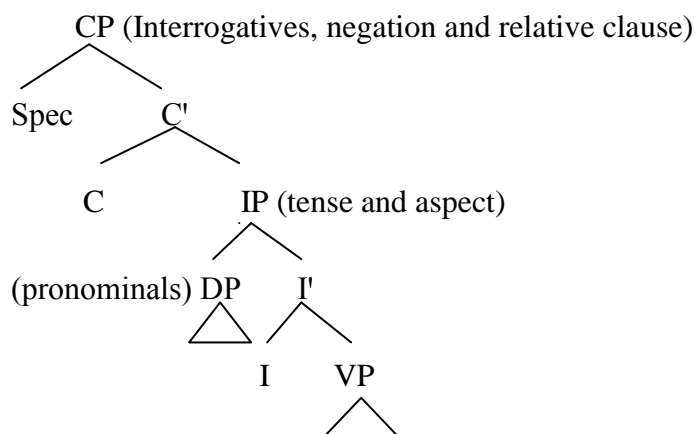
From the KoSL data on free narratives, we find the presence of pronominals, tense and aspect, interrogatives, negation, and relative clause constructions. They are manifested either in the non-manual markers or in manual signs or in the combination of both.

We also find that some late learner subjects employed some functional categories very effectively in their narration. We assumed that the early signers who had longer exposure to KoSL would employ complex constructions using the functional categories when compared with the late entrants who had less exposure to the language. But except for pronominals and tense and aspect, for interrogatives, negation and relative clause construction, the groups B, C and D where we have late entrants who had less exposure to KoSL show more or less the same level of competence as the early entrants.

But the question arises why functional categories such as interrogatives, negation and relative clause constructions appear earlier when compared to pronominals and tense and aspect if these are all considered functional categories which are the defining properties of any natural language whether signed or spoken (as characterized by Chomsky 1986).

We notice that the functional categories pronominals and tense and aspect where our late entrant subjects lag behind come under the determiner or D- system and inflectional or I- system respectively as the pronominals are considered to be instantiations of D in the DP and tense and aspect are functional projections of the verbal categories. The other functional categories such as interrogatives, negation and relative clause constructions belong to the clausal typing C- system as all the C- system elements above involve the role of clausal operators of interrogation, negation and relativization. Consider the syntactic tree below

1.



In KoSL, we find the late entrants employing the C- system categories more effectively in their signing than the I- system and D-system. This shows that the pattern of acquisition with the late entrants proceeds from top to bottom in the tree. That is, C-system elements appear in their signing before the I and the D- system elements. It may be that the communicative pressure to indicate clausal typing functional categories is greater than those of clause internal functional categories of the verbal and nominal systems.

Yet these results bear further investigation, because it is not readily apparent in (hearing) child language acquisition studies that children acquire the C-system elements before the rest. Our results are in contrast with Rizzi's 'truncation hypothesis' which says (hearing) children acquire the syntactic structures from bottom up over the maturation period. "... adults build their phrase structure all the way to CP because CP is the root of all clauses, while children might build just a VP or an IP (TP) and stop" cited in Murasugi (2015:384). We feel this difference that we find in the acquisition pattern of functional categories in the Kovali signing community could be due to the age factor. While truncation is subject to maturation, here our subjects being older (our youngest subject was 6 years old when he entered the community), truncation does not hold in their output.

## 1.6 Organization of the thesis

This thesis is organized into five chapters. Apart from this chapter which gives the outline of the thesis, the second chapter deals with the properties of Sign Language in

general. This includes modularity of mind, modality independence, signing elements and sign language acquisition.

Chapter Three discusses the methodologies adopted for the two pilot studies and the main study. It gives a detailed account of the tools and techniques used for data elicitation, their outcomes and insights.

Chapter Four is on data analysis. This chapter is divided into two parts A and B. Part A discusses the functional categories pronominals and tense and aspect and part B discusses negation, tense and aspect, relative clause constructions and topicalisation. This chapter analyses the form of functional categories in KoSL and captures the pattern of acquisition in our early and late entrant subjects.

Chapter Five gives the conclusion. It presents a brief overview of the whole study including the objectives of the study, subjects, methodology for data elicitation, the form of functional categories mentioned above and their acquisition pattern in our early and late entrants. This chapter also discusses the findings based on the objectives of the study and some recommendations for deaf education.

## **CHAPTER TWO: SIGNLANGUAGE, MODALITYINDEPENDENCE, SIGN ELEMENTS AND ACQUISITION**

### **2.0 Introduction**

Sign language is the principal language of the deaf community. It is a naturally occurring language and it does not follow the pattern and grammar of any spoken language. It evolves within the deaf community, providing the deaf with the ability to express themselves with ease and therefore has its independent form and structure (Kyle and Woll 1985, Valli et al 2011).

### **2.1 The modularity of mind and modality independence**

The study of sign language follows from the claim that language instantiation is independent of its modality. According to the hypothesis of “the modularity of mind”, language is a separate module in the brain differentiated from other cognitive systems such as reasoning, memory or learning (Fodor 1983). Language is not dependent on any other faculty in the mind/brain. Language is an innate, human ability and the linguistic universals fundamental to language are already prewired in the mind/brain. “The language faculty is an innate component of the human mind/brain that yields a particular language through interaction with presented experience, a device that converts experience into a system of knowledge” (Chomsky1986:3). Therefore, language is a system of knowledge (“competence”) generated in the mind/brain and it utilizes physical entities for its production and comprehension, i.e. for the manifestation of language competence in performance. The performance system is not restricted to one particular mode for the production and comprehension of language; rather the medium through which language is expressed changes depending on the availability of the medium. Thus language is *modality independent*. In this regard, sign languages which are used by the deaf communities in different parts of the world adopt a visual-manual medium for language, where hearing communities use an aural-oral medium.

In spoken languages, sound is a physical entity that is used to express ideas generated in the mind. Comprehension and production are accomplished in the aural-oral



medium. Language is perceived through the ears and produced in the vocal tract whereas sign language is produced manually using signs and perceived visually.

The “organs of speech” such as lungs, vocal cords and various other mouth parts involved in speech production are not devised mainly for language use; rather they are meant primarily for food consumption and the lungs for the process of respiration. This dual function of the so called speech organs clearly indicates that language is not dependent on the speech organs, but is the faculty of the mind. This strengthens the hypothesis that Language, i.e. the faculty of language is modality independent (any pre-existing physical systems may be employed by it). The human mind is endowed with the universal principles of language, and these principles are available in the hearing impaired as well. The unavailability of the aural organs and speech organs cannot preclude the availability of these principles and their operations. Thus, sign language serves as an evidence to support the modularity hypothesis.

### **2.1.1 Brain lateralization of sign language**

Emmorey (2013) reports studies on deaf signers that the neural circuits that help in the processing of spoken language also help in the processing of sign language. Her findings showed that the left hemisphere in the brain which controls linguistic abilities (language production and comprehension) in spoken language also regulates sign language processing. “Damage to the left hemisphere produces sign language aphasias that are parallel to spoken language aphasias, while damage to the right hemisphere does not” (Emmorey 2013:158). Poizner & Kegl (1993) puts forth the findings from their study on signers who have lesions on both left and right hemisphere. The study shows that the grammatical deficits in the case of left-lesioned signers are more pronounced when compared to the right-lesioned signers who exhibit deficits in ‘non-core grammatical components’ which are non-linguistic. “The grammatical deficits in the left-lesioned signers reflect obvious sign language aphasias. The right-lesioned signers are relatively unimpaired linguistically” (Poizner & Kegl 1993:202). Deaf signers who have lesions in the left frontal cortex exhibit Broca’s aphasia-like symptoms such as effortful signing with reduced grammatical complexity, similar to effortful speech in hearing patients who suffer from Broca’s aphasia. Damage to the left hemisphere also results in poorer sign comprehension (Poizner, Klima and Bellugi 1987). Therefore, the brain is lateralized not only for

spoken language but also for sign language. The neural circuits responsible for language functions remain impartial to language in different modalities.

## **2.2 Elements of sign language: the sign**

The sign is the ‘basic lexical unit’ in sign language. Signs are the counterparts of lexical items in spoken language. Sign languages have sub-lexical units that combine to create a meaningful sign. The minimal features that constitute a sign are the configuration of the hand (handshape), its co-ordinates with respect to a plane (orientation), its position in the signing space (location), and the trajectory or internal hand transitions that occur during the execution of a sign movement (Stokoe, 1960; Brentari, 1999; van der Kooji, 2002). Signs rest largely upon hand shape, orientation, location, movement and facial expressions and they comprise both manual signs and non-manual markers.

Manual signs are produced using handshape, location, movement and orientation which are the formational elements. In the phonology of sign language, these basic units of a sign are also known as *parameters*. A change in one of these parameters will bring about a meaning change in the signs. Therefore different signs that carry entirely different meanings can share one or more of the same parameters such as same handshape and movement but different location as in the ASL examples SUMMER and DRY. The sign for SUMMER is a closed fist handshape with an extended to a bent index finger with the palm facing the side is kept near the signer’s forehead and DRY which shares the same handshape for SUMMER but is kept near the chin; or signs can have same movement and location but different handshape as in RED which shows an extended index finger to a closed fist handshape with the palm facing the signer is kept near the chin and CUTE which is signed with an extended index and middle finger and has the same movement and kept in the same location as RED (Valli et al 2011). Manual signs include iconic and non-iconic signs.

### **2.2.1. Iconic signs**

Iconic signs are mimetic signs which have a one-to-one relation between the sign and the meaning and resemble forms of the object, action or event they denote. “Iconic means that the form of the symbol is an icon or representation of some aspect of the thing or activity being symbolized” (Valli et al 2011:4). The signer tends to act out an

event. Consider the examples below collected by this researcher from ISL (Hyderabad variety) where the verbs ‘eat’ and ‘write’ are depicted.

2.

EAT

WRITE



### 2.2.2. Non- iconic signs

Non- iconic signs do not have a one-to-one relation between the sign and the meaning. They are arbitrary and do not reflect the form of the thing or activity being symbolized (Valli et al 2011).

3.

JUMP

PLAY



As mentioned earlier, the manual signs (including both iconic and non-iconic signs) are produced using handshape, hand location and orientation and hand movement which are the formational elements of a sign.

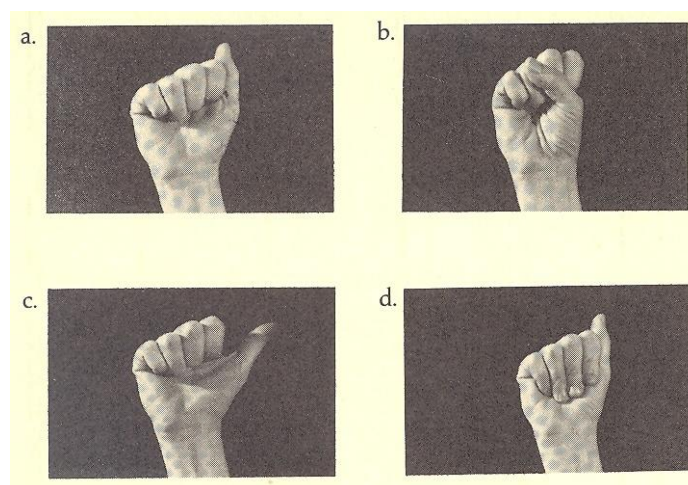
#### 2.2.2.1 Handshape /form

Handshape plays a central role in the production of Signs. It is the shape formed by the hand using fingers. In the example given below, a closed fist handshape is shown with different thumb positions. There are one- handed signs as well as two- handed

signs in sign language. In the case of two-handed signs, one hand plays a dominant role and the other a passive role. Signers can use either the left or the right hand as the dominant hand, referred to as the property of *handedness* in sign language (Kyle and Woll 1985). The number of handshapes in sign language varies from one sign language to the other, just as the variations in vowel and consonant inventories in different spoken languages.

4.

#### Handshapes



Source: Kyle and Woll (1985)

#### 2.2.2.2 Hand location and orientation

Hand location is the place where the hand is positioned in front of signer's body. The possible locations include forehead, and other facial features, chest, toward the signer's side either right or left.

#### 2.2.2.3 Hand orientation

Hand orientation as one of the parameters can be sub categorized under hand shape and hand location as it closely interacts with these in terms of characteristics. It refers to the 'visibility' of the palm of the hand while forming handshapes for signs in the signing space. Sinha (2012) defines orientation as "... a minimal contrastive parameter when reference is made to the visibility of the palm surface with respect to the

signer's body and carpal orientation (the direction of the carpal area between the metacarpophalangeal joints i.e. the knuckles, and the wrist)" (Sinha 2012:63). Therefore, the hand can be oriented in a number of ways described as flat hand, cupped hand, palm up, palm down and so on according to the manner in which the hand is oriented.

#### **2.2.2.4 Hand movement**

Hand movement is the direction in which the hand moves. The hand could take up and down movement, movement toward the signer, away from the signer or side to side movement and so on within the signing space. Movement can take place in a single sweeping motion or different movements in sequence or simultaneous movements. "It occurs in a single motion, or in a sequence, or simultaneously, or both sequentially and simultaneously within a sign" (Sinha 2012:60).

#### **2.2.3 Body posture**

The body space for sign language is highly restricted. Although in mime and dance, meaning is expressed through gestures and signs, they use a wide space. For example, to show someone sweeping the floor, one can stoop to show the action. But in sign language, the signing space is restricted to the upper part of the body and the head. The signer does not sign outside this space. The signer's body is positioned right in front of the observer.

5.

Body posture



Therefore the handshape, hand location and orientation and the hand movement give rise to manual signs. Apart from the manual signs, there are non-manual signs or markers in sign language which constitute the grammatical categories.

#### **2.2.4 Non-manual markers**

Non-manual markers in sign language include facial expressions and head and upper body movements. They are used to denote various functional elements that constitute the syntax of sign language. The non-manual markers play a crucial role in expressing the grammar of sign language together with its manual lexical signs and are referred to as non-manual grammatical markers (Liddell 1980). The presence of grammatical markers or functional categories for yes-no question elements, reflexives, relative clause constructions, agreement features etc. that are manifested in the non-manual markers attest that sign language is on a par with spoken language, i.e. it is not a mere occurrence of iconic gestural elements, but uses signed grammatical markers that have no iconic or only referential meaning.

#### **2.3 Native and non-native acquisition of sign language**

As mentioned earlier, most of the deaf children are born to hearing parents and are exposed to only gestures of spoken language. As a result, they fail to master spoken language due to profound deafness. This situation eventually leads them to come up with a gestural communication system using idiosyncratic signs called home signs.

Home sign system is a collection of gestures developed within the family by the members of the family. This situation is likely to arise when there is a deaf person among the hearing group. Since it is developed within a particular group, it might not be intelligible to people outside the community. Though it carries some structural regularities and consistent gestures (Goldin-Meadow 2003), it is not as complex as those well established signed languages such as ISL or BSL which are either acquired or taught.

When children who use home sign, come into contact with other deaf children of the same background in schools or in localities, they encounter a mixture of idiosyncratic home signs and often get an opportunity to implement their own signs as well as create new signs while in conversation with others. As a result, a rudimentary form of sign language is born out of the group and over a period of time it gets infused with more complex grammatical structures as it sails through different generations and eventually the language arrives at a form which is conceived of a full-fledged grammar as that of any natural sign language.

At first, due to language contact, the idiosyncratic home signs from various sources emerge as a pidgin and the use of the pidgin over a period of time results in an elaborate complex system which gets normalized by the interlocutors, and the pidgin becomes a creole in the consecutive generations. This creole is independent of any majority language in the locality i.e. it does not have traces of any spoken language grammar.

A study on Sign Language in Nicaragua by Senghas (1995) titled “Children’s contribution to the birth of Nicaraguan Sign Language” elucidates a shift in signing from the first generation to the second generation signers over a period of time. The full bloomed creole ISN has evolved from the pidgin LSN which took its root from the idiosyncratic home signs. The language situation in the Nicaraguan deaf community exemplifies the emergence of sign language as an independent language free of spoken language structure and grammar. This is a typical and well documented case evidences the emergence of sign language spontaneously out of idiosyncratic home signs in the Nicaraguan deaf community.

Information about Nicaraguan Sign Language (Senghas 1995) is given below to illustrate non-native acquisition of sign language. In section 2.3.2, we illustrate native acquisition of sign language again based on the studies by Senghas (1995). Section 2.4 discusses in more detail the Nicaraguan Sign Language studies by Senghas.

### **2.3.1. Non-native acquisition using home signs: an illustration**

After the Nicaraguan revolution that took place in 1979, the Sandinista party came to power and established the first public school for special education in Managua where the deaf children also constituted a group. The school did not intend to impart knowledge through sign language; rather it employed oral methods for teaching. The deaf children constituted a large group and they were taught using oral techniques. That was for the very first time the deaf children came into contact with other deaf children. Each of them came with their idiosyncratic home signs and they began to sign with each other. As a result, sign language emerged spontaneously from the deaf community. Though not in front of the teacher, they signed comfortably with each other in the playground, in the buses and in their neighborhoods.

The first generation of Nicaraguan signers entered school in 1980 when they were 10-15 years old. Using the fragments of idiosyncratic home signs, they started interacting with their peers. Upon contact; they eventually gave birth to a pidgin sign language *Lenguaje de signos Nicaraguanese* (LSN). Though it was lacking in grammatical complexity, it evolved independently. In the sense that, it did not have its root either in Spanish, the spoken language of the region or American Sign Language (ASL), the sign language used in North America. Since there were interlocutors, they finally arrived at a partially crystallized pidgin (LSN).

### **2.3.2 Sign language acquired natively**

While the first generation Nicaraguan deaf signers of hearing parents arrive at pidgin LSN out of idiosyncratic home signs, the deaf children of deaf parents who are native signers acquire sign language natively which already has its grammar in full form. In this case, sign language acquisition parallels spoken language acquisition (Petitto 1993). Even if the children of deaf parents are provided with impoverished input in case the parents are non-native signers, i.e. late learners due to poor educational set up or their negative attitude towards sign language, often native like control is achieved by the learners since the innate language learning device meets the inadequacy of the external stimuli (Singleton and Newport 2004). According to Newport (1985) as in Senghas, children who begin to sign from birth are native signers, those who begin between the ages 4 and 6 are early learners and those who begin after puberty are late learners. Apart from the learners who often fail to achieve native like control over the language, the native signers and early learners have the tendency to normalize the language even when they are presented with insufficient input. The second generation of Nicaraguan deaf signers serves as a good example to the above situation.

While the first generation Nicaraguan signers continued using LSN, the second generation joined the school after 1983 when they were as young as 4 years old. The second generation signers who were the early learners came into contact with their older peers and their sign system LSN yet they did not ape the language structures of the first generation signers; rather what emerged from them were enhanced language structures with inflections, agreement markers and classifiers. Then the new, enhanced creole version of LSN was named *Idioma de Signos Nicaraguanese* (ISN).



This serves as a strong evidence to support that language is innate. If language learning is accomplished only through exposure to speech, then a soundless language like sign language must be at stake. But without having been exposed to any model of spoken language or its grammar, sign language emerges within the Nicaraguan deaf community spontaneously and appears with a full-fledged grammar eventually. ISN possesses the fundamental principles of language and appears with complex structures and functional syntactic elements.

Though the second generation of Nicaraguan signers converged upon a rich grammar using incomplete language fragments like the children of pidgin speakers, there is a marked contrast between these two groups. Besides learning from the late learners, the second generation signers did not have a language form which already has its roots in a full blown language; rather it was formed using different idiosyncratic home sign varieties. Given this situation, the author strives to winkle out whether the children still are able to surpass the pidgin LSN which is lacking in systematic internal structure.

Studies were undertaken using empirical methods to see the ways in which the signing may have changed in the hands of the second generation. This will give an insight into the language abilities of the first generation signers who are the late entrants and the second generation signers who are the early entrants. This is one of the aspects we seek to find in our present study.

The Nicaraguan language study discussed below is a part of a larger project ‘Nicaraguan Sign Language Project’ (NLSP) which was carried out over a period of ten years while our present study is a cross-sectional one which took one day to collect data from the deaf subjects belonging to different generations.

#### **2.4 A discussion of the Nicaraguan Sign Language studies by Senghas**

The overall study captured the development of creole ISN from the pidgin LSN in the first (non-native) and the second (native) generation of Nicaraguan signers. It also captured the differences between the LSN and the ISN by comparing the language abilities of the two generation of signers. The study investigated three aspects namely fluency, the effects of age and year of entry on verbal inflection and comprehension

of verbal inflections and classifiers. We will discuss the first two aspects which are of our interest here.

In Senghas study, the comparison between two generations of Nicaraguan signers was made on four measures viz, fluency and prevalence of mimetic signing, use of verbal inflections and abstract classifiers and specifiers.

The subjects were 30 Nicaraguan deaf signers included 15 subjects from the first generation signers and 15 from the second generation signers. The average age of the members in the older group was 25; 8 and the younger group was 17; 4 at the time of testing.

The stimuli for the study consisted of two non-verbal video cartoons “Mr. Koumal flies like a bird” and “Mr. Koumal battles his conscience”. Each cartoon had duration of one and a half minutes. In previous researches, these cartoons were used to elicit narratives from ASL signers. Since these clips were likely to stimulate a high number of motion location verbs, classifiers, co-reference markers and verb agreement inflections, the author had chosen them for the study. This particular aspect (that intends to elicit functional categories) will give us a deep insight into the nature of functional elements in sign language that emerged from a group of young language learners, as we test the same in KoSL.

#### **2.4.1. Fluency**

Fluency was rated on the basis of morpheme density per sign. In each narrative, the total number of morphemes including basic stems, spatial and movement inflections, classifiers and specifiers were calculated. The results showed that the second generation signers produced more morphemes per sign than the first generation signers. They incorporated complex, multiple inflections into their signing unlike the first generation of signers which in turn means that the former group had more basic units than the latter.

#### **2.4.2 Mimetic signing**

Since Nicaraguan Sign Language was developed from gestures (home signs), this measure tested the prevalence of mimetic signing; as said earlier they are iconic in nature. This test showed how the second generation signers reflected on it, i.e.

whether they deviated from it as they are mimetic in nature or incorporated it into their speech at a higher rate due to its semantic transparency.

The results showed that the second generation signers produced fewer mimetic signs than the older signers. To show ‘the man took a coin from his pocket’, the first generation signers acted out the event by putting fingers in the pocket and shaped the finger as if they are holding a coin, whereas the second generation signers subsumed the container classifier to indicate the source of the coin and also the size and shape specifier to identify the object.

### 2.4.3 Classifiers

In sign language, the hand shapes that are used to indicate human class, animal class and various other semantic classes are commonly known as semantic or objects classifiers.

In the sign language literature, the term ‘classifiers’ has been the topic of debate as it has been claimed by sign linguists that their characteristics vary considerably compared to the commonly found classifier system in spoken classifier languages such as Chinese, Thai and so on. Schembri (2003) points out that what has been termed as classifiers in sign language are not true classifiers but ‘polycomponential verbs (PVs) of motion, location, handling and visuo-geometric description’. Senghas (1995) discussion was centered largely upon Allan’s (1997) definition of classifiers in spoken languages.

As reported by Schembri (2003). Allan’s typology of classifier languages is categorized into different types: numeral classifier languages which have an obligatory classifier morpheme to specify the noun class, for example Thai. Concordial classifier languages where the classifier unit is not a free morpheme but are affixed (generally a prefix) and the third category is the predicate classifier which is found to be on a par with the classifier system in signed languages. Consider the examples 6 (i-iii) below of predicate classifiers from Navajo.

6. (i) beeso si-ʔa

(ii) beeso si-Itsooz

Money PERF-lie: round –object

money PERF-lie: flat-flexible object

“a coin is lying there”

“a note is lying there”

(iii) beeso si-nil

Money PERF-lie: collocation

“a pile of change is lying there”

Source: Schembri (2003:12-13)

The examples show that, in spite of the fact that the reference is to ‘the thing which is lying’, the classifier does not denote the same referent in each case. Allan (1977) as in Schembri explains that this has to be taken into consideration to term it as one of the classifiers because each morpheme describes a particular meaningful aspect associated with the referent, thus classifies the referent.

Criticisms were made of Allan’s typology of classifiers as there is no clear distinction made between noun classification and classifiers as such. Therefore Schembri (2003) discussed the Grinefield (1996, 2000) typology of classifier languages which according to Schembri addresses issues related to Allen’s previous classification by ‘redefining’ the term classifiers and making a clear distinction between ‘classifier systems’ and nominal classification. Grinefield’s definition of classifiers as discussed by Schembri (2003) is given below.

Grinefield (1996, 2000) as discussed in Schembri mentions that unlike noun class, classifiers encompass varied semantic domains intensively whereas noun class is restricted to a particular semantic entity. Moreover, unlike the measure terms in English such as ‘a cup of milk’, ‘a pile of clothes’ (which are considered to be true classifiers), classifiers take obligatory position besides quantification even when they appear in other contexts. As the term ‘classifiers’ appears to be misconstrued of and identified with different terminologies such as noun class, gender class, class terms and so on, Grinefield proposed a set of criteria (which will be discussed where they are relevant) and classified them into four main classes; noun classifiers, numeral classifiers, genitive and verbal classifiers. We will not have a discussion on all these four classes but of all the four classes Grinefield classified ASL under verbal classifiers. He states that verbal classifiers carry the classifier affix attached inside the verb that classifies the noun related to it. Examples are given from Diegueflo.

## 7. (iv) Tu-kat

CL: ROUND-OBJECT-cut

“to cut with a scissors or adze”

## (v) a-kat

CL: LONG-OBJECT-cut

“to cut with a knife”

Source: Schembri (2003:16-17)

However, examples from ASL were not shown to bolster this claim, moreover Grinefield mentions that more research has to be done on sign language classifiers to highlight the difference between true ‘classifiers’ and ‘class terms’.

### 2.4.3.1 Classifiers in Signed Languages

As mentioned in the beginning, Schembri (2003) discusses polycomponential verbs (PVs) in terms of Grinefield’s criteria to validate whether they qualify for classifiers.

As stated by many sign linguists that PVs are morphologically complex units comprising many handshape units such as handling and Size and Shape Specifier (SASS) handshapes, criterion (a) of Grinefield (1996) which states that ‘classifiers are overt morphemes’ cannot be possibly applied on PVs. According to criterion (b) of Grinefield (1996) that ‘they constitute a morphosyntactic subsystem’, Classifiers behave more like the ‘class terms’ than classifiers as such as distinguished by Grinefield. In PV’s the handshape units can become a part of a ‘lexicalized monomorphemic unit’ giving out ‘highly specific meanings’ rather than being general. Signed languages of Auslan seem to exhibit some monomorphemic signs also called ‘frozen signs’ which seem to derive from the PV forms of motion, handling and visual-geometric specifications. For example, DISABLED is signed as an extended index finger pointing down with an with a slight up and down motion, and BAG is signed as an inverted closed finger handshape with an up and down motion represents the manner of ‘handling’ the object. And a Ticket is signed by drawing a rectangle outline in the signing space close to the signer which specifies the shape and size. Therefore Schembri (2003) highlights the fact that PVs in sign languages are not ‘supplementary’ optional elements rather they are inherent to lexical signs and plays a role in the word formation process.

Further he adds that PVs are motivated not only by the aspectual references such as the size and shape of an entity but also by factors such as how the agent interacts with it. Different hand shapes were found to be used among signers to represent small round objects, medium sized objects and large ones. A man handling a pen would be shown differently from an elephant handling a pen probably with the motion of its trunk. Therefore it is not the inherent characteristics that classifies but the superficial aspects of it as mentioned above that are subject to change. Hence unlike classifiers, PVs in sign language provides the description of the entity rather than classifying based on its inherent characteristics and they are inseparable between the hand shape and its movement which also signals that they are not independent morphemes.

Finally, with respect to our study, Schembri (2003) mentions that home signers who are raised in hearing families are found to be signing PV like signs that are very similar to the PVs in the well established sign languages (though she mentions that this needs proper groundings). Moreover, Schembri also mentions that instances of PVs were found in Nicaraguan signing community. since PVs involve in the process of ‘lexicogenesis’ (as mentioned with English ‘tree’ and ‘berry’), creole sign languages may possibly use PVs as a device to derive certain lexical signs. In this light, we have also found PVs structures from the KoSL data which is discussed in chapter 4 section 4.4.2 as size and shape specifiers (SASS).

#### **2.4.3.2 Examples of classifiers from Nicaraguan Sign Language**

Let us now look at the examples from Nicaraguan Sign Language.

In ASL, ‘BUS CRASHED’ is signed as BUS VEHICLE CRASHED where VEHICLE is the object classifier.

In the Nicaraguan signing, an inverted ‘L’ shape made with an extended index and thumb fingers indicates the small animal class. A ‘V’ hand shape with an extended index and middle fingers pointing downward is one of the human classifiers and an extended index finger denotes long or narrow objects.

Apart from object classifier, Nicaraguan signing has handling classifier as well. The difference is that the verb incorporates the latter when the subject is causative or agentive whereas when no agent is applied; the verb selects the object classifier.

## 8. HE HAS FEATHERS IN HIS HANDS- Object classifier

### HE PUT FEATHERS IN HIS ARMS- Handling classifier

Results have shown that the second generation signers used more than twice as many object classifiers than the first generation signers. Both first and second generation of Nicaraguan signers used the same proportion of handling classifiers. Since they are mimetic in nature, the first generation signers utilized it quite well.

It was also observed that only the second generation of signers made a distinction between the object and handling classifiers and the first generation signers used both interchangeably.

### **2.4.4 Size and Shape Specifiers (SASS)**

Size and Shape Specifiers (SASS) indicate the size and shape of a noun. In the Nicaraguan signing, a loosely cupped hand denotes tall-cylindrical objects such as bottle, cup and so on and an extended and curved index and thumb fingers evidence flat-round objects such as plates, tortillas and so on. If the referent has different dimensions such as straight, curved, short, etc the sign will exhibit a complex compounding of various SASS.

Results showed that the second generation signers produced more than twice as many SASS than the first generation signers. Though it was presumed that the first generation signers would use SASS at a higher rate since it was mimetic while the second generation avail the object classifier system, the second generation signers upstaged the first generation by performing it at a higher rate. Though they replaced some mimetic forms with object classifier, they did not opt for a total rejection of it; rather they used it with structural regularity and systematicity.

### **2.4.5 Verbal inflections**

In sign languages, the location in the sign space is used as a referential index. The movement of the verb between these referential loci carries the inflection and it occurs simultaneously with the sign. In the ISN form, the verbs are inflected to mark agreement between the arguments when the signer sets up the loci to denote the arguments in the signing space while incorporating the verb movement.

Verbal inflections include position/location inflection (verb is inflected to refer to a position or location), person inflection (to indicate locations for person such as subject, object or direct object) and number inflection (inflected for number through reduplication to indicate plurality). Results revealed that the second generation signers used more than twice as many position/ location and person inflections per sign and nearly five times person inflections as the first generation Nicaraguan signers.

The author examines the effects of age and year of entry into the signing community with respect to verbal inflections such as adverbial aspectual markers. In the Nicaraguan signing community, the second generation signers who are early entrants were found to be more fluent and more efficient in employing the aspectual markers on verbs compared to the first generation signers who joined at later stages.

#### **2.4.6 The effects of age and year of entry on verbal inflection**

An enriched version of LSN was observed among the second generation of signers. To argue that the language had undergone changes soon after the entry of the second generation signers and to examine whether it was due to the critical period effects, the author characterized second generation in two ways; viz the age of entry which means their own individual age at the time of their entry that serves to determine if there was any effect from age of acquisition to proficiency or the acquired grammar. The second factor was the “year of entry” into the signing community which is external to the subject and pertains to the community. It looked at the pattern of evolution of the sign language and the way subjects carried it forward from the pidgin (LSN) to creole (ISN).

There were 25 subjects including first and second generation signers. At the time of testing, their age ranged from birth to 27;5. The subjects were divided into three groups namely young signers (0;0-6;6), middle signers (6;7-10;0) and older signers (10;1-27;5) with respect to the age of entry.

The children, who were exposed to the signing community in the year 1980, received a mixture of home signs and gestures. The ones who entered in the mid 80s received LSN, the pidgin form. And those who entered in the 90s mostly were exposed to the ISN form. Therefore the year of entry takes into account the entry of signers in 1981, the earlier stage or in 1990, the later stage with a median at 1983.



As before, the stimulus 'Mr. Koumal battles his conscience' was taken from the animated cartoons. Effects were found from both age of entry and year of entry on fluency that included number of morphemes per sign, role shifting which is manifested in shoulder shift and adverbial aspectual markers.

'Shoulder shift' denotes the voice of the referent subject in Nicaraguan signing. It is produced in the first person toward the direction of the locus, and the referent associated with the locus is taken to be the subject of the verb. In this way, the signer takes up the voice of the subject than of a narrator. This particular subject marking is called role shift in ASL.

Aspectual markers are incorporated in to the verb movement to mark the manner and aspect. The sign for FALL is shown by incorporating the inflection for repetition or iteration into the sign which looks like 'tumble' or 'fall head over heels repeatedly'.

Results revealed that the signers who entered at the young age and middle age used more shoulder shifts and more aspectual inflections per verb than the ones who entered at their old age. The signers who entered in the year 1983 or later incorporated more shoulder shifts and aspectual inflections per verb into the signs than the ones who entered before 1983.

The results showed that the newest and the youngest members in the signing community were the most proficient and they surpassed the language system of the older signers. They reanalyzed the sign system of LSN and came up with a modified version ISN which contained more complex forms and more meaning packed into signs.

Therefore, when compared to the first generation signers (non-native), the second generation signers (native) were more fluent and they produced signs with great dexterity. They nativised the incomplete input by having generated a rich and structured grammar and transformed the incomplete pidgin LSN into creole ISN.

In ISN, the inflections were used to mark agreement between nouns. The second generation signers incorporated verbal inflections, embedding marker for subject and object into the movement of verbs. Some of the mimetic signs were replaced with classifiers and specifiers. They also introduced verbs with multiple arguments and serial verb constructions (See Senghas 1995).

## **CHAPTER THREE: METHODOLOGY**

### **3.0 Introduction**

The main study was conducted on 11 deaf subjects from ‘Infant Jesus Convent’. It was a cross sectional study. As mentioned earlier, our 11 subjects were video recorded in a single day for some logistic reasons. The school is situated away from the main stream area and was difficult to reach, because of paucity of transportation. Request to stay on campus or for a suitable accommodation was turned down by school authorities. This could be understood as the usual situation in which schools are often unwilling to let researchers have an extended interaction, because it interferes with the school’s teaching schedules. However, the institution was kind enough to allow the researcher to interact with all the subjects in a day and made them available for data collection for an entire day. Therefore all the 11 subjects could be dealt with in one day.

Before the main study, in order for the researcher to try out to her satisfaction the proposed aim and methodology of data collection, we had conducted two pilot studies.

### **3.1 Pilot study 1**

Pilot study 1 had been undertaken to get a pre-hand knowledge of the functional categories in ISL (Hyderabad) which are reportedly manifested as non-manual markers in earlier studies (Liddell 1980).

The aim was to identify the nature and form of functional categories used in ISL (Hyderabad) by adult signers.

Data was collected from 6 adult signers from the ‘Deaf Enabled Foundation’ (DEF) located in Hyderabad in the state of Telangana, India. The participants’ age ranged from 20-30 years. It so happened that the subjects included five deaf participants and one hearing participant. The hearing participant was subsumed into the deaf group because she was a native signer as her parents were hearing impaired. The remaining 5 subjects were born to hearing parents and were admitted to the institution in order to learn sign language and written English, so they turned out to be the late learner

signers. It was my observation that the hearing subject who was a native signer of ISL was more fluent in signing when compared with the five late learner signers of ISL.

### **3.1.1 Tools and procedure**

We used ‘structured elicitation technique’ to elicit the relevant functional categories from their sign language. As this method of data elicitation was found to yield good results in Sinha’s (2012) study where he used a questionnaire typed in English, we decided to employ the same technique in our study. Therefore, a questionnaire was constructed with 47 English sentences instantiating the functional categories such as pronominals and reflexives, interrogatives, tense markers, agreement markers, relative clause constructions and determiners. Out of 47 sentences, the first 28 sentences were meant to examine the presence of pronominals and reflexives. The same 28 sentences sufficed to elicit agreement markers as well. So we availed those sentences to elicit both categories.

The sentences in the questionnaire were presented to the subjects and they needed to use sign language to translate them. The task was done in the presence of their ISL instructor. Since they were late learner signers, the instructor cross-checked the ISL (Hyderabad) translations by the signers. Initially, an epidiascope was planned to display the questionnaire to the subjects. As the room was not equipped with a projector, the questionnaire was shown to the subjects by the researcher standing beside them to facilitate a better view. The translation of the given English sentences into ISL (Hyderabad) was captured using a video camera. As the subject signed, the corresponding given sentence in the questionnaire was read aloud by the researcher to get more discerning during data analysis.

### **3.1.2 Outcomes**

Though some subjects were a little reluctant to participate in the study at first, they began showing interest when they saw their peers coming forward to participate. We found the presence of aforesaid functional categories (see section 3.1.1), some in the form of non-manual markers, some in manual signs and some in a combination of both. Though the questionnaire helped in eliciting the functional categories, there was a major drawback in using individual sentence structures. While signing the sentences, though the functional categories were implemented properly, the subjects

mostly adhered to the sentence pattern of the given English sentences. The word order of the given sentences was kept intact and there was lack of spontaneity in their signing.

For example, the sentences ‘I look at him’, ‘I play cricket’, ‘It is my book’ given in the questionnaire were signed as I- LOOK- AT- HIM, I-PLAY-CRICKET, IT- MY-BOOK respectively. Though the given SVO word order is maintained for the above simple sentences, a change in the word order has been noticed for complex sentences like example 9. The sentence given below, signed in ISL (Hyderabad) was found to have SOV word order. (Section 4.2.1 discusses word order in KoSL)

9.

-----R

BOY THIS YESTERDAY COME PAST (‘R’ stands for non-manual relative marker).

“It is this boy who came yesterday”

“With respect to word order in ISL, the S-O-V is the default neutral order, with other orders being pragmatically determined” (Sinha 2012:142). Though surface variations in word order are allowed in sign languages, here we find that the given sentence in example 9 was reconstructed in their spontaneous response and the given word order in the questionnaire was not retained. Therefore, to get more discerning about the word order and other functional elements, we felt a spontaneous production of data would be more fruitful.

### **3.1.3 Insights**

Though the structured elicitation method in pilot 1 failed to elicit spontaneous data from the subjects, it did help us identify the presence of functional categories in ISL (Hyderabad). However, we felt the need to switch to some other technique that would germinate a spontaneous response from the subjects. So we decided to test on ‘picture book narration’ method in pilot 2 to elicit free narratives.

### 3.2 Pilot study 2

Pilot study 2 was undertaken on hearing subjects who are in the same age group (10-17) as our deaf subjects.

The aim of the study was to study hearing children on their use of spoken language to get an insight into the language abilities of hearing children who were in the same age group as our deaf subjects and to check how favorable the picture book narration method was.

The subjects were 4 hearing children who were native speakers of the Kovai dialect of Tamil. Their age ranged from 11 to 15 and they were attending school. The target age group set was 10-17 which we have fixed for our deaf subjects as well for the main study.

#### 3.2.1 Tools and procedure

As the structured elicitation method did not yield spontaneous production of data in pilot 1, we wanted to try the video clip method (using non-verbal cartoons) that has been used by Senghas (1995) in her study for data elicitation from signers. But as she pointed out the difficulties in this method when there was a power failure as well as we strongly felt that the video clips in motion might abort the subjects' understanding of the coherence of the clips in motion and also it would be dilatory to view the video clips repeatedly, we decided to use pictures instead of video clips. Therefore we trialed on picture book narration method in pilot 2 to use it for data elicitation in the main study.

An excerpt from a Tamil version of Amar Chitra Katha<sup>2</sup> titled *Buttisaali Biirbaal* which means 'Birbal the clever' was presented to the subjects. It is a comic book series which contain Indian stories from great epics, mythology and history. Therefore we found this book age appropriate for children in the age group 10-17. The excerpt consisted of 5 pages and the pictures on each page were supported with dialogues in bubbles and written in Tamil. The subjects were given a choice of three stories of

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<sup>2</sup> Amar Chitra Katha is one of India's largest selling comic books which are produced in 20 Indian Languages. It was first founded in 1967 and has more than 400 titles that tell stories of great Indian epic mythology, history and folklore. It was created by Anant Pai and published by India Book House.

which they were asked to pick one that they would narrate in sign language. All of them chose 'Birbal the clever' which served our purpose effectively.

The excerpt from Amar Chitra Katha was presented to the subjects and given plenty of time to read through and understand. At first, they were allowed to narrate it by looking at the excerpt. But later it was found that they were unconsciously reading the actual text given in the dialogue box at some point. Reading the actual text would not allow us to capture the syntax of their language and would make the study ineffective since the language would not be spontaneous. Therefore we resorted to narrate the story differently to the subjects and the researcher did not allow them to look at the excerpt while narrating. Eventually, the subjects could narrate it without looking at the pictures of the story but with a few silent cues from the researcher when they stood still recollecting the next setting.

The whole narration was recorded using a mobile phone recorder which was held by the subjects themselves in a silent environment. The subjects were found to be at ease using a mobile phone recorder as it is a familiar gadget used in our day-to-day life.

### **3.2.2 Outcomes**

The subjects were very enthusiastic while participating in the study. But again we found the picture book-plus-text narration method for data elicitation not conducive to elicit spontaneous speech from the subjects. Free narratives were elicited from the subjects, only when the researcher attempted to narrate the story to the subjects. Nevertheless, we found the presence of pronominals and reflexives, tense marker, agreement features, relative clause constructions and determiners. In addition to that, we also found certain other features such as pro-drop, topic marker and reduplication. The findings will be discussed in the thesis wherever it is relevant.

### **3.2.3 Insights**

The picture book-plus-text narration method did not yield spontaneous speech from the subjects and so the researcher had to narrate the story to the subjects to elicit free narratives. In the free narratives, we could capture the aforesaid functional categories and some other features from their spontaneous speech. This gave us a great insight into the language abilities of this group of subjects who use spoken language and the importance of spontaneous speech data.

### 3.3 Main study

For the main study, we began with the same picture book narration method inspite of its outcome in pilot 2 where it failed to yield spontaneous speech from the hearing subjects. But in the case of deaf subjects, we found the given text in the excerpt having no influence on their signing. This was mainly because the subjects made use of the pictures in the excerpt more than the text for the narration. The subjects were found to be intuitive while producing the signed narratives. So we proceeded to employ the same method for our main study, i.e. the picture book narration method.

The main study was conducted on 11 deaf subjects. They are profoundly deaf and hailed from hearing family backgrounds. We delimited our group such that our subjects included early entrants who joined the school before 10 years of age and late entrants who joined after 10 years of age and they had at least one or two years of exposure to KoSL. The subjects were coded as *SUJ*, *KIR*, *JOD*, *RAM*, *DEV*, *SAN*, *SIN*, *SAT*, *PAV*, *PRI* and *RAJ*. Out of 11 subjects, only 10 were considered for the data analysis since the subject *RAJ* who joined the school at the age of 9 and has one year of exposure to KoSL was found to be making random gestures which were repetitive. We noticed our subject *RAJ* making signs which looked almost like gestures used by hearing people and those gestures were repeated for almost every sentence. Later we came to know that this subject (*RAJ*) is partially hearing. Hence we excluded *RAJ*'s narration from the data analysis. The subjects were divided into four groups A, B, C and D based on the age of entry into the institution and the years of exposure to sign language. The subjects were ordered in the following way.

As may be seen from the table, we have 10 subjects from the Kovai signing community which included 8 male and 2 female participants. They fell under the age group 10-17 at the time of recording. We have 3 subjects in group A who are the early entrants and they had the maximum years of exposure to KoSL followed by groups B, C and D. In group D, we have the oldest entrants who joined the signing community at the age of 13. The subjects in each group are comparable because the difference in the years of exposure to KoSL and the age of entry into community within the group is either 1 or 2 years.

**Table 3. 1: Subject groups**

Group	S.NO	Recording order	Subject code	Years of Exposure to Sign Language	Age of Entry into the Institution	Age at the Time of Recording
A	1.	3	SUJ	8	6	14
	2.	9	KIR	8	6	14
	3.	8	JOD	8	7	15
B	4.	1	RAM	8	9	17
	5.	11	DEV	6	10	16
C	6.	2	SAN	2	9	11
	7.	7	SIN	2	9	11
	8.	4	SAT	1	10	11
D	9.	5	PAV	3	13	16
	10	10	PRI	1	13	14

### 3.3.1 Administration

As said earlier in section (3.1), all 11 subjects were video recorded in one day and the narrations were used to identify the presence of functional categories in their signing. Before the study began, the researcher distributed individual copy of the excerpt to every subject to go through. After some time, some subjects reported to the researcher that they were unable to comprehend the written dialogues given in the excerpt. But one of our subjects *RAM* who had 8 years of exposure to KoSL claimed to have understood the written language in the excerpt. He volunteered to explain it in sign language to the subjects who have not understood the excerpt.

From this we could understand that different subjects had different levels of comprehension which could be mainly due to their entry into the school at different stages (refer to table 3.1). Considering this situation, the researcher decided to conduct the study on each subject in the presence of other subjects and not in isolation. In this way, the researcher felt the subjects who had difficulty in comprehending the story could observe other subjects' (who had understood the story) narration which would help them understand the excerpt better. We can justify



this intuitively made decision as follows, arguing that it does not contaminate the data elicited from individual subjects for the purposes of our study.

### **3.3.2 Elicited imitation task (EI)**

In child language studies, a technique called ‘elicited imitation’ has been used. In elicited imitation (EI) technique, children are made to imitate the examiner’s model sentence or a story to elicit a particular grammatical structure in their language model. “...the elicited imitation task elicits imitation of particular sentences by young children: children are asked to repeat a “story” as the adult said” (Lust et al 1996:59).

Brown and Fraser (1963) were the first to examine children using EI systematically (Ratner 2000:293). They found that even children between the age group 2 and 3 regulate the structure to their level of production and narrate in their own telegraphic way. They are not “tape recorders or parrots” merely reproducing the original model.

According to Slobin and Welsh (1967), in the psycholinguistic literature, researchers put forth the following observation that two year old children repeat only stressed content words without the functional elements in the proper order of the given sentence provided the length and complexity is not beyond their language ability. This observation does not give us a further understanding of why imitation happens in this fashion. Therefore, Slobin and Welsh (1967) conducted a “longitudinal study of linguistic development” in a two year old child named ‘Echo’ using EI technique. The experiment was conducted to provide evidence for children’s “reconstructive and analytic aspect”. The examples show that it is not a passive imitation of the adult’ model rather the child reconstructs the adult model while keeping the meaning intact.

The results were based on 1000 elicited imitations and the researcher’s observation modified the general statements made on EI technique in the literature.

The findings of Slobin and Welsh are discussed below. They state that in the process of imitation the child ‘recodes’ the model sentence if it is beyond her production ability.

10. *Adult*: Mozart who cried came to my party

*Child*: Mozart cried and he came to my party (2;4;3)

We see in the child's production of language, though the relative particle is missed, the relative function is realized. It is clear that this is mainly due to production constraints.

Another aspect of Slobin and Welsh's finding shows that, when a word is repeated in the model sentence, it is not repeated in the child's utterance unless the repetition has relevance in the sentence (eg. Adverbs like *very very*)

11. *Adult*: I can can can eat

*Child*: I can eat (2;3;2)

Importantly, when the child comprehends the model sentence, she does not necessarily imitate the sentence in its proper order as mentioned in the literature. Consider the example below.

12. *Adult*: The red beads and brown beads are here

*Child*: Brown beads here an' a red beads here (2;3;3)

The above findings of Slobin and Welsh modify the general claims made in the literature and they further claim that "The process of sentence recognition includes retrieval of both form and content". In a child's language, when the syntactic structure is stored up in the child's memory, the content words might get rearranged or replaced. On the other hand, when the meaning of the model sentence is comprehended at that moment, they are reconstructed and produced at the level of the child's production ability slightly different from the structure of the model sentence.

Over the years, researchers also agreed upon the fact that in EI when children are presented with stimulus which is slightly above their production level, the resultant structure is not a "melting down" of the adults model through omission and deletion rather it is an imitated production with a different form keeping the meaning intact. "Elicited imitation has been found to allow testing of children's knowledge of specific hypothesized grammatical factors involved in UG" (Lust et al 1996:59).

Therefore, EI technique captures the actual linguistic representation of the examiner's intended structure in a child's language model. Children's imitation of the examiner's model was believed to alert similar structures in their brain without any other intervening elements. Hence, it would strike a balance between what is being tested and the child's response to it which helps the examiner construe of the child's actual representation of that particular structure in the brain.

Therefore for the present study we allowed our subjects to observe each other's signing since this method was found feasible and reliable.

However, in our study, the differences in the level of comprehension of the given stimulus among the subjects were overlooked because the story was only an occasion to elicit spontaneous signing from the subjects. Our main aim is to elicit the production of language and we are not in the spirit of a teacher who ought to get correct answers, i.e. right interpretation of the given stimulus. Considering this, the subjects were given freedom to narrate what they could comprehend from the stimulus. Unlike in pilot 2, here the subjects were allowed to keep the excerpt next to them to refer to if needed. The subjects in group A took 2- 3 minutes for the narration, group B took 2- 4 minutes, group C took 2-3 minutes and group D, 1- 2 minutes. We faced no disturbances during the recording session.

### **3.3.3 Data collection part II/ subjects revisited**

During the data analysis, it was very difficult and challenging to isolate propositions out of the narratives. There were many sign forms especially some lexical items which were not intelligible to the researcher. Therefore we could not make any sense of most of the utterances. So the researcher revisited the school and gathered together all the 10 subjects. The researcher played the video recordings of the subjects signing and got them to explain the signs which we could not interpret. The researcher could not understand explanations of each subject. From those whom we could not understand, the researcher requested one of our subjects *SAN* who was found to be clear in explaining the sign language terms to help the researcher throughout the session. First *SAN* tried using oral gesture and when that failed, she acted out the meaning, if that did not help, she would write the meaning of the sign in Tamil if she knew the equivalent term. She happened to be a late learner signer in our group.

Words such as TEACHER, POLICE, RESPECT, KING, GOOD MORNING, and INTEREST were explained by our subjects.

### **3.3.4 Data analysis**

First, the researcher glossed all the signs for all the 10 recordings. Glossing conventions are discussed in section 4.5.2 and notation conventions are listed in (beginning) page\_\_\_. We began the data analysis with an assumption that the glossing would help in isolating propositions from the narratives. But we found it to be the most difficult task since the subjects had a varied understanding of the excerpt which did not always coincide with the corresponding picture in the excerpt. Therefore in the next step, we chunked the narration page wise (pages of the excerpt). It was done based on the point at which the subject turns the page in the video. Then the narration was cross checked with the pictures on each page. Finally we could arrive at an understanding of what their signing meant. Once the propositions were isolated, we considered only those utterances that bear functional elements for the analysis. The length of the shortest transcript contained 68 signs and the longest transcript contained 384 signs.

First we sought the presence of functional categories such as pronominals and reflexives, interrogatives, tense markers, agreement markers, relative clause constructions and determiners in this order. All the narratives were analyzed for each of the functional categories and the number of occurrences for every functional category was calculated for each of the four groups. This way, we are informed of the level at which the functional categories got stabilized in their signing which in turn gives us an idea of their proficiency in KoSL between the early and the late entrants.

Upon analysis, we found the presence of functional categories such as pronominals, tense and aspect, interrogatives, negation and relative clause construction. Besides this, we also came across some more interesting features like case marking, agreement, directionality in verbs, assimilation, topicalisation, pro-drop and so on. The data analysis helped us to extract the functional categories, their form, and the effect of age and exposure to the language.

## **CHAPTER FOUR: DATA ANALYSIS (PART A)**

### **4.0 An overview of the chapter**

This chapter on data analysis is divided into two parts, part A and part B. Part A of data analysis deals with pronominals and phi-features and tense and aspect in KoSL. Part B deals with interrogatives, negation, and relative clause construction. In Part A, the first section discusses the population in the Kovai signing community. In the next section we will discuss pronominals in general which include pronominal case, verb agreement, directionality in verbs and assimilation followed by the instantiation of the above said features and phi- features in first, second and third person pronouns in KoSL. The last section on tense and aspect in part A deals with sign for past, verb modulation and some aspectual elements such as perfective, completive, durative and succession.

### **4.1. The population**

For the data analysis, we have 10 subjects (2 male and 8 female) from the Kovai signing community (refer to table 1). As said earlier in chapter 3; section (3.3), the subjects are divided into 4 groups A, B, C, and D, based on their age of entry into the signing community and their period of exposure to sign language. In group A, we have 3 participants who have the longest period of exposure of about 8 years to Kovai sign language when compared to the rest of the subjects who have an exposure ranging from 6 to 3 years. The subjects in group A are also the earliest entrants in terms of age into the signing community. They had entered the community when they were 6 and 7 years old while the other subjects entered between the ages 9 and 13. In group B, we have 2 participants. Though we see that one of the subjects in group B had 8 years of exposure to KoSL, as seen in group A, we grouped him in B as we find this subject's age of entry into the signing community is not as early as the subjects in group A. Here we find the subjects in group B comparable because they had only one year difference in the age of entry into the signing community. In group C, we had three subjects. We find a similar situation here that the three subjects in group C are comparable as all of them have 1 to 2 years of exposure to the sign language and entered the signing community at the age of 9 or 10. In group D we have two subjects and they have 1 and 3 years of exposure to sign language. Though the number of

years of exposure into the signing community in group D exceeds the number of years in group C in the case of *PAV(f)*, here the subjects are comparable because they are the oldest entrants into the signing community joined at the age of 13.

**Table 4. 1 Subjects' age of entry and years of exposure to KoSL**

Group	S.NO	Recording order	Subject Code	Years of Exposure to Sign Language	Age of Entry Into The Institution	Age at The Time of Recording
A	1.	3	SUJ( <i>f</i> )	8	6	14
	2.	9	KIR( <i>f</i> )	8	6	14
	3.	8	JOD( <i>m</i> )	8	7	15
B	4.	1	RAM( <i>m</i> )	8	9	17
	5.	11	DEV( <i>f</i> )	6	10	16
C	6.	2	SAN( <i>f</i> )	2	9	11
	7.	7	SIN( <i>f</i> )	2	9	11
	8.	4	SAT( <i>f</i> )	1	10	11
D	9.	5	PAV( <i>f</i> )	3	13	16
	10	10	PRI( <i>f</i> )	1	13	14

Since group A had an early and longer exposure to KoSL, we may assume that this group has a higher chance of employing functional elements in their signing based on the Nicaraguan signing community where the second generation signers who are also the early signers converged upon a creole ISN while the first generation signers who are the late learners came up with a pidgin LSN.

#### **4.2 Pronominals: Case, agreement and assimilation**

In the American Sign Language (ASL), the pronouns ME and YOU are signed by pointing the index finger at the referents respectively. “The pronoun signs for ME and YOU involve directing an index finger to a point in space: to the signer for ME, to the addressee for YOU” (Crain and Lillo-Martin 1999:280). In the Indo-Pakistani Sign

Language (IPSL), Zeshan (2000) calls the points in space loci which she claims are used to refer to the Person. “The body centre locus ... is used almost exclusively for reference to the first person. The ‘front’ locus often stands for the second person...” (Zeshan 2000:100). Therefore, referential loci (R-loci) are reference points assigned in the signing space once the argument is established. They signify the pronominal system featuring the first and non-first referents.

In sign language, a class of verbs referred to as directional verbs (refer to the next paragraph for discussion on verb classes) in which the movement takes place between the subject and its object, marks agreement between its arguments in terms of the verb movement. The reference marking system in sign language such as I, YOU, HE or SHE is inherent to the discussion of verb agreement in sign language. Crain and Lillo-Martin (1999) mention that the same mechanisms that are used for making reference to people in sign language are also used for verb agreement. “We first need to discuss how reference to different people is made, because some of the same mechanisms are used in verb agreement” (Crain and Lillo-Martin 1999:280). This is because the signs for both pronominals and the verbs that mark agreement are directed toward the referent. “The grammatical mechanism of agreement closely interacts with the more general principle of localization, since it depends on the association of discourse referents with locations in the signing space” (Hendriks 2008:59). “The pronoun signs for ME and YOU involve directing an index finger to a point in space: to the signer for ME, to the addressee for YOU. These points in space are used as the end points for the movement of verbs marked with agreement” (Crain and Lillo-Martin 1999:280).

Another fact is that verb agreement is not a property of all verbs in sign language. The verbs are grouped into three classes viz. indicating verbs/ directional verbs, spatial verbs and plain verbs (Lillo-Martin and Meier 2011). Directional verbs such as LOOK, SEE, and GIVE are directional in nature, i.e. directional verbs start at one point and are directed toward the object. In the literature, it has been said that directional verbs agree for person by means of moving toward the referent. But it has also been argued that the movement in directional verbs is represented gesturally and it cannot be considered as verb agreement. We revert below to the discussion whether sign languages manifest agreement at all. Spatial verbs are also directional verbs as

they involve movement between locations, that is from source location to the goal and they agree for location. “These verbs, such as PUT, MOVE, and GO-TO, move with respect to locations associated with locative arguments/adjuncts of those verbs” (Lillo-Martin and Meier 2011:106). And plain verbs such as EAT, SLEEP, THINK, SING are non-directional in nature, i.e. they do not undergo any modulation in terms of directionality. “Plain verbs are produced in a static location that cannot be altered without changing the meaning of the sign” (Valli et al 2011:133). Therefore, it is only the directional/ indicating verbs and spatial verbs show agreement in sign language due to their directionality.

By means of moving in a particular direction toward the reference point standing for person in the signing space (verb movement as discussed in the beginning of this section), directional verbs encompass information about the subject and the object in a sentence without explicit mentioning of the subject and the object. “Indicating verbs are more dynamic than plain verbs. They move toward specific people, objects or spatial locations, and in doing this, they incorporate additional information about the subject and the object of the sentence” (Valli et al 2011:133). Due to verbal inflections, directional verbs allow for pro-drop phenomenon in which the signer can afford to drop the subject or the object in a sentence.

According to Lillo-Martin and Meier (2011), agreement in sign language is associated with directionality in verbs for the past three decades and it is from 1990, an opposing view questioned the grammaticality of agreement in sign language. The authors further state that Liddell (2000) strongly argued against directionality as he found this property to be ‘gestural’ and ‘non-linguistic’. But Lillo-Martin and Meier in their work claim that verb agreement in the form of directionality in sign language is indeed a “linguistic process of person marking”. In the following sub-sections from (4.2.1) to (4.2.5.2), we will review Liddell’s view on verb agreement in sign languages as reported by Lillo-Martin and Meier and the authors’ claim on the agreement issues.

Liddell (1990, 1994, 1995, 2000, 2003) points out that, in the movement of directional verbs, the point of contact made on the referent is a non- standardized way of person marking as it varies with respect to the changes in the physical world. For example, in ASL, the direction in which the verb sign ASK moves is toward the chin of the



referent. This point of contact is subject to variation depending on the height of the referent. Therefore Liddell concludes that it is a gestural pointing made towards the referent and the height at which the hand moves is determined non-linguistically. Moreover, he argues that the index which is established in the signing space does not stand for person rather it denotes the location that is associated with the person. Lillo-Martin and Meier report that according to Liddell (2000) “the loci are not linguistic, and that therefore there is no system of verb agreement. Instead, verbs indicate their arguments gesturally” (Lillo-Martin and Meier 2011:111).

In this view, Lillo-Martin and Meier mention that though agreement by means of directionality is considered as an iconic way of pointing to the referents, it indeed does the person marking grammatically. They put forth their views as follows. The most important aspect of agreement in languages is seen as verbs agree for their arguments in phi-features (person, number and gender). In ASL, a distinction is made between first and non-first referents by the agreeing verbs which are directional. We see that reference to person in the signing space is closely connected to directionality in verbs as its movement is directed toward the referent or an index established for the referent. We also see instances of number distinction in the form of arc movement or consecutive points of the person argument (see Lillo-Martin and Meier 2011:113 for discussion). The authors further state that sign languages in East Asia such as Japanese Sign Language (JSL) marks gender in pronouns in the ‘non-present referents’.

To account for the variations in the height dimension of directional verbs with respect to the height of the referent, and also the idiosyncratic forms of first person object forms that point at various locations such as nose, chest, neck and shoulder, Lillo-Martin and Meier made a claim that the idiosyncratic forms of reference made to person with respect to variations in height and the point of contact are ‘lexically specified’ in the verb form. Person marking is determined by a morphological rule and the directional verbs are lexically specified for their referent and therefore vary with respect to height (can move higher or lower other than the movement in a horizontal plane) and point of contact at the referent. For example, the verb INVITE moves between the levels of abdomen, GIVE at the level of chest and SAY-NO-TO moves at nose level. Therefore Lillo-Martin and Meier conclude that agreement feature is determined grammatically in sign language. Besides that, the authors also

point out that the absence of third person referent in ASL needs to be accounted for as it is seen as a ‘universal phenomenon of language’.

The above discussion on verb agreement directs us to a discussion on case marking in sign languages. In BSL, verbs are inflected for case and mark the subject and the object. Kyle and Woll (1988) state that in BSL, the directional verbs or indicating verbs which carry the inflection for case in terms of movement in the direction of the referent, indicate the role of the participants apart from other explicit non-manual markers such as ‘eye gaze’ or ‘shoulder shift’ that exhibit the role of the pronouns. “The notion of ‘role’ involves both inflection for case (the description of subject, object, indirect object etc) and other devices by which the relationship between participants mentioned in a sentence is made explicit” (Kyle and Woll 1988:136).

Unlike the observation by Kyle and Woll, Meir (2003) points out that in Israeli Sign Language, case marking is seen only in the object position with the argument of non-agreeing verbs. The lexical PERSON pronoun in Israeli Sign Language has evolved into a PRO that bears the case marking through grammaticalization process. The sign for PERSON pronoun retains the same G handshape (an extended index finger pointing toward the R-locus) in the subject NP as well as in the object NP position whereas PRO with the case marking feature takes a bC handshape (a closed fist handshape with an extended thumb and index finger in a ‘cupped manner’) and a downward movement.

They not only differ in terms of hand shape and function but also exhibit differences syntactically (see Meir 2003).

He further argues that, unlike spoken languages where the case marking is associated with nouns or verbs that denote spatial relations such as GO, GIVE and so on, Israeli Sign Language discounts the process by which ‘spatial adpositions’ evolve into case markers as a result of its transparency in agreement on verbs and their arguments. However, the functional and syntactic differences mentioned by Meir with respect to PERSON and PRO are not found in the KoSL data. Hence we cannot base our claim on this. As Meir mentions that this claim needs to be verified in other sign languages as well, we cannot strongly take this claim as a universal case marking phenomenon for sign language in general but specific to Israeli Sign Language.

From the KoSL data, we can enunciate that in the case of directional verbs, the case marking along with subject-object agreement are identified with the help of inflections on the verb whereas in the case of plain verbs in sentences, the case marking is identified in the ‘syntactic domain’ where the word order itself is the indicator of case without any explicit inflection on the verb as discussed in the following subsection 4.2.1.

While dealing with case marking in pronouns, we may also notice a process of *assimilation* occurring in pronouns with a verb or a noun that follows or precedes. “*Assimilation* means that a segment takes on the characteristics of another segment near it, usually the one just before it or after it” (Valli et al 2011:50).

In the following sections we will discuss Case, agreement, assimilation as well as phi-features in KoSL. These well-known characteristics of sign language described in the literature, are noticed in our data as well.

#### **4.2.1 An overview of Pronominal Case and phi- features in KoSL**

In the use of pronouns by the subjects in KoSL, we found evidence for case marking as well as person, number distinctions and gender marking which are the characteristic features of pronominal systems in any natural language as explained in Harley and Ritter (2002).

In KoSL, we have found both the SVO and SOV word orders with SOV being the word order of the spoken language (Tamil) of that area.

##### SVO word order

13. MAN BASKET UNDERSTAND NOTHING

“Basket man understands nothing”

14. MAN THINKING BAD

“Man is thinking bad”

##### (S)OV word order

15. GREETINGS SAY

“(He) says greetings”

## 16.CLOTHES SPREAD CUTTING

“(He) spreads the cloth and cutting”

Pending a better determination of the word order in KoSL, we shall say that we can reliably identify case only in conjunction with agreement in directional verbs where there is a verb movement between its arguments that shows nominative and non nominative case as in example 17 given below. With the single agreement verbs (see 4.2.2.1) and plain verbs as in examples 18 and 19 respectively, nominative case is identified by the position of the argument (sign initial). The nominative subject always precedes the object and when it occurs in the post verbal position it occurs only in the subject- object sequence as shown in example 19 which has a VSO word order.

### 17. (a) GIVE ME (agreement verb)

“(You) give it to me”

A flat hand shape with palm up orientation is brought toward the signer from the location in front of the signer which stands for second person pronoun YOU.

### 18. SAY ME GREETINGS (single agreement verb)

“(You) say to me greetings”

An extended index finger is moved toward the signer from the verb sign SAY.

### 19. HELP I YOU (plain verb)

“I help you”

Table 4.2 provides the instantiations of Case, person, number and gender agreement on the pronominal in the sign narrations of groups A, B, C and D along with frequency indicated in parentheses. The nominative case is identified positionally. Arguments with the accusative role but occurring with non directional verbs are termed as “unmarked accusatives”. Plurality is represented by a plural marker whereas the singular form is unmarked. Agreement is seen when there is directionality in verbs. We also found instances of masculine gender which is manifested in a MOUSTACHE sign.

**Table 4. 2: An overview of the instantiation of Case and agreement and phi-features in groups A, B, C and D**

Group	Case	Agreement	Number	Gender
A	Nominative (30) Unmarked accusative arguments (1) Dative (3) Adnominal (2)	Yes	Unmarked Singular- 32  Plural-2	Masculine- 2
B	Nominative (81) Unmarked accusative arguments (2)  Dative (2)	Yes	Unmarked singular-84  Plural- 9	-----
C	Nominative (9) Dative (1)	Yes	Unmarked Singular-7	Masculine- 1
D	Nominative- 2	----	Unmarked Singular-2	-----

From the table above, we can see that the earliest entrants in group A who have a longer period of exposure to KoSL seem to have employed the functional elements of case, agreement and phi-features. They employed the maximum categories followed by B, C and D. The use of adnominal case marking is seen only group A using the movement of hand in the signing space. Group A uses nominative, dative, unmarked accusative and adnominal case marking; this indicates that A uses a more elaborate case system than the others. Apart from group A, every group has nominative arguments. The use of indicating verbs that mark subject-object agreement are seen in groups B and C. Dative case starts emerging in groups B and C. Finally in group D where we have the oldest entrants, we see only nominative arguments. Agreement is seen only when the verb is directional.

While singular is indicated by all groups, plural marking which is encoded manually (see section 4.2.2.4) is indicated only in groups A and B who are the early entrants into sign language. Number distinction is seen in groups A, B and C and not in D.

Gender marking is seen in groups A and C and not in B and D. In general, gender markings were rare, with group A showing two such cases where pronominals were marked masculine, and group C one such case. This could also be because the third person pronominals were not used, because of pro-drop.

Therefore, we find group D, the last of all has not utilized pronominal case or verb agreement. Number distinction and gender marking is also not seen in the pronouns.

In the following sections, we will discuss our data on KoSL elaborately with regard to pronominal case, agreement, assimilation as well as number and gender in pronouns in each group.

#### 4.2.2 Group A

This section deals with Case in pronominals and phi-features found in the sign narration of group A.

**Table 4. 3: Table (4.3) Subjects in Group A**

Group	S.no	S.NO as per recording order	Subject code	Years of exposure to sign language	Age of entry into the institution	Age at the time of recording
A	1.	3	<i>SUJ(f)</i>	8	6	14
	2.	9	<i>KIR(f)</i>	8	6	14
	3.	8	<i>JOD(m)</i>	8	7	15

We can identify first, second and third person pronouns that are marked for case. Number and gender distinctions are also identified in their signing. In earlier studies on Indian sign languages, a distinction was found between first and non-first referents in the case of pronouns (Sinha 2012; Zeshan 2000), where the same manual sign (Index finger) with varied orientation (towards the speaker and in the opposite direction) captures the distinction between the two. However, in our KoSL data, the non-first referents is found to be further differentiated into second and third person pronouns in terms of handshape and orientation with the manual sign (i.e. the pointing sign) remains the same across all person marking. In our analysis, we will provide

examples to support this differentiation. Eye gaze shift for second and third person has not been identified among the signers.

#### 4.2.2.1 First person pronouns

In the first person pronoun in KoSL, we find instances of the pronoun occurring in nominative, adnominal and dative positions, thus showing the instance of case use. A count of their occurrences is shown in table 4.4. Examples of sign use to mark case in the first person is shown in table 4.5.

**Table 4. 4: Count for first person singular nominative **I**,  
Adnominal and dative **ME****

Subject code	1 <sup>st</sup> person singular nominative <b>I</b>	1 <sup>st</sup> person singular adnominal and dative <b>ME</b>
<i>SUJ(f)</i>	20	1 (adnominal)
<i>KIR(f)</i>	2	1 (dative)
<i>JOD(f)</i>	1	0

**Table 4. 5: Signs for first person pronouns**

Person	Singular		
1 <sup>st</sup>	Nominative	Dative	Adnominal
	<b>I</b> - A flat hand shape with the index finger slightly apart is kept on signer' chest.  Eg: GREETINGS <b>I</b> SAY "I say greetings" <u>SUB</u> : <i>KIR(f)</i>	<b>ME</b> - A flat hand shape is moved toward the signer from the verb.  Eg: GIVE <b>ME</b> "give it to me" <u>SUB</u> : <i>KIR(f)</i>	<b>ME</b> - A closed finger hand shape with a slightly extended index and middle finger is brought toward the signer from one side from the verb.  Eg: TALKING <b>ME</b> "talking about me"  <u>SUB</u> : <i>SUJ(f)</i>

In the table above, we find that there are three distinct signs corresponding to the first person nominative (**I**), dative (**TO ME**) and adnominal (**ABOUT ME**).

In KoSL, pronominals are manifested in manual signs. The manual sign is the index finger pointed at the referent. The sign for I is always signed by pointing to the signer himself, i.e. an index finger kept on the signer's chest.

The sign for the dative TO ME, start at a position in front of the signer where the sign for the verb GIVE is made and is directed towards the signer and ends at the position for I.

In the adnominal TALKING ABOUT ME, the sign starts from a point to the signer's right where the sign for TALKING is made and ends at the position for I.

Though the sign movements mentioned above end at the position for I, the difference we find between I and ME in terms of case marking is that for the nominative I, the pointing sign is so close to the signer that the index finger can be just kept on the signer's chest. Whereas for the dative and adnominal case marked 1<sup>st</sup> pronoun ME, the pointing sign moves from a considerable distance toward the signer's body and then ends at I. Hence Kovai sign language distinguishes case by movement of the hand. While making this claim, we can also elucidate that the preceding verb signs TALKING and GIVE are made away from the signer's body, providing space for the movement to take place between the verb sign and the signer, thereby giving rise to the readings ABOUT ME and TO ME respectively. However we make this claim cautiously, since the verb 'give' is directional (as we discuss below). Perhaps later work may look for contrasts in non-nominative case marking for verb pairs such as 'buy' ('from me') and 'sell' ('to me'). We did not find the requisite contrasts in our data. Here we also note that our data does not show plural pronominals in the first-person.

Instances of assimilation as discussed in the literature are found in our data. If we pay close attention to the hand shapes for pronouns (see table 4.5), they take on the preceding or the following verb sign's hand shape. For I (nominative) - a flat hand shape for I is influenced by the preceding hand shape for the sign GREETINGS (a flat hand shape kept vertically with the palm facing inside is taken to the forehead). While making the sign for 'I', again the signer extends the index finger in the flat hand shape for I to sign the following the sign SAY (An extended index finger is moved from the mouth toward the front).



In ABOUT ME (adnominal case), the closed finger hand shape for ME is inspired by the hand shape (an extended and slightly bent index and middle finger) made for TALKING that precedes. The same is the case with GIVE ME, YOU, HE and HIM. Here, if we notice the hand shapes for the pronouns, we find that the hand takes up the shape of the verb or noun that precedes the pronoun in the signing process.

In our data, verb agreement is seen in the verb GIVE as it is directional in nature. In the case of GIVE TO ME, the sign movement starts from the location in front of the signer away from the signer's body and moves towards the object ME, which is coming close enough toward the signer's body and ends there. For instance, if it were GIVE TO YOU, the sign movement of the verb GIVE would start from the location close enough to the signer's body and ends in the direction of the object YOU which is in front of the signer, away from the signer's body. "One of the most important uses of the signing space is the expression of subject-object relationships in agreement verbs. These are morphologically complex verbs that change movement direction and/or hand orientation to show who is doing what to whom" (Hendriks 2008:59).

Therefore, the data shows that in KoSL, the change in the direction of the verb movement for the verb sign GIVE marks agreement between the subject and the object. We also see *single agreement* with respect to the movement of the verb form SAY.

In KoSL, with the verb SAY, it shows movement from the signer and not the subject towards the object, thus showing *single agreement* as characterized in Meir et.al (2006). The authors also agree that verb agreement pattern seen in spoken language shows that it is not possible to have object agreement without subject agreement in sentences as subject is ranked highest in the 'Grammatical Relations hierarchy'(GR) (Greenberg 1966: 37-38 as in Meir et.al 2006). Therefore subject agreement in the absence of object agreement can be anticipated but not the other way round. But in sign language, subject agreement alone cannot be licensed unless there is object agreement. Moreover, there are verb forms such as SAY which are directional and yet only object agreement is seen thus marking *single agreement* (Meir et. al 2006).

According to Meir et al (2006), in single agreement verbs, irrespective of the subject who is first or non-first referents, the initial location of the verb sign is always on the signer's body. Example signs such as ANSWER, EXPLAIN, TELL are signed in the

location of the signer's mouth and verbs like SEE, VISIT are signed on signer's eyes. And they all end at the location of the object. This shows that the object agreement is made obligatory while the 'syntactic subject' is omitted. This phenomenon has been observed in sign languages such as Danish sign language and Italian sign language.

In the KoSL data, we find the verb forms TELL, SAY (examples from tables 4.5, 4.7 and 4.13) which are found to be single agreeing verbs as the verb signs are initiated at the location (mouth) on the signer's body and directed toward the object YOU or ME and end there. The movement of the verb signs cannot be altered or initiated at the location of non-first person subjects. Hence, the verb forms SAY, TELL in KoSL are considered as single agreement verbs as we find evidence only for object agreement without the subject agreement. Here the subject is identified lexically i.e. not syntactically but pragmatically.

#### 4.2.2.2 Second person pronouns

**Table 4. 6: Count for second person pronouns**

Subject code	Second person singular nominative <b>YOU</b>	Singular (unmarked accusative) and dative <b>YOU</b>	Plural Dative and adnominal <b>YOU</b>
<i>SUJ(f)</i>	1	1 (dative)	1 (dative)
<i>KIR(f)</i>	0	1	1 (adnominal)
<i>JOD(f)</i>	0	0	0

**Table 4. 7: Signs for second person pronouns**

Person	Singular		Plural
2 <sup>nd</sup>	Nominative	Dative	Dative and adnominal
	<p><b>YOU-</b> An index finger is pointed to the addressee</p> <p><b>YOU WAIT</b> “you wait”</p> <p><u>SUB</u>: <i>SUJ(f)</i></p>	<p><b>YOU-</b> An L hand shape with the palm facing up is moved forward</p> <p><b>GIVE YOU GIFT</b> “give you gift”</p> <p><u>SUB</u>: <i>SUJ(f)</i></p>	<p><b>YOU-</b> An index finger pointed to the addressee and kept at consecutive points</p> <p>1. <b>TOMORROW TELL YOU</b> “tell you tomorrow”</p> <p><u>SUB</u>: <i>SUJ(f)</i></p> <p>2. <b>FACE YOU YOU</b> “your faces” (i.e. faces of you)</p> <p><u>SUB</u>: <i>KIR(f)</i></p>

For the second person pronoun **YOU**, the sign is always pointed at the addressee and is made in front of the signer in the signing space. The signs for nominative **YOU** is a pointing sign whereas the accusative **YOU** sign in **GIVE YOU** is assimilated with the preceding verb sign **GIVE** as a process of verb agreement and is assigned dative case. Plurality is indicated by consecutive points for the sign for **YOU** in the dative case and also in the adpositional genitive case. Here we note that our data does not show plural nominative **YOU**.

#### 4.2.2.3 Third person pronoun

**Table 4. 8: Count for third person singular nominative HE/SHE**

Subject code	Third person singular nominative <b>HE/SHE, +male</b>
<i>SUJ(f)</i>	3
<i>KIR(f)</i>	1
<i>JOD(m)</i>	2 (+male)

**Table 4. 9: Signs for third person pronouns**

Person	Singular
	Nominative
3 <sup>rd</sup>	<p><b>1.HE/SHE-</b> an index finger pointed to a reference point in the signing space</p> <p>Eg: <b>HE/SHE</b> NOW COME “he/she comes now”</p> <p><u>SUB</u>: <i>SUJ(f)</i></p>
+male	<p><b>2. HE-</b> A moustache sign+ an index finger pointed to a reference point in the signing space</p> <p>Eg: <b>HE</b> AFTER FIGHT “after that he fights”</p> <p><u>SUB</u>: <i>JOD(m)</i></p>

For the third person pronouns in Kovai sign language, an index is established in the signing space toward the signer’s right or left. A similar situation is also found in BSL where the reference for the third person is made toward the signer’s right (Kyle & Woll 1988). But in IPSL, Zeshan (2000) notices that there is no clear cut distinction made between the index for the second person and index for the third person. “When an index is used as a pronoun, it is not always easy to differentiate between second and third person reference in the texts because the form of the pointing sign is identical in both cases except, arguably, for the direction of the pointing” (Zeshan 2000:100). Lillo-Martin and Meier (2011) also add “At this time, we know of no arguments for manual distinctions between second- and third-person signs (whether pronouns or, as we will see, agreeing verbs)” (Lillo-Martin and Meier 2011:101).

But in Kovai sign language, a distinction between second and third- person pronouns are clearly made by the subjects. A pointing sign in front of the signer is YOU and toward the right or left is HE/SHE. Here not only the direction of the pointing changes, but also the place of articulation. This is similar to our finding in ISL (Hyderabad) from pilot 1 where an index is assigned in the signing space for the third person referents.

Plural third person pronominal does not occur in our data.

In the signing of the subject *JOD (m)* in table 4.9, we find one instance of gender marking indicated by a MOUSTACHE sign in the third person pronoun in example 2 (table 4.9) whereas in example 1 gender marking is not seen in the third person

pronoun sign. Other than this, we find gender marking in a topicalised sentence where the entity that HE refers to is being *topicalised*.

## 20. **SUB**: *JOD* (*f*)

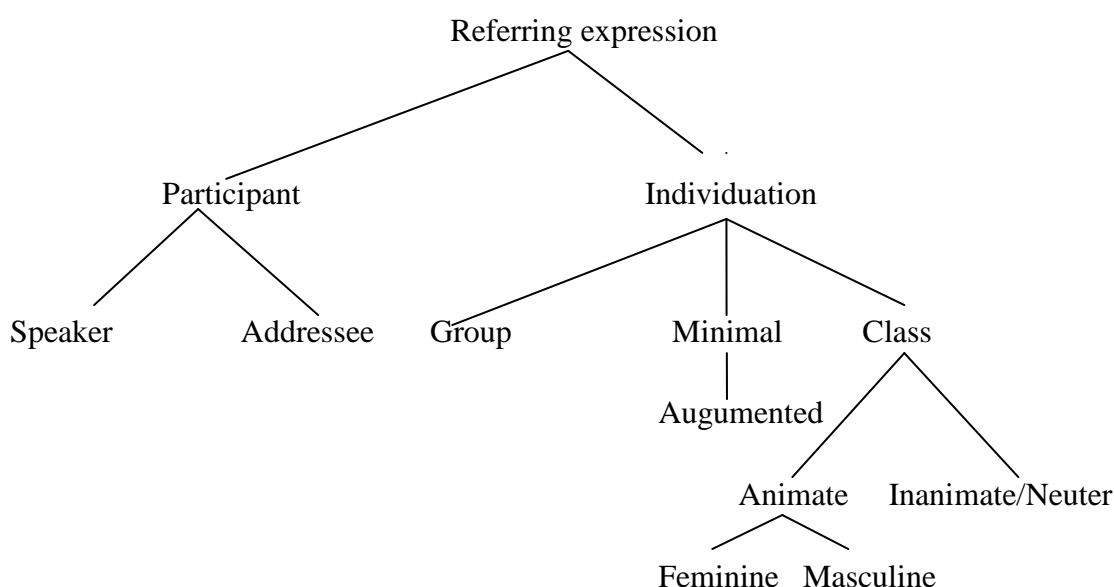
BASKET MAN **HE** BAD

“basket man, he is bad”

Although Lillo-Martin and Meier (2011) point out that in sign language, gender marking is seen only when the referents are not present in the ‘immediate conversational context’, we find in KoSL that the gender is marked even when we have the pictorial representation of the referents in the immediate conversational context in the story excerpt. The same is the case with ISL (Hyderabad) where the gender distinction between the third person +male and –male is established through the MOUSTACHE and NOSE STUD (an index finger is kept on one side of the nose) signs respectively.

We also notice that, gender marking is seen only in third person pronouns and not in first or second person pronouns. This property of where the gender feature is instantiated in the pronominal system mirrors the universal feature hierarchy of pronominal systems suggested by Ritter and Harley (2002).

## 21. A morphosyntactic feature geometry



Source: Harley & Ritter (2002)

In the system of Harley and Ritter, gender is a node specified only on the non-participant node (i.e. the third person). The participant node encodes first and second person features, i.e. the speaker or the addressee. The gender feature is not specified on the participant node. It is therefore interesting to see that the sign language analysis here has the same finding.

An overview of the performance of group A on pronominal case and agreement is given below.

**Table 4. 10: An overview of the use of pronominals and case marking in group A**

Group	Person	Singular		Plural
		Nominative	Unmarked accusative/ dative/ adnominal	Unmarked accusative/ dative/ adnominal
A	1 <sup>st</sup>	23	2 (1 dative, 1 adnominal)	0
	2 <sup>nd</sup>	1	2(1Dative,1unmarked accusative)	2 (1 Dative, 1 Adnominal)
	3 <sup>rd</sup>	6(2 +male)	0	0

#### 4.2.2.4 Number

Number marking is one of the functional categories and the instantiation of it differs from language to language. In a language like Tamil, the number distinction is made between singular and plural. And it is only the plural form which carries the suffix –*kal* or –*kka* (Lehmann 1989). The same is the case with English which uses the plural suffix –*s*. Apart from the singular and plural marking; dual marking and reduplication are also used to indicate number distinction in some languages. Another way of number marking is the use of cardinals with the nouns such as *two cows*, *three roses* and so on.

In sign languages, especially in the case of BSL, plurality is denoted by reduplication process as well as by the use of cardinals which precede the noun sign. For example, FIVE MAN, MANY MAN (Kyle and Woll 1985). Also in the case of ASL, ‘numeral incorporation’ is used for number marking (Valli et al 2011). And also we have seen instances of arc movement, consecutive points in the signing space indicating plurality in ASL in Martin and Meier (2011).

In KoSL, plurality is seen in the second person pronouns in group A. A singular YOU vs. plural YOU. For the plural YOU, the pointing sign is made at three consecutive points in front of the signer as seen in ASL.

A sign for ALL (excluding the signer) is also found which is manifested in a spread finger hand shape moved around in the signing space. A similar instance of this kind plural marking phenomenon has been noted by Zeshan (2000) in IPSL. “In some cases, however, the index finger moves in a semicircle in the horizontal plane indicating several points. Thus the index refers to several participants in the action, corresponding to a ‘pronoun’ in the ‘plural’ form (or the ‘distributive’ form)” (Zeshan 2000:106).

In our data, number distinction is not found in the first and third person pronouns in group A.

#### 4.2.3 Group B

We have two signers in group B who had 6-8 years of exposure to sign language, and had first been exposed to sign language when they were 9-10 years old. The data was collected when they were 16-17 years of age.

**Table 4. 11: Subjects in group B**

Group	S.NO	Recording order	Subject Code	Years of Exposure to Sign Language	Age of Entry Into the Institution	Age at the Time of Recording
B	4.	1	<i>RAM(m)</i>	8	9	17
	5.	11	<i>DEV(f)</i>	6	10	16

Here in group B, we found evidence for pronominal case marking, verb agreement, number and gender distinctions.

##### 4.2.3.1 First person pronouns

**Table 4. 12: Count for first person singular nominative I, dative ME**

Subject code	1 <sup>st</sup> person singular nominative I	1 <sup>st</sup> person singular dative ME
<i>RAM(m)</i>	6	0
<i>DEV(f)</i>	70	1

**Table 4. 13: Signs for first person pronouns**

Person	Singular	
1 <sup>st</sup>	Nominative	Dative
	<b>I</b> - A spread finger hand shape is kept on signer' chest.  Eg: HELP <b>I</b> YOU "I help you"  SUB: <i>RAM(m)</i>	<b>ME</b> - An extended index finger is moved toward the signer from the verb.  Eg: SAY <b>ME</b> "say to me"  SUB: <i>DEV(f)</i>

As mentioned earlier, in group B as well, we find that for the nominative 'I', the pointing sign is close to the signer' body whereas for the dative case, the pointing sign moves at a distance from the verb toward the signer' body and ends at I. Therefore in group B, we can identify the distinction between nominative and dative case by the hand movement as seen in group A. Here verb agreement is found in the non-nominative pronoun ME as the verb sign SAY is directional in nature.

#### 4.2.3.2 Second person pronouns

**Table 4. 14: Count for second person pronouns**

Subjects	Second person singular nominative <b>YOU</b>	Second person plural nominative <b>YOU</b>	Singular (unmarked accusative)/dative <b>YOU</b>
<i>RAM(m)</i>	1	0	2
<i>DEV(f)</i>	3	9	1 (dative)

**Table 4. 15: Signs for second person pronouns**

Person	Singular		Plural
2 <sup>nd</sup>	Nominative	Dative	Nominative
	<b>YOU</b> - An extended index finger is pointed in front of the signer. Eg: <b>YOU</b> NOW SWEEPING "you are sweeping now" SUB: <i>RAM(m)</i>	<b>YOU</b> - An extended index finger is moved toward the addressee from the verb.  Eg: I SAY <b>YOU</b> "I say to you"  SUB: <i>DEV(f)</i>	<b>YOU</b> - A flat hand shape is moved in an orbital motion in front of the signer.  Eg: <b>YOU</b> ALL FRIENDS "you are all friends"  SUB: <i>DEV(f)</i>

The signs for singular nominative YOU and dative YOU in group B are the same. Though the plural nominative YOU was not identified in group A, we notice the presence of it in group B.



### 4.2.3.3 Third person pronouns

**Table 4. 16: Count for third person singular nominative pronoun HE/SHE**

Subject code	3 <sup>rd</sup> person singular nominative <b>HE/SHE</b>
<i>RAM(m)</i>	0
<i>DEV(f)</i>	1

**Table 4. 17: Signs for third person pronouns**

Person	Singular nominative
3 <sup>rd</sup>	<b>HE/SHE</b> - A flat hand shape is pointed at the side of the signer' body  Eg: <b>HE/SHE</b> THINK "he/she thinks" SUB: <i>DEV(f)</i>

In group B, for the third person pronoun, an index is established in the signing space. An overview of the performance of group B on the pronominals and case marking is given in table 4.18.

**Table 4. 18: An overview of the use of pronominals and case marking in group B**

Group	Person	Singular		Plural
B		nominative	(Unmarked Accusative)/ dative/ admoninal	nominative
	1 <sup>st</sup>	76	1 (dative)	0
	2 <sup>nd</sup>	4	3 (2 unmarked accusative, 1 dative)	9
	3 <sup>rd</sup>	1	0	0

### 4.2.3.4 Number

In group B, number distinction is made in the second person nominative pronoun between singular YOU and plural YOU.

#### 4.2.4 Group C

**Table 4. 19: Subjects in group C**

Group	S.NO	Recording order	Subject Code	Years of Exposure to Sign Language	Age of Entry into The Institution	Age at The Time of Recording
C	6.	2	<i>SAN(f)</i>	2	9	11
	7.	7	<i>SIN(f)</i>	2	9	11
	8.	4	<i>SAT(f)</i>	1	10	11

In group C, we notice that among the three subjects, only one subject made signs for all the first, second and third person pronouns. Even within the group, we find individual differences among the subjects. That is, these are differences that cannot be explained by the so-called objective or observable categories of gender (all three are female), age of entry into the signing community, or years of exposure to sign language in the community.

##### 4.2.4.1 First person pronouns

**Table 4. 20: Count for first person nominative I, dative ME**

Subjects	1 <sup>st</sup> person Singular	
	Nominative <b>I</b>	Dative <b>ME</b>
<i>SAN(f)</i>	6	1 (dative)
<i>SIN(f)</i>	0	0
<i>SAT(f)</i>	0	0

**Table 4. 21: Signs for first person pronouns**

Person	Singular	
	Nominative	Dative
1 <sup>st</sup>	<p><b>I</b>- A flat hand shape is pointed at and kept on the signer's chest.</p> <p>Eg: <b>I THINKING</b> "I am thinking"</p> <p><u>SUB</u>: <i>SAN(f)</i></p>	<p><b>ME</b>- An extended index finger is dragged toward the signer from the verb</p> <p>Eg: <b>SAY ME GREETINGS</b> "say to me greetings"</p> <p><u>SUB</u>: <i>SAN(f)</i></p>

In group C, a distinction is made between nominative I and dative ME.

#### 4.2.4.2 Second person pronouns

**Table 4. 22: Count for second person singular nominative YOU**

Subject code	Second person singular nominative <b>YOU</b>
<i>SAN(f)</i>	1
<i>SIN(f)</i>	0
<i>SAT(f)</i>	0

**Table 4. 23: Signs for second person pronouns**

Person	Singular nominative
2 <sup>nd</sup>	<p><b>YOU</b>- An index finger is pointed at the addressee in front of the signer</p> <p>Eg: <b>YOU GO</b>  “you go”  <u>SUB</u>: <i>SAN(f)</i></p>

#### 4.2.4.3 Third person pronouns

**Table 4. 24: Count for third person singular nominative HE/SHE**

Subject code	3 <sup>rd</sup> person singular nominative <b>HE/SHE</b>
<i>SAN(f)</i>	1
<i>SIN(f)</i>	0
<i>SAT(f)</i>	1 (+male)

**Table 4. 25: Signs for third person pronouns**

Person	Singular nominative
Third	<p><b>HE/SHE</b>- An extended index finger is pointed at the signing space toward the signer's left</p> <p>Eg: I <b>HE/SHE GO</b>  “I and he/she go”  <u>SUB</u>: <i>SAN(f)</i></p>
+male	<p><b>HE</b>- Reference to index + moustache sign</p> <p>Eg. <b>HE ONE BASKET GO</b>  “he (that one) goes with basket”  <u>SUB</u>: <i>SAT(f)</i></p>

An overview of the performance of group C on the pronominals is given below.

**Table 4. 26: An overview of the use of pronominals in group C**

Group	Person	Singular	
C		Nominative	Dative
	1 <sup>st</sup>	6	1
	2 <sup>nd</sup>	1	0
	3 <sup>rd</sup>	2 (1 +male)	0

Gender marking is seen in the third person nominative pronoun.

#### 4.2.5 Group D

**Table 4. 27: Subjects in group D**

Group	S.NO	Recording order	Subject Code	Years of Exposure to Sign Language	Age of Entry Into The Institution	Age at The Time of Recording
D	9.	5	<i>PAV(f)</i>	3	13	16
	10	10	<i>PRI(f)</i>	1	13	14

##### 4.2.5.1 First person pronouns

**Table 4. 28: Count for first- person nominative I**

Subject code	1 <sup>st</sup> person singular nominative I
<i>PAV(f)</i>	1
<i>PRI(f)</i>	0

**Table 4. 29: Signs for first person singular nominative pronoun I**

Person	Singular nominative I
1 <sup>st</sup>	<p><b>I</b>-A flat hand shape is kept on the signer' chest.</p> <p>Eg: I RIGHT "I am right"</p> <p><u>SUB</u>: <i>PAV(f)</i></p>

#### 4.2.5.2 Second person pronouns

**Table 4. 30: Count for second-person nominative YOU**

Subject code	2 <sup>nd</sup> person singular nominative <b>YOU</b>
<i>PAV(f)</i>	1
<i>PRI(f)</i>	0

**Table 4. 31: Signs for second person pronouns**

Person	Singular nominative
Second	<p><b>YOU</b>-An index finger is pointed at the addressee in front of the signer</p> <p>Eg: <b>YOU KING</b> “you are the king”</p> <p><u>SUB</u> : <i>PAV(f)</i></p>

In group D, we found evidence only for nominative case in the first and second person pronouns.

**Table 4. 32: An overview of the use of pronominals in group D**

Group	Person	Singular nominative <b>I</b>
D	First	1
	Second	1

Due to the absence of plural pronouns, number distinction is not found in group D. Gender marking is also not found in group D.

#### 4.3 Tense and aspect

In Signed languages such as ASL and ISL, the *tense* is marked with an independent lexical sign and/or with adverbs of time such as YESTERDAY, TODAY, TOMORROW and so on which are represented manually. In English, the past tense marker *-ed* is bound with the verb and for the irregular verb forms such as *see:saw*, *think:thought* and so on, the verb itself undergoes modification giving rise to past

tense. But in ASL and ISL, the tense markers are neither bound with the verb nor change the verb form. Even some spoken languages like Chinese use aspectual markings such as *today*, *tomorrow*, *yesterday* to mark tense and it also uses an independent functional word *le* (which is not connected to the verb) to mark past tense or completion of an action.

In ASL, an independent lexical item such as YESTERDAY, TODAY or TOMORROW denotes time. “ASL does not add segments to a sign to indicate tense” (Valli et al 2011:121). “For example, the English sentence *Tomorrow I will go to the store* can be produced in ASL as TOMORROW PRO.1 GO STORE. The meaning comes from the separate lexical sign TOMORROW. The sign WILL is not required to make future tense...” (Valli et al 2011:124). Kyle and Woll (1988) states that in BSL, there are two ways to indicate time: one is verb undergoing change for past tense which happens only with the following verbs SEE:SAW, GO:WENT and WIN:WON. And the other is ‘adverbial modification’ such as TOMORROW, YESTERDAY and so on.

According to Sinha (2012), present tense is unmarked in ISL and the past and future tense are separate lexical signs. “...these tense distinctions are not marked on the ISL verb; the signer establishes temporal reference through lexical tense markers and by NP adverbs of time” (Sinha 2012:119).

Interestingly in KoSL, we find there is a sign for past that follows the lexical verb sign as a suffix and that sign does not refer to the adverb yesterday as in ASL. It purely stands for the past tense. The suffix sign for past in KoSL is ‘fingers swirled down outward’. We have also found verb modulation in one subject for GO: WENT as seen in BSL. Apart from this, some aspectual elements such as perfective, completive, durative and succession are also found in our data. Present tense is unmarked in KoSL as it is in ISL and evidence for future tense is not found in our data. We make the claim about past tense marking tentatively, and agree that it needs to be validated with more data and with reference to different types of verbs (as identified by Sinha 2012). There might be a question whether what we suggest as a past tense marker is a perfect aspect marker. However, in many languages, the past and perfect verbs are morphologically identical. For Dravidian in particular, it has been argued and fairly well accepted that the perfect aspect marked verb is interpreted

as a past tense verb (Amritavalli 2014). Hence we raise this possibility, and leave it open for verification.

As the table shows, the subjects in group A employed 5 out of 6 categories in tense and aspect followed by group C who employed 3 out of 6. The performance of group B is fairly better when compared to group D as we see the latter employing only durative aspect.

Perhaps, apart from pronominals and phi features, of all the functional categories we have examined so far, we see that for tense and aspect, group A (who are early entrants and have the longer exposure to sign language) exhibits a richer language system as they are performing better than the other groups by employing 5 out of 6 categories.

**Table 4. 33: no. of occurrences of tense and aspect**

<b>Groups</b>	<b>Past tense</b>		<b>Aspect</b>			
	<b>Sign for PAST</b>	<b>Verb modulation</b>	<b>Perfective-HAVE</b>	<b>FINISH (lexical)</b>	<b>Durative-KEEP ON</b>	<b>Succession-AFTER, NEXT</b>
A	1	1	1	2	0	2
B	0	0	0	16	0	2
C	1	0	0	2	0	1
D	0	0	0	0	1	0

#### **4.3.1 Sign for past**

As mentioned earlier, the sign for PAST is fingers swirled down outward. It is a suffix sign follows the lexical verb sign. Consider the examples below.

22. Context: KING HAIR GOOD SAY PAST

“king said hair is good”

**KIR (group A)**



SAY

PAST

“said”

23. Context: BASKET MAN GO, MAN SWEEP SEE PAST

“Sweeping man saw basket man go”

**SAT (group C)**



SEE

PAST

“saw”

In example 23, the onset of the sign for PAST is clearly distinguished from the final position of the sign SEE. We see that the sign for SEE ends as seen in the second frame and the signer’s hand is pulled back slightly to make the sign for PAST, i.e.



fingers swirled down in the third frame. Hence, we analyze it as not a part of the lexical sign SEE but the past tense marker.

### 4.3.2 Verb modulation

Interestingly, we also found an instance of verb modulation in KoSL where the verb sign GO is inflected for the PAST by changing the direction of GO to mean WENT.

24. **KIR (group A)** GO vs. WENT.



GO

:

HOSPITAL

WENT

“I went to the hospital”

In example 24, we illustrate two separate signs. We find that, in one instance the signer signs GO and in another instance the signer signs HOSPITAL WENT. The signs GO and WENT were signed in two different instances. The sign for verb sign GO is directed over the shoulder towards the back which indicates that the action has happened in the past. This is different from the usual sign for the PAST (discussed above) which is ‘*fingers swirled downward*’.

### 4.3.3 Perfective aspect

We found one subject in group A signing the perfective aspect. For the perfective, the sign for PAST is made using both hands and brought down completely, i.e. fingers swirled outward and brought down.

## 25. Context: I FOOD COOK EAT PAST PERFECTIVE

“I cook food and have eaten”

*SUJ (group A)*



EAT

PAST

PERFECTIVE

“I have eaten”

We see that the sign for perfective aspect is ‘fingers swirled outward and brought down’ whereas the sign for past stops only with the ‘fingers swirled outward’. This way we distinguish past from the perfective aspect.

The final sign in example 25 reminds us of the action of putting something down. We may note here that in spoken Tamil, perfective aspect is often indicated by an auxiliary verb. One such auxiliary is the light verb counterpart of a lexical verb ‘leave.’ Another such auxiliary is the light verb counterpart of the lexical verb ‘put.’ For example, the verbal expression in English corresponding to “put it away” in English would translate in Tamil as *eDuttu veyy*, literally ‘take up and put;’ and the expression *paNNi veyy* ‘make and keep/put’ corresponds to the meaning of making something and keeping it ready (for someone), or doing something (undesirable) from which there is no turning back, which we speculate indicate perfective aspect.

We also found instances of completion, durative aspect and succession.

The sign for FINISH in KoSL involves a manual sign ‘flat hand shape in both hands stretched out’ with a non-manual marker HEAD NOD SIDE TO SIDE. It is an independent lexical sign in the sense that it does not occur with any other verb.

Subjects employed completive aspect at the end of their story narration. The examples given below show the sign for FINISH.

## 26. Sign for FINISH

***KIR (group A)***



***RAM (group B)***



***SIN (group C)***



-----A

FINISH

A- Head nod side to side

### 4.3.4 Durative aspect

The sign for durative verb GO ON/KEEP ON is the main verb with iteration along with a non manual- marker FROWN. Here the verb sign for TALK (an extended index finger in both hands moving to and fro) is repeated thrice to indicate the duration of the verb TALKING.

27. *PAV (group D)*



-----A

A- FROWN

KEEP TALKING

“Going on talking”

**4.3.5 Succession**

The sign for succession such as AFTER is a manual sign. It is a ‘flat hand shape swam inward from the side into the signing space’. Subjects used the sign for AFTER while starting a new utterance. The sign denoting AFTER is given below.

28. *SUJ (group A)*



AFTER

29. *RAM (group B)*



AFTER

30. *SAN (group C)*



AFTER

An instance of NEXT is also found in one of the subjects. The sign for NEXT is a manual sign that involves ‘an extended index finger swirled outward in front of the signer’ body’.

31. *SUJ (group A)*



NEXT

From this we see that in KoSL, we have a suffix sign for PAST tense following the lexical verb sign and also verb modification as seen in example 24. Subjects also employed various aspectual elements in their narration. Though in some groups subjects employed very few tense and aspectual elements, we find that wherever it is used, it is done in a systematic way in all the four groups.

**Table 4. 34: Signs for tense and aspect**

Past tense		Aspect			
Sign for PAST	Verb modulation	Perfective-HAVE	FINISH (lexical)	Durative-KEEP ON	Succession-AFTER, NEXT
Fingers swirled outward.	A flat hand shape is directed over the shoulder toward the back.	Fingers swirled outward and brought down.	A flat hand shape in both hands is stretched out with a non-manual marker HEAD NOD SIDE-TO-SIDE	Main verb with iteration along with a non-manual marker FROWN	A closed fist with an extended index finger swirled outward.

#### 4.4 Observation based on the results

From the analysis of pronominals and tense and aspect, we can see that the age of entry into the signing community and the period of exposure to sign language have an impact on the competence level of the subjects in groups A, B, C and D. It is seen from their instantiation of functional elements in the sign narration to varying degrees. This finding from the study of pronominals and tense and aspect in KoSL, is found to be consistent with the findings from the Nicaraguan sign language studies by Senghas (1995) (see chapter 2, section 2.4).

Senghas finding states that the second generation signers who are the early entrants surpassed the language abilities of the first generation signers who are the late learners in aspects such as fluency, use of verbal inflections, SASS and so on. We find a similar situation in the Kovai signing community in the case of pronominals and tense and aspect. Apart from these two functional categories, for the other aspects

mentioned above such as verbal inflections and SASS, our early entrants in the Kovai signing community exhibit higher proficiency than the late entrant signers as it is in the Nicaraguan signing community. Let us discuss our findings in KoSL with regard to verbal inflections and SASS. In our study on KoSL, the fluency rate was not calculated, i.e. morpheme density per sign.

#### **4.4.1 Verbal inflections**

As we discussed earlier in this chapter (section 4.2) that verbs that are inflected for agreement mark Case in sign language, we found our early entrants in group A employing dative case and adnominal case at a higher rate followed by groups B, C and D (see section 4.2.1). In groups B and C we found only an instance of dative case and in group D, we found only the nominative argument. Therefore it is noticeable that group A (early entrants) shows a better proficiency in the use of verbal inflections compared to the other groups B, C and D.

#### **4.4.2 Size and shape specifier (SASS)**

For SASS, our early entrants in group A and B in the Kovai signing community use size and shape specifiers. It is not seen in groups C and D where we have the late entrants. This is similar to the situation in the Nicaraguan signing community. Two instances of SASS were found with two of our early entrant subjects. To show ‘stitching clothes’ one subject *JOD(m)* from group A, pinched his clothes and made a rectangular shape (refers to a piece of cloth as seen in example 32) in front of the upper body followed by the sign for STITCHING while the other signers from group C and D consistently pinched their own clothes and made the sign for STITCHING without using the SASS.



32. **JOD (group A)** Sign for a rectangular piece of cloth (SASS)

Frame 1



Frame 2



Secondly, to show 'lighting fire', one subject *RAM (m)* from group B, incorporated a straight C hand shape to indicate the size and shape of a match box and signed for LIGHTING fire. This was not utilized by our other subjects.

33. **RAM (group B)** A straight 'C' handshape denoting a small box (SASS)



Therefore verbal inflections are employed at a higher rate by group A followed by groups B, C and D. And 'size and shape specifiers' (SASS) are seen in groups A and B and not in C and D where we have the late entrants. This is consistent with the results we found from the Nicaraguan signing community (studied by Senghas).



## CHAPTER FOUR: DATA ANALYSIS (PART B)

### An overview of the chapter

This chapter part B of data analysis deals with interrogatives, negation, and relative clause construction in KoSL. Interrogatives includes discussion on yes-no and *wh*-questions. Negation deals with aspects such as lack of need, prohibition, sentential negation and state of inability. Relative clause construction discusses the relative non-manual marker.

### 4.5 Interrogatives

In KoSL, we found instances of both yes- no and *wh*-questions from our data. Here we notice that the instantiation of *wh*- questions is more when compared to yes-no questions. It is unclear whether this is an accidental fact in our data, as the literature on sign language does not mention any proportionality in yes-no and *wh*- questions. Moreover, the age of entry or the period of exposure to the sign language does not have any effect on the subjects' production of questions. This is different from our findings about the instantiation of pronominals, phi-features, case and agreement and tense and aspect in part A of chapter 4. Surprisingly, we found almost all the groups employing both *wh*- and yes-no questions in KoSL except for group B where we did not find yes-no construction. As we analyze the data, we will see in groups C and D where we have the late entrants with less exposure to KoSL, actually use complex yes-no and *wh*-constructions.

**Table 4. 35: An overview of the performance of groups A, B, C and D**

Groups	Wh- questions					Yes-no question
	what	why	when	How come	Total count	
A	11	0	1	1	13	1
B	15	0	0	0	15	0
C	1	2	0	0	3	1
D	7	2	0	0	9	1

#### 4.5.1 Yes-no questions (notated as ‘q’)

In the sign language literature, we find that the sign for a yes-no question is a non-manual marker. In American Sign Language (ASL), the non-manual marker that signals a yes-no question is “the head and shoulders leaned forward; the chin is forward far enough to keep the face relatively vertical and the eyebrows are raised” (Liddell 1980:20). In Jordanian sign language or *Lughat al-Ishāra al-Urdunia* (LIU), Hendriks (2008) mentions that it is the non-manual marker that alerts us when there is yes-no question and the non-manual marker is ‘head-tilt forward accompanied by raising of the eyebrows and wide-opened eyes’. “Non-manual information alone usually marks a sentence as a yes/no question” (Hendriks 2008:73).

In Indian Sign Language (ISL), Sinha (2012) also states that the yes-no question is not a manual sign but an expression that differentiates interrogatives from declaratives. From our pilot study data on ISL (Hyderabad), we see that a lowered eyebrow accompanied by a head tilt forward indicates a yes-no question. As we notice in ASL, LIU, ISL and ISL (Hyderabad), we find one common feature that the non-manual marker for yes-no questions involves a head bent forward. In KoSL, we have a similar situation where a non-manual marker head bent slightly forward marks the yes-no question.

#### 34. JOD (group A)

Context: A servant enters (a sign for servant greeting the king). The king asks the servant this question.



-----q

ANYTHING

SAY?

q- HEAD BENT SLIGHTLY FORWARD

“do you have anything to say?”

In the above example, the non-manual marker head bent slightly forward for the yes-no question falls on the sign SAY. In example 34, the line above SAY refers to the non-manual marker that prolonged throughout the articulation of the below manual sign it covers. “A bar above a sign or sign sequence will be used to represent the presence and duration of a specific non-manual signal.” (Liddell 1980:20). ‘*q*’ refers to the non-manual activity. “The letter or letters at the end of the bar represent the particular type of non-manual activity...” (Liddell 1980:20).

We note that the hand shape for ANYTHING is a component of the hand shape for *wh*-questions as described in the next section. In example 34, we see that the signer signs a closed fist hand shape to mean ANYTHING which is the same sign used to denote a *wh*-word in KoSL. But the difference is that, the same sign when used in the *wh*-context occurs with a jerk whereas with the quantifier ANYTHING, it occurs without a jerk.

Here we would like to connect this fact as a pointer for further research with an interesting fact about quantifiers in natural language commented on extensively in Jayaseelan (2001, and related work). Jayaseelan points out that in many other languages, including Japanese and the Dravidian languages, question words and quantifiers are related; the words for quantifiers incorporate the *wh*- word. He shows at length that this morphological make-up of quantifiers mirrors the universal semantic structure of quantifiers. Quantifier semantics is reflected morphologically transparently in languages such as Japanese and in the Dravidian family of languages, and indeed a relation can be shown also in less morphologically transparent languages such as English. The leading idea is that this morphological make-up is a non-accidental fact about natural languages, given the semantics of question words and quantifiers.

Now given the claim that sign language is a natural language, albeit in another modality, we think it is important to note the KoSL data that show an apparent similarity or coincidence with spoken language data with respect to the sign for quantifier and question. The attempt is not to make an outlandish claim on the basis of limited data, but to point to further possibilities to research the claim that sign language is grounded in the same universal principles as all natural languages, and

extending it further from the currently well-discussed functional categories in the literature.

Given the limited data that we have on quantifiers, we can at best speculate that in KoSL, the fact that quantifier incorporates a handshake used for a *wh* question may not be accidental but principled, and a pointer to the correspondence between oral and sign language. For completeness, we illustrate below that in the aural-oral language Tamil, spoken in that area, quantifiers incorporate *wh*-words.

Consider the Tamil examples below.

### 35. Tamil

*yaar*- who?                    *yaar-aavadu*- anyone lit. who- happen. future

*edu*- what thing?    *ed- aavadu*- anything lit. what- happen. future

To reiterate, it is interesting to see that sign language in a different modality is found to be exhibiting the same characteristics as many other languages of the world with respect to this morphological similarity between quantifiers and question words.

Another instance of yes-no question was found from one of the subjects in group D.

### 36. PRI (group D)



-----q

FEVER?

q- SLIGHT HEAD NOD

‘Do you have a fever’?

From the examples 34 and 36, we see that the non-manual marker for yes-no question in KoSL is a head move forward. The slight variations in the head movements in examples could be due to intonation variations. Apart from these, in group C, we have one subject instantiating yes-no question in negated form in the following manner.

### 37. SAT (group C)



-----q

DON'T WANT? → “don’t want?”

q- HEAD SHAKE SIDE TO SIDE

This is a question with a negation in it. “YOU DON’T WANT?”/ “DON’T YOU WANT?” The word for *don’t want* in Tamil (the spoken language in Kovai) is veNDaa which is mouthed (see *mouthing* in the next section) in this example. Here the subject uses a manual sign for negation; spread finger hand shape wagged gently as discussed in the following section. The negative manual sign is accompanied by a head shake side to side which is a non-manual marker that also denotes negation. Since the yes-no question in example 37 is negated, the non-manual marker head shake side to side accompanies the yes-no non-manual marker head move forward. As we see in the figure, the signer starts the sign for negation with a head shake side to side accompanied by the manual sign and then the head bends slightly forward which is the non-manual marker for yes-no question.

Furthermore, we also notice that the signer while using the non-manual marker head shake for negation, simultaneously signs the manual sign for negation (We discuss negation in KoSL more fully in section 4.6. Here we discuss it as part of its occurrence in *wh*-questions as an interesting phenomenon found in all natural language). In the data here, negation is expressed twice: once by the head and once by

the hand. We analyze this as an instance of double negation which is actually *negative concord*. There are double negation constructions in natural language, where only one instance of the negation is interpreted (if both negations were interpreted, they would cancel each other out, as in “I don’t not like bananas”). These instances of double negatives interpreted as a single negation are called *negative concord*. “The phenomenon where two (or more) negative elements that are able to express negation in isolation yield a single semantic negation is called Negative Concord...” (Zeijlstra 2007:504).

For example, in non- standard varieties of English, the sentence ‘I don’t want nothing’ contains a negative element ‘not’ and a negative quantifier ‘nothing’. Though we see an instance of double negation, here only one negation is licensed and the sentence is interpreted as ‘I do not want anything’. Italian, Spanish, French, Portuguese, Russian, Czech, Polish, Albanian and Greek are some of the languages that exhibit negative concord. But in the standard variety of English, the same sentence ‘I do not want nothing’ would mean ‘I want something’ because the negative element negates the truth value of the entire sentence and the quantifier ‘nothing’ is also in the scope of the sentential negation.

Interestingly in KoSL, we find an instance of negative concord where the signer uses both manual sign and a non-manual marker for negation in a context where a non-manual sign also has to express an interrogative meaning. We must note that, importantly, Tamil (the spoken language in this area) is not a negative concord language.

#### **4.5.2 Wh- questions (WH)**

The sign for the *wh*- element is a manual sign in KoSL. Similarly, in British Sign Language (BSL), Kyle and Woll (1985) state that the *wh*-question is a manual sign that involves ‘five fingers extended, separate and wiggling’. In KoSL, the manual sign is a closed fist hand shape accompanied by a jerk.

The manual sign for *wh*- elements such as WHAT, WHY, WHEN and HOW are found to be similar in KoSL as it is seen in BSL. “Several of the *wh*- question signs resemble each other; instead of beginning with *wh*- they share a common hand shape and movement...” (Kyle and Woll 1985:159). And it is mainly through the oral

gesture which is commonly known as ‘mouthing’ in sign literature that we identify the differences in the use of *wh*- questions in sign languages. In LIU, Hendriks (2008) says that mouthing is making an oral gesture while articulating a sign and the gesture is taken from the corresponding spoken language word for that sign. “...the movement of the mouth is derived from a word in the spoken language..” (Hendriks 2008:42). He also states that “For instance, mouthing may distinguish between the question words WHAT, pronounced in Jordanian Arabic as *shū*, and HOW, pronounced *kīf*, which are expressed by the same manual sign”.

In ASL, the *wh*- question constitutes a *wh*-manual sign and a non-manual marker ‘furrowed brows and head tilted back’. In BSL, Kyle and Woll (1985) state that apart from the manual sign, a non-manual marker is necessary to differentiate *wh*-question from declaratives. “Signers clearly interpret utterances as *wh*-questions only when particular non-manual features occur.” (Kyle and Woll 1985:159). The non-manual marker for the *wh*-question in BSL is ‘eyebrows are lowered and together (as in a frown) and shoulders are hunched as well as forward’. Both in ASL and BSL, the role of mouthing is not mentioned.

In KoSL, the *wh*- question is comprised of a manual sign, i.e. closed fist hand shape (which only signals the *wh*-feature and not the question), with a jerk (which signals a question), mouthing which informs us of the restrictor for *wh*- person, place, time and manner, and the facial expressions. We note that the Q in the *wh*-question is not the same sign as in the yes-no question, described in section 4.5.1. In spoken languages, the yes-no question marker need not (sometimes may not) occur overtly in a *wh*-question; although languages such as Japanese allow the yes-no question marker *ka* to overtly occur in a *wh*-question, i.e., spoken languages may have an abstract as well as an overt Q, corresponding to *wh*- and yes-no questions; or they may manifest the same overt Q in both types of questions.

As mentioned by Hendriks (2008) in LIU, in KoSL, the signer while signing the *wh*-manual sign simultaneously does mouthing of the corresponding *wh*- term in Tamil which is the spoken language in Kovai.

Facial expressions are optional for some *wh*-questions in KoSL unlike ASL and BSL (as we will see in the examples below). *Wh*-questions such as WHAT, WHY, WHEN and HOW COME are identified among the subjects in all the groups.

#### 4.5.2.1 Wh- question WHAT

WHAT occurs with the *wh*- manual sign and mouthing *enna* which denotes *what* in Tamil.

#### 38. *SUJ* (group A)



(KING) ASKS

WHAT?

“The king asks what?”

In example 38, the subject KING (which we interpret from the context) is being dropped by the signer as we see the characters in the story close to the subject and visible in the extract. Therefore, the subject KING is pro-dropped.

#### 39. *PAV* ( group D)



KEEP TALKING

WHAT?

“what are they (going on) talking about?”



#### 40. *DEV* (group B)



TALKING

WHAT

“what are they talking about?”

#### 41. *SAN* (group C)



SAY

WHAT

“what to say?”

In example 41, we also see that there is an indirect question embedding. The sentence occurs in a context where somebody is thinking ‘what to say’. Surprisingly this subject is from group C where we least expected such complex constructions.

#### 4.5.2.2 Wh- question WHY

The sign for WHY occurs with mouthing, *wh-* manual sign and a facial expression which is optional. Here the mouthing is *een* as we see the signer drops the jaw deeply.

#### 42. SAT (group C)



WHY?

“why?”

#### 43.



-----WH

MAN      WHY?

“man (says) why?”

WH- SLIGHTLY LOWERED EYEBROWS

The reason we claim that the non-manual marker here is optional is that, in example 42, the sign for WHY does not occur with any non manual marker whereas in example 43, we find the same *wh*-manual sign is accompanied by the non-manual marker. Here in these examples, it is the mouthing along with its manual sign that plays the major role in describing the *wh*- question WHY and the non-manual marker only gives additional information about the signer’s curiosity.

#### 4.5.2.3 Wh-question WHEN

##### 44. *SUJ* (group A)



WHEN HE GO? “when will he go?”

In the above example, we notice that the signer’s lips are folded in. This mouthing corresponds to the Tamil *wh*- question *eppa* which means ‘when’. The sign for WHEN constitutes mouthing and the *wh*- manual sign.

#### 4.5.2.4 Wh- question HOW COME

The sign for HOW COME is mouthing along with the *wh*-manual sign and a facial expression. The mouthing is *eppaDi* which means both *how* and *how come* in Tamil. The expression *How come* expresses *why* in Tamil, i.e. *For what purpose? For what reason?* and so on. “How come is an informal expression used to ask about the reason for something, especially when you feel surprised about it” (Cambridge learner’s dictionary 2007). In the example below, even though the mouthing *eppaDi* has more or less the same articulation as *eppa* (when), here we go by the reading HOW and not WHEN because the sign for WHEN is not accompanied by a facial expression (see example 44). Here HOW COME occurs with a facial expression as shown in the example because of the puzzlement of the WHY meaning.

#### 45. *KIR* (group A)



-----WH1 -----WH2 -----WH3

HEAD ACHE VERY MUCH THINKING HOW COME

“thinking how come head is aching so much”

1. WH1- SHRUNKEN EYES
2. WH2- SHRUNKEN EYES+ CLOSED EYES
3. WH3- SHRUNKEN EYES+ HEAD NOD

Here it is the facial expression (SHRUNKEN EYES) that plays a crucial role in distinguishing HOW COME from WHEN. Though they are optional for constructions such as WHY (see examples 42 and 43), facial expressions are obligatory for HOW COME without which it fails to convey the intended meaning. It differentiates the signs WHEN and HOW which has the same mouthing. We see that it is both the mouthing and the non-manual marker that play equal role in *wh*- question interpretation in KoSL.

In example 45, we also note the presence of a set of non-manual markers spread throughout the sentence, which indicate the scope of *wh*-question HOW COME. The scope of HOW COME has three distinct non manual representations: the first with shrunken eyes, followed by the first along with closed eyes, and the third shrunken eyes along with a head nod. This non manual marker ‘shrunken eyes’ differentiates HOW COME from WHY; for the latter the non manual marker is optional, and is indicated by lowered eyebrows, rather than shrunken eyes, and a head nod. In oral language, WHY is an information seeking question like *when*, *where*, *who* and *what*. However, HOW COME has a certain presupposition. We argue that presupposition

requirement in HOW COME is fulfilled by the shrunkened eyes, which is not required for WHY. Let us look at example 45 again in detail.



-----WH1	-----WH2	-----WH3
HEAD ACHE	VERY MUCH	THINKING
		HOW COME

“Thinking how come head is aching so much”

1. SHRUNKEN EYES
2. SHRUNKEN + CLOSED EYES
3. SHRUNKEN EYES + HEAD NOD

Here the facial expression SHRUNKEN EYES that accompanies the *wh*- manual sign HOW COME is seen throughout the sentence even before the occurrence of the *wh*-element. This clearly indicates that the sentence is in scope of the *wh*- question.

As mentioned earlier in this section that HOW COME informally expresses WHY meaning, the facial expressions SLIGHTLY LOWERED EYEBROWS and SHRUNKEN EYES that accompany them are considered as an instance of the same, though they slightly vary in terms of articulation due to the puzzlement of the ‘WHY’

meaning. While the facial expressions are seen optional in WHY, they are found obligatory in HOW COME which further differentiates it from WHEN as they share a similar mouthing.

#### 46. DEV (group B)



THINKING

(WHAT)

“thinking (what)”

The subject DEV used *wh*-sign 14 times. Her mouthing was not clear to us as she used most of the time lips ‘folded inward’ not only for *wh*- questions but also for other signs. So it was really challenging to discern which *wh*-question the signer is intending since her mouthing is unclear to us. Hendriks (2008) finds the same situation in LIU and mentions that mouthing is not always clear to non-signers and sometimes it becomes uninterpretable. The same difficulty we are facing here with the Kovai signing community.

To sum up, in KoSL, we notice that all yes-no questions are manifested in the non-manual marker head move forward.

The *wh*- question on the other hand is a unit comprised of mouthing, *wh*- manual sign and facial expression which becomes optional in constructions such as WHY and obligatory in HOW COME constructions. In KoSL, with respect to facial expression, it distinguishes WHY from other *wh*-questions which are themselves distinguished by mouthing. The table given below gives a clear picture of the *wh*- components in KoSL based on the data.

**Table 4. 36: Signs for wh- question**

<b>Wh- element</b>	<b>Mouthing Tamil</b>	<b>in</b>	<b>Wh- manual sign</b>	<b>Wh-non-manual marker</b>
WHAT	<i>Enna</i>		A closed fist hand shape with a jerk	---
WHY	<i>Een</i>			Lowered eyebrows (optional)
WHEN	<i>Eppo</i>			---
HOW COME	<i>EppaDi</i>			Shrunken eyes

Like other sign languages particularly in IPSL (Zeshan), ISL (Sinha), the *wh*-manual sign is a generic sign, which is signed with the same handshape (closed fist) but with a jerk in KoSL. The *wh*-manual sign is therefore a question particle, with the differences either indicated through mouthing or a distinct non manual marker. The second point we note is that all *wh* -manual markers are clause final. There were instances where the other arguments were dropped as they were present in the discourse. The third incidental parallel we find in the data (though this needs to be looked into more systematically) is between the signs for *wh*-manual signs and quantifiers that has been established for oral languages as well as mentioned by Jayaseelan (2001).

#### 4.6 Negation

Negation in sign languages is manifested in both manual signs and non-manual markings. In some sign languages, the non-manual markings are the obligatory elements in the presence or absence of a manual sign. In some other sign languages, the manual sign becomes the obligatory element in the presence or absence of non-manual markings. There are also cases where both the manual and the non-manual elements occur independently and give rise to the negative meaning.

A negative sentence in ASL constitutes a manual sign, a closed fist hand shape with an extended thumb finger and non-manual markings such as “furrowing of the eyebrows and a side-to-side head shake”. In ASL, the non- manual markings are obligatory and a negative sentence can occur with its non-manual markings even without its manual counterpart but the manual sign alone in the absence of non-manual markings would make a negative sentence ungrammatical. “.... negative

sentences in ASL do not require an overt lexical sign of negation, but they do require the non-manual marking” (Neidle et al 2000:45). Consider the examples below from ASL.

47.

(a) \*JOHN [NOT] neg BUY HOUSE      [+ manual sign, -non manual markings]

-----neg

(b) JOHN NOT BUY HOUSE      [+manual sign, + non manual markings]

-----neg

(c) JOHN [+neg] neg BUY HOUSE      [- manual sign, +non manual markings]

“John is not buying house”

Source: Neidle et al (2000: 45)

Also, the spread of the non-manual marker over the rest of the sentence is obligatory in the absence of the manual sign as in (c) whereas in the presence of its manual sign, the spread becomes optional as in (b). “In cases without an overt manual sign of negation with which the non-manual marking can be co-articulated, the spread of non-manual marking is obligatory” (Neidle et al 2000:45).

In Indian Sign Language (ISL), the manual and the non-manual signals can independently stand for negation. Sinha (2012) mentions that in negative sentences, there is either a manual sign or a non-manual marker (head shake) and the non-manual marker is optional with the manual sign. “The negation in ISL is either manually signed and/or with a headshake which does not spread over other signs, and is optional even with the negation” (Sinha 2012:167). Zeshan (2000) also mentions the same situation in Indo-Pakistani Sign Language (IPSL).

In Jordanian Sign Language (LIU), there is a set of manual signs for negation such as closed fist hand shape with an extended index finger, palm facing front or a slightly bent flat hand shape and so on. They bring out slight variations in the meaning of negative sentences in LIU. The non-manual markers are ‘backward head-tilt, head



shake, head turn' and so on. In LIU, Hendriks (2008) states that the manual sign for negation is obligatory in sentences. "...negation in LIU requires a manual negator whereas a headshake or other non-manual ways of negating a sentence are optional" (Hendriks 2008:77).

In our data from KoSL, we find that there are manual signs as well as non-manual markings forming negative sentences. We also noticed the occurrence of mouthing in some places. The manual sign for negation occurs at the *clause-final* position. A flat hand shape with fingers spread or kept intact with a waggling motion side to side, a spread finger hand shape in both hands kept near the chest and wriggled back and forth and a spread finger hand shape twisted inward are the manual signs denoting negation. The non-manual markers are shrunken eyes, head shake side to side, slight closing and opening of eyes and shoulder shift. Except for one subject from group C who signed only the non-manual marker for negation, KoSL is akin to LIU in terms of negation where the manual sign is the obligatory element and the non-manual markers that accompany them are optional unlike ASL and ISL. We observed that the subjects in all four groups signed the manual sign for negation with or without the non-manual markers. A table is given below showing the number of occurrences of negation in all the groups.

**Table 4. 37: no. of occurrences of negation**

Group	No. of occurrences of negation
A	3
B	14
C	10
D	7

**48. JOD (group A)**



-----N      N- shrunken eyes+ head shake side-to-side (s-s) and mouthing

DON'T WANT

“don't want food”

**49. SUJ (group A)**



-----N      N- shrunken eyes+ head shake (s-s) and mouthing

DON'T WANT

“don't want”

**50. KIR (group A)**



THERE

NOT

GO THERE

“not there”

From the examples 48, 49 and 50, we notice the presence of the manual sign a flat hand shape with fingers spread or kept intact with a waggling motion side to side in all the subjects. In example 48 and 49, we find the presence of non-manual markers head shake (s-s) and shrunken eyes which are common in both the subjects. And the mouthing *veNDaam* means ‘don’t want’ in Tamil. In example 50, non-manual marker is absent and the mouthing is unclear.

Apart from the flat hand shape with or without the fingers spread, we also found a another hand shape which is a spread finger kept near the chest, palm facing each other or the signer and wriggled back and forth. It seems to denote ‘sentential negation’ as against I DON’T WANT in the previous examples. This particular hand shape, we found in groups B, C and D. The subjects in these groups used both the hand shapes mentioned above.

### 51. DEV (group B)



-----N

N- slight head shake

I SIT NO

“I am not sitting”

### 52. SAN (group C)



-----N

N- a frown quickly made

BODY NOT-WELL → “not feeling well”

We also noticed a spread finger hand shape twisted inward for sentences like I DON'T KNOW and I DON'T UNDERSTAND. This hand shape is used when the signer expresses some kind of inability. An optional non-manual marker 'slight closing and opening of eyes' is found common in examples 53 and 54 for this construction.

### 53. SAT (group C)



-----N

DON'T KNOW

“I don't know”

N- pressed lips, slight closing and opening of eyes and a slight shoulder shift.

### 54. PRI (group D)



-----N

DON'T KNOW

N- slight opening and closing of eyes + mouthing

→ “I don't know”

**55. SAT (group C)**



UNDERSTAND



NO

“I don’t understand”

**56. DEV (group B)**



UNDERSTAND



NO

“I don’t understand”

In KoSL, we also found evidences for imperative negatives such as order and an expression which denotes ‘no thanks’

**57. DEV (group B)**



-----N

N- constant stare

SPEAK

DON’T

“Don’t speak”

### 58. *SUJ (group A)*



-----N1

NO THANKS

N1- shrunken eyes+ head shake (s-s) and mouthing



-----N2

I AM FINE

N2- head bent to one side and closed eyes

As we see in all the above examples, the manual sign is made obligatory and we find the non-manual markers omitted in some constructions as in example 50, 55 and 56. However, there is an exception in group C where we find one subject omitting the manual sign for negation and signs only the non-manual markers and mouthing.

### 59. *SAT (group C)*



-----N

N- slightly shrunken eyes + head nod (s-s) and mouthing

HUNGRY+NOT → “not hungry”

As we mentioned earlier that KoSL behaves more like LIU because of the obligatory use of the manual lexical sign for negation, there is an exception in example 59 where we find a negative construction without an explicit manual lexical sign. As described earlier in section 4.5.1; example 37, there is a double negation construction in which the signer uses mouthing *VeNDaa* as well as the non-manual marker for negation. Therefore, we speculate that the signer overlooks the manual sign due to negative concord effects. Since we find this particular construction in group C, we also assume that there is a possibility this could be an evolving pattern in KoSL but we cannot make a strong claim about it since we do not have much evidence for this construction in our data.

On the other hand, the manual signs do play an important role in bringing out the meaning differences. The flat hand shape with or without finger spread denotes a lack of need or prohibition as in examples 48, 49, 50, and 57. The second type of hand shape which is a spread finger hand shape palm facing each other or the signer is expressing a sentential negation as in examples 51 and 52. We can claim that this is a recent structure (though not very recent) evolved among the signers as we find it in groups B, C and D and not in A. The third type which is a spread finger hand shape twisted inward denotes the state of inability as in examples 53, 54, 55 and 56. From this we can clearly see that the lexical signs and the non-manual markers for negation in KoSL are functionally differentiated.

We may also note here that in spoken Tamil, negative modals expressing inability are quite different from the sentential negation *ille* or *le*. We have a negative suffix *-aa* that occurs after the verb stem stands for inability or impossibility. For ‘can/can’t’ we have the words *muDiyum/ muDi- aa-tu*. Thus for ‘want/ don’t want’ we have *veeNum* and *veeND-aa-m*, where *aa* is the negative element within the word (Lehmann 1989).

#### **4.7 Relative clause constructions**

In our data from KoSL, we have two instances of relative clause constructions. We find there are two subjects, one from group A (*JOD*) and the other from group C (*SAT*), signing relative clause in a sentence.

In ASL, relative clause constructions are characterized by a set of non-manual markers. The three non-manual markers head tilt forward, eye brows raised and a



tensed upper lip mark the relative clause in a sentence and distinguish it from a simple sentence. “The three independent features of the facial expression and head positions, taken together, distinguish a simple sentence from a relative clause” (Liddell 1980:137). Consider the ASL example below.

-----r

RECENTLY DOG CHASE CAT COME HOME

“The dog which recently chased the cat came home”

Source: Liddell (1980:136)

In the above example, ‘r’ is a set of non-manual markers (mentioned above) that mark relative clause in ASL. As we see in example above, the non-manual markers fall on the relative clause and stops when the main clause resumes (Liddell 1980).

Based on our data, we find in KoSL like ASL, it is a non-manual marker *widened eyes* that marks the relative clause in a sentence. Consider the sentences 1 and 2 in example 60 below.

60. *Sentence 1 (Sub code: JOD)*



SAYING

GREETINGS

“(man) is saying greetings”

Here in the above example, we have a simple sentence as sentence 1 that introduces the subject. Next, this sentence is introduced as a relative clause in sentence 2 below.

*Sentence 2*

-----r  
 (GREETINGS                      MAN)                      SAY                      NOW-

“The man who now said the greetings-                      r- eyes widened



-GO  
 -goes”

In the above example sentence 2, the subject which is pro dropped in sentence 1 is overt (see the sign for MAN) and is relativized using the non-manual marker ‘widened eyes’. Similar to ASL, we see in KoSL that the non-manual sign ‘widened eyes’ falls on the entire relative clause and stops when the main clause resumes (notice the line above the sentence). We also notice a sudden transition in the signer’s face after signing the relative clause, as the facial muscles relaxed while signing GO

which is a simple sentence following the relative clause. In sentence 2, for GREETINGS MAN the signer's eyes are not facing the addressee.

*61. Sub code: SAT (group C) Sentence 1*



KING

GREETINGS

“Greetings to the king”

*Sentence 2*



-----r

GREETINGS

MASCULINE

SEE

“Man sees the one who said greetings”

In the above example, the non-manual marker ‘widened eyes’ falls on the relative clause as it is in the previous example. Here the sign for greetings (relative clause) in sentence 2 is done only half, and therefore the widening of eyes is not so evident in the example.

In KoSL, the relative marker behaves the same as ASL. It is manifested in the non-manual marker in both the languages.

#### 4.8 Topicalisation

A topicalised example was identified in our data in one subject in group A. In example 62, the signer who intended to say that the basket man is bad, repeats the topic of the sentence BASKET MAN in the form of its pronoun HE in the sentence.

##### **SUB: JOD (group A)**

62. -----t (widened eyes + frown)

BASKET MAN HE BAD

“basket man, he is bad”

This property is also found in ASL. “Topicalisation occurs in ASL when information is expressed at the beginning of the sentence to draw specific attention to it or to emphasize it. Often the topic names what the rest of the sentence will be about”. (Valli et al 2011:95). The same property has been identified by Zeshan (2000) in IPSL where the topic which is being discussed is put in the beginning of the sentence while the sentence that follow the topic still includes that topic. “Another rather frequent principle of ordering involves the most important sign which is semantically most prominent to be placed at the beginning of the sentence. Then the whole sentence follows which again contains the same sign” (Zeshan 2000: 90).

63. LETTER CLUB LETTER I

‘I have got a letter from the club.’

Source: Zeshan (2000:90)

#### 4.9 Observation based on the results from part A and B

From the analysis of KoSL data in part A and part B, we identified the presence of pronominals and phi-features, tense and aspect, interrogatives, negation and relative clause constructions. We also identified that they are manifested in the form of manual signs, some only in non-manual markers and some in the combination of both. Mouthing is also seen in our subjects while signing the functional categories.

The other observation from our data is that, of all the aforesaid functional categories identified in our data, the pronominals and tense and aspect are the only two

categories which our early entrants use at a higher rate when compared to the late entrants as discussed in part A. For the other functional categories such as interrogatives, negation and relative clause construction, all the groups performed more or less at the same level. This is contradictory to the situation we see in the Nicaraguan signing community apart from what has been discussed in part A.

The findings from part A shows that the differences in the age and the year of entry into the Kovai signing community seem to have an effect on the use of pronominals and tense and aspect as seen in the Nicaraguan signing community whereas in part B, we find that for the categories interrogatives, negation and relative clause construction, all the groups A, B, C and D performed more or less at the same level. Therefore we see a division in the functional categories between pronominals and tense and aspect and interrogatives, negation and relative clause construction in terms of their occurrence in the signing of our late entrant subjects.

#### **4.9.1 A comparison between hearing and deaf subjects in Kovai from pilot 2**

Besides the similarities and differences between the two signing communities (Kovai and Nicaragua), if we want to make an informal comparison of the use functional categories between our deaf subjects and the hearing subjects (from pilot 2) of the same age group, we find that the hearing subjects employed more functional categories than the deaf subjects from the Kovai signing community. In pilot study 2, we found our hearing subjects employing pronominals and phi-features, tense marker for past and non-past, relative clause constructions, reflexives, possessives, determiners and the use of royal 'I' to refer to oneself. Apart from that, they also used topic markers, reduplicated lexical forms to emphasize the lexical meaning in a sentence and many other language aspects. Although our deaf subjects utilized some of the above mentioned categories, still we find there is a gap. This differences we find between the two subject groups (hearing and deaf) in our study do not imply there is inadequacy in Sign language but our deaf subjects' lack of exposure to sign language and restriction from the society to express in sign language. While our hearing subjects have the advantage to learn in spoken language and are given freedom to use it without restriction, our deaf subjects are suppressed from using sign language and are forced to adopt the conventional language in the aural- oral medium.

## CHAPTER FIVE: CONCLUSION

### 5.0 An overview of the chapter

This chapter starts with a brief summary of the present study on Kovai Sign Language (KoSL). It includes the subjects, methodology, objectives of the study and the findings. In the following section, a summary of the findings is given which discusses the form and traits of the functional categories in KoSL. The findings are discussed in the light of the objectives of the study. This is followed by a discussion on the occurrence of functional categories and the pattern of their acquisition in our subjects. This chapter provides a final note on some recommendations for deaf education.

### 5.1 A summary of our present study on KoSL

Our present study explores the functional categories in Kovai Sign Language (KoSL) which emerged from a group of deaf children in a school at Kovai, also known as Coimbatore in the state of Tamil Nadu in southern India. The deaf children in the Kovai signing community hail from hearing family backgrounds and the school also imparts education using oral methods. Nevertheless, upon contact, sign language emerged spontaneously from this group of deaf children.

We find this situation similar to Nicaraguan signing community pioneered by Senghas (1995) where we see a group of deaf children from hearing family backgrounds who entered school at the age of 10-15 years, came up with a pidgin variety of sign language referred to by Senghas (1995) as *Lenguaje de signos Nicaraguanese* (LSN). With the second generation of signers who joined school when they were as young as four years old, the pidgin LSN got more enriched, elaborate and finally was normalized into a creole named as *Idioma de Signos Nicaraguanese* (ISN). The Kovai sign language that we study is a case very similar to the Nicaraguan community, where a pidgin form gradually emerges as a creole. To establish this transition from the early signs to a more sophisticated system, we categorized the signers in terms of their age of entry into the signing community and exposure to signing as a means of communication. The ten participating signers constituted early entrants, i.e. they joined the school before 10 years of age and late entrants who joined after 10 years of age and all of them had at least one or two years of exposure to KoSL. This factor

will allow us to deduce the status of this language in learners who have had early and prolonged exposure to it, as against those who are exposed to it near the end of their childhood and for a shorter period.

As we see that KoSL emerged from a group of home signers, we investigate the presence of functional categories in KoSL as functional categories are grammatical categories which are indispensable to any natural language. This measure will inform us of the degree of richness of grammatical elements in KoSL. We also started our study with an assumption that the late entrant subjects would show a low proficiency in terms of employing the functional categories into their signing when compared to the early entrants as seen in the Nicaraguan community.

Therefore, our objectives of the study were to explore the functional categories in KoSL and establish the current language situation in the Kovai signing community and to capture the stages of development of functional categories in different generation of signers with respect to the years of exposure to KoSL and the age of entry into the signing community.

Before the main study, the author conducted two pilot studies. As Liddell (1980) points out that functional categories are represented by non-manual markers in sign language in the form of facial expressions, head movement, shoulder shift and so on, we conducted our pilot study 1 on adult signers who use ISL (Hyderabad) to identify the manifestation of functional categories in sign languages. We used a 'structured elicitation technique' for data elicitation as used in Sinha's (2012) study. A questionnaire in English with sentences instantiating functional categories such as pronominals and reflexives, yes-no question elements, tense markers, agreement markers, relative clause constructions and determiners was constructed and the signer was asked to translate them into sign language for the study. We found the presence of aforesaid functional categories in ISL (Hyderabad). Pronominals and reflexives, tense markers, agreement markers and determiners were indicated by manual signs, yes-no question elements and relative clause formation are manifested in the non-manual markers. Though this method yielded functional categories in the signing of our subjects, it had two shortcomings: The signing by the subjects seemed to mirror the English order and the signing lacked spontaneity as the questionnaire consists of single sentence structures.

Therefore we looked for an alternate method that would elicit a spontaneous response from the subjects incorporating the functional elements. Using video clips for data elicitation as seen in Senghas (1995) study was considered at first but as she pointed out the difficulties when there was a power failure, and also we felt that the video clips in motion might lead the subjects miss out information which would not be conducive for them to narrate the event, we delved into other methods of data elicitation to pick out a suitable method that would initiate spontaneous response from the subjects. So finally we decided to use pictures instead of video clips. Therefore we decided on the 'picture book narration method'.

Before we employed the picture book narration method in the main study, we had tried this method out on hearing children who were in the same age group (10-17) as the deaf subjects to see how effectively this method could elicit functional categories from children in that age group. This method also provided information about the language abilities of children in that particular age group.

In pilot 2, we used an excerpt from Amar Chitra Katha picture books for children. These comic series are available in several Indian languages as well as in English. A Tamil version of Amar Chitra Katha was chosen for our study since it is the spoken language in Kovai. The excerpt contained 5 pages with dialogues in bubbles, written in Tamil.

Contrary to our expectation, this method again partially failed to elicit spontaneous data from the subjects as our hearing subjects at some point read aloud the written text from the excerpt instead of spontaneous narration. So the researcher resorted to narrate the story differently to the subjects and did not allow them to look at the excerpt. This helped in eliciting free narratives from the subjects. From the data, we did find the presence of functional categories such as pronominals and reflexives, tense marker, agreement features, relative clause constructions and determiners. In addition to that, we also found certain other features such as pro-drop, topic marker and reduplication.

Since we found the picture book method yielding free narratives (though it yielded after the researcher resorted to narrate the story differently) from the subject and it is age appropriate, we persisted in using the same method for our main study. In the main study, we found this method not having any impact on the signing of our deaf



subjects. This was mainly due to the fact that our deaf subjects mostly made use of the pictures in the excerpt for narration more than the written text. Since we found our subjects making sign narratives intuitively, we continued using the same method for our main study. Functional categories such as pronominals, tense and aspect, interrogatives, negation and relative clause constructions were identified in the signing of our subjects. Upon detailed analysis, we identified that the functional categories such as pronominals and tense and aspect are represented in the form of manual signs, yes-no questions, relative clause constructions are manifested in non-manual markers. Interrogatives and negation are represented in the combination of both manual signs and non-manual markers in KoSL.

## **5.2 A summary of the findings in KoSL**

The analysis of the functional categories from our data on KoSL showed many interesting trends which corroborate findings in other sign languages, and oral languages as well. The form and traits of the functional categories we have identified in our data are summarized in the following sections.

### **5.2.1 Pronominal case and phi-features**

Pronominals such as I, ME (dative and adnominal), YOU, YOU dative, third person pronoun (HE/SHE) and masculine (HE) are identified in our data. These are manifested in manual signs in the form of ‘pointing finger’ handshape. Case marking is identified in terms of agreement in directional verbs where the verb movement is seen between its arguments, i.e. directional verbs start at one point and are directed toward the object. The verb movement in directional verbs marks agreement either between the subject and the object or only in the non-nominative case for the object by moving in the direction of the object and are termed as ‘single agreement verbs’. In the case of single agreement verbs, subject agreement is not seen in our data. In the case of static/plain verbs which do not undergo any modulation in terms of directionality, case marking is identified in the ‘syntactic domain’ where the word order is the indicator of Case, i.e. the position of the argument in a sentence. The first argument in the sentence either in the sentence initial position or before the object is the nominative argument and argument seen in the sentence final position is the ‘unmarked accusative’ argument. As there is no directionality in plain verbs, there is

also no agreement (which determines Case in KoSL). Instantiation of nominative, dative and adnominal case were found in the data.

Plurality was found in the second person pronoun YOU in our data. It is manifested in a manual sign which is characterized by ‘consecutive points’ made for the sign YOU or an orbital motion in front of the signer in the signing space. Gender marking is seen in third person pronoun HE with a ‘moustache’ sign which denotes masculine gender.

### **5.2.2 Interrogatives**

Yes-no questions in KoSL are manifested in the non-manual markers. The non-manual marker is ‘head bent slightly forward’. This is in consonance with many oral languages where there is no specific lexical word or particle that encodes a polar question, but the interrogative is indicated through suprasegmental features, akin to non-manual markers in sign language. *Wh*-questions such as WHAT, WHY, WHEN and HOW COME are identified in the signing of our subjects. *Wh*-question is a unit comprised of a manual sign as well as non-manual markers and mouthing. The manual sign for *wh*-question is a ‘closed fist hand shape accompanied by a jerk’ and ‘mouthing’. Mouthing is an oral articulation (taken from the spoken language of the same region) equivalent of the signed *wh*-word. The non-manual markers are ‘lowered eyebrows’ which is found to be optional for WHY constructions and ‘shrunk eyes’ which is obligatory for HOW COME constructions.

### **5.2.3 Negation**

Negation in KoSL is manifested in manual signs as well as in the non-manual markers. The manual sign is obligatory in a negative sentence while the non-manual markers are optional elements. A ‘flat hand shape with or without finger spread waggled side to side’, ‘spread finger hand shape with palm facing each other wriggled back and forth’ and ‘spread finger twisted inward’ are signs that stand for prohibition, lack of need and state of inability respectively. Sentential negation was also found in the signing of one subject. From this we can distinguish that the lexical signs and non-manual markers indicating negation are functionally differentiated in KoSL.

#### **5.2.4 Tense and aspect**

From the data, we identify that the sign for past is a manual sign ‘fingers swirled down outward’. Present tense is unmarked and there is no evidence for future tense in our data. Aspectual markings such perfective, completive, durative and succession are found in our data.

#### **5.2.5 Relative clause constructions**

Relative clause in a sentence in KoSL is manifested in the form of a non-manual marker. The non manual marker is ‘widened eyes’. The non-manual marker is expressed while the relative clause is being signed and the facial muscles relax when the simple sentence resumes.

### **5.3 A review of the functional categories and their acquisition**

As already mentioned in the scope of the study that functional categories are crucial to any natural language, we attempted to find the presence of functional categories in Kovai Sign Language which emerged from a group of home signers in a school environment. We have also identified the presence of functional categories such as pronominals and phi-features, tense and aspect, interrogatives, negation, and relative clause constructions from our data. From the above discussion on functional categories, we find that the functional elements are manifested not only in the form of non-manual markers as mentioned in the previous studies but our data from KoSL also show manual signs that constitute the functional categories. Therefore, based on our findings, we can claim that KoSL possess adequate functional elements in the form of non-manual markers and manual signs and the systematic manifestation of these grammatical elements by our subjects in their signing provides evidence that KoSL is not ‘fragmentary’ or at its nascent stage. KoSL symbolizes the syntactic elements of any natural language and perhaps, may be certain grammatical structures are still in the process of evolving into its full-fledged form.

The other aspect of the study that examines the acquisition pattern in the early entrants who had longer exposure to KoSL as against late entrants who had less exposure shows that the late entrants are more or less on par with the early entrants in employing the functional categories such as interrogatives, negation and relative clause construction but in the case of pronominals and tense and aspect, the late

entrants lag behind. We find this result contrary to our assumption we had in the beginning based on the Nicaraguan signing community where the early entrants who joined at their young age surpassed the language abilities of the late entrants.

#### **5.4 The occurrence of functional categories in groups A, B, C and D**

Further analysis on the occurrence of functional categories in the signing of our subjects who are grouped under early entrants and late entrants (with respect to their age of entry into the signing community and the period of exposure to KoSL) shows that, in the Kovai signing community, of all the functional categories discussed above, only for pronominals and tense and aspect, the early entrants in group A show a higher level of proficiency compared with the other groups B, C and D. In the pronominals, apart from nominative case, group A employed dative and adnominal case marking using the movement of hand. Apart from group A, every group has nominative arguments. Dative case is seen in groups B and C, and verb agreement is also seen in groups B and C. Group D employed only nominative case. The use of indicating verbs to mark agreement for the object was seen in groups A, B, and C and not in D. Number and gender distinctions are made in group A, B and C but not in D.

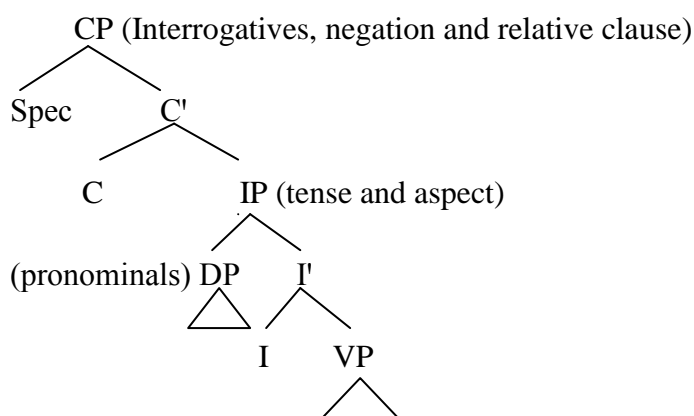
For tense and aspect, the sign for ‘past’ and the aspectual elements are used effectively by the subjects in group A followed by C, B and D. Group A employed the sign for past, verb modulation, perfective aspect, completion, and succession. Group C employed past tense, completion and succession. Group B employed only completion and succession and in group D, only durative aspect was seen.

Apart from pronominals and tense and aspect, for the other functional categories we found in our data such as interrogatives, negation and relative clause construction, all the groups performed more or less the at the same level and employed the functional elements systematically using non-manual markers, manual sign and mouthing.

We also notice that our late learner subject *SAT(f)* from group C who had one year of exposure to KoSL at the time of recording, consistently employing complex constructions such as yes-no question marker that exhibits double negation, sign for negation using only the non-manual markers and mouthing without the obligatory manual sign and relative clause construction, though we do not find any major differences among the group members in group C in terms of gender, period of

exposure to the signing community or the age of entry into the signing community. But we also notice that *SAT(f)* has advantage only over the C-system categories (interrogatives, negation and relative clause construction). Hence we observe there is an early occurrence of some functional categories such as interrogatives, negation and relative clause constructions but not all, i.e. pronominals and tense and aspect.

To account for the early occurrence of some functional categories but not all, we need to scrutinize our data further. We see that the above said categories that are evident in the signing of the late entrants are grouped under clausal typing or C- system and they appear in their signing before the pronominals which are considered to be the instantiations of determiner or D - system in the DP and tense and aspect which are the functional projections of verbal categories inflectional or I - system. Consider the tree diagram below.



We see in KoSL, our late entrant subjects have the C-system categories more readily than the D or I system categories below. Here the pattern of acquisition proceeds from top to bottom. This acquisition pattern again has to account for Rizzi's 'Truncation hypothesis' which states that children (hearing) acquire the elements bottom- up in the tree during the course of maturation. "... adults build their phrase structure all the way to CP because CP is the root of all clauses, while children might build just a VP or an IP (TP) and stop" (cited in Murasugi 2015:384). This implies that acquisition of D-type and I- type categories precedes the C- type categories. But in the Kovai signing community we see reverse results. We feel that this difference could be due to the age factor. Rizzi's claim was inferred from young children in their maturation period. But here our subjects being older, the acquisition pattern showed reverse results as the truncation is subject to maturation. Further research on whether there is a similar

division in the appearance of the C-system functional elements as compared with the I and the D systems with the late learners would be fruitful.

We see that in the Kovai signing community, deaf children as a community gave birth to a sign language which possess the properties of natural language even when they are not taught or exposed to it in their early childhood (in the case of our subjects). It shows the innate language ability in children in spite of the modality differences.

As it is clear that it is absolutely impossible to receive a spoken language input when there is profound deafness, deaf children in a hearing background end up integrating idiosyncratic gestures into the language which results in a ‘fragmentary’ form of language. As there is inadequacy in the existing form of language they are first exposed to, it gets extremely strenuous for them to express their mind. As a result, deaf children’s mental abilities and other potentials are tamed until they find a deaf community to socialize and start implementing signs into their language. Suppressing deaf children from expressing in their own medium of language will only render them ineffectual. Rather allowing them to adopt a medium which is convenient to express themselves can make them think and perform better in life.

### **5.5 Recommendations for deaf education**

Given the situation, one should reconsider insisting deaf children to use spoken language or teaching deaf children using oral techniques. This point has been stressed by various sign linguists in their studies. Zeshan (2000) says that majority of the schools for deaf in Karachi show little or no interest in IPSL and employs hearing instructors. Swisher (1989:250) mentions that “....hearing people have historically controlled the education of deaf children, and the field has heavily emphasized the importance of instruction in English for the purposes of education (especially for reading), as well as for the goal of integration of deaf children into the hearing world”. She also emphasizes that in the case of ASL, the deaf children of hearing parents first encounter ASL when they meet deaf children of deaf parents in dormitories while the teachers attempt to teach the deaf children English through oral means or by “signed code” with speech simultaneously (Swisher 1989).

Many would still advocate the use of oral teaching in deaf education where one is taught to lip read to understand others and to use mouthing to communicate. Though the method might be used in favour of assimilation with the hearing community and participation in the society, it is a mode to silence the naturalness of Language which is essentially modality independent. As is witnessed in our KoSL study, it is

impossible to suppress a language and it is criminal to force a child to use a modality that the child has difficulty with. There is always a risk that the deaf child may turn out to be an oral failure as mouthing limits their expressive capacity to what words and structures they have learnt rather than what they want to say. On the note of social justice, teaching through oral methods restricts the ability of deaf children to communicate in what is considered their native language and in fact is tantamount to stripping them of their identity culture.

In education, we need to be aspiring to equity rather than equality, which would take into consideration the historicity and the culture of the participants. It provides an equitable allocation of resources, so that all have equal opportunities and chances of success. One of the ways in which a deaf child can be provided with equal opportunities is either to have teachers trained in basic sign language, or to have signers who can be employed to help deaf children in classrooms and schools. The other way which would be resource consuming but permanent is to provide deaf children with visual support as much as possible in terms of lessons, class activities, black board work etc.

One of the interesting things that the study throws back is that signs evolve over a period of time, and become elaborate as linguistic systems in the mind. In such a case, hearing children, who are bimodal can learn as many languages as they are exposed to, through their interaction with deaf children and possibly evolve a system of sign language which would be available to the community in general. This can act as a resource within the school, and would enrich both hearing and deaf children.

However, concerns that teachers and parents have for the deaf children about their participation in the society and communication with family and friends can be addressed by other means. Offering sign language course to the members of the family providing sign language as an optional language in schools could be better options to implement the use of sign language among people in the society. Further research can be carried out on the situation of deaf children learning spoken language as to how far spoken language can contribute to their learning or help interacting with other hearing members. This can help bringing out the hurdles or advantages they come across and thereby facilitate ways to implement the use of sign language in schools.

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