A COMPARATIVE PHONOLOGICAL STUDY OF THE INDIAN SIGN LANGUAGES

Thesis submitted to Jawaharlal Nehru University

in partial fulfillment of the requirements

for the award of the degree of

DOCTOR OF PHILOSOPHY

NISHA ANAND

2022

CENTRE FOR LINGUISTICS

SCHOOL OF LANGUAGE, LITERATURE AND CULTURE STUDIES

JAWAHARLAL NEHRU UNIVERSITY

NEW DELHI – 110067

2022

Centre for Linguistics
School of Language, Literature & Culture Studies
Jawaharlal Nehru University
New Delhi-110067 India

Dated 27-12-2022

CERTIFICATE

This is to certify that the thesis titled "A Comparative Phonological Study of Indian Sign Languages" submitted by Mr./Ms. Nisha Anand, in partial fulfillment of the requirements for award of degree of Ph.D. of Centre for Linguistics, School of Language, Literature and Culture Studies-I, Jawaharlal Nehru University, New Delhi, has not been previously submitted in part or in full for any other degree of this university or any other university/institution.

We recommend this thesis be placed before the examiners for evaluation for the award of the degree of Ph.D.

(Dr. Hari Madhab Ray)
SUPERVISOR

Hari Madhab Ray
Assistant Professor
Centre for Linguistics
School of Language, Literature & Culture Studies
Jawaharlal Nehru University, New Delhi-110067

(Dr. Melissa G. Wallang)
CO-SUPERVISOR

(Prof. Pradeep Kumar Das)
CHAIRPERSON

Chairperson
CL/SLL&CS
J.N.U., New Delhi-67

Dated: 27/12/2022

DECLARATION

This thesis titled "**A COMPARATIVE PHONOLOGICAL STUDY OF THE INDIAN SIGN LANGUAGES**" submitted by me for the award of the degree of Doctor of Philosophy, is an original work and has not been submitted so far in part or in full, for any other degree or diploma of any University or Institute.

NISHA ANAND
Ph.D. Student
Centre for Linguistics
SLL&CS

Dedicated to

My Loving Parents

ACKNOWLEDGEMENT

The journey of writing this thesis has been a roller coaster ride, the episodes of sudden fall and rise has been constant during the whole process. Such an undertaking could not be successfully completed without a community of support, encouragement and constructive criticism. I am fortunate in that, I have had more than my fair share of such supportive people in my life throughout this process.

First and foremost, I would like to take this opportunity to thank my supervisors Dr. Hari Madhab Ray and Dr. Melissa G. Wallang for their unfailing guidance, support and confidence in my abilities to pursue academics related with Deaf and Sign Language. They have been there for me in shaping this dissertation from the very scratch of the idea to formulating, formatting and beyond. This dissertation could have not been existed without their useful comments, remarks and engagement throughout the process. I truly think this could not have been done without them; I am forever indebted to them for making this dissertation legible. Thank you for the belief that this could be done, for asking the right questions, for the guidance that helped keep me on the right track and for the support that makes me believe that the completion of this thesis is really just another beginning. The learning curve has been huge!

The connection with the D/deaf community did not simply begin with the writing of this thesis but it is Dr. Melissa G. Wallang who introduced me to the world of sign language, it was her expertise that induced me to learn and work on Indian Sign Language. My words are not enough to thank Dr. Ayesha Kidwai who initially nourished my interest in academics and encouraged me to work on Indian Sign Language. Her valuable guidance, suggestions and support during the course of M. Phil have been my prized possessions.

I also thank present and previous faculty members of the Centre for linguistics; Prof. Anvita Abbi, Prof. Vaishna Narang, Prof. Franson Manjali, Prof. Pradeep Kumar Das and Dr. Pauthang Haokip for teaching many facets of Linguistics as a discipline and being supportive throughout my studentship at the centre.

Also, my heartfelt gratitude goes to my ISL teachers at AYJNIHH (NRC); Mr. Saurav Bhattacharya, Miss. Bhawna Rawal, Mr. Ramnath Singh and Mr. Dharmesh. All have contributed significantly from learning ISL to giving significant academic inputs in my research.

I am indebted to Ms. Ruma Roka, founder NDS (Noida Deaf Society) and Keerthy, co-ordinator DEF (Deaf Enabled Foundation, Hydarabad) who welcomed me open heartedly to conduct this study over there. Students and staff members showed a great enthusiasm and concern for this study. Their involvement and participation boosted my confidence at every step of this dissertation. A huge thanks to those who participated as informants in the data elicitation task, I can't thank enough to those participants who allowed me to video graph them and remain anonymous as requested. I am indebted to Brijesh Barot who is not only a primary informant but a dear friend of mine, his pursuit of ISL and constant input has made this dissertation possible.

My words are not enough to thank Megha Chakravarty for her significant contribution; from being partner in learning sign language to collecting data, interpreting the sign language data and sharing her valuable ideas she has always been there for me. I also thank her family to make me feel like home in Delhi.

Friends and family have been tremendous: they have developed that special talent of knowing when to enquire …and when not to! Thank you all for giving me that space. I am very lucky to have supportive parents and in-laws who have nurtured my interest and never hesitated to make sacrifices in making this dissertation possible. My siblings, Ravi (elder brother) and Deepshikha (younger sister) has constantly pumped me with optimism throughout this journey, I know their debt cannot be paid back.

I thank my husband Nirmal, for helping me in the best way possible by giving me mental support and constantly encouraging me to do my work. He has helped me in his own way in revising formatting and correcting this dissertation. He has truly been a savior as far as technical issues are concerned; he has resolved all the problems with utmost ease.

Lastly, I am very lucky to have my girl squad, Shreya, Mamta, Saloni and Anujeema for being always there for me; casual discussion of the work over a cup of coffee was truly refreshing even as we struggled together. I extend my gratitude to all my classmates well-wishers and seniors.

Glossing Convention

1. A sign is transcribed using upper case letters for example sign for flower is transcribed as FLOWER.
2. SE- Signed English, order in which a phrase is signed.
3. HS- Handshape.
4. LOC- Location.
5. MOV- Movement.
6. ORI- Orientation.
7. NMF/NMA- Non-manual Features/ Non-manual Activity.
8. RH- Right hand.
9. LH- Left hand.
10. DH- Dominant Hand.
11. WH- Weak Hand.
12. fs: Fingerspelled Words.
13. 2h- for double handed signs.
14. 2h alt- for double handed signs in which movement of both the hands are in an alternate manner.
15. Comp: - For compound noun.
16. :d- Signs which have a direction.
17. fst- Fast movement of hands.
18. sl- Slow movement of hands.
19. (a)- Movement of sign is big.
20. (c)- Movement of sign is small.
21. hs- Headshake.
22. eyz- Eye gaze fixation.
23. rb- Raised eyebrow.
24. hb- Head bent.
25. hl- Head lowered slightly towards shoulder.
26. ce- Clinched eyebrow.
27. neg hs- Handshake for Negation.

28. yes hs- Handshake for Affirmation.

29. CL- Classifier handshape.

30. -(b LOC)- Body location.

31. ++- Represents repetition of a sign.

Grammatical Category

32. Noun – (N).

33. Pronoun- (Self) signed with classifier [Ghandshape].

34. Person- (Per).

35. Singular- (Sng).

36. Plural- (Plu).

37. : (Agreement).

38. Determiner- (Det).

39. Quantifier- (Quant).

40. Wh questions- (Wh).

41. Verb- (V).

42. Adverb- (Adv).

43. Adjective- (Adj).

44. Preposition- (Prep).

45. Conjunction- (Conj).

46. Masculine- (Masc).

47. Feminine- (Fem).

48. Aspect- (Asp).

49. Past Tense- (PST).

50. Present Tense- (PRST).

51. Future Tense- (FUT).

52. Progressive Marker- (Prog).

53. Pronominal Adjective- (Self) signed with classifier [handshapeA].

List of Abbreviations

1. ISL- Indian Sign Language
2. NISL- North Indian Sign Language
3. SISL- South Indian Sign Language
4. ASL- American Sign Language
5. ShSL- Shillong Sign Language
6. RISL- Rural Indian Sign Language
7. UISL- Urban Indian Sign Language
8. BSL- British Sign Language
9. IPSL- Indo-Pakistani Sign Language
10. NEP- New Education Policy
11. CODA- Child of Deaf Adult
12. SODA- Sibling of Deaf Adult
13. WHO- World Health Organization
14. RCI- Rehabilitation Council of India
15. dB- Decible
16. CTDI- Convention of the Teachers of Deaf in India
17. AYJNIHH- Ali Yavar Jung National Institute for the Hearing Handicap
18. ISLRTC- Indian Sign Language Research and Training Centre
19. D.Ed- Diploma in Education
20. B.Ed- Bachelor of Education
21. M.Ed- Master of Education
22. PWD- The Persons with Disabilities
23. DITSIL- Diploma in Teaching Indian Sing Language
24. UNCRPD- United Nation's Convention on Rights of Persons with Disabilities
25. MSJE- The Ministry of Social Justice and Empowerment
26. AAC- Alternative and Augmentative Communications
27. RPWD- Rights of Persons with Disabilities
28. CIIL- Central Institute of Indian Languages
29. NGO- Non-Governmental Organization

List of Tables

List of Figures

Table of Contents

Introduction

I. Abstract

The present research work, "A Comparative Phonological Study of the Indian Sign Languages" (henceforth, ISL) seeks to investigate the extent of linguistic variation that may exist across the deaf communities in India. It attempts to trace such variation by closely examining the lexical items commonly shared across the main selected regions. The selected areas (see Chapter 2) for the study include the North Indian Sign language henceforth, (NISL) and the South Indian Sign Language (henceforth, SISL) of India. Due to the differences in its modality, i.e sign language makes use of the hands and facial expressions for the production of language unlike the oral languages, therefore, this study targets its analysis at the phonological level. In addition to the modality, the uniqueness of how sign languages evolve in communities is another aspect of which the study tries to provide a background of the deaf communities and their education. Thus, alongside the study of linguistic variation of the ISL, this research also tries to highlight and address issues of standardization of the language which is crucial, particularly in present times when efforts of standardization have begun in India. Hence, it also tries to find out the possible path ways for ISL standardization amidst the linguistic and cultural diversity in the country. The study hopefully can contribute in the efforts to understand the theoretical issues of evolution, emergence and the development of human languages.

Until the mid-1960s, sign languages were not viewed as full-fledged languages that are comparable to spoken languages. The origins of most sign languages throughout all of their existence have been documented in various literatures concerning deaf education. Nowadays, we observe many developments in the field of sign language studies in many countries due to the gradual legal recognition of sign languages. Such studies were initiated by studying the phonological structures and lexicography, which resulted in the compilation of dictionaries that we see today. Extensive research on sign language variation has been conducted particularly sign languages such as the American Sign Language (henceforth, ASL), (Lucas &Valli, 2005) Australian Sign Languages,

(Johnston, 2007) and many others. Language variation can be found in any language communities and it is not unusual to find such variation even in sign language deaf communities. On the basis of these previous studies pointed above, this study also takes these similar arguments in its attempt to investigate possible language variation within ISL.

The linguistic system of sign languages is evidently different from the linguistic system of spoken languages 'simply' because of its modality. Each sign segment is a combination of 'Five' phonological features/temporal segments).These are handshapes (HS), location (LOC), movement (MOV), orientation (ORI) and the non-manual or facial expressions (NMF). These are finite set of discrete meaningless contrastive elements that combine to form a sign (see chapter 1, section 1.4). Signs in SL are organized into syllables and the movement feature corresponds to the nucleus of the syllable, analogous to the vowels of spoken language syllables (Sandler &Lilo-Martin, 2006). Phonological variations across different sign languages can also be found. Such cross-linguistic investigation was conducted between sign languages such as Al-Sayyid Bedouin Sign Language and Israeli Sign Language by Sandler & Aronoff, 2007 and many others. A single sign may differ from one another when it makes use of one or more segments.

This study focuses on the phonological variation of the selected five hundred (500) lexical items (see appendix and Chapter 2 on selection of lexical items) in the two selected areas of the study. In this study, phonological comparison between NISL and SISL is based on the Prosodic model (1999) of sign language phonology which suggests that phonological features such as HS, MOV, LOC, ORI and NMF are the articulators of sign language. These features are auto-segmental and are arranged in hierarchy in which HS and LOC are the inherent features of a lexeme whereas MOV is prosodic feature of lexeme. In this model ORI is placed as a sub-ordinate category of the inherent feature HS because orientation of the palm is dependent on hand configuration. Later, Sandler (2006) reviewed the MOV and NMF and suggested that minimal pairs based on MOV and NMF

is scant. The specification of MOV is active in grammar; in ASL plural object agreement is marked by inserting a MOV shape. Sandler (2006) categorized NMF under the node of prosodic feature of the lexeme because it is equivalent to intonation in spoken language. Based on the recent phonological models HS and LOC are the major contrastive units and ORI, MOV and NMF are the minor contrastive units for the study of lexical variation between NISL and SISL. Both the regional varieties of ISL are designed for efficient communication but have different sign structure for same lexical item (see chapter 3), given the situation that ISL is a heterogeneous language the effect of social environment of the deaf community has also been observed in the manner of articulation within the regional varieties of ISL (see chapter 4). Lastly the issue of language vitality and identity of the signers of NISL and SISL developed due to lexical variation has been explored, the opinion and attitude of the signers towards their regional variety of ISL determines the path of standardization of ISL in India (see chapter 5).

II. Aims and Objective of this Study

The stigma of disability attached with the deaf community has devalued sign language for ages. Historically, the presence of deaf people has been mentioned and talked about in all human societies across time. The sufferance and suppression this community has faced cannot be quantified on any scale but despite the millennium old suppression of ISL, it has always flourished in Deaf culture and will continue to flourish as in the words of George Veditz (1913),"As long as there are Deaf people on earth, there will be signs."

The medical model[1] of deafness has certainly not diminished from the society but social model[2] has started to co-exist and it has empowered the deaf community. In India, the deaf community has recognized themselves as a “linguistic minority community” which has their own culture, values and is bound together by the use of one language which is

[1] Des Power (2005).Models of deafness: Cochlear implants in the Australian Daily press. *Journal of Deaf studies and Deaf Education.* 10 (4): 451-9.
[2] Samaha AM (2007). "What good is the social model of disability". *University of Chicago Law Review*. 74 (4): 1251–1308.

ISL. The concern for shaping the future of the deaf people in India has increased and now the deaf communities in India are much more aware of their linguistic and cultural rights.

Unlike centuries of old linguistic research tradition of spoken language, linguistic study of signed language in India is about fifty years old. Nevertheless in past few years has seen a tremendous linguistic research and development of ISL. The past research has mainly focused on lexical similarity (Zeshan 2000a, Woodward 1993) and phonology, syntax, and grammar (Vasishta et al. 1987b, Zeshan 2000c, 2003 and Sinha 2016); however, the linguistic diversity of ISL has remained unnoticed (see section 0.5.1). Different regional varieties have always been reported to exist viz. Calcutta, Delhi, Bombay (Mumbai), Madras (Chennai) and Shillong (North-East) on the basis of the lexical differences (rather than on the basis of structures) but the data regarding regional variations of ISL within India remains scant. Till date there is no empirical based research work methodology suggested for confirming and tendering exact details of regional variation studies. The regional varieties of ISL are still ignored and the linguistic studies on the sign language in India mainly focus on only urban pan-Indian sign language (ISL).

The main objective of this dissertation is to establish an empirical structure on the basis of which two varieties of ISL can be claimed. The migration[3] of the deaf people in search of good education and job opportunities from rural and nearby towns towards metro cities such as Delhi, Kolkata and Hyderabad has resulted in formation of distinct regional varieties of sign language in India. For the study of lexical variation of the regional varieties of ISL, two regional varieties; Delhi and Hyderabad has been taken into account. Since the distance between both the states is more the probability of finding lexical variations remains high. The Delhi variety of sign language is named as North

[3] Migration is the barometer of changing socio-economic and political conditions at the national and international
levels. It is also a sign of wide disparities in economic and social conditions between the origin and destination
(UNFPA, 1993).

Indian Sign Language (NISL) and Hyderabad variety as South Indian Sign Language (SISL) because the demography of the signers consists of deaf people from adjacent neighboring states also therefore it will be unfair to classify the sign language variety under the name of just one state rather regional classification will be more appropriate. It is proposed that NISL and SISL are two different and independent regional variety of ISL in India; in support of this argument a comparative phonological study of NISL and SISL has been done to illustrate lexical variation between both the varieties. The lexical variation between NISL and SISL has been explored with the help of phonological comparison because phonology gives clear and exact details of the articulation of lexical items in sign or any spoken language. Further in this study, the data suggests that NISL and SISL are not only subjected to inter-regional variation but also subjected to phonological variations within the regional variety. The linguistic diversity and heterogeneity of ISL is huge and has been underestimated in previous studies.

Any form of language that is systematically different from others can be said to be a 'variety'. In studies of ISL such as Vasishta (1978) suggests that, ISL have systemic variation in and between regions and it will not *create problems* for language standardization or planning. However, this may not be the case when at this point, when the government has announced through the launched of the New Education Policy, 2020. This policy states to standardize ISL although it also states the integration of the local varieties. With such announcement as observed in various social media, the perception and understanding of standardization in this context is 'lexical unification'. Apparently, the path of standardization of ISL is not easy due to regional variations; the hindrances in the path of standardization due to lexical variations between NISL and SISL have been discussed in this dissertation.

It is the most crucial time for the development of ISL as on 30th July 2020, New Education Policy[4] (NEP) has announced that ISL will be standardized and National and State curriculum materials will be developed and implemented for the hearing impaired students. Therefore, the issue of lexical variation has to be addressed in ensuring local varieties are integrated, equally represented and considered part and parcel of ISL for an inclusive development of ISL before just one variety of ISL takes over and diminishes the other regional varieties.

III. Research Questions

The center staged research questions of this study are:

a. Jepson (1991) suggests that in India only two varieties of sign language exists, rural sign language (RISL) and urban sign language (UISL); both the varieties are designed for efficient communication but have developed differently in response to the contrast sociolinguistic environments. The users of RISL is limited and is used only by rural deaf community of India while UISL is the pan-Indian variety used by educated, employed, upper and middle class deaf community of India. According to Jepson UISL is the only pan-Indian variety of sign language which is also referred as ISL. Over the time period eminent scholars have reported regional varieties of ISL such as Delhi, Kolkata, Mumbai, Chennai and Shillong but suggest that variation is only lexical of about only 40%. These other varieties reported by other studies whether they are included under the umbrella term ISL or not is still a major question that needs serious investigation.

   Hence, this work, tries to answer the question "Is ISL, the only pan India variety of sign language or it should be viewed through a broad spectrum now"?

b. As mentioned by Jepson (1991) due to contrast of sociolinguistic environment, India has majorly only two types of sign language varieties; given the fact that India is a multilingual and multicultural country the possibilities of heterogeneity

[4] The National Policy on Education (NPE) is a policy formulated by the Government of India to promote and regulate education in India. The policy covers elementary education to higher education in both rural and urban.

is very high. Deaf community in India comprises of the pre-lingual deafs, post-lingual deafs, native signers, CODA and SODA apart from this every single deaf have a different life experience with deafness and sign language; it is a very diverse community (Zeeshan, 2006). According to Labov (1969), the social environments plays a huge role in developing inter and intra language variations. Since deaf community in India is a diverse community therefore in this work it will be observed whether social environments also affects ISL, if "ISL is a heterogeneous Language or not"?

c. In a multilingual speech community often the language spoken by the upper class people of the society is accepted as the high prestige variety and is considered as the standard form of the language (Labov, 2006). Given the situation that ISL is a heterogeneous language "Is standardization of ISL possible considering the fact that it has other regional varieties"?
d. In India the condition of deaf education and employment is not satisfactory due to which deaf communities in India are facing various social and economical issues. Certainly standardization of ISL will help the development of the community in many ways but given the situation of regional variation standardization seems to be a little difficult for now therefore, "Can ISL survive without standardization process in India"?

Section 0.1 provides an insight of the contemporary construct of the deafness as a disability and empowerment of the deaf community as a linguistic minority community has been discussed. Section 0.2 and 0.3 gives a detailed account of the history of sufferance and development of sign language and deaf community internationally and in India. The subsequent section focuses on perspective of ancient text towards deafness in western and India culture followed by development of sign language and deaf education prior to Stokoe has been discussed. Section 0.4 is an account of Indian deaf community which has slowly emerged as a linguistic minority community in India. In this section the role and importance of sign language in forming the community along with other important factors has been discussed. In section 0.5, set forth the issues emerged in

previous sign language studies and the political situation related to deaf community in India which has resulted in the inception of this dissertation. The subsequent section discusses the ignorance of the regional varieties of ISL in previous linguistic studies and a detailed account of the violation of linguistic rights of the deaf community in India has been discussed; this section builds up the base and need of this dissertation. Section 0.6 concludes the chapter with an outline of the dissertation.

0.1 D/deaf Community

Contemporarily from the perspective of deaf, deafness in not just an audiological condition rather it is a set of unique attitude and behavior. The journey of the deaf community, from merely being an oppressed group of deaf individuals have emerged as unit of deaf individual who are culturally, socially and linguistically empowered. The pathological[5]definitions of deafness have been a set back for the overall development of this community but slowly they are embracing the social model of deafness; deaf community identify themselves as a cultural and linguistic minority group. The social model asserts that the stigma of disability of the deaf community is due to the society not the deaf people; society does not give access of information due to which a certain amount of gap is built between the deaf people and hearing people. Deaf community is united by; the sense of common oppression faced by them in a speaking and hearing dominant society, their cultural values and common set of goal of attaining equal linguistic and social right. It is aptly argued by Barth (1969) and Fishman (1977) that notion of 'self recognition' and by others are the central elements for forming and defining a community. A sense of belongingness in form of a community has empowered deaf people to stay united and fight for their social and linguistic rights globally.

Woodward (1972) has defined deaf community and deaf people by using D/d upper and lower case classification. "Deaf" people identify themselves as empowered individuals of the "Deaf community" with a better perspective of the notion of equality in the society

[5] Humphries (1977), refers to socially constructed set of meanings of deaf.

whereas “deaf” people are still stuck with the stigma of disability and do not embrace “Deaf” culture. It is the choice of an individual to be “D/deaf”.

Deaf community unlike other communities is an open ended community, it is the choice of an individual whether they identify themselves as a part of deaf community or not; it is not bounded and conditioned with the notion of race, caste, gender, religion, ethnicity and geographical boundaries. The membership of the deaf community is not something which is genetically passed or inherited, it has no biological connections. The notion of ‘paternity’ is a little irrelevant in the case of Deaf community; according to a research (Karchmer, Trybus, and Paquin, 1978; Meadow, 1972; Rawlings, 1973; Trybus and Jensema 1978) only 3-4 percent of all deaf children are born to two deaf parents, and about 90 percent have two hearing parents, therefore most of the children do not share biological origins except for the case in which a deaf child is born in a deaf family.

Membership of the deaf community does not solely dependent on audiological condition of deafness; as discussed above there can be “deaf” people who do not associate themselves with Deaf culture and have no urge to learn sign language; this can be the case of mildly hearing impaired individuals and late deafened individuals. On the other hand, there are also hearing individuals who have embraced deaf culture and sign language whole heartedly and they respect deaf culture in every aspect. This can be the case of CODA (Child of a Deaf Adult) and SODA (Sibling of a deaf adult), they grow up in an environment of Deaf culture and therefore they associate themselves with the community. The hearing people who identify themselves as part of deaf community are called “Culturally Deaf”, here audiological condition of deafness does not imply. According to this model of deaf community, hearing people who have common goals like a deaf person are bicultural; they also deserve to be a part of this community. Napier (2001) has established the relation of deaf community with hearing community by differentiating between the attitudes of “hearing” and “Hearing” person, this concept is based on the deaf model of deafness. A “Hearing” person is totally consumed by the stigma of disability and is ignorant enough to not look beyond the old aged prejudices

related to deafness whereas a “hearing” person are those who have internalized deaf culture and is successful in rejecting the idea of hegemony of speaking over sign.

Therefore, audiological deafness alone does not ensure membership of this community there are other vital conditions required to be fulfilled for attaining membership of the “Deaf” community. Baker-Shenk & Cokely (1980) model of deaf community is the most accepted model; they have listed four important factors for attaining membership of the deaf community:

i) Audiological Condition: Audiological condition of deafness is required to attain membership of the deaf community only to a certain extent.

ii) Social Behavior: All the deaf members are required to attend and participate in the social gatherings and activities organized by the community by doing this they reciprocate unity and togetherness of the community.

iii) Linguistic: Since the notion of empowerment among the deaf community is transported by the language use therefore this criteria holds the most importance among all the other factors. Each and every member of this community should have same linguistic repertoire, it also holds importance because the deaf culture is transmitted only by this mode of language.

iv) Political dissent: It is important for a deaf individual to fight for their linguistic rights and for the best of interest of the community, it is important to show their dissent to the policies which directly affects deaf rights.

Of all the several models of the deaf community, knowledge of sign language remains the vital condition because it is the source from which all empowerment channels through. It is the mother of the creation of this community, its values and tradition; it also shapes the attitude of an individual towards their co-existing deaf members. The unity of deaf community has given a new perspective of viewing deafness to the world of speech dominant society.

The phenomenon of Martha's Vineyard deafness holds a special place in the history of deaf culture. Martha's Vineyard is an island in the southeastern coast of Massachusetts, U.S.A; by the end of the 17th century people of this place was struck by hereditary deafness due to genetic mutation and restricted genetic pool. For over 200 years, this place remained home for one of the largest deaf community of America. The islanders used a highly developed form of sign language for communication purposes without any barrier of deafness, they never treated deafness differently and sign language became a necessary part for deaf and hearing people in their daily life routines. Deaf people equally participated in religious, social, political and occupational activities with no language barrier unlike now there was no separate social network exclusively for deaf. The social construct in Martha's Vineyard was far more advanced and inclusive then what we have now.

The hard work and unity of deaf community is remarkable; the support and respect for each other of this community has set up a new dimension in the studies related to sociolinguistic issues of a community. The reference of Martha's Vineyard gives a hope that only a collaborative effort of "hearing" and "Deaf" community can bring a difference in the society; the bi-modal structure of communication can make our society linguistically diverse.

At this point of time, it is important to understand the hardships deaf community and sign language has undergone through over centuries. The perspective of H/hearing[6] people on deafness and sign language will help us to understand the emotions deaf people have developed over the time period for their community. In the next section, the developmental stages of the deaf community and sign language will be discussed.

[6] Napier,J. (2002). The D/deaf—H/hearing Debate. *Sign Language Studies.* Vol. 2, No. 2 (Winter 2002), pp. 141-149 (9 pages). Gallaudet University Press.

0.2 Global Perspective on Deafness and Sign Language

Deaf community has been an integral part of the society right from its inception; the presence of deaf people has been mentioned and talked about in all the human societies across the time. However, sign language has emerged as a subject of research only in the middle of the 19th century despite of being a linguistically and a socially systematized language. The following section presents a brief background of the beliefs related to deafness and development of sign language trough citation of deafness in various religious texts, philosophies and educational methods used in various events down the history lane.

0.2.1 Ancient Beliefs

For millennia people with hearing impairment have encountered oppression and faced negative attitude from the speech dominant society, deaf education and sign language was seen through the prism of religion. The evidences in Greco-Roman literature has convinced that deaf-mutism existed in pre-enlightenment era and deaf people were considered as unsocial beings; they were considered incapable of getting education because of the physical inability to speak. Ancient Greek philosopher Aristotle asserted that "Men that are deaf are in all cases also dumb" (384-322 BC). He clearly means that a deaf person will remain dumb and incompetent all their life because they are incapable of being educated; spoken language was the only comprehensible and valid means of communication in the eyes of Greco-Roman thinkers. Socrates (470-399 BC), "deaf people as totally mute and void of language", here he infers that deaf people only rely on gestures and pantomime for communication purposes.

With the beginning of Hebrew and Christian teachings; society started developing a positive attitude towards deafness and deaf people started receiving a humanitarian touch to certain extent. In the New Testament of Bible, there is a reference of deaf people; Exodus has mentioned a conversation between Moses and Christ himself where Moses wants to be excused from God's assignment to him, to request that Pharaoh release the Israelites from slavery. Moses replies:

"… O my Lord, I am not eloquent, neither heretofore, nor since thou hast spoken unto thy servant: but I am slow of speech, and of a slow tongue." (Exodus 4:10)

To which Jesus Christ replied:

"And the LORD said unto him [Moses], Who hath made man's mouth? or who maketh the dumb, or deaf, or the seeing, or the blind? have not I the LORD?" (Exodus 4:11)

Here, Jesus says to Moses that God has made all people equal and they are self sufficient to overcome such defects and then proposes how he would deal with the defect. Moses was claiming as an excuse and Moses was not even mute, he mentioned himself of being slow at speech. So Jesus tried to illustrate that everybody is capable of doing everything in this world, if they can so can you.

Greco-Roman literature proclaimed that speech and language were one in the same and that those who could not speak were unteachable. This pronouncement on the deaf cursed them for the next two thousand years and no development took place. The deaf people were denied citizenship, religious rights, and were often left out to die in the times of the ancient Greeks as a result; the use of signs was heavily looked down upon and shamed. The Roman- Catholic preaching started a new discourse about deaf people in the society and advocated for deaf education. Pliny (AD 23- 79), was a Roman historian and in his work *Historical Naturalis* he has also mentioned about painting lessons given to deaf people.

0.2. 2 Deaf Education

Renaissance[7] pushed back all the prejudices against deaf people and deaf education methods, scholars from different domain started to develop teaching methods of deaf. The thinking that deaf people are uneducable was changing and concern towards deaf

[7] "The Renaissance was a cultural movement that profoundly affected European intellectual life in the early modern period. Beginning in Italy, and spreading to the rest of Europe by the 16th century, its influence was felt in art, architecture, philosophy, literature, music, science, technology, politics, religion, and other aspects of intellectual inquiry. Renaissance scholars employed the humanist method in study, and searched for realism and human emotion in art". (Perry, M. (2002). *Humanities in the Western Tradition* : Ideas and Aesthetics, Volume I: Ancient to Medieval, Ch. 13.Cengage Learning, Inc. United States)

education gradually shifted. Girolano Cardano, an Italian physician mentions in his book *Paralipomennon* (1663): "mute can hear by reading and speak by writing". It somehow altered the notion of deaf being incompetent and philosophers took inspiration from his work.

In the 16th-century Spanish Benedictine monk , Pedro Ponce de León created first ever manual representation of alphabets in sign language and started first ever deaf school with only two deaf boys. His teachings emphasized on the development of writhing and usage of hand formation in deaf education. Juan Pablo Bonet (1579- 1629) published a book *"Simplification of the Alphabet and the method of teaching deaf mutes to Speak"*; the sign alphabets illustrated in his work is very similar to the modern sign language alphabet. The alphabets were based on the Aretina score; it is a system of musical notation created by Guido Aretinus. Bonet's approach on deaf education was a combination of *Oralism* (using sounds to communicate) and sign language.

Charles-Michel de l'Épée (1775), a French Catholic priest established a more comprehensive method for educating deaf. He founded the first school for deaf children, "National Institute for Deaf-Mutes in Paris"; deaf students from all over France having different sign language communication skill came to this school. Michel adapted these signs and added his own manual alphabets and developed the first ever sign language dictionary. His book *"Instruction of deaf and dumb by means of methodical signs"* (1776) advocates usage of sign language as a medium of instruction at deaf schools . Charles-Michel de l'Épée later own opened twenty one deaf schools in different place of France and is very worthily known as *father of deaf education*. His standardized form of sign language propagated to Europe and the United States in a very short span of time, henceforth sign language and deaf education got some importance. Thomas Hopkins Gallaudet a minister from Connecticut came to France in 1814 to learn sign language; he was trained under Michel's successor , Abbé Sicard . Three years later of the training Gallaudet opened the first deaf school in his hometown Hartford, Connecticut "American School for the Deaf". Deaf students from all the parts of America attended this school

same as the Michel's school which led to the modification of ASL. Thomas Gallaudet moved on to train teachers for deaf education and opened many other deaf schools. He received a lot of success because until then people were unaware of intelligence and capabilities of deaf people. Later on in 1957, Edward Gallaudet son of Thomas Gallaudet established Gallaudet College for the higher education of deaf people which is now known as the Gallaudet University. This University became the epicenter of various researches, linguistic inquires and developmental programs related to sign language and deaf education.

In 1880 a major event took place which had a greater impact on the lives of deaf people in the history of deaf education. Alexander Graham Bell (1847- 1922) along with an inventor he also claimed himself as "a teacher of the deaf"[8]. His mother and wife both were deaf due to which his interest in deaf teaching increased. Throughout his life he viewed deafness as something which needs to be eradicated from the society and believed through proper resources and methods deaf people can be trained to understand lip-reading and can imitate speaking commonly known as oralism. He was an extreme believer that sign language should be banned from the society as it is a symbol of dumbness. After the invention of Telephone in 1876, he became an influential member of the society and other deaf educationist became his followers; they formed a group "Volta Bureau"[9] dedicated to the diffusion of sign language and applying oral method in deaf education.

In 1880, under his leadership a multi country conference "The Second International Congress on Education of the Deaf" was held at Milan; this event is famously known as "The Milan Conference or Milan Congress". This conference was attended by one hundred and sixty four deaf educationists across the world out of which only one delegate was deaf. At this conference a unanimous declaration was made that oral education was better than manual (sign language) education. Hence, on this basis the use of sign

[8] See also, Gray, Charlotte. (2006). *Reluctant Genius: Alexander Graham Bell and the Passion for Invention*. New York: Arcade Publishing.
[9] It was an organization established "for the increase and diffusion of knowledge relating to the Deaf."

language was strictly prohibited and completely banned in deaf schools. Total eight dark resolutions were passed by the convention slamming sign language completely. Here below are the first two resolutions:

a) The Convention, considering the incontestable superiority of articulation over signs in restoring the deaf-mute to society and giving him a fuller knowledge of language, declares that the oral method should be preferred to that of signs in the education and instruction of deaf-mutes. (Burke, J. 2014)
b) The Convention, considering that the simultaneous use of articulation and signs has the disadvantage of injuring articulation and lip-reading and the precision of ideas, declares that the pure oral method should be preferred. (Burke, J. 2014)

The conference of Milan resulted in a unpleasant set back in the history of deaf education, the proclamations were atrocious towards sign language and it clearly showed the hegemonic mind set of the glottal-centric society. Due to the enactment of the conference many deaf teachers lost their jobs as there was an overall decline in deaf professionals and above all the deaf education was negatively impacted.

By the time National Association of Deaf (1890) was formed, the association regained supporters and stepped in to oppose Milan's resolutions. The president of Gallaudet College made a bold decision to keep sign language alive in the campus.

Eventually, Stokoe's seminal work (1960), shunted all controversies related to sign language and eliminated the old aged prejudice against sign language. He firmly put forward the facts that sign language is a natural human language and has a different modality unlike other spoken languages. Gradually, the linguistic inquiry of sign language ignited a sense of empowerment in the deaf community; it resulted as a tool to fight against the primeval oppressors in every sense. The researches on sign languages

helped the deaf community to confront social, cultural, political and educational problems coming in the way of deaf community with a more empirical approach.

0.2.3 Global Acceptance

A major event took place at Gallaudet University in the year 1988, where the deaf people confronted the social stigma of dis-ableism attached to the deaf community and emerged as a linguistically empowered community. On March 6th 1988, Dr. Elizabeth Zinser[10] got appointed as the president of Gallaudet University; it sparked a sense of anger among many students, alumni and faculty and staff of the University which resulted in a massive protest. The protesters believed the Dr. Zinser is a misfit for this post because she lacked knowledge and skill of sign language which definitely is an obstacle in the way of development of sign language in the University. On top of this, she gave a highly insensitive statement: "learn a little sign . . . just a few basic phrases, some warm sentences when they meet people around the school" (Washington Post, 12 March 1988). This statement shows a sense of negative attitude of Dr. Zinser towards deaf community because she tries to convey her staff that sign language is just symbolically important so learning few words and sentences is enough and has completely ignored the fact that it is an accomplished mode of communication. With the effect of the protest Dr. Zinser had to step down from the post. This event holds a critical importance in the study of sociolinguistics of the deaf community because the deaf community of America has beautifully expressed their unity, identity, loyalty and responsibility towards the importance of the protection of their linguistic rights required in the community development.

This event sparked a new discourse of the need of official recognition of sign language and charged up human right activists to strike a movement. The human right activists along with the support of deaf right activists advocated for equal status of sign language

[10] Elisabeth Ann Zinser is a retired university president, most recently at Southern Oregon University in Ashland, Oregon. Previously she was the chancellor of the Lexington campus of the University of Kentucky, and the first female president of the University of Idaho, serving from 1989–95 in Moscow, Idaho. https://en.wikipedia.org/wiki/Elisabeth_Zinser

as it is for spoken language and obligated countries to facilitate the use of the language to promote the linguistic identity of the deaf.

Deaf community is successful in getting legal affiliation of as sign language as their lingua franca in total thirty one countries out of which most of them are members of European Union. The recognition is explicit in nature which makes language planning programs more effective; the nature of the recognition are by constitution, by means of general language legislation, by means of a sign language law or act and by means of legislation on the functioning of the national language council.

Contemporarily there are eleven countries who have confirmed recognition to sign language through constitution to list a few: Uganda (1995, Article XXIV, on cultural objectives), Finland (1995, Section 17, on the right to one's language and culture), South Africa (1996, Article 6, on languages), Austria (2005, Article 8, on languages) and New Zealand (2006, New Zealand Sign Language Act).

Four other countries have recognized their sign language by means of general language legislation that also makes regulations for the national spoken languages, they are: Latvia (1999, Official Language Law), Estonia (2007, Language Act), Sweden (2009, Language Act), and Iceland (2011, Act on the Status of the Icelandic Language and Icelandic Sign Language).

There are some countries that have protected their linguistic identity by forming a specific sign language law to list a few: Slovakia (1995, Law on the Sign Language of the Deaf), Uruguay (2001, Law no. 17.378) and Cyprus (2006, Act on the Recognition of Cyprus Sign Language 66[I]).

Few countries like Norway and Denmark have recognized their sign languages in legislation on the functioning of the language council in 2009 and 2014, respectively.

Due to the impact of stigma often the value of stigmatized starts to get diminished and that is the point when oppressors win on their hegemonic agendas. For years sign language and deaf community did not get the credit of their cultural and linguistic diversity but they broke all the stigma of disability and are accepted globally.

The next section talks about the stages of development of deaf community and Indian Sign Language and will try to understand the perspectives of Indian society towards deafness as well as analyze whether deaf community is successful in breaking the stigma or still it is suppressed.

0.3 Perspective of Deafness, Deaf Community and Sign Language in India

Deafness in India as defined by Rehabilitation Council of India (RCI) under the act of 1995 is "hearing impaired person is one who has the hearing loss of 60 dB or more in one or both the ears for conversational range of frequencies" The population statistics suggests that in India there are around 14 million[11] deaf people which makes around 1.40% [12]of the total population of India. India is culturally a diverse country where all kind of religious believes, cultures, language, food, ethnicity and communities co-exists and flourishes irrespective of numerous dissimilarities and has been witness to birth and growth of many such distinct communities; deaf community and Indian sign language is one of them. The existence of deaf community and ISL has a deep rooted history in India. Deaf community in India has gradually evolved as linguistic minority community. Irrespective of numerous geographical boundaries, this community is united by their common cultural values, beliefs and ISL.

[11] An estimation by Dr. Madan Vasishta as cited in Indian Sign Language Dictionary, 2001.
[12] According to the 20011 Census figures show 1.3 million persons with hearing impairment i.e. 5.8 percentages of the total 21.9 million persons with disabilities in India (cited in Julka & Sabu ms).

However, the journey of development of the deaf community and ISL in India has not been so welcoming and pleasant; down the history we can trace the level of oppression, ignorance and sufferance this community has endured and has stood tall and high in every aspect. The following section is a brief documentation of the evolution of deafness, deaf community and ISL starting from the Vedic period to present day situation in India.

0.3.1 Ancient Traditions and Texts Related to Deafness

India as a country has witnessed the birth and growth of many religions and its number is still multiplying but the ancient of all is Hinduism. India has very strong historical and cultural ties with Hinduism, an early citation of deaf and deafness can also be found in ancient Vedic Hindu texts.

Manu Smriti, is one such ancient text document of India which is best known for its influence on the societal code of conduct in the ancient Indian society. Back then in ancient era it was regarded as the code of conduct of Hinduism. Each and every verse of this text held legal importance more than the religious importance and contains all types of legal theories regarding Hinduism. In *Manu Smriti* deafness along with other disabilities were looked down upon as the lowest strata of the society and people who have any physical disability were refrained from the share of their paternal property. They were forced to be dependent on the other members of the family.

"The following receives no shares [of inheritance]: the impotent, outcastes, those born blind or deaf, insane, the mentally retarded, mutes and anyone lacking manly strength. It is right, however, that a wise man should provide all of them with food and clothing according to his ability until end; if he does not he will become outcaste. If one of the other hand, any of these, the impotent and so forth, somehow wants to have wives and do have issues, their offspring are entitled to share"[13]. (169)

[13]The Law Code of Manu, translated by Patrick Olivelle (Oxford: Oxford UP, 2004), 9.201-203, p.169.

In the verse, *Manu* reprimands the society that deaf people along with several other type of differently abled members of the society will be taken care by a "wise man" of the family and till death those people will have to live on the charity of the wise member of the family. Here, very conveniently a physically abled member of the family is referred as the "wise man". The epic story of *Mahabharata* illustrates this norm of doctrine[14] with reference to *Manu Smriti* in one of the incidences. *Dhritrashtra* being the eldest son of *Kuru Dynasty* was not accepted as the rightful heir for the throne; despite having all the quintessential qualities required to be a king he was denied because he was visually challenged. The ethic minister of the court, *Vidur* took this decision based on this verse of *Manu Smriti*.

Manu also urged people to keep deaf people and other disabled people away from the king because they cannot be trusted.

"Idiots, the dumb, the blind, the deaf, the old people, women, foreigners, the sick and the crippled- [the king] should have these removed when he confers with his counselors. He should pay special attention to this because, these wretched people and animal, women in particular, betray these plans"[15]. (117)

Here deaf, differently-abled people and specially women are branded as "wretched people"; these wretched people in particular women should be debarred to meet the king and other court counselors because they will always betray. Unfortunately, *Manu* made the physical impairment the baseless criteria of showing loyalty and betrayal towards the king which lacked logic and thoughtfulness.

According to another old Hindu text *"Dharma Shastra"*, it is believed that whatever sufferance we face in this birth is penance of the sins we have done in our past birth; our

[14] See (2001b) for other Eastern religious views on disability.
[15] The Law Code of Manu, translated by Patrick Olivelle (Oxford: Oxford UP, 2004), 7.149-150, p.117.

present life is based upon the "*Karma*" of previous birth. Unfortunately, according to this theory of *karma* physical impairment is a result of bad *karma* in previous birth. There is a list of bad deeds which results in physical impairment as punishment of having bad *karma*.

"In this way, as a result of the remnants of the past deeds are born individuals despised by good people: the mentally retarded, the mute, the blind and the deaf, as well as those who are deformed. Therefore, one should always do penances to purify oneself; for individuals whose sins have not been expiated are born with detestable characteristics"[16]. (193-194)

The deaf and other differently-abled people were stereotyped and left to live alone in the society based on this theory of *Karm*a. There is not a single hint of acceptance and inclusion of deaf along with other disabilities in the society.

Apart from this theory of *karma* mentioned in *Dharma Shastra* where deafness was considered penance of the past life sins *Atharva Veda* (approx. 1500 BC) considered deafness as a disease which needs to be treated: "the malady that makes one deaf, the malady that makes one blind/ all malady that wrings thy brow, we charm away with this our spell."

Shushruta Samhita, an ancient Indian text which is based on the *Ayurvedic* tradition of Indian medical practices is the first ancient text of India which successfully differentiated deafness from religion and claimed it to be a physical ailment by explaining the physiology of deafness.

"When wind covers the tubes which carry sound, and then stays there, either pure or in combination of phlegm, the result is deafness….. A wind with phlegm which covers the

[16] The Law Code of Manu, translated by Patrick Olivelle (Oxford: Oxford UP, 2004), 11.53-54, pp. 193-194.

pipes which carries sound can then make men be inactive, dumb, mumble, or stammer"[17]. (124)

In his work, *Shushruta* explained the whole physiological condition which leads to deafness; here a scientific attempt is being made to explain deafness. *Shushruta* also suggests deafness is incurable and one has to live and accept this reality.

The sufferance and ignorance of deaf community along with other differently-abled people are deep rooted in the history, no matter how old these practices are there is a tendency to carry forward the essence of older practices in some or the other way. The way in which deaf people were treated according to the citation of ancient Hindu texts, can be a plausible reason why deafness is still seen through the prism of disability.

0.3.2 Signed Language Origin and Education of the Deaf

It is true that sign language must have started with the origin of deaf community in India but, we don't need official records to ascertain the natural growth of a language. As long as there are deaf people even if it is just one or two community members some form of natural and spontaneous sign language communication will exists. That shows the natural propensity of any human as a social being, the need and desire to communicate. Historical studies on any SL shows that when such 'disabled' group come together in a school or any other platform, natural forms of communication emerged example, Nicaraguan Sign language, ShSL etc. However Miles (2001) cited Coomaraswamy (1928) and suggests that sign language in India is documented to be used by hearing people also and not only by the deaf people. The following statement of Miles (2001), suggests that the evidence of using signs started much before from the foundation of deaf educational institutions in India.

[17] Sushruta's Compendium. From The Roots of Ayurveda, translated by Dominik Wujastyk (London: Penguin, 2003),124.

"Long before the era of modern studies of European sign language history began, Coomaraswamy (1877-1947) cited the use of *mudra* in the *Milindapañho,* for which he believed the translation 'sign language' or 'hand gesture' was appropriate; and further asserted that "we know from other sources that in early India a sign language of the hands was considered an art or accomplishment with which an educated person should be familiar." He then cited the first of the two sign or gesture language scenes in *Jataka* 546, and found that "it is evident that the *Bodhisattva* was already using an established and conventional sign language of the hands, and this is what *mudra,* as an art or accomplishment, always means. *NaTa-sUtras* [= rules for actors], which must have dealt with the expression of ideas, etc., by means of formal gesture, are mentioned as early as in *Panini* [i.e. in the range 5th - 7th century BC]. Needless to say, this conventional sign language of the hands, whether in actual use by living persons, or in the more limited range of iconographic usage, must have been based on a natural and spontaneous language of gesture;…" (Miles 2001)

Most development of the ISL occurred in the deaf schools of India, the very first attempt at systematic education was undertaken at Mazagaon in the Bombay Presidency in 1884 by the Roman Catholic Mission. The inception of a deaf school in India was done by Dr. De Haerne in 1882 and with his initiative Dr. Leo Meurin, the then Roman Catholic Archbishop of Bombay; was able to establish first deaf school in Bombay in the year 1884[18]. Nine years after, the Calcutta Deaf and Dumb school was established in 1893. Third institution for deaf came into existence in the Southern part of India at Palayamkottah in the year1896.

In 1935, the Convention of the Teachers of Deaf (CTDI) in India was formed; its aim was to look after the teaching pedagogy and spread the awareness of ISL in India. CTDI under the editorship of A.C. Sen brought up a journal titled "The Deaf in India", the journal was focused to create awareness and bring up the needs and problems of the deaf

[18] J.N.Banerjee, "India." "International Reports of Schools for the Deaf 1898 (Washington: Volta Bureau) : 65.

people in the general public eye of India. Eminent scholars like P.T. Kerridge, Dr.I.R. Ewing and A.W. Ewing of Victoria University contributed their articles to the journal. This platform was used to exchange views and clarify doubts on the academic questions of the teachers of the deaf.

By the time India became Independent in 1947; forty five deaf schools were established in different regions of India[19]. The growth and development of ISL became stagnant when India confronted World War II, struggle for Independence and the communal riots which ultimately resulted in partition of India and Pakistan.

Indeed deaf education was in developmental phase in pre-Independence era but ISL was highly discouraged and "Oral" method of teaching deaf students was predominantly used all over the country. Crosset (1887) and Hull (1913) documented; that the use of the oral method first started in 1884 in the Bombay Institute for the Deaf-mute due to the effect of Congress of Milan in 1880. Banerjee (1949) also stated that the oral method was introduced in 1896 in the Calcutta Deaf and Dumb School. The evidence of predominant use of the oral method over ISL is also cited by western traveler Dorothy Brodie (1935): "Typically in Mysore and elsewhere the method used was an oral one, signs being discouraged and fingerspelling not taught" In 1935 she visited a deaf school at Bangalore and had faced a horrible experience, she writes: "The method used was an oral one, signs being discouraged and finger spelling not taught… I myself had a greatest difficulty in getting one of the eldest deaf girl to lip-read the simplest question"[20] (Brodie 1935). Bhallacharyya (1939) did a small survey on the method of teaching used in the deaf schools of India in a form of questionnaire all over India and stated that "only Poona and Nunguniri [Madras[21]] used both sign and oral methods while the rest strictly followed the oral method". The teacher training program started at the Calcutta deaf and dumb school

[19] Roopa Vohra, "Institutional Services for the Speech and Hearing Impaired Person in India" Disabilities and Impairement 2:1 (Delhi : Akshat, 1998) : 59-81
[20] Dorothy Brodie, "Education of the Deaf in India" Teacher of the Deaf 33 (1935): 172.
[21] Madras is now known as Chennai; in 1996 government of Tamil Nadu officially changed the name.

also emphasized on the Oral method of teaching and completely overlooked ISL as the medium of instruction, (Iyer 1938 and Kirk 1920).

Oral method of deaf education was used for the longest time in India until 1970's; in the beginning of 1970's the concept of "Total Communication" was introduced in India. Madan Vashista who worked in Gallaudet University, introduced this method of deaf communication in India. This method advocated the usage of gestures, fingerspelling and sign language to establish communication with the deaf. This method was completely rejected by the advocators of oral method and completely misconstrued. They interpreted it as simultaneous use of spoken language while teaching deaf people.

It is true that due to Congress of Milan in 1880, speech was considered incontestably superior over sign. Deaf education system in India remained paralyzed for the longest period of time but there is no hint of the use of any other foreign sign language in Indian schools on record. Thus it appears that ISL is completely indigenous therefore, the deaf themselves have established their own sign systems over the years.

0.3.3 Development of Sign Language in India

In 1983, the government of India under the Ministry of Social Welfare established Ali Yavar Jung National Institute for the Hearing Handicap; it is considered as a landmark in the history of this country for the development of ISL and deaf education. It was located in Bombay[22] followed with regional centers in New Delhi, Hyderabad, Calcutta[23] and Orissa[24]. It was founded with a goal to take up large scaled manpower for the development, research, early detection of hearing impairment and deaf teaching methods of Sign language in India. AYJNIHH in 1983; encapsulated various teacher training programs, special education degrees like D.Ed (HI), B.Ed (HI)and M.Ed (HI) and it also provided other technical services to the deaf community.

[22] Now known as Mumbai; Government of India officially changed the name of Bombay to Mumbai in November 1995.
[23] Now known as Kolkata; the name changed after amendment of West Bengal Act XVIII of 2001.
[24] Orissa is now renamed as Odisha after amendment of The Orissa (Alteration of Name) Act, 2011.

Enactment of Rehabilitation Council of India 1992 by the Ministry of Social Justice and Empowerment Cell, took up the complete responsibility to make India an inclusive society. Enactment of PWD act 1995 set up a stage for development and protection of linguistic rights of the deaf community of India.

AYJNIHH in 2001 developed a three leveled (A, B and C) Sign Language and Interpretation diploma course to generate sign language interpreters and encourage hearing people to learn ISL. The course structure was developed and syllabus was approved by RCI and they also give certification to the qualified ISL interpreters and special educators. This course was conducted in all the regional centers of AYJNIHH and *Ramakrishna Vidyalaya* in Coimbatore from July 2001. Meanwhile in 2001, *Ramakrishna Vidyalaya* developed the very first ISL dictionary which was proudly released on 15th August 2001 to the general public to spread the awareness of ISL.

AYJNIHH did not fulfill the other ISL development related issues like research related projects in collaboration with the other Universities, introduction of ISL in school curriculums and implementation of bilingual education in school. Therefore, deaf community and deaf right activists started to demand rigorously for an autonomous research institute exclusively for ISL. All the efforts and protests fruited in year 2015, the Ministry of Social Justice and Empowerment cell passed the bill to established Indian Sign Language Research and Training Center Cell (ISLRTC)[25] under the *Society Registration Act, 1860.* ISLRTC is an autonomous body which has the following objectives:

a) To develop manpower for using bilingual teaching and developing research in Indian Sign Language.

[25] Document No-4-12/2009NI by Ministry of social justice and Empowerment,Department of empowerment for person with disabilities,Government of India.

b) To promote the use of Indian sign language at primary, secondary and higher education levels.
c) To carry research in collaboration with universities and other educational institutions. To create linguistic record of languages and develop corpus.
d) To train government officials, teachers and public to a larger extent who can understand Indian Sign Language.
e) To collaborate with other groups and institution working under field of disability to propagate Indian sign language.
f) To collect recent developments in sign languages at other parts of the world and implement those and upgrade Indian sign language.

Henceforth, ISLRTC has announced various ISL development related projects; in the year 2018, ISLRTC launched a digital dictionary of 3000 lexical items which is vast so far and it is still under the process of development. In 2020 Government of India announced New Education Policy (NEP) which ensures educational rights to each and every child of this country in their mother tongue. ISLRTC signed a Memorandum of Understanding (MoU) with NCERT[26] to make education materials accessible for hearing impaired children in their preferred format of communication of ISL. This work is still undergoing so it will be unfair to comment anything on this, it is a hope that this MoU will raise the standard of deaf education in India. It is a commendable effort to ensure the accessibility of ISL for D/deaf children in the mainstream schools.

Like many deaf communities, the path of development of the deaf community and sign ISL in India has been a cake walk but definitely it has come a long way and has stood still on its feet. Untill now the social model of perceiving deafness has not drastically changed, a lot of more awareness and development initiatives of ISL is required to overcome the gap between deaf and hearing community of India. However, over the years deaf community in India has emerged as a cultural and linguistic minority group

[26] NCERT is an autonomous organisation of the Government of India which was established in 1961 as a literary, scientific and charitable Society under the Societies' Registration Act, 1860.

and has a better understanding about the dignity of the deaf community, equality and justice. The concern for shaping future of the deaf people in India has tremendously increased and they are walking shoulder to shoulder with the deaf communities of the other countries.

0.4 D/deaf Community: Minority Community in India

Deaf community has come a long way; from the previous belief of deafness as just an audiological ailment that needs medical treatment to the contemporary mindset of viewing deaf people as a minority community. Though the stigma of disability is still attached with the deaf community but with the various linguistic researches and constant struggle of the deaf right activists ISL has established its own place in the speech dominant society.

The deaf culture and identity is not passed on to the offspring in the same manner as it happens in other communities. It is something which cannot be inherited by birth or have no biological relation to it rather it is something which a deaf inhabits from the constant suppression and ignorance from the society. In the spoken community, pre-lingual deaf[27] and natal deaf are looked down upon, discouraged and suppressed at every stage of life whereas in deaf community pre-lingual and natal deaf are considered as gain in terms of language, culture and values. They are the future of deaf community in terms of language development and language attitude towards sign language. The post-lingual and hard of hearings are stuck between two identities. Since the post-lingual deaf become deaf after acquiring spoken language, they don't learn sign language neither they are encouraged to learn sign language. As a result to this, they are not accepted by the signing community and on the other hand they are avoided by the spoken community because they can't speak.

[27] See also Lane (1995) for details of how the formulation of deafness as a loss contradicts the primary foundations of the Deaf community.

Deaf community is integrated by their values and upholds integration among their community in a large social aspect. They cherish their unique identity and establish deafness as unique community who has their own linguistic and cultural identity. Over the time this concept is adopted by the deaf people of India; Indian deaf people collectively call themselves as a linguistic minority community, they are aware of their linguistic rights. The reason why they call themselves as minority community apart from demography are:

- The community has its own language; in case of deaf community in India it is Indian Sign language.
- There is regular in-group interaction between the members of the group.
- The community has its own institution, such as deaf association.
- Each member of the community shares collective experiences and values within the group, such as experience of linguistic oppression.
- The community follows its own norms of communication and has its own historical and cultural heritage.

The deaf community of India identifies themselves as the minority community united with same lingua franca. They have regular in-group interactions in form of social gatherings at the deaf associations.

0.5 Significance of the Study

In this section, the issues emerged in previous sign language studies and the political situation related to deaf community in India will be discussed. Scanty research works related to regional verities of ISL and sociopolitical situation of the deaf community in India are the significance of this study.

0.5.1 Ignorance towards the Regional Varieties of ISL

Hymes (1972, 1974) has argued that the study of any language in the absence of social framework will only build model of the grammar. Despite being linguistically and socially systemized language, Sign language emerged as a subject of research only in the

middle of the 20th century. Previous researches of ISL was mostly based on descriptive models of the language and still lacks in studies that could account for clear variations across the different regions in the country. Mere mentions of the social context of the D/deaf community can be found in literature and mostly concentrate on the educational perspectives. Due to the ignorance of social contrast of the ISL the regional varieties of ISL are less explored however, the existence of the regional varieties of sign language in India is often mentioned but the data is scanty.

Jespon (1991) mentions that in India primarily two types of sign language exist; Urban India Sign Language (UISL) and Rural Indian Sign Language (RISL). He proposed that due to the difference in social environment of RISL and UISL a huge difference can be observed on their structural level as well. As per his observations; in RISL the syntactic complexity is very low, size of the lexicons is limited and it is highly based on the gestural system of hearing community as compared to UISL. As per the observations in this study; dearth of education institutions (that serves as a platform for sign language to grow), even if they exist they are mostly isolated from one another, minimal existence of deaf clubs/associations are the possible reasons for this variation. However this should be a matter of linguistic investigation but in his work he has considered the Delhi variety of Sign language in reference to UISL and for RISL villages of Uttar Pradesh and Rajasthan was only considered. In his work he has emphasized on the uniform usage of UISL as pan Indian variety "Despite some degree of regional variation, UISL can be considered pan- Indian" (1991), which is a little problematic. Here, despite of agreeing to the fact that regional variations are there but only UISL (which is only in the reference to the signs observed in Delhi) should be considered uniform ISL pan India. Also, here the notion of 'village' is also a matter of stereotype because analysis was simply drawn from two states; Uttar Pradesh and Rajasthan to refer RISL.

In the preliminary studies of ISL, it was mostly investigated in relation to their neighboring countries like Pakistan, Bangladesh, Nepal and Sri Lanka. From the investigations it is established that ISL is very closely related to their neighboring

countries. Woodward (1992) in one of his work investigated the vocabulary of the sign language varieties in Karachi (Sindh, Pakistan), Delhi (NCT, India), Bombay (Maharashtra, India), Bangalore (Karnataka, India) and Calcutta (West Bengal, India) and concluded that there is 62–71% similarity between the Karachi vocabulary and the four Indian vocabularies; the sign language varieties in India and Pakistan are distinct but are closely related language varieties. In most of the notified works, in order to establish similarities of ISL across the border it narrowed down the possibilities of regional varieties within ISL by simply representing signs of few states as pan Indian variety. Due to this not only the possibilities of regional variations in ISL was overlooked but the possibility of variation in other related countries were also overlooked.

Woodward (1993) expanded his earlier (1992) research by comparing the results observed from the data of India and Pakistan with new data of Nepal. He concludes that the sign language varieties of India, Pakistan, Nepal, Bangladesh and Sri Lanka are so closely related that they may constitute a single sign language. By doing this, Woodward completely rejects the idea of indigenous ISL and disregards any scope of regional variation studies on ISL.

Zeshan (2000), based on her research in Karachi and New Delhi concludes that the grammar of ISL and PSL are identical. Sign language of both the countries has mere small vocabulary difference therefore it can be constituted as a single variety. In her work, Indian and Pakistani sign language is referred as IPSL (Indo-Pakistani sign language). In her work, she very empathetically rejects the notion of indigenous ISL and PSL. Although her work is a tremendous contribution in regard to understand the underlying grammatical features of ISL but she has only focused on Delhi and Mumbai variety for representing ISL.

In the contrary, there are few linguistic investigations on ISL which has given a fair trial for the possibilities of sign language variation within India. Johnson and Johnson (2016) argued that sign language variety of Kolkata is distinctively different from the Delhi

variety. He also points out that previous works on sign language (Vasishta, Woodward, and Wilson 1978; Zeshan 2000) must have faced "Observer's Paradox" (Labov 1972), due to which the deaf informants must have has altered their signs to accommodate the researches resulting in an artificially inflated relationship between the sign language varieties.

Wallang (2007), attempted the first linguistic study in the North-East region (North-East region comprises of 8 states in India which includes, Assam, Manipur, Meghalaya, Nagaland, Mizoram, Arunachal Pradesh, Tripura and Sikkim) beginning with her M Phil research in the year 2001 taking a sample from only one state which is Meghalaya. She states that the students of residential deaf schools of Shillong form a unique deaf community which has their own variety of sign language "ShSL". She has documented the variation in lexical items of ShSL (2010) in form of a multi-media dictionary, "Shillong Sign Language: A Multi-Media Lexicon. In her latest work (2014), "*Introduction to Sign Language: The Visual Dictionary",* she has mentioned that ShSL and ISL have almost similar grammatical structures but shows diverse lexical variations which has been ignored over a larger period of time. Her further works include the ongoing documentation of sign language varieties in the entire NE region which are stored in a database. In this resource, one will also find varieties even within one region.

0.5.2 Violation of the Linguistic Rights

As it was mentioned in previous sections that deaf community in India identifies as a linguistic minority community which ensures the participation of the community in various political and social process. In India, the status of the minority community entails linguistic human rights and guarantee equality, fraternity, and freedom. The linguistic human rights works at two levels: individual and collective. The individual linguistic rights give a community a sense of security to identify their language as their mother tongue and ensures right of education in their mother tongue. The collective linguistic right ensures the existence of the community with dignity in the eye of the other co-

existing communities and guarantee right to develop their language. Unfortunately in India linguistic human right of the deaf community is violated at both the levels.

(a) Linguistic rights given by the Constitution of India:

Constitution of India has made several provisions for safeguarding minority language and their speakers which clearly means that constitution regards India as a multilingual state where diversity is valued and respected. It is everyone's duty to abide by the constitution and protect minority language and its culture.

Part IV A

Fundamental duties

"It shall be the duty of every citizen of India to value and preserve the rich heritage of our composite culture".

Indeed India is a diverse country where many language and cultural practices co-exist, of these all composites culture Deaf culture is also a part of it but do we have the same respect for sign language and deaf culture as we have for other languages? The answer is "No". In progressive country like India sign language is looked down upon and deaf people have been associated with the terms such as dumb and stupid. In many parts of the country Deaf is still used as a derogatory term.

Madan Vashistha writes in his autobiography[28]; "But the idea of being deaf petrified me. I shuddered at the terms bola in Punjabi, behra in Urdu, and vadhir in Hindi. All these are extremely offensive and derogatory words to describe someone who is not really a human. (2006:5). He shares an experience of having a deaf guy in his village, he was the only deaf guy in village and people used to call him "bola" which is used as a derogatory word in Punjabi for deaf, also that deaf guy was often called as mentally retarded. Deafness has always been a subject of embarrassment and sufferance for deaf naturally because it is not given equal respect from the other hearing community of India.

[28] Vashistha,M. (2006).*Deaf in Delhi: A memoire*. Gallaudet University. United States of America.

Article 30 gives fundamental right to every citizen to get primary education in their mother tongue.

30. Right of minorities to establish and administer educational institution-

I. All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice."

Part XVII

Chapter IV- Special Directives

350A. Facilities for instruction in mother-tongue at primary stage-

"It shall be the endeavor of every state of every local authority within the state to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups; and the President may issue such directions to any state as he considers necessary or proper for securing the provisions of such facilities."

In India, the deaf community identifies Indian sign language as their mother tongue; our constitution has made room for every minority community to flourish but these rights and rules are not implemented on the ground level for deaf community. In most of the deaf schools oralism and lip-reading method is practiced to teach deaf students, there are only few sign language expert teachers. In schools Indian sign language is highly discouraged; in India there are only few deaf schools where students are taught exclusively in ISL or by deaf itself. If a deaf child somehow manages to complete his/her senior secondary examination then the worst obstacle in education awaits for the child which is higher education. Till now we don't have any mainstream universities which take deaf student for regular course provided with sign language interpreters and having a University exclusively for deaf in India seems to be obscure for now. However, ISLRTC took an initiative for higher education of deaf students and have started DITSIL course; it is a two year diploma course exclusively for deaf which trains and aspires them to become a deaf

school teacher. This is indeed a baby step but results seem to be bright for deaf on the ground of deaf school education as well as deaf employment.

(b) United Nation's Convention on Rights of Persons with Disabilities, 2006 (UNCRPD)

The CRPD[29] is an international human right treaty of the United Nations which is dedicated to protect the rights and dignity of people with disabilities. Parties of the convention are expected to promote, protect and ensure that their differently abled citizens of their country enjoy their equality law and live with dignity. India is one of the signatories of UNCRPD; India signed it on 30th March, 2007 and it was ratified and came into force on 3rd May, 2008.

Article no 2 in UNCRPD gives definitions of the purpose of the convention. It clearly acknowledges sign language as a means of communication.

"Communication" includes languages, display of text, Braille, tactile communication, large print, accessible multimedia as well as written, audio, plain-language, human-reader and augmentative and alternative modes, means and formats of communication, including accessible information and communication technology; "Language" includes spoken and signed languages and other forms of non spoken languages".

Article no 9 talks about the suggestive measures taken by the states parties to ensure the accessibility of transportation, infrastructure, physical environment, information and technologies and communication for the differently abled persons so that they can live their life on their own with dignity and without being dependent on anyone.

[29] CRPD was adopted on 13 December 2006 at the United Nations Headquarters in New York. It was opened for signature on 30 March 2007.

2.(e) “To provide forms of live assistance and intermediaries, including guides, readers and professional sign language interpreters, to facilitate accessibility to buildings and other facilities open to the public”.

The above mentioned section of the article acknowledges the fact that there is a requirement of sign language interpreters to facilitate accessibility of various public facilities to the deaf community.

Article no 21, mentions guidelines to be followed by state parties to ensure and protect the right of expression, and access of information of the differently abled people through all forms of communication (defined in *article no 2*) of their choice.

(b) Accepting and facilitating the use of sign languages, Braille, augmentative and alternative communication, and all other accessible means, modes and formats of communication of their choice by persons with disabilities in official interactions.

(e) Recognizing and promoting the use of sign languages.

This article suggests all state parties to make sure that deaf community should not face any communication gap in any public domain. Deaf community can express their views in sign language at any platform and the informative input should also be in sign language. It urges all state parties to promote and encourage use of sign language at every public and private platform.

Article 24, ensures right of education of deaf community. UNCRPD clearly mentions that the signatory state parties will make sure that sign language should be used and encouraged in deaf schools as it is the only means of communication of the deaf community. State parties shall ensure an inclusive education system and deaf community will not have to compromise on education based on modality difference of language.

(b) “Facilitating the learning of sign language and the promotion of the linguistic identity of the deaf community”.

(c) “Ensuring that the education of persons, and in particular children, who are blind, deaf or deaf blind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development”.

4. “In order to help ensure the realization of this right, States Parties shall take appropriate measures to employ teachers, including teachers with disabilities, who are qualified in sign language and/or Braille, and to train professionals and staff who work at all levels of education. Such training shall incorporate disability awareness and the use of appropriate augmentative and alternative modes, means and formats of communication, educational techniques and materials to support persons with disabilities”.

UNCRPD makes it clear that sign language is the linguistic right of the deaf community; it cannot be ignored or discouraged in deaf schools and it should be conducted by well trained sign language teachers.

Article 30, mentions the guidelines to be followed by the signing parties on how they should make an inclusive environment for the deaf community; so that they can participate in sports and leisure, and recreation and cultural life.

4. “Persons with disabilities shall be entitled, on an equal basis with others, to recognition and support of their specific cultural and linguistic identity, including sign languages and deaf culture.”

In this article, UNCRPD acknowledges the fact that sign language is a part of deaf culture, community and identity therefore; deaf community has all rights to preserve their culture in form of sports and leisure.

It is clear from UNCRPD articles that sign languages are accepted internationally as the language of communication and expression of the signing community. As India is one of the signatory members of the UNCRPD, it has accepted the existence of sign language and deaf community in India. So, India is under obligation of; implementation of provisions of the UNCRPD, harmonization of Indian laws with the UNCRPD and preparation of a country report by 2010.

(c) National Policies for persons with Disabilities, 2006

The government of India formulated National Policy for Persons with Disabilities on 10th February, 2006. It recognizes that Persons with Disabilities are valuable human resources for the country and seeks to create an inclusive environment and provide them equal opportunities, protection of their rights and full participation in society. It follows the basic principles enshrined in the Constitution of India; equality of freedom, justice, and dignity of all the individuals of India including the differently abled people. The National policy has mentioned that most of the differently abled people of India can live a mainstream and dignified life if they are provided with equal opportunities and effective rehabilitation measures are taken in time. The Ministry of Social Justice and Empowerment (MSJE) coordinate with all the states and union territories of India regarding implementation of the policy.

National policy is dedicated to:

i) Physical Rehabilitation, which includes early detection and intervention, counseling and medical interventions and provision of aids and appliances. It also includes the development of rehabilitation professionals.
ii) Educational Rehabilitation which includes vocational training.
iii) Economic Rehabilitation, for a dignified life in society.

National policy including many other disabilities has also acknowledged presence of deaf community in India and identified sign language as their medium of communication.

However it has not emphasized on recognition of Indian Sign Language as the mother tongue of Deaf community.

Under *section IV (48.vi)*, it has ensured that every child with disability has access to appropriate pre-school, primary and secondary level education by 2020. Special care will be taken for deaf community to encourage, recognizes, standardize and popularize Sign language and Alternative and Augmentative Communications (AAC) as a viable medium in inter personal communication.

Section VI talks about the possible strategies adopted by the government to create a barrier free environment for the differently abled citizens of India. In this section *(51.ii & x)*, it is clearly mentioned that the use of sign language will be encouraged in all public functions. It simply means that sign language interpretation is obligatory in any public function if there are deaf audiences. This section further includes that banking system will be encouraged to meet the needs to the persons with disabilities. It clearly implies that all the government banks should heir sign language interpreters to overcome the communication barriers of the deaf community.

(d) The Persons with Disabilities Act, 1995

The PWD Act (The Persons with Disabilities), 1995 came into effect to give equal opportunity and equal rights to persons with various kind of disabilities. This act was issued in a meeting Economic and Social Commission for Asia and the Pacific Region in December 1992 at Beijing, to launch the "Asian and Pacific Decade of Disabled Persons 1993–2002". In this act seven kinds of disabilities were defined which were; blindness, low vision, leprosy cured, hearing impairment, locomotor disability, mental retardation, and mental illness (Chapter 1, page 246). We can conclude that this act showed concern for the above mentioned physical disabilities and is dedicated eliminate all kind of obstacles faced by our differently abled citizens including the deaf community of India. This act is absolutely not helpful for the deaf community because it has not mentioned deaf community and Indian sign language for once. This act talks about initiatives to be

taken for making education available for the differently abled citizens but have not mentioned how deaf education should be conducted, it did not even mention about deaf special educators trained in sign language. The definition of deaf given in chapter no:1, page 248 “"Hearing impairment means loss of sixty decibels or more in the better year in the conversational range of' frequencies” is also very vague and unclear, it has not included hard of hearing people.

It is not wrong to say that PWD act, 1995 has completely overlooked the fact that deaf community co-exists in the hearing dominant society who have their own language which is India Sign Language and constitution has given right to every minority community to enjoy their linguistic rights.

(e) Rights of Persons with Disabilities Act, 2016

In September 2012, Ministry of Social Justice and Empowerment drafted RPWD bill. With several rounds of consultancy at state and centre level, this bill was passed by the parliament at became Right of Person with Disability act from 28th December 2016. This bill is inspired by UNCRPD of which India is one of the signatory members. It holds same sentiments and has similar goals as UNCRPD.

In *chapter no 1* of the RPWD (2016), it has defined ‘language’ in similar manner as it is defined in UNCRPD, 2006; stating that ‘language includes spoken and signed languages and other forms of non spoken languages’. This bill holds similar views as UNCRPD does in terms of understanding the goal of language, therefore it acknowledge sign language as the natural language of deaf community.

Furthermore in *chapter no 3* (RPWD:2016), clear guidance has been given to the state authorities regarding how education should be conducted of the deaf students mentions; to ensure that education to persons of deaf will be imparted in the most appropriate language and means of communication in case of deaf community it is sign language. It

also suggests promoting inclusive education, training and employing teachers, including teachers with disabilities, who are qualified in sign language.

This act is different from the previous bill because until RPWD act no other policies talked about promoting awareness of disabilities through different social media platforms (*chapter no:V,25;h*). This act has also urged local authorities and government to ensure that persons with hearing impairment can have access to television shows with sign language interpretation or sub-titles. Doing this will help in the development of Indian Sign Language at will reach to a larger number of people at single point of time. This is a great initiative by the central government; this will certainly draw attention of the hearing people towards sign language and encourage them to conduct it in their real lives.

Special provisions are made by RPWD act to ensure all information should reach to the deaf community and other differently abled citizens. To special provisions of deaf community it has been guided that persons with disabilities should have access to electronic media by providing audio description, sign language interpreter and close captioning. This is an attempt to overcome the communication gap faced by the deaf community.

In India over the past 40 years, deaf community has started to identify themselves as the minority community of India and has been protesting for their linguistic rights. Language development strategies and policies in any country are either mentioned in the constitution or are mentioned in separate regulatory acts. In India, sign language has been ignored in both the regulatory bodies.

Looking at the present socio-economic status of the deaf community of India it is clear that all these acts and policies are just theoretical and fails miserably at the implementation level. Therefore, it is the right time to intervene and address regional varieties of sign language in India and come up with strategies of developing and planning Indian Sign Language in presence of the fact that ISL is subjected to regional

plurality. Currently, India Sign Language recognition seems to be a far cry for now but the possibility of strategizing language development in the presence of regional variations of ISL may result more impactful and assertive in this process.

0.6 Outline of the dissertation

In the forgoing section, the need of social acceptance of ISL in India has been the centre of discussion because it is essential to make sure that the deaf community meets all the linguistic rights provided to them by our constitution and amendments. The desired status of ISL in India can only be achieved when all the regional varieties of ISL are properly addresses and taken into consideration. This dissertation is an attempt to address two such regional varieties of ISL in India; NISL and SISL. It is a hope that the attempt of detailed phonological comparison of NISL and SISL presented in this dissertation will build this fact with conviction.

This dissertation is organized in the following chapters:

Chapter 1 starts by breaking the prejudices and myths people had prior to comprehensive linguistic analysis on sign language; the seminal work of Stokoe (1960) divulge that sign language is as natural as any other spoken language and it is just the modality difference which makes it unique. The discussion continues by addressing parallel linguistic research work done between sign language and spoken language. In this chapter, the phonological components of ISL have been introduced; the phonological components are the contrastive units on which lexical comparison between NISL and SISL are established. The discussions in later sections give an overview of the trend of phonological variation studies done so far on sign language. The trend of ISL research in India is discussed in four perspectives; lexical, structural, dictionary and regional variations. The chapter ends with an overview of the basic grammatical features of NISL and SISL; it does not present the complete grammatical anatomy however it does provide a glimpse of basic grammatical structures.

Chapter 2 is an overview of the research design; it illustrates the theoretical framework and tools adopted to conduct this research in order to meet the goals and objective of this study. In this chapter, a brief discussion on phonological models of sign language has been discussed which is the theoretical base on which contrastive units for lexical comparison between NISL and SISL will be observed. In the later section of this chapter the phonological transcription key used to describe the phonological segments of the lexical items of NISL and SISL has been presented. This chapter ends with the sociolinguistic profiling of the informants who have been inseparable part of this study.

Chapter 3 presents the observations and findings in support of the lexical variation found between NISL and SISL. A comparative phonological analysis of the similar lexical items on all five contrastive units of sign has been presented. Lexical variation between NISL and SISL has also been established through a lexical scoring method adopted exclusively for this study.

Chapter 4 presents the phonological phenomenon observed in NISL and SISL which suggests that lexical variation is at intrinsic level also. The heterogeneity of ISL is analyzed in the broadest sense possible; the factors which influence intrinsic variation is also analyzed and discussed simultaneously with the help of data found in support of this.

Chapter 5 brings forth the issues and concerns emerged due to existence of lexical variation between NISL and SISL, the possibilities of hindrances faced in the path of standardization and language planning of ISL due to regional variation has been discussed. This chapter highlights the personal opinion of D/deaf community of NISL and SISL on the uniformity of sign language in India. Their opinion is presented through a statistical poll in which related questions to standardization of ISL was asked, the problems and need of a standard variety of ISL in India is also presented through a small case study conducted for this study.

Finally in chapter 6 an attempt to answer research questions of this study is done; the discussion on lexical variation between NISL and SISL, heterogeneity of ISL and hindrances in the path of standardization of ISL due to existing lexical variation is supported with the observations deduced from the data. This chapter also presents the future projection and application of the study; it ends with a list of limitations of this study.

CHAPTER 1

Trends in Sign Language Research

This chapter starts by breaking the prejudices and myths people had prior to comprehensive linguistic analysis on sign language; the seminal work of Stokoe (1960) divulge that sign language is as natural as any other spoken language and it is just the modality difference which makes it unique. The discussion continues by addressing parallel linguistic research work done between sign language and spoken language. In this chapter, the phonological components of ISL have been introduced; the phonological components are the contrastive units on which lexical comparison between NISL and SISL are established. The discussions in later sections give an overview of the trend of phonological variation studies done so far on sign language. The trend of ISL research in India is discussed in four perspectives; lexical, structural, dictionary and regional variations. The chapter ends with an overview of the basic grammatical features of NISL and SISL; it does not present the complete grammatical anatomy however it does provide a glimpse of basic grammatical structures.

1.0 Introduction

William C. Stokoe (1960) introduced the world with Sign Language and argued that Sign language is no less than the spoken language or speech; as a medium of communication and cultural exchange. For decades sign language was ignored and considered nothing but just a mime and random movement of hands but Stokoe's linguistic investigation brought an end to this ages old debate and established the fact that Sign language is a natural language and a complete language in itself. It's just that there is a modality difference; spoken language is vocal auditory language whereas sign language is manual visual language.

The comprehensive linguistic research on sign language resolved the myths and assumptions glottal dominant society had for sign language. Prior to Stokoe (1960), the biggest prejudice revolved around sign language was that it is an invented language which contains random movement of hands and gestures. It was also prejudiced that sign language is just a literal translation of spoken language which is untrue because sign language follows its own complex grammar and word order like any other language as for example word order of ISL is S-O-V (subject-object-verb). The hearing community often criticizes that sign language has a limited vocabulary however sign language also have same morphological processes as spoken languages so if sign language was an translation of spoken language then number of vocabulary would have been similar which is not the case, therefore sign language is not anyway related to spoken language. As an outsider's perspective, hearing people often think that sign language is universal and same for all deaf people in the world but it is untrue; sign language can be formed by the group of deaf people at any geographical condition having their own unique identity of language. In today's world, it is a established fact now that all the countries have their own sign language with little or no mutual intelligibility; in fact within one country more than one variety of sign language can exist. Like the case in India; over the time apart from ISL other varieties of sign language has been reported. In this dissertation, two varieties of ISL; NISL and SISL will be discussed and investigated for lexical variation.

In the glottal dominating society, Stokoe's (1960) seminal work on the structure of ASL brought a new linguistic turn. In the society where sign language was prejudiced as the language of dumb, with no grammar and logic, has now got a new place and status in the society.

This spark of thought gave birth to Sign Linguistics as a new discipline; it worked as an eye opener for many linguists and then linguistic journey of sign language started. Thereafter several parallel studies have been done between sign language and spoken language; a few of which is discussed in the next section.

1.1 Neurolinguistic Correlations

It is a firmly established fact that "both language and space are mediated by widely distributed neural networks.... Distributed neural networks in the left hemisphere mediate components of language, such as phonology, lexical semantics and syntax. Distributed spatial networks in the right hemisphere mediate components of space, such as reference frames anchored to retina, head or trunk, and spatial locations indexed to movements of different body parts" (Chatterjee 2001: 55).

Brocca (1865); explained that left hemisphere is involved in spoken language, Jackson (1876) and Sperry (1974), argued that right hemisphere is involved in visio-spatial cognition of language therefore it was obvious to expect that Sign language has all right hemisphere characteristics. To clear this confusion at Salk Institute Ursula Bellugi with her colleague examined a brain damaged signer. They found out that the signer showed difficulty in spatial processing while having a lesion in right hemisphere but had no effect on the use of sign whereas the signers who had a damaged left hemisphere also showed genuine problems in spatial syntax. Their study proved that left hemisphere is involved in signing and right hemisphere is responsible for spatial syntax. Their conclusions lead to a distinction between spatial syntax, where space is used for grammatical function, and spatial mapping, where space used to describe objects and events.

Further; Bellugi and her colleague successfully demonstrated that facial expression which is a linguistic feature of sign language is left hemisphere based. Poizner, Klima & Bellugi (1987) studied on SL aphasia[30] and concluded that there is no language loss if there is damage on right hemisphere; hence with the fact remaining that despite of the modality difference the brain organization for language is same. It's the left hemisphere which is responsible for language processing as it works in spoken language.

[30] Aphasia was first studied by neuro-surgeon Paul Broca; it is an inability to comprehend or formulate language because of damage to specific brain regions.

Hickok (1999) closely examined a right hemisphere damaged signer and found out that they have problem in language at discourse level. The signer failed to integrate information across sentences, faced difficulty in understanding jokes and could not maintain inference. Brownell (1986) work also suggests similar problem in right hemisphere damaged spoken language patients. Thus, the parallel studies on sign language and spoken language suggests that right hemisphere lesion of the brain does not compromise sign language processing at grammatical level but certainly impairs language at discourse level.

Petitto (2000), has claimed that despite the modality difference sign language acquisition takes place in the same manner as spoken language. She claims that if deaf children are exposed to sign language from birth then it can acquire the language within the same course of time as hearing children acquire spoken language. In her work she has put forward that the milestones of language acquisition in SL and spoken language are the same. It starts with the babbling stage (7 to 12 month); first word stage (11 to 14 month) and two word stage (16 to 22 month). As she says, "social and conversational patterns of language use ..., as well as the types of things that they 'talk' about ..., have demonstrated unequivocally that their language acquisition follows the identical path seen in age-matched hearing children acquiring spoken language" (Petitto 2000).

These evidences from neuro-linguistics establishes the fact that left hemisphere is innately disposed for grammatical processing of the sign language at sentence level and right hemisphere in discourse level of the language just as spoken language. Pettitto's parallel study of sign language acquisition in a deaf child (2000), suggests irrespective of the audio-visual ailment in the deaf child the pattern of language acquisition is same as it is in a hearing child. Pettito proposes a new concept in human language ontogeny that rather than being exclusively hardwired for speech and sound young humans are hardwired to detect aspects of its temporal and distributional regularities corresponding to the syllabic and prosodic levels of natural language organization.

1.2 Grammatical Correlation

Ever since Stokoe (1960), established the fact that sign language is a natural language through his research on structure of sign language, radically transformed the discipline of linguistics. Henceforth, several attempts have been made to correlate that Sign languages contain the same underlying principle of structure and organization as spoken language. They have lexicon and systematic rule governing the use of symbols. Stokoe (1960) proposed that signs are made up of smaller meaningless units that are linguistically significant, like the phonemes in words of spoken language. Substituting features within any of these sign phonemes can result in minimal pairs. Klima & Bellugi (1979) analysis on Chinese sign language (CSL) shows that inventory varies from one SL to another like in the spoken languages. Like in spoken languages, not all possible combinations of sign phonemes occur; there are definite constraints on sign formation.

Liddell and Johnson (1984), gave the concept of Movement (M) and Hold (H), signs are analyzed as sequences of M and H segments which they describe as comparable to vowel and consonant segments in terms of being two distinct segments, each with different properties. With this concept they provided the concept of syllables in sign with M as a nuclei and H as onset and/or coda. The types of phonological rules that they described for ASL are same as described for spoken languages which includes assimilation, dissimilation, deletion, and insertion.

Padden & Perlmutter (1987) established the fact that interaction of the 'characteristic adjective rule ‘and’ symmetry condition, which they call weak drop, shows the need for a post-lexical, phonological component. With this concept they proposed another rule weak freeze where the weak hand loses movement, but retains all other features. Their argument that weak freeze must also be prevented from applying before lexical rules are applied concluded that the interaction of weak drop and weak freeze with lexical rules in ASL supports positing a post lexical phonological component in ASL.

Suppalla & Newport (1978) and Klima & Bellugi (1979), works made the fact more clear that; in ASL both derivational and inflectional morphological processes occurs and these processes can be described by a discrete morphological structure of spoken languages at an abstract level.

Suppalla (1982), put up a theory that in ASL there are two classes of sign: productive lexicon and frozen lexicon. Productive lexicon is formed from roots that cannot stand alone and must be combined with affixes and frozen lexicon may take a number of derivational and inflectional affixes.
Research on French Sign Language (FSL), American Sign Language (ASL) (Woodward & de Santis 1977), and British Sign Language (BSL) (Deuchar 1987) has established the fact that certain experiential verbs are converted to negatives through negative incorporation. Similarly, time and calendric signs (or signs related to time and calendric notions) obligatorily incorporate a numeral affix into the sign root.

As far as syntax is concerned sign language shows same grammatical relations as found in spoken language. Woodward & de Santis (1977); Deuchar (1987), claimed that negative incorporation is a regular syntactic process. Verb agreement is also incorporated (Klima & Bellugi 1979; Padden 1983; Lillo-Martin 1986; Bahan 1996; Mathur 2000; Meir 2002).Presence of auxiliary verb which is responsible for agreement in the absence of main verb has been postulated (Fischer 1996: 103). The presence of Case has been as well claimed by Meir (2002; 2003) although in Israeli Sign Language nouns and pronouns do not overtly mark Case. The structural case relation is nevertheless reflected on the verbal head in a manner similar to the Bantu applicative affixes or the verbal affixes indicating case of the topic argument in Tagalog.

In sign language facial expression plays a very important role, it signals certain pragmatic functions such as doubt, surprise, anger etc. Coulter (1979) and Liddell (1980) proposed that facial adverbs and adjectives can only co-occur with manual verbs or adjectives and not with signs of other word classes, e.g; nouns. Lillo-Martin's (1986) work proposes that

ASL allows null subjects and objects with both agreeing and non-agreeing verbs which is parallel to spoken languages like Chinese, Italian, and Chichewa.

As in spoken language sign language also have different mechanism for forming WH-questions and yes/no questions. In sign language, WH questions are phrased as WH-sign and accompanied by non manual features. Word order is something which is not uniform in worldwide same as spoken language. According to Fischer (1975) and Liddell (1980) word order of ASL is S-V-O. To understand the syntactic structure of sign language non-manual expressions such as raised eyebrows, head forward, body forward, etc. have been found to be part of the marking of the various syntactic constructions such as topic, relative clauses, conditional clauses, WH questions and yes/no questions.

In last five decades, cross linguistics research on sign language has very strongly confirmed the fact that there are strong similarities across sign languages. Over the time researches on sign language has dissected unique features of sign language such as use of space, iconicity, visual imaginary of grammar and lexicon, relation of sign and gesture etc. The researches have divulged that sign language's description can no longer be modeled on the spoken language. New theoretical and methodological tools and perspective is required to conduct linguistic researches on sign language.

1.3 Phonology of Sign Language: Stokoe's Endowment

Until the first half of the 20th century, ultimate educational goal as suggested by prominent scholars for deaf education was acquisition of spoken language and ability to discern speech on lips. As summed up by Helmer Myklebust (1957) the view point of most of the educationist was:

"The manual language used by the deaf is an ideographic language ...it is more pictorial, less symbolic. . . . Ideographic language systems, in comparison with verbal systems, lack precision, subtlety and flexibility. It is likely that Man cannot achieve his ultimate

potential through an Ideographic language. . . . The manual sign language must be viewed as inferior to the verbal as a language". (Myklebust 1957:241–42)

Phonological study of Sign language is incomplete without citation of William C. Stokoe (1919-2000). He invoked a comprehensive linguistic study of sign language. William C. Stokoe was appointed to teach Medieval English literature to the deaf students of Gallaudet University. During this experience of teaching he observed that sign language is an effective medium of instruction; the deaf students were able to read and write English and understand literature only through sign language. He was not a well trained sign language expert himself but he observed that the deaf students in the campus can very well communicate among each other and with the hearing students as well in a different mode of language. He became convinced that sign language is a natural language and equal to spoken language from every aspect.

His achievements with respect to sign language are fourfold; his first achievement is the realization that sign language has all important characteristics as spoken language has, his second achievement is formation of a descriptive system that would convince this fact to then scholars, his third achievement is that he convinced general public and educationist to allow deaf children to communicate in their natural language although his interest for sign language was not limited to right of education alone and last but not the least his fourth achievement is establishment of the fact that humans have much larger capacity of language which is not restricted to one modality.

His foundational work, *Sign language Structure: An outline of the Visual Communication System of the American Deaf* (1960) sets up a new discourse and widens our understanding of human language. He argues that sign language functions in similar ways as spoken language but has a modality difference; spoken language is an oral-auditory mode of language whereas sign language is constructed on a visual-manual mode. In spoken language, articulation is accomplished by speaker's mouth and is governed by certain phonological rules whereas in sign language there are also phonological rules but

articulation is accomplished by hands. He proposed that a sign has three independent formational components; handshape, movement and location, which are manipulated simultaneously in various combinations to form sign. Stoke named these sign forms as 'cheremes' which in spoken language is called Phoneme. He sketched out parameters of a sign and proposed that ASL consists of nineteen handshapes, twelve different locations and twenty four movements which are combined linguistically in process of articulation of this visual language. He went on to the creation of first ever ASL dictionary "*Dictionary of American Sign Language*" (1965), which analyzed the lexical structures and formational principals of ASL.

Stokoe's pioneering works are pedestal for phonological studies of sign language around the world. His work is an asset which paved a path for further linguistic inquiry of sign language of which sign linguists are indebted. The fourfold contributions of Stokoe towards sign language are the foundation of this work. The phonological components described by Stokoe are the phonological architecture of the sign hence, the lexical variation between NISL and SISL will be observed on the phonological components. The attempt to study lexical variation between NISL and SISL with the help of phonological tools will help to build the fact with conviction that ISL is a heterogeneous language, regional variation in ISL can also occur due to certain social factors like it occurs in any spoken language. The documentation of the regional varieties of ISL will help us to understand the deaf community in much better way which is crucial in developing language policies for the deaf community; regional dictionaries can also be helpful in providing better education to deaf people in India. In the next section a brief discussion on phonological components of a sign in reference to ISL is presented.

1.4. Phonological components of a Sign

Sign language is a very creative language; a deaf is capable of creating new vocabularies on their own. The process of creation of a sign is not merely a gesture but it is very systematic and fulfills all criteria of being a natural language. The articulation of a sign is

completely based on hand and bodies of the signer hence the discrete phonological properties of a sign is completely based on hand and body movement of the signer.

According to Hockett's *Design Features* (1960), a natural language can be broken down into smaller discrete unit and combine with each in a rule governed way to yield a productive utterance[31]. Sign language has discrete phonological units which combine in a systematic way to yield a meaningful sign; therefore, irrespective of modality difference sign language completely fulfills the criteria of being a natural language.

Stokoe (1960), describes ASL having three main components ie, handshape (dez/ designation), the location of the sign (tab/ tabulation), and the movement of the sign (sig/signation). He argued that these parameters coexists simultaneously and combine linguistically to form a lexical item of sign language. Stoke introduced the term "Cherology" as an equivalent of the term phonology in spoken language and "Cheremes" as basic phonological unit of sign language.

Later on Friedmann (1977) and Battison (1978) added fourth parameter; palm orientation in ASL. The fifth and the most complex parameter "non-manual" features were identified by Baker (1977) and Liddell (1978).

Therefore, each sign is a combination of mainly five phonological units/components; handshapes (phoneme of sign language), location (place of articulation of phoneme), movement (description of movement of handshape), orientation (placement of the handshape) and non-manual features (aspect of the sign). All these five components combine systematically to form one unit of meaningful lexical item.

[31] Hockett, Charles F (1960) The Origin of Speech, Scientific American 203, 88–111 Reprinted in: Wang, William S-Y. (1982) Human Communication: Language and Its Psychobiological Bases, Scientific American pp. 4–12.

Indian Sign Language is also naturally formed by the deaf communities in India and posses discrete phonological units as described by Stoke (1960). In ISL all five components subsequently combine with each other to form one meaningful unit.

1.4.1 Handshape

Hanshape is the fundamental unit of a sign since sign language is a manual visual language; handshape is basic requirement for articulation of a sign. Handshapes are the result of extension, contraction, contact and divergence of the arrangement of finger and thumb. Stokoe (1960) described handshapes "chereme" which is equivalent to phonems of spoken language.

A sign can be done by single hand or both the hands. In case of Indian Sign Language; most of the lexical items are signed by both the hands. A signer can be right hand dominant signer or left hand dominant signer. This situation is linguistically called handedness in Sign Language. In ISL since both hands are used for signing, so the active hand which performs sign is called HI (dominant hand) and the other hand is called H2 which forms the base (passive hand).

Battison (1978), talked about Indian sign language typology. As suggested by Battison handshapes can be typologised in three different ways:

Type I: A single handed sign in which the handshape remains static and do not change their shape from initial to final position. For e.g: FEW, PERSON and GIVE.

Type II: A single handed sign in which handshape changes with respect to movement from initial position of articulation to final position of articulation. For e.g: MORNING, NIGNT and THROW.

Type III: There are double handed signs in which both the hand and handshapes are in symmetry from initial to final position of articulation. For e.g: RAIN, PLAY and CLOUD.

Type 1V: A double handed sign which are symmetrical and the handshape changes from initial to final position of articulation. For e.g: DARK, MAGIC and BRIGHT.

Type 1V: It is a double handed sign in which the handshape of the dominant hand is different from the passive hand. It is also called asymmetrical handshape sign. For e.g: DOCTOR, TEACHER and JUMP.

From the previous works on sign language it is found that; /A/, /B/, /C/, /0/, /G/ and /5/ handshapes are universal and are found in all sign languages (Friedman 1978, Battison (1978) and Boyes-Braem (1990). However the core handshapes found in NISL and SISL is same as found in ISL which are /A/, /B/, /C/, /G/, /L/, /V/, /O/ and /5/.

In SISL and NISL, these handshapes also functions as phonemes; in few signs handshape is the only contrastive unit between two signs and rest of the components remains same. For example, TEA and COFFEE has same movement, location and orientation but difference in articulation lies in the handshape which is /fO/ and /bC/ respectively.

Below, is the list of few handshape with respective lexical items which are phonemic in nature found in ISL.

SIGN	**HANDSHAPE**	**SIGN**	**HANDSHAPE**
TEA	fO	COFFEE	bC
LEPORASY	c5	BALL	scB
VICTORY	V	SERGRNT	W
LOCK	A	MANAGE	tA
MILK	sF	FAMILY	F
RUN	tA	SIGN	5
STAND	V	WEAK	cV
COW	L	RABBIT	cB
IDEA	I	TICKET	tB

Table 1.1 The phonemic status of Handshape in ISL

1.4.2 Location

The second phonological component of a sign is location, in sign language the space in front of the body of signer and the signer's body is used for the articulation of sign. The sign is either formed in the neutral space which is just in front of the signer's body or with the contact of specific body part(s) of the signer. Therefore, the signs which are articulated with the contact to specific body part(s) are called body location and the signs which are done just in front of the signer without any body contact is called neutral space. In the transcription system for ISL developed by Sinha (2012), has named body location as (bLOC) and neutral space as (sLOC).

In ISL, (bLOC) and (sLOC) is also phonemic in nature; when two signs share same phonological components a difference in the body location of the sign will signal a difference in the meaning of both the signs.

To do a comparative phonological analysis between NISL and SISL, body location can be one of the potential contrastive units to analyze lexical variation between the two varieties.

1.4.3 Movement

Movement is the third phonological component of a sign; it is a dynamic motion of hand (s) articulated in order to form a sign. It may occur in a single motion, or in a sequence, or simultaneously, or both sequentially and simultaneously within a sign. There are other features accompanied with the movement of sign such as shape, size, dynamic and path; it is discussed elaborately in section (2.3.3) of chapter 2.

According to Liddell and Johnson (1989), a lexical item of sign language is a combination of sequence of movement and hold segments same as spoken language syllables which is a combination of sequence of consonant and vowel. Therefore, their Movement-Hold model works same as syllables in spoken language. For example, in

ISL, NISL and SISL the sign EAT begins with a “Hold” just near the mouth, moves a little down and ends with second “Hold” at the same location of the first hold.

This phonological component has many features due to which it can be one of the contrastive units for comparing lexical variation between NISL and SISL. For example, in ISL, SISL and NISL the dynamics of the movement decides difference between the lexical item FINISH and CLEAN. Both of the lexical items are signed with same handshape at same location but the speed of the movement is different; FINISH is signed faster than CLEAN. Therefore, here dynamic of the movement is in phonemic state for FINISH and CLEAN.

1.4.4 Orientation

Orientation is the fourth phonological component of a sign; orientation of a sign is completely dependent on the handshape therefore it is the minor contrastive unit. Orientation refers to the direction of the inner palm surface accompanied by the finger tip face with respect to the signer’s body. It can be phonemic in nature when reference is made to the visibility of palm surface of the signer and addressee, difference in orientation can be isolated.

The section (2.3.4) provides the typologies of this feature which will help as a tool to establish phonological variation between NISL and SISL.

1.4.5 Non-Manual activity/Features (NMA/F)

Non-manual feature/activity is the fifth phonological component of sign language, since sign language is a manual visual language it has several important phonological and syntactic functions. The non manual feature in sign language include movement and position of head, shoulder and upper body as a whole apart from these, aspects of facial expressions such as eye movement, eye gaze, eyelids, cheeks, jaws, nose, lip orification, brow movement, etc. serves as an active articulator.

NMF is crucial at all linguistic levels; at phonological level it plays an important role in visualizing emotive aspect of lexical items such as surprise, fear, disgust, anger, happiness, and sadness. In ISL NMF forms an integral part of the lexical item for example if the lexical item HAPPY is signed without a smile on the face then it will remain meaningless. However, it is not obligatory that all lexical items must have NMF but if present, it gives a phonemic status to the lexical item.

In NISL and SISL, NMF is a crucial phonological component and have syntactic roles as well; the WH-questions are incomplete without NMF "raised eyebrow". For imperative sentences NMF "head shake" from end to end shoulder is the negative marker and NMF "head nod" is enough for YES.

The NMF "Eye gaze" in neutral space plays an important role in referring pronominal in NISL and SISL; this is also similar to ISL. For example the pronoun YOU (2^{nd}per SNG), is located in front of the signer accompanied with NMF "eye gaze".

The phonemic features of NMF required for comparative phonological analysis between NISL and SISL is listed in section (2.3.5) of chapter 2.

1.5 Phonological Variation studied so far in Sign Language

Variation can be found and studied at all structural level of the sign languages as it is found in spoken languages. In this section, the previous studies and findings on the phonological variations of the sign languages occurring in the sub-lexical features of the sign is discussed.

Studies on phonological variation in sign languages started to appear in 1970's partly in response to studies of phonological variation in spoken language. In 1975 Battison, Markowicz, and Woodward made first attempt to study phonological variation in ASL; they examined thirty nine hearing and deaf participant of both the genders and found that

in certain signs there is extension of thumb in ASL. They concluded that there are six constrains of extension of thumb; if sign is in actual contact with its referent, bending of fingers, middle finger extension, twisting movement, whether the sign is on the face and whether the sign is made in the centre of one of four major areas of the body. Around the same time in 1977, Woodward and DeSantis investigated phonological variation in two-handed signs vs one-handed form of signs, they found that white signers significantly use more of the newer one-handed variant of sign than the black signers. They also concluded that Southern signers, who are old use more two-hand variant signs then non-Sothern young signers[32].

In 1975, Frishberg compared lexical items documented in 1965 dictionary of ASL with the contemporary signs published for ASL and FSL; he found out that in the recent form of sign there is a transition of two-handed signs to one-handed sign and transition from less to more symmetrical signs and movement from more peripheral location in the signing space to more centralized places of articulation. Similar findings were reported for BSL by Woll in 1987. In BSL transition of two-hand sign to one-handed sign variants were reported and movement of signs from higher location to lower location was found. Both Frishberg (1975) and Woll (1987) put forward the fact that diachronic changes in ASL and BSL were related to synchronic phonological variation.

In the previous studies, phonological variations in ASL was investigated with a few number of informants with a mixed group of both hearing and deaf signers but in 1990's Ceil Lucas and her colleagues started to study phonological variation in ASL on a large scale with more number of deaf informants and more lexical items. The data set of 207 deaf signers of all the age groups of white and black, male and female and working class and middle class deaf informants from seven sites across the United States were collected. The data set was collected in form of videotaped interviews, conversation and lexical sign elicitation. The first phase of the study investigated the variations for the sign

[32] See Hill, J., McCaskill, C., Lucas, C., & Bayley, R. 2009. Signing outside the box: The size of the signing space in black ASL. Paper presented at the Conference on New Ways of Analyzing Variation 38, October 22–25, University of Ottawa.

of DEAF. It turned out that sign DEAF have different signing variants of which only three was in focus of the study. One form of the variant for DEAF was observed in isolation or citation form in which one handshape contacts the ear and then moves down to contact the chin and two non-citation variants that consist of either a reversed movement of the hand from chin to ear or a reduced form in which the handshape simply contacts the cheek. The phonological variation in ASL of the data set was conditioned to linguistic and social factors. Lucas 1990) concluded that southern states tended to use non-citation forms of DEAF more than twice as often as signers in Boston. Despite this, older signers in Boston were found to be consistently more likely to use the citation form than younger signers.

Lucas (1990) and her team next explored location variation in ASL signs, they found out that the lexical sign KNOW; in citation form is produced on or side of the signer's forehead but in non-citation form it often may be produced at locations lower than this, either on other parts of the signer's body (such as near the cheek) or in the space in front of the signer's chest. The result also revealed that younger signers particularly men and non-native signers all favored lowered variants of the sign KNOW in comparison to older signers, women and native signers.

In the study of variation in NZSL (McKee, McKee & Major 2011), similar pattern of change and variation emerged[33]. Phonological variation was consistently observed in the younger generation for numerals SIX to TEN, they utilized only the dominant hand for signing these numbers, whereas older signers used two-handed system for these numerals (e.g., signing FIVE on the non-dominant hand simultaneously with TWO on the dominant hand for seven, similar to the number gestures sometimes used by hearing people). Furthermore the data of AUSLAN also revealed that the location based signs such as THINK, NAME AND CLEVER could be also produced at locations lower than

[33] Also see, McKee, D., McKee, R., & Major, G. 2011. Numeral variation in New Zealand Sign Language. *Sign Language Studies* 11(5): 72-97.

the forehead place of articulation in their citation forms similar to Lucas (2001) findings of ASL.

Scambri (2009) pointed out that this similar type of variation in ASL, AUSLAN and NZSL in the use of the location parameter reflects both linguistic and social factors conditioned for this change. The AUSLAN data set showed lowering of the location in certain sign classes majorly conditioned by the younger deaf population which reflects that within the deaf community of Australia language change is in progression[34]. Whereas similar regional variations were found in NZSL study such as use of the lowered variant but age was not a significant factor in their dataset. The results indicate that some of the particular factors and the kind of influence that they have on location variation, appear to differ in AUSLAN and NZSL when compared to ASL.

Overall the linguistic investigations on the phonological variation of the signed languages accomplished so far suggests that, variations in sign language is subjected to multiple linguistic and social constraints which are identical to spoken languages, however much remains are yet to be done.

1.6 Researches on ISL

Miles (2000), pointed out that until the 20th century deafness was considered as punishments for the sins of previous birth, they were banned of any social responsibility. They could not claim paternal property. He compiled a historical bibliography on education for handicap in South Asia and could only find out few citations on deaf education over a span of 4,000 years. With the belief than deafness is due to sin it is clear that for Indian society deaf education or deaf development was not a priority.

Till the beginning of 20th century, it was believed that there was no Indian Sign Language. Banerjee (1928) did a comparative study between three deaf schools of Bengal

[34]Also see, McKee, R., Schembri, A., McKee, D., & Johnston, T. (2011). Variable subject expression in Australian Sign Language and New Zealand Sign Language. *Language Variation and Change* 23(3): 375-398.

and concluded that in each school signs and gestures were different. He also suggested that ISL started in 18th century but it was strongly discouraged, ISL was looked down upon. Dr.Madan Vashist (1975) did a survey over 117 deaf schools of India. He sent questionnaires to the heads of deaf school. Almost all the respondents agreed to that there was no usage of Sign language in India however they admitted that deaf children use "collection of gestures" (Cross J. 1977). Twenty years later a similar survey was done by D. Deshmukh which resulted in the same misconception about ISL. He sent questionnaires to deaf schools and the respondents said that "signing is based on spoken language" and it is "difficult to find signs for every spoken word". From mid of 1970's the journey of linguistic study of ISL started and the research literature of ISL became wider.

1.6.1 Lexical Analysis

The first ever linguistic research started in India in 1970's. Vasishta, Woodward and Wilson with the support of National Science Foundation (USA) conducted a lexical data study of ISL in 1977. They collected signs of lexical items from the deaf schools of urban cities like Delhi, Bangalore, Kolkata and Mumbai for linguistic analysis. Vasishta (1982) put forward that ISL is indigenous to Indian subcontinent and it has its own structure. ISL is not related to European Sign language in any manner, India constitutes one sign language structurally however there is a possibility of systematic variation in and between regions and these regional variations will not create any problem for language planning and standardization of ISL. In 1993, Woodward collected a small data sample of 62 words from the neighboring countries of India; Pakistan (Karachi) and Nepal (Kathmandu) and compared it with signs collected from four cities in India and concluded that across the border the language varieties are distinct but are closely related varieties of the same language family. Later on Zeshan (2000) conducted a similar study of lexical comparison of ISL with the neighboring countries of India but more extensively with larger data samples. She analyzed over 500 words collected from 10 cities of India, Pakistan and Nepal; she found lexical similarity to vary from 60 percent to 84 percent within India and she also found that Karachi and Kathmandu lexical similarities between each other and the 10 cities in India ranged from 65 to 82 percent.

1.6.2 Dictionary

The lexical study of Vasishta, Woodward and Wilson in 1977 resulted in publication of four regional based ISL dictionaries; Delhi variety: (Vasishta1980), Mumbai variety: (Vasishta 1998), Kolkata variety: (Vasishta 1987) and Bangalore variety: (Vasishta 1985). These dictionaries had limited number of lexicons; it was only in 2001 when very first ISL dictionary came into existence. Ramakrishna Mission Vidhyalay in Coimbatore published first ISL dictionary[35] representing 1830 lexicons collected from forty-three cities and fourteen states across India. This dictionary reports that all over India there are only 42% of signs which are similar across the regions of India.

1.6.3 Structural Analysis

The first attempt to study the structure of ISL was done by Zeeshan in the year 2000. *"Sign language in Indo-Pakistan: A description of a signed language"* (2000), was the first structural linguistic study of ISL. Her extensive study on sign language of Pakistan and India suggests that PSL and ISL are structurally closely related and have almost similar grammar with very few lexical differences. She correlated the findings from both the countries and collectively named it as Indo-Pakistani Sign Language (IPSL). Later on her works *"Mouthing in Indopakistani Sign Language: Regularities and Variation"* (2001); *"Classificatory' Constructions in Indo-Pakistani Sign Language – Grammaticalization and Lexicalization Processes"* (2003) and *"Indo-Pakistani Sign Language Grammar: A Typological Outline" (2003*), so far all her work on IPSL suggests that:

" ISL is indigenous to India and is used in the form of regional dialects all over the Indian subcontinent, that ISL has a complex linguistic structure of its own and is not based on any spoken language, and that its grammar can be described by means of linguistic analysis" Zeeshan (2005).

[35] *Indian Sign Language Dictionary*.(2001). Coimbatore: Sri Ramakrishna Mission Vidhyalay Printing Press. It is probably the first dictionary accounting regional variations in the lexicon of ISL, in India.

1.6.4 Regional Variation Studies

The literature on phonological variations and regional varieties of ISL is scant in India unlike sign languages of Europe, America, UK, Australia and New Zealand. ISL is virtually unstudied from regional variation perspective both structurally and lexically. However, Vasishta, Woodward & Wilson (1978) and Vasishta, Woodward & de Santis (1980, 85, 86, 87) had documented variations in the form of lexical documentation of the signs from major urban cities of India but did not analyzed it empirically with linguistic tools. Jepson (199l) worked on the structural variation and sociolinguistic aspect of SL in India and suggests that ISL is indigenous to India and is genetically unrelated to SLs of other continents. However, it is believed to be genetically related with other SLs of the subcontinent viz. Pakistani, Nepali, and Sri Lanka.

Jepson (1991), reports that rural ISL (RISL) and urban ISL (UISL) are two different sign languages in India on the basis of structure resulting from the different socio-linguistic environments. He claims that USIL is the pan-Indian variety of ISL in India. Due to diversity of the country, different regional varieties are reported to exist viz. Calcutta, Delhi, Bombay (Mumbai) and Madras (Chennai) on the basis of the lexical differences (rather than on the basis of structures). Vasishta, Woodward & de Santis (1980) and Zeshan (1998), works suggests that 75% signs are common across all regions of India. On the other hand ISL dictionary (2001) reports that 42% of signs are common all over India.

Therefore, further empirical studies are essential to confirm and tender exact details whether variation is only lexical or also grammatical. The degree to which SL users within a nation state use a common SL will depend on the effectiveness of national networks within the Deaf community. Regional variation studies of sign language will help in forming teaching pedagogy with an inclusive approach for the sign language, along with this it will also impact the standardization policies of sign language and assist in building national sign language. (Branson & Miller 1997:90).

1.7 Grammatical Features of NISL and SISL

At this point it is a conjecture that NISL and SISL are independent regional varieties of ISL, it will be only phonologically analyzed in chapter 3. However, before that in this section an attempt has been made to briefly illustrate the grammatical layout of NISL and SISL. The examples presented for each grammatical category is glossed in four tiers; the first tier (from bottom) is the English sentence asked for signing, second tier (middle) is the order of signing the sentence in English (signed English), third tier represents grammatical category of the sentence lastly fourth tier (top) illustrates NMF if present during signing the sentence.

1.7.1 Word Order

Information of the word order of any language of all possible modalities, give an insight to the language; the position of subject, object and verb in a sentence entails information related to the other syntactic features of the given language. So far the linguistic studies on ISL, suggests that in ISL verb is in the final position of the sentence hence it has a subject- object- verb (S-O-V) word order. According to Zeshan (2000), in Indo-Pakistan Sign Language participants are always placed first and predicates are placed at the final position of the sentence. Samar Sinha (2012), suggests that the arguments in ISL are pre verbal and the SOV is the default word order. In this dissertation, it is proposed that NISL and SISL is a regional variety of ISL however the word order of NISL and SISL remains same as ISL which is SOV.

Position of Predicates and Participants

In NISL and SISL, there is a general tendency of placing the participants first and the predicate last which is similar to ISL. In the sentences where a "Dynamic Sign" is combined with agent and location, the placement of the participant (agent) remains in the beginning of the sentence. The placement of the agent in the beginning of the sentence in every possible way suggests NISL and SISL have S-O-V word order.

(1.1.a)

NISL

1st Per Sng DEAF

SE: I DEAF

English: I am Deaf

(1.1.b)

SISL

1st Per Sng DEAF

SE: I DEAF

English: I am Deaf

(1.2.a)

NISL

1st Per Sng DEAF CLUB GO:d

SE: I DEAF CLUB GO

English: I am going to a deaf club

(1.2.b)

SISL

1st Per Sng DEAF CLUB GO:d

SE: I DEAF CLUB GO

English: I am going to a deaf club

In the example (1.1 a & b), the directionality of the verb "Going (Go)" is in the outward direction of the signer's body. The outward direction of the verb go gives a visual sense of the spatial movement of the agent.

1.7.2 Tense

In vocal languages, often temporal aspect of any event or occurrence is expressed by a tense marker. A tense marker morpheme is added to the verb which gives the exact details of the temporal aspect of the sentence. For e.g: In English "–ed" is one of the past tense marker, so to obtain past tense of the verb "Work" suffix "-ed" will be added to the

verb (Worked). In sign language tense is not marked overtly in the form of morpheme, the body of the signer becomes the timeline of the event. The area just in front of the signer's body is the "present", area which is a little farther away from the body becomes the "future" and the whole space behind the shoulder of the signer's body is the "past". Apart from ASL, ISL also follows the same method for expressing temporal aspect of the event; Zeeshan (2000) and Sinha (2012) have both talked about it in their grammatical structure of ISL. The NISL and SISL signer's also use their body as a timeline to explain the time of occurrence of any event. The time indicator in NISL and SISL is marked by G handshape (index finger).

Figure 1. 1 Past Tense

Figure 1. 2 Present Tense

Figure 1. 3 Future Tense

Some informants are also recorded to have signed temporal signs with G handshape along with an extension of thumb, but this phenomenon is found to be common for both NISL and SISL. The reason why a few informants use G handshape along with thumb extension is talked exclusively in chapter 4 of this dissertation.

PRESENT TENSE

(1.3.a)

NISL

NMF: hb

Index front (PRES) INDIA ALL CLOSE++

SE: NOW INDIA ALL CLOSE

English: India is under lockdown.

(1.3.b)

SISL

NMF: hb

Index front (PRES) INDIA ALL CLOSE++

SE: NOW INDIA ALL CLOSE

English: India is under lockdown.

PAST TENSE

(1.4 a)

NISL

NMF: ht

Index back (PST) YEAR INDIA ALL CLOSE ++

SE: LAST YEAR INDIA ALL CLOSE

English: Last year, India was under lockdown.

(1.4.b)

SISL

NMF: ____ht_____

Index back (PST) YEAR INDIA ALL CLOSE ++

SE: LAST YEAR INDIA ALL CLOSE

English: Last year India was under lockdown.

FUTURE TENSE

(1.5.a)

NISL

NMF: _____ce_____

Index front semi-circle (FUT) YEAR INDIA ALL CLOSE ++

SE: NEXT YEAR INDIA ALL CLOSE

English: Next year India will be under lockdown.

(1.5.b)

SISL

NMF: _____ce_____

Index front semi-circle (FUT) YEAR INDIA ALL CLOSE ++

SE: NEXT YEAR INDIA ALL CLOSE

English: Next year India will be under lockdown.

In NISL and SISL non-manual features also play a vital role in marking the tense of the event. A signer is observed with a NMF *Head lowered slightly towards the shoulder* (hl) while expressing a past tense event, hence (ht) is one of the tense marker observed in NISL and SISL. For present tense, the NMF *Head bent forward* (hb) is the tense marker whereas future tense is marked with NMF *Clinched eyebrows (*ce).

In NISL and SISL tense is also marked with lexical items such as today, tomorrow and yesterday for present tense, future tense and past tense respectively. In NISL and SISL tense is always marked in the initial position of the sentence; before the verb predicate.

Along with the lexical and NMF tense markers, in NISL and SISL verb is also accompanied with aspectual completive marker FINISH for past tense and progressive aspect HAVE for present continuous tense.

The examples of past, present and futures tense with the combination of NMF, lexical item marker and aspectual marker in NISL and SISL are presented below.

PRESENT TENSE

(1.6.a)

NISL

NMA: ____hb_____

Index front (PRST) 1st Per Sng DEAF CLUB GO:d HAVE (Prog)

SE: TODAY I DEAF CLUB GO HAVE

English: I am going to deaf club today.

(1.6.b)

SISL

NMA: ____hb_____

Index front (PRST) 1st Per Sng DEAF CLUB GO:d HAVE (Prog)

SE: TODAY I DEAF CLUB GO HAVE

English: I am going to deaf club today.

PAST TENSE

(1.7.a)

NISL

NMA:____hl_____

Index back (PST) 1st Per Sng DEAF CLUB GO:d FINISH (Comp)

SE: YESTERDAY I DEAF CLUB GO FINISH

English: Yesterday I went to deaf club

(1.7.b)

SISL

NMA:____hl_____

Index back (PST) 1st Per Sng DEAF CLUB GO:d FINISH (Comp)

SE: YESTERDAY I DEAF CLUB GO FINISH

English: Yesterday I went to deaf club

FUTURE TENSE

(1.8.a)

NISL

NMF: ____ce_____

Index semi-circle 1st Per Sng DEAF CLUB GO:d

SE: TOMORROW I DEAF CLUB GO

English: Tomorrow I will go to deaf club.

(1.8.b)

SISL

NMF: ____ce_____

Index semi-circle 1st Per Sng DEAF CLUB GO:d

SE: TOMORROW I DEAF CLUB GO

English: Tomorrow I will go to deaf club.

1.7.3 Numerals

NISL and SISL have number system similar to ISL, in the data it is observed that in both the varieties of ISL cardinal numbers 1 to 9 are represented by handshape classifiers but the handshape is not common for both the varieties of ISL; variation in articulation of cardinal numbers have been observed. The assigned handshapes from number 1 to 9 in SISL are /G/, /V/, /W/, /4/, /5/, /I/, /cG/, /3/ and /x5/, whereas in NISL handshape is different for number 6 /fO/ and 8 /L/; rest of the numbers are similar in articulation. In NISL and ISL, however the position of the numbers while forming a complete sentence remains same; numbers are always placed in the final position of the sentence. For example:

(1.9.a)

NISL

HOUSE IN ROOM 2h SIX CLI

SE: HOUSE INSIDE ROOM SIX

English: There are six rooms in the house

(1.9.b)

SISL

HOUSE IN ROOM 2h SIX CLI

SE: HOUSE INSIDE ROOM SIX

English: There are six rooms in the house

In NISL and SISL determiner articles such as “a”, “an” and “the” is not overtly marked in the sentence; it does not have sign for listed respective articles but it has signs for demonstrative pronouns such as “this”, “that” and “those”. The pronoun “this” is signed by /G/ handshape simply by pointing towards the referred object whereas “that” is signed by same handshape but a little far from the body of the signer. The determiner “those” is also signed with /G/ handshape same as “this” but the sign is repeated more than two times. The examples of articles and demonstrative pronouns are listed below.

ARTICLE

(1.10.a)

NISL

Self CL A SISTERComp: APPLE GIVE:d

SE: OWN SISTER APPLE GIVE

English: My sister gave me an apple

(1.10.b)

SISL

Self CL A SISTERComp: APPLE GIVE:d

SE: OWN SISTER APPLE GIVE

English: My sister gave me an apple

PRONOUN

(1.11.a)

NISL

NMA: ___eyz____

Index Point out BOOK Slf CL A

SE: THAT BOOK MY

English: That is my book.

(1.11.b)

SISL

NMA: ___eyz____

Index Point out BOOK Slf CL A

SE: THAT BOOK MY

English: That is my book.

1.7.4 Negation

Negation is a grammatical category which contradicts affirmative (positive) sentences into a negative sentence. In NISL and SISL negative sentences is formed by signing negative lexical item like “no”, “not” and “never”, whereas it is also expressed by simply shaking head from end to end exclusively for yes/no questions.

Figure 1. 4 Sign of “No”(Negation)

In NISL and SISL, grammatical category for negation (no, not and never) is always signed at the final position of the sentence; the process of forming negative sentences is same as ISL as for example:

(1.12.a)

NISL

NMA: neg hs

Index self BANANA EAT:d NO

SE: I BANANA EAT NOT

English: I will not eat banana.

(1.12.b)

SISL

NMA: neg hs

Index self BANANA EAT:d NO

SE: I BANANA EAT NOT

English: I will not eat banana.

In this sentence, negative lexical item “No” is signed at the end of the sentence, if it was to be asked in a form of yes/no question to the signer for example: “Will you eat banana?” then simply action of head shake from end to end is enough to express negation.

In contradiction to negation the expression of affirmation “yes” is placed in the initial position of the sentence as for example:

(1.13.a)

NISL

NMA: _yes hs_

Index self BANANA EAT:d

SE: YES I BANANA EAT

English: Yes, I will eat banana.

(1.13.b)

SISL

NMA: _yes hs_

Index self BANANA EAT:d

SE: YES I BANANA EAT

English: Yes, I will eat banana.

In SISL and NISL the lexical item “yes” is signed by simply nodding head in upward and downward motion or by nodding fist in upward and downward motion. If it was to be asked, “Will you eat banana?” in a form of yes/no question then a simple head nod is enough to express affirmation (yes).

1.7.5 Adposition

Adpositions in NISL and SISL are grammatically distinct class of words which characteristically express spatial and temporal relations of subject with the object. The word order of NISL and SISL is a little flexible but the frequency of SOV construction is more therefore, it has post-positional phrases.

In NISL and SISL postpositions are not always distinctively marked in a sentence, there are instances where postpositions are overtly marked and at certain instances it gets incorporated with the verb and remains unmarked. In the following section, below here is listed the examples of temporal and spatial postpositions in which postposition markers remains unmarked and instances where it is overtly marked.

a) Temporal postposition

The members of postposition which confirms or shows the temporal relation of subject with object is called temporal postposition. For example: I will meet you on Monday.

Here the preposition marker on gives the temporal or relation of time of the subject with object.

In NISL and SISL, it is observed that temporal postpositions are overtly marked only when the body of the signer is used as referential timeline like “before” and “after”. The handshape classifier /B/ is used as postposition marker.

Figure 1. 5 Sign of “Before” (Adposition)

(1.14.a)

NISL

NMA: ht_____

Index self SUNSET(a) BEFORE CL B HOME 2h LOC1 REACH:d

SE: I SUNSET BEFORE HOME REACH

English: I will reach home before sunset.

(1.14.b)

SISL

NMA: ht_____

Index self SUNSET(a) BEFORE CL B HOME 2h LOC1 REACH:d

SE: I SUNSET BEFORE HOME REACH

English: I will reach home before sunset.

Those signs which do not refer body parts as their timeline such as “on” and “at” are not overtly marked; it gets incorporated with the verb. For example:

(1.15.a)

NISL

NIGHT :d DOG CL fO BARK ++

SE: NIGHT DOGS BARK

English: Dogs bark at night.

(1.15.b)

SISL

NIGHT :d DOG CL fO BARK ++

SE: NIGHT DOG BARK

English: Dogs bark at night.

b) Spatial postposition

The member of postpositions which confirms or shows the spatial relation of subject with object is called spatial postpositions as for example: “Mother is in the kitchen”.

Here, preposition in denotes the spatial relation of the spatial relation of the figure (mother) with the location entity (kitchen).

In NISL and SISL it is observed that; when there is a static verb in the sentence then the postpositions is overtly marked and when the verb is non-static; the postpositions remains unmarked and gets in-corporate with the verb as for example:

NON-STATIC VERB

(1.16.a)

NISL

Table LOC1 CLtB BOOK 2h CLB:d

SE: TABLE BOOK KEPT

English: Book is kept on the table.

(1.16.b)

SISL

Table LOC1 CLtB BOOK 2h CLB:d

SE: TABLE BOOK KEPT

English: Book is kept on the table

In the above example the postposition marker “on” gets incorporated with the verb “kept”. While signing first the locative entity (table) is fixed then the activity of keeping the book on the table is conveyed.

STATIC VERB

(1.17.a)

NISL

Index 2nd Per Sng SPEAK BEFORE CLB:d THINK (bLOC)sh MUST DH

SE: YOU SPEAKING BEFORE THINK MUST

English: You should think before speaking

(1.17.b)

SISL

Index 2nd Per Sng SPEAK BEFORE CLB:d THINK (bLOC)sh MUST DH

SE: YOU SPEAKING BEFORE THINK MUST

English: you should think before speaking

In this sentence the postposition “before” is marked with the handshape classifier /B/.

1.7.6 Adjective

The semantic role of adjective is to modify noun phrase and give extra information of the subject. The order of adjective in NISL and SISL is same as in ISL, from the data of NISL and SISL it has been observed that; adjective is always placed in the final position in simple sentences in which subject is not performing any activity. Whereas, in the sentences where there is any kind of information about the activity done by the subject then adjective is placed just before the verb. The examples of both the situations found in NISL and SISL is illustrated below.

ONLY AGENT

(1.18.a)

NISL

NMA: __eyz____

Index Point out Table CLB BLACK (bLOC)v

SE: THAT TABLE BLACK

English: That table is black

(1.18.b)

SISL

NMA: __eyz____

Index Point out Table CLB BLACK (bLOC)v

SE: THAT TABLE BLACK

English: That table is black

In this example, it can be seen that the color "black" modifies the noun "table" and it is signed after noun.

AGENT DOING SOME ACTIVITY

(1.19.a)

NISL

NMA: __eyz_____

Index 2nd Per Sng Comp Black (bLOC)v Table CLB BREAK CLtB

SE: SHE BLACK TABLE BROKE

English: She broke the black table.

(1.19.b)

SISL

NMA: __eyz_____

Index 2nd Per Sng Comp Black (bLOC)v Table CLB BREAK CLtB

SE: SHE BLACK TABLE BROKE

English: She broke the black table.

In this sentence, “she” is the agent and action performed by the agent is “broke” so here color adjective “black” is used to specify object of the sentence which is “table”. The placement of the adjective in this case is before the object of the sentence and verb (action) remains on the final position of the sentence unlike in the first case.

In NISL and SISL along with the signs of the adjective lexical items, non-manual features also play an important; it specifies the abstract information of the adjective by creating a visual effect of the adjective lexical item. For example, the adjective lexical item “beautiful” is articulated with a smile on the face which gives visual information of the abstract feeling one gets after seeing anything beautiful. In contrast to this, the adjective lexical item “bad/ugly” is articulated with an upset face to express unpleasant feeling. The textural information of the object such as heavy, light, thin, thick etc. is also expressed through different NMFs.

1.7.7 WH-Question

WH-questions are the interrogative pronouns which are used to inquire specific time, place, quality, quantity and person. In ISL WH-question is always placed at the end of the sentence (Sinha, 2012); in NISL and SISL the order of the WH-question is same as ISL. In both the regional varieties of ISL, question is articulated by handshape /x5/ accompanied with a specific NMF “raised eyebrow”.

Figure 1. 6 Sign of “What” (WH-question)

In NISL and SISL, WHY, WHAT and HOW are individual signs; it is articulated by just one handshape /x5/ along with the NMF. These are illustrated as follows:

(1.20.a)

NISL

NMA: rb

2nd Per Sng:j NAME CLH Wh-CLx5

SE: YOUR NAME WHAT

English: What is your name?

(1.20.b)

SISL

NMA: rb

2nd Per Sng:j NAME CLH Wh-CLx5

SE: YOUR NAME WHAT

English: What is your name?

In the above example, it can see that question "what" is articulated at the end of the sentence and NMF "raised eyebrow" is used to assign semantic feature of interrogative pronoun "what".

The other WH-questions, WHO, WHERE, WHICH, HOW MANY and WHEN are compound signs; it is articulated by two different independent signs. The compound WH-questions are signed as:

WHO:- FACE + QUESTION

WHERE:- PLACE + QUESTION

WHICH:- THIS + THIS + THIS + QUESTION

HOW MANY:- COUNT + QUESTION

WHEN:- TIME + QUESTION

Examples for compound WH-questions in NISL and SISL are illustrated below.

WHO

(1.21.a)

NISL

NMA: ___rb_____

2nd Per Sng:j FRIEND 2h Wh-Index face

SE: YOUR FRIEND WHO

English: Who is your friend?

(1.21.b)

SISL

NMA: ___rb_____

2nd Per Sng:j FRIEND 2h Wh-Index face

SE: YOUR FRIEND WHO

English: Who is your friend?

WHERE

(1.22.a)

NISL

NMA: ___rb_____

2nd Per Sng:j HOUSE 2h Wh-Place CLx5

SE: YOUR HOUSE WHERE

English: Where is your house?

(1.22.b)

SISL

NMA: ___rb_____

2nd Per Sng:j HOUSE 2h Wh-Place CLx5

SE: YOUR HOSUES WHERE

English: Where is your house?

In both the examples, it can be see that the WH-question WHO and WHERE is articulated at the end of the sentence accompanied by NMF "raised eyebrow" at the end.

In example no (1.21 a & b) WHO is a compound sign; first handshape /G/ is articulated to show face and then question classifier handshape /x5/ is articulated. Similarly, for WHERE the sign for PLACE is articulated and then question classifier handshape /x5/ is used.

Chapter 2

Research Design

This chapter illustrates the theoretical framework and tools adopted to conduct this research in order to meet the goals and objective of this study. In this chapter, a brief discussion on phonological models of sign language has been discussed which is the theoretical base on which contrastive units for lexical comparison between NISL and SISL will be observed. In the later section of this chapter the transcription and notation system used to describe the phonological segments of the lexical items of NISL and SISL has been presented. This chapter ends with the sociolinguistic profiling of the informants selected for this study.

2.0 Introduction

The main aim of this study is to find phonological differences at the level of articulation of the individual signs between two regional varieties of ISL; the north variety (NISL) and south variety (SISL). In India, the socio-cultural environment of the native residents of north and south regions are extremely different. Both the region has different cultural values, cuisine and vastly different spoken languages. In north region; Indo-Aryan languages such as Hindi, Panjabi, and Haryanvi are spoken whereas in south region languages from Dravidian language family such as Kannada, Tamil and Telugu are spoken. Language variation due to vivid socio-cultural environment is vastly studied in spoken languages, regional variation due to diversity of the signers may be also present in ISL since the signers of NISL and SISL have diverse customs and cultural values.

In this study, phonological variation will be inquired at the broadest sense possible; investigation of phonological variation at the lexical level between the two regional varieties of ISL will be explored. In the second section of the study, the aspect of internal variation i.e. style of signing due to social diversity of the signer such as age, gender, age of onset of ISL etc is also explored. The study cannot shy away from discussing the

issues of variation that could have an impact on standardization of ISL. Therefore attempts to understand the sociolinguistic factors and perceptions of the sign language community members towards their own regional varieties and standardization process is also a part of the study. In the later stage, a discussion on the implications of lexical variation on the ISL standardization and language planning related issues of ISL in India will be presented.

2.1 Theoretical Framework

The phonological variation between NISL and SISL will be observed on the five articulatory components of the sign (handshape, movement, location, orientation and NMF) because these components are universal and organized systematically as the sub lexical structure. Sign language stands in stark contrast to spoken language because they are produced in a manual-visual modality with the help of the articulatory components; these components are systematically arranged and constrained in the lexeme. Over the time period several phonological theories have been proposed to account for the underlying representation of signs, therefore the phonological models proposed so far has been revisited to figure out the hierarchy of the contrastive units based on which lexical variation between NISL and SISL will be conducted.

2.1.1 Development of Phonological Models

Over the time period various phonological models have been proposed to account for the underlying representation of sign. The earliest phonological model proposed by Stokoe (1960) emphasized on the simultaneous nature of signs i.e. the parameters of handshape, location and movement. In this model no attempt was made to define the parameter according to the hierarchy of occurrence instead all the parameters are happened to be realized at the same time during the production of a sign. Later on the phonological models of sign language emphasized on the sequential occurrences of the signing units which indicated that signs could also be comprised of sequential units or timing units.

To start with, Liddell and Johnson's (1989) Hold-Movement model put forth that signs can be divided into linear segments; either 'hold' or 'movement' can be at the centre of

the representation of sign. This model drew parallels between spoken language and sign language by linking ‘hold’ (i.e., the static elements of sign) to consonant and ‘movement’ (i.e., dynamic elements of sign) to vowels. This model mirrors to Chomsky and Halle (1968) *Sound Patterns of English;* it was based on the sequential representation of segments. In this model the articulatory features can be identified but these features did not appear to enter any hierarchical relationship with each other.

The shortcomings of Hold-Movement model was addressed by Sandler through Hand-Tier model (1989), the model represents handshape as an autosegment. The Hand-Tier model suggests that, in any monomorphemic sign the handshape consists of one or more selected fingers in certain positions such as bent, curved, closed or extended. Therefore, if there is a handshape change in a sign then all the selected fingers will change their position; the change in the handshape for any lexical item can be determined trough the position of fingers. It is the first phonological model of sign language to establish feature geometry to organize hierarchy of the articulatory features of a sign; however, it has only focused on one phonological parameter.

The Hand tier model continued to copy linear sequential segment of sign in the central position whereas later on in contrast, Van der Hulst in Dependency model (1993) and Brentari in Prosodic model (1999) both placed the simultaneous structure of sign back in central position. Both the models suggested that segmented structure despite playing an important role in phonology it is derived from the feature specified within a sign. Dependency model suggests that segmental structure of a lexicon is linked to handshape and location; based on his arguments movement is given a minor position in the hierarchy of articulation because movement can be derived from the configuration of handshape and location.

Prosodic model (1999) is an extension of the Dependency model (1993) but in contrast, it acknowledged that the handshape, movement and location all have autosegmental properties. In this model, the inherent and prosodic properties of all the segments were placed in a separate branch of the hierarchy of the articulatory segments.

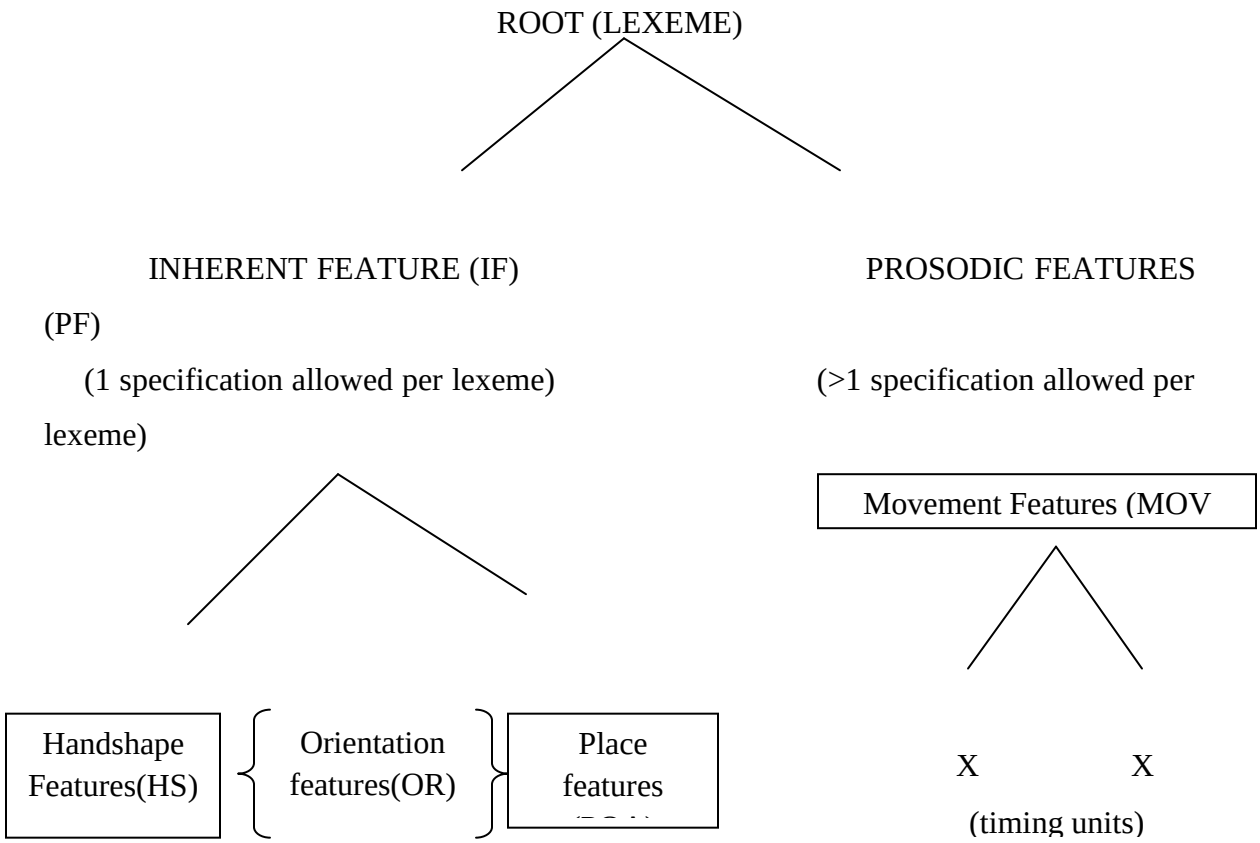


Figure 2. 1 Overview of the Prosodic Model (Brentari 1999)

Except for Hold-Movement model, the rest of latest model such as Hand-Tier model, Dependency model and Prosodic model have represented the articulatory features as the autosegmental properties of the lexeme. It is observed that all the features such as handshape, movement and location of a lexical item is arranged in certain hierarchy and it is specified to appear once per lexeme. For handshape, it is specified by Mandel (1981) that a sign will have only one set of selected fingers within its articulation; it is known as *Selected Fingers Constraint*. The Prosodic model and Dependency model have also

addressed the situation of two handed signs in sign language, the non dominant hand (H2) is represented as having a dependent role; its representation is occupied by the dominant hand (H1). Battison (1978) formalized the *Symmetry* and *Dominance Constraint*, according to this constraint the non-dominant hand is either specified for the same handshape and movement as the dominant hand (the Symmetry Constraint) or if the non-dominant hand is stationary it is expected to have limited set of finger configuration (the Dominance Constraint).

In the recent models, the presentation of non-manual features (NMF) as an auto segmental property is missing (see figure no 2.1). In the sign language literature NMF such as raised eyebrow, puffed cheek, pursed lips and tongue protrusion is often cited as the supra segmental feature of a sign as intonation is for spoken language (Nespor and Sandler, 1999, Sandler and Lillo-Martin, 2006). It is also plays a key role in morphology, discourse and syntax of sign language (Zeshan, 2004). Considering the recent phonological models the representation of NMF in the segment hierarchy is unclear however Sandler (2006) suggest NMF to be under the prosodic node of the lexeme.

The Hand-Tier model has only represented handshape as an auto segment feature of lexeme whereas, Dependency model and Prosodic model has placed handshape and location in the top of the hierarchy, movement is kept under the prosodic feature whereas orientation is the sub-ordinate inherent feature of the auto segment features of lexeme. Later on Sandler placed movement and NMF under the category of prosodic feature of the auto segments of lexeme. To conduct the investigation on phonological variation between NISL and SISL the autosegmental hierarchy placed in prosodic model (1999) and Sandler (2006) has been followed. For this study, phonological parameters of handshape and location are the major contrastive unit on which lexical variation between NISL and SISL will be analyzed. The other two phonological features, movement and NMF determine prosodic features of lexeme therefore both the features are the minor contrastive units. Orientation also remains the minor contrastive unit for this study because according to the model orientation of palm is manifested by configuration of

handshape. The properties of phonological features such as handshape, movement, location, orientation and NMF are discussed in chapter 1 (refer section 1.4).

2.2 Methodology

This section gives an outline of the strategies adopted for the data collection in relevance to the research goals and objectives of this study.

2.2.1 Site Selection

For the north variety of sign language data was mostly collected from New Delhi, Noida and Gurugram. For north variety data, the above mentioned site were chosen because in these cities there are many deaf schools, vocational training centers for deaf, deaf associations and other deaf social service agencies. So being the metro city deaf people from various northern region belts like Bihar, Uttar Pradesh, Jammu, Kolkata and Gujarat come here for further education. In the preliminary stage of data collection it was observed that deaf students from Bihar and Uttar Pradesh migrate to Delhi and NCR for job and vocational training purposes. Therefore, for north variety of sign language (NISL) New Delhi, Noida and Gurugram became the optimal choice for data collection site.

For the south variety (SISL), the complete data has been collected from vocational training centers such as DEF (Deaf Enabled Foundation) of Hyderabad. Hyderabad being a metro city, deaf students from nearby regions register themselves for various vocational training courses. Data was collected for lexical comparison through field work with the deaf associations and vocational training centers of the respective places at different time intervals during the research period.

2.2.2 Questionnaire Content

This research focuses on three perspectives; lexical variations of the north and south variety of ISL, impact of heterogeneity of the deaf community on the lexical variation of both the regional varieties of ISL and attitude of deaf community towards standardization of ISL developed due to defined regional variations. For each perspective, there is

individual type of questionnaire and elicitation of data was done differently for each section. The entire questionnaire and word list was typed in English roman script.

Section 1: Lexical Variations

Five hundred words were selected and grouped according to their semantic domain with the goal of adequately representing the vocabulary of ISL (refer appendix no 3). Various wordlists used by others in the past formed the basis of many words used in my research. The previous work on ISL dictionary (Vasishta, Woodward & DeSantis 1980), Indian Sign Language Dictionary (2001) and CDROMs prepared and produced by Indian Sign Language Cell, Ali Yavar Jung National Institute for Hearing Handicapped, Mumbai are the primary source of the word list constructed for this study. An effort was made to exclude complete iconic words however; less iconic[36] words are used in the word list.

Section 2: Heterogeneity of the Deaf Community

The aim of this section is to understand the diversity of the deaf community, their basic information and background. A closed questionnaire with mostly multiple choice answers and "yes" and "no" questions were asked (refer appendix no 1). The aim of this questionnaire is to establish background information of the participants such as age, sex, mother tongue, educational background and occupation. There are in total 12 questions which initially help to understand the background of the participant. The background information of the informants is the foundation base of the fourth chapter of this dissertation.

Section 3: Standardization of ISL

This section argues and discusses the need and obstacle faced in the standardization process of ISL from the perspective of deaf community. For this a closed ended questionnaire of 20 questions is framed (refer appendix no 1 part II) to understand the attitude of deaf community developed due to defined regional variation towards their own variety of sign language. Apart from this one-to-one personal interview was conducted to

[36] Iconic words are those which are signed and represented as it is based on their shape and size.

understand the vitality and identity of sign language among the deaf community (for questionnaire refer appendix no 2). The phonological variation plays an important role in developing attitude of the signer towards their regional variety of sign language therefore, the language attitude data has been collected with following goals:

1. To assess language/dialect prestige.
2. To assess exposure to other regional dialects.
3. To assess sign language vitality.
4. To assess sign language identity.

2.2.3 Questionnaire Administration Procedure

For the North variety, the entire questionnaire was filled by the deaf students and deaf staff members of Noida Deaf Society. Before visiting NDS (Noida Deaf Society) an informal permission was taken by the founder of NDS Ms. Ruma Roka. In NDS, deaf from all over India come to study and work, having different backgrounds. With help of one of the interpreter at NDS, I was introduced to the deaf students who were there to attend English writing course; taught by Mr. Ravi Dwivedi who is a deaf himself.

For the South variety, the entire questionnaire was filled by the deaf students of Deaf Enabled Foundation, Hyderabad. I was assisted by Keerthy, sign language interpreter of DEF, Hyderabad.

Data collection was conducted in three stages:

Stage 1: Informants were asked to fill the closed ended questionnaire. The questionnaire focused on basic information such as age, sex, mother tongue, educational background and occupation. The questions based on language attitude, prestige and vitality were also compiled with the background information. This compiled questionnaire of total 32 questions was polled by 32 informants each of both the regions (total 64 informants). The entire questionnaire was in the English language and with the help of local sign language interpreter it was conducted successfully.

Stage 2: At this stage, based on the background information of 32 informants each only twenty informants (ten each of NISL and SISL) were shortlisted for word list data elicitation. The informants were given the word list and they had to sign it in front of the camera. Prior to word list data collection, the following procedure was explained to the signer:

1. Sign only the words and not a phrase or sentence using those words.
2. Don't fingerspell the word.
3. Do include local synonyms.
4. If local sign is not known, don't give the sign of another region.
5. If local sign is not known, that is ok. Just go on to the next word.

Stage 3: Apart from the word list data elicitation, these twenty informants (ten each for both the regions) were exposed to one-to-one personal interview. Open ended questions based on their personal information and life experience story was asked to sign in front of the camera. This section also includes questions based on language attitude, vitality and identity.

The part I and II of the questionnaire, word list and personal interview questions are written in English, since all deaf informants had different background of education and knowledge of different spoken language so, for those who were not well verse with English vocabularies; each question and their options was first explained in sign language only after clearly understanding the questions, respondent filled their responses.

2.2.4 Difficulties Faced during the survey

For the closed ended questionnaire (part I and II) lack of knowledge of English of the deaf participants was the prime difficulty faced during the survey, the questions in the questionnaire was signed and explained to each and every respondents one by one. For the data collection of the lexical items mentioned in the word list, informants were given the word list one day before for better understanding of the lexical items. This process consumed a lot of time to complete the survey at every data collection site.

It was very difficult to convince each and every deaf informant to participate in this study because most of them are not aware of such kind of research studies so they are very skeptical about sharing their personal thoughts, ideas and information. The issue of non-responses, where deaf people have completely denied participating in the study was also faced during the whole data collection period; their privacy and choice of not being a part of this study is totally respected.

Little more participation of the female deaf respondents for this study would have been more helpful to show influence of gender on the phonological variation of the lexical items particularly in the north Indian variety of ISL. Only few female responses are recorded for NISL however, participation of female deaf informants for SISL is satisfactory.

Mal-responses was a situation faced during the survey of closed ended questionnaire; a few respondents chose more than one response so these responses were cross checked and verified with the respondents. For the videography of the word list, few informants did not sign the whole word list of each semantic domain. The reason of not signing the whole word list can vary from person to person but the most common reason I was told by them was that they are unaware of certain words in sign language. The questionnaire and word list with noticeable mal-responses were excluded from the data elicitation procedure.

2.2.5 Data Elicitation Procedure

For the investigation of section 2 (Heterogeneity of the deaf community) and section 3 (standardization of ISL), data is entered in Microsoft excel sheet. In the first column the questions and choices were inserted, in another column no. of respondents were inserted. All the choices are marked with number of response and their individual percentage is recorded separately in the last column. Percentage of the response is only recorded for

Part I and Part II of the questionnaire, i.e.: Background Information of the informants and Language Attitude. Relevant formula is used in the excel sheet to calculate percentage of the response. The observations made from the part I of the questionnaire is presented section 2.4 of this chapter and results extracted from part II of the questionnaire is presented in chapter 5 (section 5.2).

The observations made from the personal interview are presented in a form of case study in chapter 5 (section 5.5) of this dissertation.

For the investigation of section 1(lexical variations) of this study separate method of data elicitation is used to draw the conclusions on phonological lexical variation of the two different varieties of Indian Sign Language. Signs for each and every lexical item in the word list are analyzed on all five sign components; phonological analysis of each and every word list is done separately. The previous phonological investigations done so far on ISL is the base of phonological analysis and transcription notation used for data elicitation. The phonological features and transcription notation used for lexical variation study between NISL and SISL is discussed in the next section of this chapter. The lexical data elicitation procedure followed particularly for this section is further discussed at stretch in chapter number 3 of this dissertation.

2.3 Phonological features: Transcription and notation system

In this section, phonological features of each phonological components of a sign found in ISL, NISL and SISL are discussed. At this point, it is important to illustrate phonological features because each phonological description is the key to transcription method used to present the data in a liner and comprehensive format, it is used to describe phonological variation between NISL and SISL presented in chapter 3 of this dissertation.

In previous phonological studies, several attempts were made to develop notation and writing system for sign language; ASC-III, developed by Stokoe (1960) is the widely known script for sign language. Apart from this sign linguists have used other systems such as dance moves, musical notations and various symbols to represent sign language.

Sinha, in his extensive work on Indian Sign Language (2000,2012); has illustrated phonological features found in ISL, in his work he has also developed a transcription convention to present phonology of ISL in a linear fashion which is a English-based gloss system. In this study, for analyzing the phonological variation between NISL and SISL; Sinha's description of phonological features of ISL has been followed because it works same for NISL and SISL. However, English-based gloss convention system developed by him has been avoided to make the transcription more comprehensible and reduce complexity of the analysis. For the lexical comparison between NISL and SISL; phonological features of the lexical item is written as it is in a tabulated format, for example refer (table no 3.3) of chapter 3 of this dissertation.

The phonological features of each components of a sign are discussed below.

2.3.1 Handshape

On the principle of semantic domain *Indian Sign Language Dictionary* was formed in (2001), based on that here is a list of handshapes found in ISL.

HANDSHAPE	EXAMPLE	HANDSHAPE	EXAMPLE
	BAG WASH LUGGAGE		GOOD DRINK PASS
A		xA	
	CHAIR RUN SORRY		TABLE HOUSE KING
tA		B	

xB

CLEAN
FINISH
MIRROR

tB

POLICE
GREEN
LEAF

cB

CHILD
PREGNANT
COCONUT

scB

EARTH
SUN
COMPACT DISK

C

BOTTLE
PIPE
COMMUNICATE

bC

COFFEE
PERSON
CAREFUL

F

FINE
PEACE
SIMPLE

sF

DANCE
TELEVISION
SOUL

G

DEAF
SAME
TEACHER

hG

FAMOUS
LIKE

cG

HANG
GOSSIP
KNOW

H

TICKET
NAME
DOLLAR

xH

RAT
GUN
STORY

I

IDEA
GUILTY

L

LANGUAGE
FOOL
LAZY

O

ODISHA
BINOCULAR
OWL

fO

PLEASE
FEW
EAT

bO

TEA
WRITE
PICK

fbO

DIWALI
STAR

U

SOFT

bU

THICK
ABUSE
USE

V

DIFFERENT
WALK
CHANGE

cV

BEND
BOOK (Ticket Booking)
BELT

tV

OK
QUICK
KARNATAKA

W

CAT
SERGEANT

Y

PLAY
TELEPHONE

sY

AEROPLANE
FLY

3

SCISSORS
CUT

c3

LEMON
ONION
PLUG

f3

EGG
BRINJAL
SQUEEZE

	COLOR DIRTY GATE		SIGN WIND WAVE
4		5	
	BEGGAR LEPROSY JEALOUS		SAD NIGHT DAY
c5		f5	
	WHAT WHY TIRED		FEEL BONE INTERST
x5		8	
	HATE BAD ANGRY		
t8			

Table 2. 1 Classifier Handshapes in ISL (Sinha 2012).

2.3.2 Location Features

The body location (bLOC) and neutral space (sLOC) of the signer are the two important phonological features of the sign component location. Out of both the features; neutral space (sLOC) has a specific location but there are many body locations (bLOC) in ISL, NISL and SISL. The body locations (bLOC) found in ISL, NISL and SISL are listed

below; this is one of the phonological feature on which lexical variation between NISL and SISL will be observed.

SNO	LOCATION (bLOCs)	SIGN
1	Vertex	KING, PANDIT, FOOLISH
2	Side of Frontal	HAIR, BLACK, IDEA
3	Forehead	HINDI LANGUAGE,
4	Frontal	LUCKY
5	Ear	IGNORE
6	Eye Cone	CHINESE
7	Lower Eyelid	CRY
8	Eye	BRAILLE
9	Eye Brow	BEAUTY PARLUOR
10	Ear Lobule	JWELLERY
11	Nose Bridge	BLUE
12	Nose Tip	LIE
13	Nose Groove	WOMAN
14	Cheek Bone	YELLOW
15	Face	FOX
16	Philtral	MAN
17	Philtral Column	PERSONAL
18	Cheek	MAKE UP
19	Mouth	EAT
20	Lips	RED
21	Teeth	WHITE
22	Chin	GOAT
23	Throat	KILL
24	Neck	CLEVER
25	Side Neck	BOARING
26	Shoulder	SIBLING
27	Deltoid	LAWYER

28	Arm	INJECTION
29	Elbow	POOR
30	Forearm	NAME
31	Outer Wrist	LATE
32	Breast	HATE
33	Chest	LOVE
34	Stomach	BIRTH
35	Inner Wrist	BLOOD
36	Hand	BONE
37	Palm	CLEAN
38	Phalanx (Outer)	FIGHT
39	Palm Surface	SAND
40	Phalanx (Inner)	FIGHT
41	Index side	SAME
42	Thumb Nail	LICE
43	Index Base	PERFECT
44	Middle Base	MOUNTAIN
45	Ring	HUSBAND
46	Little Finger	EFICT
47	Between Index and Middle finger	SHOES

Table 2. 2 Body locations (bLOC) in ISL (Sinha 2012).

2.3.3 Movement Features

Broadly, movement has two main features; local movement (lMOV) and path movement (pMOV) according to the locus associated with the movement. As described by Sinha (2012), local movement is articulated by interphalangeal joints, metacarpo-phalangeal joints, wrist, radio-ulnar, and elbow whereas path movement is articulated with the shoulder as a locus of movement

a) Local movement found in ISL, NISL and SISL are presented below.

SNO	LOCAL MOVEMENT	SIGN
1	SUPINATE	BALL, BREAK, EARTH
2	PRONATE	TIERED, FAIL, OPEN
3	TWISTING	MACHINE, SHARPENER, SCOOTER
4	CIRCULAR	COOK, BALL, YELLOW
5	NODDING	SUN, SCOLD, RAIN
6	OPENING	BRIGHT, MAGIC, SURPRISE
7	CLOSING	DOG, FOX, CONE
8	WIGGLING	SEA, WAVE, FLOOD
9	CRUMBLING	STAR, PANEER (Cottage cheese), SOFT
10	WAVING	BYE,
11	MOVING	PRACTICE, SAND, CLEAN
13	SHAKING	EGG, RAT, PLAY

Table 2. 3 Local movements (lMOV) in ISL (Sinha 2012).

b) Path movement

Sinha (2012), subcategorized (pMOV) into direction, shape size and dynamics of the sign. Local movement of a sign may or may not accompany path movement. The sub-categories of path movement of the movement feature are presented below.

SNO	DIRECTION	SIGN
1	UP	DAY
2	DOWN	NIGHT
3	UP-DOWN UNISON	BHANGRA (Dance form in India)
4	UP-DOWN ALTERNATIVE	EXAMINATION
5	OUT	WALK
6	IN	ACCEPT
7	IN-OUT ALTERNATIVE	SELL
8	IN-OUT UNISON	CONFUSE

9	TO SYMMETRY	MEET
10	TO LATERAL	MAGIC
11	TO SYMMETRY-LATERAL ALTERNATIVE	BOIL
12	TO SYMMETRY-LATERAL UNISON	EXERCISE

Table 2. 4 Directions of the path of movement in ISL (Sinha, 2012).

i. Shape of the path movement

SNO	SHAPE	SIGN
1	STRAIGHT	NAME, PERSON, BOTTLE
2	CIRCLE	COOK, MIX, EARTH
3	SEMICIRCLE	CHILD, BABY, DAY
4	WAVY	OCEAN, CHILDREN, DOLLAR

Table 2. 5 The shapes of the path of movement in ISL (Sinha, 2012).

ii. Size of the path movement

Thereafter, size (SIZ) of the direction is referred by length of the shape ie small, big and medium.

SNO	SIZE	SIGN
1	BIG	TREE, MOUNTAIN, TALL
2	MEDIUM	CHANGE, DISCUS, TEACH
3	SMALL	DIAMOND, SEED, DOG

Table 2. 6 The sizes of the path of movement in ISL (Sinha, 2012).

iii. Dynamics of the path movement

Last but not the least dynamics (DYN) which is the kinetic motion of the path of movement is referred by fast, slow and normal speed.

SNO	DYNAMICS	SIGN
1	FAST	MUST, FINISH, SPEED
2	SLOW	CLEAN, TIERED, LAZY
3	NORMAL	COME, OPEN, SOIL

Table 2. 7 Dynamics of the path of movement in ISL (Sinha, 2012).

2.3.4 Orientation Features

The orientation is articulated in lateral and vertical dimension of the body of the signer. Sinha (2012), has described the orientation feature from two perspectives; orientation based on visibility of the palm surface with respect to signer's body and the direction of the carpal area.

In ISL, the visibility of the palm surface with respect to signer's body is typologised as palm orientation and position of the finger tip of the signer is typologised as carpel orientation. For phonological comparison between NISL and SISL both the orientation features of the sign has been observed.

The various palm and carpal orientation typologies based on articulation of a sign are:

Type I: Based on Palm surface orientation:

a) Front- when the palm surface is visible to the signer
b) Back- when the palm surface is not visible to the signer
c) Neutral- when the palm is neither front or back

Type II: Based on carpel orientation:

a) Against the line of bilateral symmetry
b) Towards the line of bilateral symmetry
c) Towards the addressee
d) Towards the signer
e) Towards the sky
f) Towards the ground

There are sixteen specified features of orientation found in ISL, NISL and SISL; it is presented in the table below with example of lexical items found in ISL.

SNO	Palm Orientation	Carpal Orientation	SIGN
1	Front	Towards the line of bilateral symmetry	MEET, GATE, JEALOUS, CELEBRATE
2	Front	Against the line of bilateral symmetry	NEW, PURE
3	Front	Towards the addressee	GIFT, GIVE, BIRTH,COMPARE
4	Front	Towards the signer	KICK, THROW
5	Front	Towards the sky	BEGGER, BOWL, BOOK, HEAVY
6	Front	Towards the ground	WEEK, STAND, JUMP, COOK
7	Back	Towards the line of bilateral symmetry	DIFFICULT, FREEZE, DIAMOND
8	Back	Against the line of bilateral symmetry	PEOPLE, FLAG
9	Back	Towards the addressee	WALK, EARTHQUACK, CHILD
10	Back	Towards the signer	DOCTOR, LAW, GUILTY
11	Back	Towards the sky	CLOUD, STARS, FOOLISH
12	Back	Towards the ground	TODAY, HERE, COOK, LANGUAGE
13	Neutral	Towards the addressee	FISH, RAT, KEY
14	Neutral	Towards the signer	OWN, OUR, I
15	Neutral	Towards the sky	BATHING, HORN, RABBIT
16	Neutral	Towards the ground	HIT, BAT, HOCKEY

Table 2. 8 Palm and Carpal Orientations in ISL (Sinha. 2012).

2.3.5 Non- manual Features

In a lexical item either facial expression is present or remains neutral, wherever it is present it appears to have phonemic status. In ISL, for example DIFFICULT and COLD is minimal pairs because both of the signs have similar articulation components except for non-manual activity; DIFFICULT is signed with NMA/F and COLD is signed with neutral facial expressions.

The phonological features of NMA/F are closely observed to establish phonological variation between NISL and SISL.

The most commonly used NMAs in ISL are listed in the table below.

S.NO	NMF	SIGN
1	Brow freeze	DIFFICULT
2	Chin raise	DRINK
3	Eye gaze fixation	YOUR or YOU
4	Head back	LAZY
5	Head forward	SEARCH
6	Head lowering	DEAD
7	Head turn- right/left	NO
8	Headshake	YES
9	Hold resulting pause	FREEZE
10	Puffed cheek	FAT
11	Pursed lips	SORRY
12	Protruded lower lip	I DON'T KNOW
13	Raised Eyebrow	WHAT?
14	Torso movement	CELEBRATION
15	Tightened upper lip	INTERESTING
16	Widened eyes	MAGIC

Table 2. 9 NMA/F found in ISL (Sinha 2012).

2.4 Linguistic Background Information of the Informants

Before moving on to the data based chapters of this dissertation, sociolinguistic profiling of the informants is presented in this section. There are total sixty four informants who participated in this study, thirty two informants each from both the regions. Sociolinguistic profiling of the informants is based on their background information as responded by them. Part I of the questionnaire is focused to discover background information of the informants in the broadest sense possible; the background information of the informants is pivotal because it helps to understand their social interaction with the language. In case of ISL, background information such as onset of cognition of ISL and number of deaf family member is crucial because it determines the diversity of the given deaf community.

2.4.1 Informants of SISL variety

In this section, the background information of 32 respondents who participated in this study from the North Indian Variety of ISL has been discussed. It is presented in the table below.

SL NO	BACKGROUND INFORMATION	No. Of Respondents	Number of Response	Percentage(%)
1	Age:	32		
	a. 15 to 25		18	56.3
	b.26 to 40		14	43.8
2	Sex	32		
	a. Male		27	84.4
	b. Female		5	15.6
3	Place of Birth:	32		
	a.Delhi (Town)		16	50
	b. Outside Delhi or Village		16	50
4	Marital Status:	32		
	a. Married		8	25

	b. Single		24	75
	c. Divorced		0	0
	d. Widow		0	0
5	Highest Education Qualification:	32		
	a. 10th Pass		18	56.3
	b. 12th Pass		8	25
	c. Graduate		6	18.8
6	Started Schooling In:	32		
	a. Normal School		1	3.1
	b. Deaf School		21	65.6
	c. Primary in Normal School, Higher in Deaf School		8	25
	d. Primary in Deaf School, Higher in Normal School		2	6.3
7	Languages Known:	32		
	a. Only ISL		2	6.3
	b. ISL and other spoken languages		30	93.8
8	Mother Tongue:	32		
	a. ISL		12	37.5
	b. Other (Hindi,Bengali etc)		20	62.5
9	Occupation:	32		
	a. Working		9	28.1
	b. Student		23	71.9
	c. Unemployed		0	0
10	Is, any other Family member Deaf? If Yes, How many	32		
	a. Yes		15	46.9
	b. NO		17	53.1

Table 2. 10 Background information of the informants of NISL.

In the table, it can be observed that for NISL there is sociolinguistic profiling of total 32 respondents out of which 27 are male participants and 5 are female participants. The age of the respondents is categorized into two categories depending on the lowest and highest age of the respondents. The age ranges between 15 years to 40 years; there are 18 respondents which belong to the young age group which is 15-25 years and 17 respondents belong to middle age group which is 26-40 years. So for this study, I have the opinion of young and middle aged the age groups of the deaf community of which maximum number of informants are males.

Question number 3 accounts for the birth place of the informants which reflects the weightage of migration of the deaf informants towards New Delhi for the purpose of job, higher education or vocational trainings. One of the main reasons of migration of deaf people towards city like Delhi is that there are not good deaf schools and deaf associations in villages or other states like Bihar, so the deaf people feel isolated for quite a large period of their age. This pattern of migration of the deaf people in north India towards Delhi reveals that deaf people and ISL is largely ignored in villages and nearby places of Delhi in the north region of India. For this study of NISL variety of sign language there are 16 informants who are born and brought up in New Delhi whereas 16 deaf informants have come from other regions such as Haryana, Uttar Pradesh and Punjab, out of which maximum migratory informants are from Bihar.

Question number 5, accounts for highest education qualification of the informants in which it can be seen that only 6 out of 32 informants are graduates. Whereas, 18 informants are 10^{th} pass and 8 informants are 12^{th} pass.

In question number 6, it can be seen that 21 deaf informants have completed their school education from a deaf school whereas only 1 informant has done schooling from a mainstream school. 8 informants started primary education in mainstream school but later switched to deaf school. 2 informants started their primary education in deaf school and later switched to mainstream school. The background information of the school is vital information to understand the amount of exposure of ISL of the informants because

school is a place where a child spends their maximum time for learning and communicating purposes apart from the family domain.

Question number 7 and 8 inquires on the languages known by the informants from which it is clearly observed that majority (94%) of the deaf informants claim to be bilinguals; they know other spoken languages in written form. Whereas, only 6% of the deaf informants are monolingual and understand only sign language. Out of 32, 12 informants claimed of ISL being their mother tongue language which means they are the native signers and pre-lingual deaf informants where as 20 informants have learned sign language at the later stage of their life and do not associate ISL as their mother tongue, they can be post-lingual deaf informants.

Question number 10 inquires about the number of other deaf members in a family, this inquiry is important because communication gap in family domain may affect signing skills and attitude of deaf informants towards signing because among all the communication set up family set up holds utmost importance because it is the most intimate set up among all. The ignorance and isolation of a deaf informant in this communication set up can have social impact on the development of a deaf individual. Out of 32 respondents 15 have another deaf member in the family whereas 17 respondents are the sole deaf members in a family. Majority of our respondents for this study are solo deaf members which means their ISL competency and signing skills remained suppressed for the longest time. It may affect the data in terms of lexical variation as their signing skills may be different and their opinion on other related issues.

Status of being married or unmarried is not directly related to the lexical variation study, it was just asked to have overall knowledge about the informants in terms of family background. Out of 32 informants only 8 informants are married and surprisingly 6 out of 8 informants have deaf spouse which later got revealed in the second section of the questionnaire. The choice of getting married within the community clearly revel the fact that deaf community respects each other and wants to pass on their culture to their offspring directly.

2.4.2 Informants of SISL variety

In this section, the background information of 32 respondents participated in this study from the South Indian Variety of ISL has been discussed. It is presented in the table below.

SL. No	Background Information of the Informants	Total No. of Informants	Number of Response	Percentage(%)
1	Age Group	32		
	a. 15-25		22	68.75
	b. 26-40		10	31.25
2	Gender	32		
	a. Male		17	53.125
	b. Female		15	46.875
3	Place of Birth	32		
	a. Town		19	59.375
	b. Outside Hyderabad or Village		14	43.75
4	Marital Status	32		
	a. Married		6	18.75
	b. Single		26	81.25
	c. Divorced		0	
	d. Widow		0	
5	Highest Educational Qualification	32		
	a. 10th Pass		17	53.125
	b. 12th Pass		9	28.125
	c. Graduate		6	18.75
6	Started Schooling in	32		
	a. Normal School		7	21.875
	b. Deaf School		16	50
	c. Primary in Normal, higher in		8	25

	Deaf			
	d. Primary in Deaf, higher in Normal		1	3.125
7	Language Known	32		
	a. Only ISL		12	37.5
	b. ISL and Other spoken language		20	62.5
8	Mother Tongue	32		
	a. ISL		14	43.75
	b. Other		18	56.25
9	Occupation	32		
	a. Working		11	34.375
	b. Student		21	65.625
	c. Unemployed		21	65.625
10	Deaf Member in Family	32		
	a. Yes		12	37.5
	b. No		20	62.5

Table 2. 11 Background information of the informants of SISL.

For lexical variation data elicitation and other research related issues there are same number of respondents for south as it is for north Indian region. The table represents the background information of 32 deaf informants from SISL variety.

Out of 32 respondents 17 are male and 15 are female deaf informant respectively. For study of this region; the minimum age recorded of the informant is 16yrs old and maximum is 37 years old so the age range has been kept common for the study of both regions which is 15-40 yrs. In the south region there are 22 deaf informants in the young age group (15-25 yrs) and 10 informants from the middle age group (26-40 yrs).

In the response of question number 3 (place of birth), we can see 44% of migration of the respondents towards the Hyderabad city from nearby places and villages. Out of 32 respondents 19 are native residents of Hyderabad and rest 14 respondents migrated to Hyderabad in pursuit of better job and education opportunities.

In response to question number 5, only 6 respondents are graduates whereas 9 informants are 12^{th} pass and 17 informants are 10th pass.

Question number 6 accounts for background information of their preference of school which reveals that 7 informants have pass out from the main stream school whereas 16 deaf informants have done their school education in a complete deaf school. 8 informants are reported to have started their primary education in mainstream school and later switched to a deaf school for secondary classes and only 1 informant is reported to switch from a deaf school to mainstream school.

Question number 7 and 8 accounts for their linguistic background of the informants, 63% of the informants are reported to be bilinguals which means they know ISL and other spoken languages also for reading and writing purposes. Only 12 informants are monolinguals and only know sign language. Out of 32; 14 informants report sign language as their mother tongue analogically they are native signers and pre-lingual deaf members of the deaf community whereas, 18 informants reports other spoken language as their mother tongue which means they are post-lingual deaf members.

Question number 10 inquires if the informants have any other deaf member in their family to which 12 informants are recorded to have another deaf member in their family and 20 informants are the sole deaf members in their family.

For the background information of the south variety region of sign language marital status (question no 4) is asked just for their overall background information and it does not have any direct influence on the way of signing of the informants, only 6 informants are married and rest of them are unmarried informants. Out of the 6 married informants 5 have deaf spouse.

CHAPTER 3

A Phonological Comparative study: North and South variety of ISL

The aim of this chapter is to identify phonological variations between North (NISL) and South (SISL) variety of ISL, lexical comparison is conducted at the maximum and minimal contrastive units of sign which will establish the fact that both the varieties have their own take in articulating the same lexical item. This study limits its investigation to the phonological aspects of ISL in an attempt to understand and confirm the possible variants that may exist within each of these varieties.

3.0 Introduction

Jane E. Johnson and Russell J. Johnson (2008) has carved a niche in regional variation studies of ISL and can be credited for initiating empirical study on the regional varieties of ISL. In their work "*Assessment of Regional Language Varieties in Indian Sign Language* (2008)", they have examined ISL of five cities; Mumbai, Delhi, Kolkata, Chennai and Hyderabad and tested these varieties of ISL for diversity, vitality, and identity related issues. They have conducted lexical analysis, dialect intelligibility test accompanied with recorded text tests (RTTs) and language attitude assessment of the five varieties of ISL with the help of a word list of two hundred and fifty lexical items and followed movement-hold method (Liddell and Johnson 1989) for analysis. The extensive research work suggests that the regional varieties are dialects of ISL which is mutually intelligible in case of few cities. The study suggests Mumbai variety of sign language have highest language prestige and closest lexical similarity to ISL; Hyderabad and Chennai have closest lexical similarity but dissimilar to Mumbai and Kolkata variety of ISL.

Later on they conducted a similar study *"Distinction between West Bengal Sign Language and Indian Sign Language Based on Statistical Assessment*" (2016), in which they suggests that Kolkata variety (WBSL) is different from Delhi variety of ISL and WBSL is closely related to Bangladesh sign language[37]. This time they ruled out the use of movement-hold method saying this method can be impractical as it increases the complexity and was not conducive to the statistical assessment conducted in the study. To achieve this, the threshold of lexical similarity between unrelated languages was checked and ASL was taken as referral point. Same word list was assessed by the deaf people of United States and the frequency percentage of dissimilarity from ASL determined lexical similarity between Kolkata, Dhaka and Delhi.

In both the works the theoretical methodology has been same; the notion of regional variation has been established by assessing similarities between the lexical items, the phonological tools were used to test intelligibility between the regional varieties of ISL under investigation. This research differs from such notified works as it tries to look into the phonological structure of each sign based on the prosodic model of phonological analysis (as discussed in chapter 2, section 2.1). Therefore, this section focuses on the dissimilarities of lexical items which are the primary focus of this present study.

In section 3.1, lexical scoring method has been introduced which is one of the tools apart from phonological analysis which has been used for analyzing data for lexical variation between NISL and SISL. Section 3.2 discusses the procedure in which phonological analysis of all five contrastive units of a sign has been conducted for this study. Section 3.3 is a detailed discussion on lexical variation found between NISL and SISL with simultaneous phonological analysis and lexical score of the data collected from the informants. Section 3.4 presents the findings observed through data elicitation and section 3.5 is the summary of this chapter.

[37] See Johnson, Russell J and Johnson, Jane E. 2014. Distinction between West Bengal Sign Language and Indian Sign Language Based on Statistical Assessment: Sign Language Studies, Vol. 16, No. 4 (Summer 2016), pp. 473-499. Gallaudet University Press.

3.1 Lexical Analysis: Scoring Similarities and Dissimilarity

Prior to lexical analysis, this section provides a brief background on data elicitation procedure adopted for this study.

A word list of five hundred lexical items was prepared to conduct phonological comparison between NISL and SISL. Previous works on ISL such as (Vasishta, Woodward & DeSantis 1980), *Indian Sign Language Dictionary* (2001) and CDROMs published by Indian Sign Language Cell, Ali Yavar Jung National Institute for Hearing Handicapped, Mumbai were consulted for selection of the lexical items of the word list. To systematically organize the data, the word list was grouped under thirty three semantic domains. The background information of the informants was done with the help of a questionnaire (as discussed in chapter 2, section), ten informants each from NISL and SISL were shortlisted for signing the lexical items in the word list. The informants were requested to sign each lexical item of the word list in front of the camera[38]; the signs were video recorded for further data analysis.

In this study, the word list was assessed for lexical comparison of the two selected varieties on the basis of their phonological structure. Each pair of sign was visually examined for handshape, location, movement, orientation and non-manual features. Although variation studies do not account for all phonological parameters such as Flemish Sign Language, Vanhecke and Weerdt (2004) excluded non-manual feature parameter for lexical similarity[39] because in their data only a few signs appeared to have a non-manual features. This study however, incorporates all the five features because in many ISL signs NMF is a mandatory feature to be grammatically correct sign.

Lexical score of dissimilarity and similarity was given according to the number of feature match and miss-match for each lexical comparison. The possible total score for one

[38] Pictorial cue of the word list was not provided.
[39] See Johnson, Jane E. and Johnson,Russell J. 2008. *Assessment of Regional Language Varieties in Indian Sign Language.* SIL International.

lexical item is 1 (one) and if we split the score of one lexicon item between five parameters then we get 0.20 score for each phonological component.

Phonological Components of a Sign						
	Handshape	Movement	Location	Orientation	Non-Manual Feature	Total
Scores	0.20	0.20	0.20	0.20	0.20	1

Table 3. 1 Possible score value for each phonological component.

In order to have identical sign of a lexical item for both the regions we need a lexical similarity score which is equal to 1, if the lexical score of similarity is not equal to 1 and is recorded in negative scale then the signs are dissimilar and subjected to lexical variation.

For example, the word ANGRY was compared between the two varieties (refer table 3.3); the movement, orientation and non-manual feature is found to be same whereas handshape and location is different. Thus the score chart is as follows:

Phonological Components of a Sign							
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.2	-0.2	-0.2	-0.2	0.2	0.2	-0.8

Table 3. 2 Phonological score for ANGRY

In the above data for the sign ANGRY; only NMF is similar therefore the similarity score is 0.20 and dissimilarity score is -0.80 [(-0.20) + (-0.20) + (-0.20) + (-0.20)]. The similarity score $\neq 1$ and the dissimilarity score is recorded in negative scale therefore it suggests that NISL and SISL have their own versions of sign for this lexical item in their regional variety.

In the case of componential and compound signs in which more than one handshapes are involved, similar process of scoring was done. If both the components are identical then it is scored as 0.20 and if one or both components were dissimilar it is scored as (-0.20); no individual scoring of component handshape is done.

3.2 Lexicon Formation Process

Phonological components of a sign is not combined randomly to form a meaningful lexicon, it follows certain rules and conditions for combination; the visual-manual modality of sign language having a systemic level of linguistic organization is well established right from eminent works of Stokoe 1960 and several others. Therefore, investigation of any sign language research begins with investigating the sub-lexical structure. Due to its visual-manual modality, many assumed that signs are randomly organized and simply represent objects in the world by using non-coherent hand gestures although iconicity plays a relevant role in the formation of sign lexical items. Because of its modality, sign language offers insights on how lexical items are formed. Studies such as Zeshan on IPSL (2004) and Woll on BSL (1999) on lexical expansion of sign language revealed several processes which are found in ISL as well.

In ISL, same method of lexicon formation process is found (Sinha, 2016) as it is for other sign languages like ASL and BSL. The lexicon formation process includes all the possible combinations of phonological features therefore, in this study lexical variation between NISL and SISL has been investigated vis-à-vis exploring lexicon formation process involved in ISL.

The word list developed for this study is listed according to the semantic domain but the data for lexical variation between NISL and SISL presented in this chapter is organized according to the sign families. In sign language, the lexical items which share one or more formational features or are similar in one or more aspects of meaning are categorized under the term commonly adopted on sign language studies which is “Sign family”. Sign families play a very important role in the development of sign language lexicon. It was first brought out by Klima & Bellugi (1979), they stated that ‘Sign families related in both formational elements and meaning is not uncommon in ASL.’ By this they clearly mean that ‘sign family’ is universal phenomenon is all the other sign

languages. Sign families are grouped on the basis of shared phonological features such as handshape, signing location movement or orientation[40].

In the field work, NISL and SISL were observed to have similar word formation process as found in ISL and "sign family" is also similar to ISL. Therefore, this study also adopts this categorization and conducts its analysis on such lexical items belonging to a sign family.

This chapter discusses the phonological variations of lexical items between NISL and SISL vis-à-vis the process involved in the development of the sign language lexicon.

3.3 Lexical Variations in North and South variety of sign language

In the following section, the data is presented to henceforth the argument that lexical items of northern and southern region of Indian sign language are different from each other at the phonological level. This section is completely based on the data collected during the field work. In this section, to give a clear picture of lexical variation between NISL and SISL, word formation processes of ISL has been explored. Based on phonological analysis, lexical score of similarity and dissimilarity of the words is also presented simultaneously.

3.3.1 Location

Almost all the signs are signed in and around signer's body parts. The three dimensional space in front of the signer, from waist to forehead and from one lateral end to another lateral end of the body is called the signing space. Signs which are articulated with contact to any other part of body within signing space are called body (loc) and those signs which are articulated without touching any other body part within this space are called neutral signing space (NSP). A signer uses this space to physically represent any

[40] See, Sinha,Samar. 2012. A. Grammar of Indian Sign Language. PHD (Dissertation). Jawaharlal Nehru University. New Delhi.

object or to introduce any abstract concept like time and order, other than lexical articulation signing space has different other semantic roles.

The signs which share the same articulatory locus are categorized under same sign family. In sign language, body locations such as head, chest, eye, mouth, nose etc are most widely used for the signs which are related to cognition, sensory, perceptive, communication processes and body strength. Along with the corporal body the other body parts such as teeth, lips, hair etc are also used as articulatory locus for different semantic domains. The signs, which belong to the same sign family shares same articulatory locus for example signs for olfactory senses like SMELL, FLOWER and BAD SMELL etc are signed in contact with the nose.
Each body location based sign family will be discussed one by one with the data encountered for location based lexical variation in NISL and SISL below.

(a) Temple: It is the area of head just above the ear. At this location mostly signs of cognition semantic fields are done for example: REMEMBER, IDEA, INTELLIGENT, DREAM. Signs of cognition related semantic domain were asked by the deaf informants of NISL and SISL variety of ISL and remarkable dissimilarities are recorded in few words. The lexical item encountering for variation between the two varieties of ISL at the location of temple are ANGRY and PROBLEM.

In the table below, a phonological analysis of one lexical item ANGRY has been done to show lexical variation between the two regions at component level. Along with phonological analysis lexical scoring has also been done in support of lexical similarity/dissimilarity.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ANGRY**		
Phonological Feature			
Location	Temple of the Head		NSP
Handshape	5		t8
Movement	l(MOV)	Shaking	Moving
	Path	-	In
	Size	Medium	Medium
	Speed	Normal	Fast
Orientation	Palm	Neutral	Front
	Carpal	Against the line of Bilateral Symmetry	Against the line of Bilateral Symmetry
NMF	Raised Eyebrow		Raised Eyebrow

Table 3. 3 Phonological analysis of ANGRY.

From the above table, it is clear that sign for the word ANGRY varies in NISL and SISL. In NISL, ANGRY is articulated on the [b(LOC): temple region] of the head with [HS: 5]; it has [l(MOV): shaking and the size of the sign is medium]; [ORI: of the palm is neutral and carpal are against the line of bilateral symmetry]. In NISL, ANGRY is signed with raised eyebrow to show the emotions of rage. Whereas, in SISL ANGRY is signed in [NSP] with [HS: t8]. [MOV: have two aspects, it is signed in an inward direction with fast speed]; [ORI: of the palm is in front of the signer which means it is visible to the signer and carpal is against the line of bilateral symmetry]. In SISL also ANGRY is signed with a raised eyebrow as NMF to express rage.

The lexical item ANGRY is articulated in a different manner in both the regions; the difference lies not only in the location of articulation but handshape and orientation as well. Therefore the lexical scoring for each articulation components for the word ANGRY can be done as described in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	0.20	0.20	-0.80

Table 3. 4 Lexical score for ANGRY.

In the above data for the sign ANGRY; only NMF is similar therefore the similarity score is 0.20 and dissimilarity score is moving towards the negative scale with a total of -0.80 [(-0.20) + (-0.20) + (-0.20)]. The similarity score ≠ 1 therefore it suggests that NISL and SISL have their own versions of sign for this lexical item in their regional variety.

(b) Ear: Semantic domains with listening or receptive properties are signed near ears, according to the data the lexical items such as DEAF, HEAR and HEARING belong to similar sign family and are signed near the ear. In this sign family no variation in the lexical items of NISL and SISL is found. This can also mean that the processes of listening in all the varieties of ISL are perceived in similar fashion.

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DEAF**	
Phonological Features		
Location	Ear	Ear

Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 3. 5 Phonological analysis of DEAF.

In the table above we can see that the word DEAF is articulated in similar manner in both the regions. It is articulated near the ear with [HS: G]; [MOV: moving with a small size of movement]; and [ORI: of palm is neutral which means it is not clearly visible to the signer or addressee and the carpal is facing towards the signer]. The articulation is not accompanied with any kind of NMF of signer's body.

Therefore the possible lexical score for the word DEAF is as follows:-

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	0.20	0.20	0.20	0.20	1	0

Table 3. 6 Lexical score for DEAF.

In the above data all the articulation components are similar, therefore the similarity score is 1 (0.20 + 0.20 + 0.20 + 0.20 + 0.20). Dissimilarity score is not moving towards negative scale which suggests the articulation of the word DEAF is strikingly similar in NISL and SISL.

(c) Eye: On this location semantic domain with visual properties such as CRY, BLIND and SEE are signed. According to the data set, the dissimilar lexical items found for NISL and SISL are CRY and BLIND. The phonological analysis along with the lexical score is discussed below in the table.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><td>Lexical Item</td><td colspan="3">CRY</td></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Near the eye</td><td>Below the eye</td></tr>
<tr><td>Handshape</td><td colspan="2">tA</td><td>G</td></tr>
<tr><td rowspan="4">Movement</td><td>l(MOV)</td><td>Twisting</td><td>Moving</td></tr>
<tr><td>Path</td><td>-</td><td>Down</td></tr>
<tr><td>Size</td><td>Small</td><td>Small</td></tr>
<tr><td>Speed</td><td>Normal</td><td>Normal</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Neutral</td><td>Front</td></tr>
<tr><td>Carpal</td><td>Towards the signer</td><td>Towards the signer</td></tr>
<tr><td>NMF</td><td colspan="2">Pursed Lips</td><td>Pursed Lips</td></tr>
</table>

Table 3. 7 Phonological analysis of CRY.

In NISL the word CRY is signed at the body [LOC: near the eye] with [HS: tA]; [MOV: is twisting and the size of the movement is small accompanied with normal speed of signing]; [ORI: of the palm is in front of the signer and carpal is towards the signer]; the sign is accompanied with NMF of the body “pursed lips” to show the activity of crying and sadness. Whereas in SISL the word CRY is articulated at the body [LOC: below the eye]; [HS: G]; [MOV: in downward path accompanied with normal speed]; [ORI: of the palm is in the front of the signer whereas carpal is towards the signer]; it is signed with same NMF as of NISL.

The lexical item CRY is articulated in different manner in both the regions; the variation lies in the handshape, movement and orientation of the articulation. Therefore, the possible lexical score of CRY for each of the articulation components is described in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	0.20	-0.20	0.20	0.40	-0.60

Table 3. 8 Lexical score for CRY.

In the above data the phonological component movement, orientation and NMF remains similar for articulation of CRY in both the regions therefore the similarity score is 0.40 (0.20 +0.20) and the dissimilarity score is also moving towards negative scale with the total of -0.60 [(-0.20) + (-0.20)+ (-0.20)]. The similarity score is ≠ 1, which suggests that NISL and SISL identify the word CRY differently.

(d) Mouth: At this body location signs which have a relation with speaking or communication is signed; for example: SPEAK, SING, DISCUSS, ARGUE etc. Signs related to the communicative domain were asked by the deaf informants of both the regions and the dissimilarities found in the lexicon are; SING, SPEAK and JEALOUS. Phonological analysis and lexical scoring of the sign SING has been discussed in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><td>Lexical Item</td><td colspan="3">SING</td></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Near Mouth</td><td>Near Arm</td></tr>
<tr><td>Handshape</td><td colspan="2">xB</td><td>xB</td></tr>
<tr><td rowspan="4">Movement</td><td>l(MOV)</td><td>Moving</td><td>In-Out alternative</td></tr>
<tr><td>Path</td><td>Out</td><td>Lateral</td></tr>
<tr><td>Size</td><td>Medium</td><td>Medium</td></tr>
<tr><td>Speed</td><td>Normal</td><td>Normal</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Front</td><td>Front</td></tr>
<tr><td>Carpal</td><td>Against the line of bilateral symmetry</td><td>Against the line of bilateral symmetry</td></tr>
<tr><td>NMF</td><td colspan="2">Freezed Eyebrow</td><td>Neutral</td></tr>
</table>

Table 3. 9 Phonological analysis of SING.

In NISL the word SING is signed near body [LOC: mouth]; [HS: xB]; [MOV: in respect to body is outwards of medium size accompanied with normal speed]; [ORI: of palm is front which means it is visible to the signer and position of the carpal is against the line of bilateral symmetry]. In NISL SING is signed with an active involvement of NMF of signer's body, eyebrow is in freezed position while articulation of this sign to represent activity of singing. In SISL the word SING is signed near body [LOC: arm]; [HS: xB] which is same as NISL; [MOV: is in-out alternative in the lateral symmetry of medium

size sign accompanied by normal speed of signing]; [ORI: of the palm is front and carpal is against the line of bilateral symmetry] which is same as of NISL sign articulation. In SISL no NMF have been observed while articulation of SING.

The phonological analysis indicates that the lexical item SING has articulation variations in both the regions of India Sign Language, the shared common features between both the regions are handshape and orientation therefore variation lies on body location, movement and NMF. Based on phonological components the possible lexical scoring of SING is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	-0.20	-0.20	0.20	-0.20	0.400	-0.60

Table 3. 10 Lexical scoring for SING.

In the above data the phonological orientation remains common for the articulation of SING in NISL and SISL therefore the similarity score is 0.40 and dissimilarity score is moving towards the negative scale with a total sum of -0.60 due to difference of body location, movement and NMF involved in articulation. The similarity score is $\neq 1$, therefore it suggests that NISL and SISL identify the word SING differently.

(e) Chest: In sign language, signs related to the human emotions such as love, hate, jealous and greed are signed on the chest so these signs fall under same sign family. According to the data lexical items found to be non-identical in terms of articulation in both the regional variety in this semantic domain are JEALOUS, GUILTY, GREED, HEART and CELEBRATE. Phonological analysis and lexical scoring for the sign CELEBRATE is presented in the table below.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CELEBRATE**		
Phonological Features			
Location	On the Chest		In Neutral Space
Handshape	5		5
Movement	Path	To Symmetry Lateral Unison	Out
	Shape	Circle	Straight
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Torso Movement		Neutral

Table 3. 11 Phonological analysis of CELEBRATE.

In NISL the word CELEBRATE is articulated on the body [LOC: chest] with [HS: 5]; [MOV: of the sign in accordance to the body is in lateral unison symmetry moving in a circular manner with normal speed]; [ORI: of palm is neutral which means it is not visible to the signer as well as addressee and position of the carpal is towards the signer]. The articulation is accompanied with a little torso movement which adds an extra component to the sign with the help of NMF of the body. Whereas, in SISL CELEBRATE is signed in [LOC: NSP]; with [HS: 5]. [MOV: of the sign in accordance with the body is in outward direction and straight in path with normal speed]; [ORI: of the palm is neutral and position of the carpal is towards the signer]. The articulation of CELEBRATE does not involve any NMF in SISL.

The phonological analysis of the lexical item CELEBRATE indicates articulation variation between NISL and SISL variety. The variation is clearly body (loc) based with different body locations as a place of articulation accompanied with variation in terms of movement of the sign and involvement of NMF. The common component of articulation shared between the two regions is orientation and handshape.

Based on the phonological analysis possible lexical scoring of CELEBRATE is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	-0.20	-0.20	0.20	-0.20	0.40	-0.60

Table 3. 12 Lexical scoring for CELEBRATE.

The similarity score of the articulation of CELEBRATE between NISL and SISL is 0.40 due to common sign components (handshape and orientation) and dissimilarity score is moving towards negative scale with a total of -0.60 due to uncommon components (movement, location and NMF). Since the similarity score is $\neq 1$, both the regions are found positive for lexical variation for the word CELEBRATE.

(f) Arm: In sign language signs which are related to strength and power are signed on the body (LOC) arm, so signs related to strength such as BRAVE, SOLDIER, WRESTLING etc are signed in contact with arms. Only one lexical item has been encountered for regional variation in this sign family that is BRAVE; the variation is explained in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="3">BRAVE</th></tr>
<tr><th>Phonological Features</th><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">On Arm</td><td>On Chest</td></tr>
<tr><td>Handshape</td><td colspan="2">cB</td><td>A</td></tr>
<tr><td rowspan="2">Movement</td><td>Path</td><td rowspan="2">Static</td><td>Out</td></tr>
<tr><td>Speed</td><td>Normal</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Neutral</td><td>Towards the signer</td></tr>
<tr><td>Carpal</td><td>Towards the Sky</td><td>Towards the Addressee</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Chin Slightly Up</td></tr>
</table>

Table 3. 13 Phonological analysis of BRAVE.

In NISL the word BRAVE is articulated on the body [LOC: arm]; [HS: cB]; [MOV: it is a static sign]; [ORI: of the palm is neutral and position of the carpal is towards the sky] and it does not involve any [NMF] during the articulation. In SISL, it is signed on the body [LOC: chest]; [HS: A]; [MOV: of the sign in respect to the body is in outward direction of the signer with a normal speed]; [ORI: of the palm is towards the signer and carpal is towards the addressee]. In SISL, during the articulation chin remains slightly up hence involvement of [NMF] is observed here.

The phonological analysis of the lexical item BRAVE indicates clear lexical variation between NISL and SISL. There are no components observed similar for the articulation of BRAVE in both the regions and most importantly it is a body location based lexical

variation accompanied with variation of other sign components. The possible lexical score based on the phonological analysis is presented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	0.20	0	-1

Table 3. 14 Lexical Score for BRAVE.

Due to no common phonological components for the word BRAVE similarity score remains zero and the dissimilarity score is found maximum (-1) on the negative scale. It clearly suggests that NISL and SISL identify BRAVE very differently.

(g) Above the head: The spatial area just above the head is potential location for sign articulation also this location is very productive in setting up abstract discourse during a conversation, other than sign articulation this location has other semantic properties as well.

In sign language, signs related to celestial bodies such as SUN, MOON, STAR, RAIN, SKY etc are signed in this spatial area. Because of the similar signing space these signs are considered as signs of same sign family. The lexical items encountered for having phonological variations from the data of NISL and SISL are STAR, MOON and CLOUD. The phonological analysis for the word CLOUD has been discussed below in the table followed by lexical scoring.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CLOUD**		
Phonological Features			
Location	In front of Face		Above Head
Handshape	scB		scB
Movement	(lMOV)	Crumbling	Crumbling
	Size	Medium	Big
Orientation	Palm	Back	Neutral
	Carpal	Towards the Signer	Towards the Sky
NMF	Neutral		Neutral

Table 3. 15 Phonological analysis of CLOUD.

In NISL, the lexical item CLOUD is articulated in [LOC: front of the face]; [HS: scB]; [MOV: of the sign is observed in a crumbling in appearance with medium size]; [ORI: of the palm is in backward state and the carpal is positioned towards the signer]. No [NMF] has been observed for the articulation of this word. Whereas in SISL, CLOUD is signed [LOC: just above the head of the signer] with similar [HS: scB] as observed in NISL; [MOV: of the articulation is crumbling] in nature but bigger in appearance than NISL; [ORI: of the palm remains neutral and the position of carpal is towards the sky]. Similar to NISL no NMF is observed during the articulation in SISL as well.

The phonological analysis of the lexical item CLOUD indicates body location based lexical variation accompanied with movement and orientation variation as well whereas handshape and NMF remains common for articulation of CLOUD in NISL and SISL.

According to the phonological analysis possible lexical scoring for CLOUD is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	-0.20	-0.20	-0.20	0.20	0.40	-0.60

Table 3. 16 Lexical scoring for CLOUD.

The similarity score for the word CLOUD between NISL and SISL is 0.40 due to common articulation components of handshape and NMF whereas dissimilarity score is moving towards negative scales with a total of -0.60 due to dissimilar signing components (movement, location and orientation). The similarity score of CLOUD is $\neq 1$ for both the regions which indicates the fact that NISL and SISL identifies CLOUD differently which is evident in the articulation.

3.3.2 Opposite signs

Like body and spatial location, change in the pattern of movement and orientation also forms a potential 'sign family'. In ISL, most of the signs are derived by incorporating change in movement or orientation. Cruse (2000: 162-3), in his study mentioned that; antonyms such as equipollent, overlapping, reverses, and converses are formed with the change in movement and/or orientation of a marked sign to the (semantically) unmarked form[41]. In ISL, for e.g. the antonym MORNING and NIGHT are formed by same handshape and location but it is the direction of movement which makes them different from each other. The sign for MORNING has [MOV: up, straight] and NIGHT has [MOV: down, straight]. Similarly, same set of pattern is seen in the signs for the word HAPPY & SAD, PASS & FAIL and DARK & BRIGHT

The lexical data set was investigated for antonym sign sets in both the regional varieties for lexical variation, the encountered antonym sign sets are: EASY & DIFFICULT, HAPPY & SAD, FAT & THIN and GENEROUS & GREEDY.

[41] See, Cruse, D.A. 2000. Meaning in Language: An introduction. Oxford: Oxford University Press.

The antonym word set HAPPY & SAD is found as a lexical variation in the data, the phonological analysis is discussed in the table below followed by the lexical scoring.

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**HAPPY & SAD**				
Phonological Features					
Location		Happy	Sad	Happy	Sad
		In NSP	In Front of Face	Lateral side of the stomach	In NSP
Handshape		Happy	Sad	Happy	Sad
		fO	c5	xB	f5
Movement		Happy	Sad	Happy	Sad
	Path	Upward	Downward	To Symmetry-Lateral Unison	Downward
	Speed	Normal	Normal	Normal	Normal
Orientation		Happy	Sad	Happy	Sad
	Palm	Neutral	Front	Neutral	Front
	Carpal	Towards the signer	Towards the signer	Towards the signer	Towards the signer
NMF		Happy	Sad	Happy	Sad
		Smile	Pursed Lips	Smile	Pursed Lips

Table 3. 17 Phonological analysis of opposite pair HAPPY & SAD.

In NISL, the lexical item HAPPY is signed in [LOC: NSP]; [HS: fO]; [MOV: of the sign is in upward direction of the signer's body with normal speed]; [ORI: of the palm remains neutral for the signer and addressee and position of the carpal is towards the ground]. The articulation of the word HAPPY is accompanied with a smiling face of the signer to express the happy emotions of the signer thus adding [NMF] to the sign. The other pair of this lexical item SAD is signed in [LOC: front of the face of the signer]; [HS: c5]; [MOV: of the articulation is in the downwards direction of the body with normal speed]; [ORI: of the palm remains neutral for the signer and addressee and position of the carpal is towards the ground]. During the articulation signer showed [NMF: pursed lips] to express the visual feeling of sadness.

In SISL, the lexical item HAPPY is signed on [LOC: the lateral side of the signer's body]; [HS: xB]; [MOV: of the sign is in the lateral-symmetry unison of the signer's body with a normal speed]; [ORI: of the palm remains neutral for the signer and the addressee and position of the carpal is towards the ground]; [NMF: is smiling face of the signer]. The opposite lexical item SAD is signed in [LOC: NSP]; [HS: f5]; [MOV: of the articulation in accordance to signer's body is in downward motion with normal speed]; [ORI: of the palm remains neutral and position of the carpal is towards the ground]. During the articulation the signer's lips remains in the pursed position as [NMF].

The articulation of the opposite pair HAPPY & SAD is different in NISL and SISL, both the articulations varies at the phonological components of location, handshape and orientation. Based on the phonological analysis the possible lexical score for the opposite pair HAPPY & SAD is presented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	-0.20	-0.20	0.20	0.40	-0.60

Table 3. 18 Lexical score for HAPPY & SAD.

The similarity score of the articulation HAPPY & SAD between NISL and SISL is 0.40 due to two common signing components shared by both the varieties of ISL whereas dissimilarity score is more inclined towards the negative scale with a total of -0.60 score

due to dissimilar phonological components. The similarity score of the opposite pair HAPPY & SAD is ≠ 1 which suggests both the regional varieties identify the lexical opposite pair differently hence supporting lexical variation based on opposite word formation processes between NISL and SISL.

3.3.3 Handshape (Classifier)

From the studies so far, it has been observed that handshape is used in almost all the varieties of lexical items which is further categorized into semantic classes, in sign language linguistic investigation it is called classifier handshape. Traditionally, classifiers are defined as: morphemes that classify nouns according to semantic criteria.

Classifier handshape represents the visio-spatial properties of referent. The semantic field which is signed by similar classifier handshape forms signs of the same 'sign family'. In ISL signs like TABLE, BED, FLOOR are signed by similar flat handshape classifier which represents the flat surface quality of the referent; therefore it belongs to same 'sign family'.

Zeshan (2003) has talked about fourteen handshape classifier of which twelve handshapes represents visio-spatial properties of referent. The other two classifiers are PERSON and PLACE. In ISL PERSON is articulated with bU handshape and this handhsape is often compounded with other signs to articulate agentive nouns such as TYPIST [TYPE+PERSON], WRITER [WRITE+PERSON]. The other classifier PLACE is simply pointing with index finger. In ISL name of the places are signed with the compounding of sign of the place followed by pointing with index finger outward to signer. For example is ISL, DELHI will be signed as [D+POINTING] (outward to the signer if signer is not physically present in Delhi) or [D+HERE] (if the signer is physically present in Delhi).

From the data recorded during the field work it has been observed that, PERSON and PLACE classifiers remains constant in both north and south variety of sign language in India and no lexical variations are recorded. So, it can be assumed that the semantic domains related to agentive nouns and proper noun referring to some place or country

will barely have any difference, however it is signed by compounding and the initial handshape will be different but it cannot be accounted for lexical variations.

Therefore, the other twelve handshape classifiers which represent the visio-spatial properties of the referent will be analysed for handshape based lexical variation between the two regional varieties of ISL. In the following section, data based evidence for lexical variations observed in NISL and SISL due to handshape classifiers with the help of phonological analysis and lexical scoring will be discussed.

(a) Classifier CYLINDRICAL

The signs which signifies any handle-less object or cylindrical shape in any sense are classified under classifier CYLINDRICAL. In ISL, it is articulated by the C handshape for e.g. PIPE and BOTTLE. In the lexical data of NISL and SISL no lexical variation evidence has been observed for classifier CYLINDRICAL handshape. This can also mean that in NISL and SISL cylindrical objects are perceived and represented in same manner.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><td>Lexical Item</td><td colspan="3">PIPE</td></tr>
<tr><td>Phonological Feature</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">NSP</td><td>NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">C</td><td>C</td></tr>
<tr><td rowspan="2">Movement</td><td>Path</td><td>Lateral</td><td>Lateral</td></tr>
<tr><td>Size</td><td>Medium</td><td>Medium</td></tr>
</table>

	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 3. 19 Phonological analysis of PIPE.

In NISL and SISL, the lexical item PIPE is articulated in [LOC: NSP]; [HS: C]; [MOV: downward direction with respect to body, straight in shape and medium in size]; [ORI: of the palm is back and position of the carpal is towards the ground]. In both the regions PIPE is signed without any involvement of the NMF hence [NMF: neutral].

The articulation of PIPE remains identical in both the regions, all the five phonological components remains common for sign formation of PIPE. Based on the phonological analysis possible lexical score for the lexical item PIPE is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	0.20	0.20	0.20	0.20	1	0

Table 3. 20 Lexical score for PIPE.

For the lexical item PIPE there is no dissimilar phonological components therefore no negative score is found and the dissimilarity score remains zero. For NISL and SISL the formational components remains similar for the lexical item PIPE therefore the similarity score is at maximum. The similarity score is = 1 which suggests both the regions sign the word PIPE in a similar manner and hence no variation has been encountered for classifier CYLINDRICAL.

(b) Classifier ROUND: In ISL, the referents which signifies round shape in appearance may not necessarily be geometrically perfect round are signed by classifier ROUND handshape. Signs are generally articulated by scB handshape, for example words like SUN, MOON and EARTH are signed by classifier ROUND handshape.

In the data set, lexical variation has been observed for classifier ROUND handshape between NISL and SISL. The lexical item MOON is signed differently in both the regions, the variation is explained with the help of phonological analysis in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><td></td><td colspan="2">NISL</td><td>SISL</td></tr>
<tr><td>Lexical Item</td><td colspan="3">MOON</td></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">In NSP</td><td>In NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">L</td><td>xH</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td>Closing</td><td>Closing</td></tr>
<tr><td>Shape</td><td>Semi Circle</td><td>Semi Circle</td></tr>
<tr><td>Size</td><td>Big</td><td>Big</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Neutral</td><td>Neutral</td></tr>
<tr><td>Carpal</td><td>Towards the Sky</td><td>Towards the Sky</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 21 Phonological analysis of MOON.

In NISL, the lexical item MOON is signed in [LOC: NSP]; [HS: L]; [MOV: closing in nature with a visual appearance of semicircle shape and size of the sign is big]; [ORI: of the palm remains neutral for the signer and addressee and the position of the carpal is towards the sky]; [NMF: remains neutral for this sign]. In SISL, this lexical item is articulated with [HS: xH]; it is the only variation component and rest of the formational features remains same as for NISL.

The phonological analysis of the lexical item MOON indicates classifier based variation between NISL and SISL as difference of articulation is spotted only in the handshape. Based on phonological analysis possible lexical score for the word MOON is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	0.20	0.20	0.20	0.80	-0.20

Table 3. 22 Lexical score for MOON.

The data represented in the table suggests similarity score to be 0.80 because of the common phonological components (movement, location, orientation and NMF) signed in NISL and SISL for the word MOON and dissimilarity score is in the negative scale with a total of -0.20 due to use of different handshape classifier for articulation. Since the similarity score for the lexical item MOON is $\neq 1$ it is subjected to lexical variation and suggests classifier ROUND is identified in NISLS and SISL differently.

(c) Classifier HOLLOW: In ISL Classifier HOLLOW handshape along with other formational components are used to refer the hollowness of round or similar to round shape objects; it is signed by scB handshape and is a double handed sign. In ISL, the hollowness of edible items such as “Puri”, “Bhatura” and “Coconut” is represented by classifier HOLLOW handshape.

The use of similar classifier HOLLOW handshape is observed in NISL and SISL but with different handshape for few lexical items. The geometry of hollowness for the word

IDLLI[42] is represented by classifier HOLLOW handshape but with different handshape formation in both the regions. Given below in the table is the phonological analysis of the word PURI[43] in both the regional varieties of ISL.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PURI /pūrī/**		
Phonological Features			
Location	In NSP		In NSP
Handshape	xA		scB
Movement	(lMOV)	Moving	Opening
	Size	Small	Big
	Speed	Medium	Medium
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	One hand carpal towards the sky & other hand carpal towards the ground
NMF	Neutral		Puffed Cheek

Table 3. 23 Phonological analysis of PURI.

[42] A South-Indian cuisine, mostly eaten for breakfast.
[43] A North-India deeply fried puffed flat bread.

In NISL the lexical item PURI is signed in [LOC: NSP]; [HS: xA]; [MOV: sign is moving in appearance to the lateral symmetry unison with respect to body of the signer, movement is small in size and medium in speed]; [ORI: of the palm is neutral which makes not visible for the signer as well as addressee and position of the carpal is towards the line of bilateral symmetry]. This sign does not involve any NMF of the signer's body hence remains neutral. In SISL the articulation of the word PURI is done in [LOC: NSP]; [HS: scB]; [MOV: of the sign is opening in visual appearance, big in size and is signed in a medium speed]; [ORI: of both the palm remains neutral and position of the carpal for one hand is towards the sky and other hand is towards the ground]. This sign is articulated with a puffed check of the signer to add a semantic value of hollowness of the referred object.

The phonological analysis of the lexical item PURI suggests that the classifier HOLLOW is not used for articulation of this lexical item in NISL along with handshape it has other variation components for articulation. SISL shows the use of classifier HOLLOW handshape for articulation of this lexical item' therefore along with handshape there are other sign components as well responsible for variation of the lexical item PURI between NISL and SISL. Based on the phonological analysis lexical score for PURI is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	0.20	-0.20	-0.20	0.20	-0.80

Table 3. 24 Lexical score for PURI.

The above data suggests that NISL and SISL identifies the lexical item PURI differently, the similarity score is only 0.20 due to common location of articulation whereas the dissimilarity score is highly inclined towards the negative scale with a total of -0.80 due to dissimilar signing components (handshape, movement, orientation and NMF). The similarity score of the lexical item PURI is $\neq 1$ and suggests lexical variation between NISL and SISL for the classifier HOLLOW.

(d) Classifier SMALL ROUNDISH: In ISL, classifier SMALL ROUNDISH is used to refer small round or near to round objects, this classifier is different from the above discussed classifier ROUND because this classifier represents not only shape but small size of the referent object. In ISL, it is signed by c3 handshape along with the other formational components. The shape and size of the objects like LEMON and ONION are represented by the classifier SMALL ROUNDISH handshape.

In the lexical data of NISL and SISL the use of classifier SMALL ROUNDISH handshape is prominent but in both the varieties there is a variation of handshape formation which is discussed below in the table with the sign of the lexical item ORANGE.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="3">ORANGE</th></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">In NSP</td><td>In NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">c3</td><td>c5</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td>Twisting</td><td>Twisting</td></tr>
<tr><td>Shape</td><td>Circle</td><td>Circle</td></tr>
<tr><td>Size</td><td>Small</td><td>Small</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Front</td><td>Front</td></tr>
<tr><td>Carpal</td><td>Against the line of bilateral symmetry</td><td>Against the line of bilateral symmetry</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 25 Phonological analysis of ORANGE.

In NISL the lexical item ORANGE is signed in [LOC: NSP]; [HS: c3]; [MOV: of the sign is twisting in visual appearance, circular is shape and have a small movement]; [ORI: of the palm remains in the front of the signer and position of the carpal is against the line of bilateral symmetry]; [NMF: neutral]. In SISL all the articulation components remain similar as it is for NISL except for classifier hanshape. In SISL the lexical item ORANGE is signed with the [HS: c5] due to which the appearance of ORANGE becomes bigger in size as compared to visual appearance of the referred object signed in NISL.

The phonological analysis of the lexical item ORANGE suggests that in both the region the lexical item ORANGE is signed differently. The variation factor for the lexical item between NISL and SISL remains handshape classifier SMALL ROUNDISH. Based on the phonological analysis the possible lexical score for ORANGE is presented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	0.20	0.20	0.20	0.80	-0.20

Table 3. 26 Lexical score for ORANGE.

The similarity score for the lexical item ORANGE is 0.80 due to common signing components (movement, location, orientation and NMF) for this word between NISLS and SISL. The dissimilarity score is -0.20 due to use of different hanshape for articulation of this lexical item. The similarity score of the lexical item ORANGE is $\neq 1$ therefore it fails to establish similarity factor and hence it is subjected to lexical variation.

(e) Classifier LIQUID: The referral objects which have the texture and appearance of water is signed by the classifier LIQUID handshape. In ISL the words like WATER, COLD DRINK and JUICE are signed by classifier LIQUID with [HS: xA] along with the other formational components.

In NISL and SISL to refer water texture of the referral object classifier LIQUID is used same as ISL but in both the regions use of different handshape has been observed in the data. In support of lexical variation a phonological analysis of the word FRUIT JUICE from both the regions has been presented in the table below as an example.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FRUIT JUICE**		
Phonological Features			
Location	In NSP		In NSP
Handshape	G		scB
Movement	(lMOV)	Circular	Supinate
	Speed	Medium	Medium
Orientation	Palm	Back	Neutral
	Carpal	Towards the Ground	Towards the Sky
NMF	Neutral		Neutral

Table 3. 27 Phonological analysis of FRUIT JUICE.

In NISL the lexical item FRUIT JUICE is signed in [LOC: NSP]; [HS: G]; [MOV: of the sign is in circular motion and speed of the sign is medium]; [ORI: of the palm remains in the back of the signer and position of the carpal is towards the ground]. The articulation of the referred object does not involve any non-manual feature. In SISL the lexical item FRUIT JUICE is articulated in the [LOC: NSP] with [HS: scB]; [MOV: is supinate and speed of the motion remains medium]; [ORI: of the palm is neutral for the signer and addressee and position of the carpal is towards the sky]. Even in SISL no NMF is observed for this lexical item.

The phonological analysis of the lexical item FRUIT JUICE suggests that both the regions have their own understanding of the refereed object and the base of the lexical

variation remains classifier handshape. Both the regions assign different handshape for the classifier LIQUID in their regional variety. Along with the handshape there are other variation phonological components as well. Based on the phonological analysis possible lexical scoring has been presented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	0.20	-0.20	0.20	0.40	-0.60

Table 3. 28 Lexical score for FRUIT JUICE.

The data presented above suggests the similarity score for the lexical item FRUIT JUICE in NISL and SISL to be only 0.40 due to two common phonological components (location and NMF) on the other hand the dissimilarity score is more inclined towards the negative scale with a total of -0.60 due to non identical sign components (handshape, movement and orientation). The similarity score for the lexical item FRUIT JUICE is $\neq 1$ therefore it fails to establish similarity of articulation and confirms lexical variation of the referred lexical item in NISL and SISL.

(f) Classifier WAVY: In ISL, the visual appearance of the waviness of sea waves and style of hair is signed by the classifier WAVY handshape; this handshape classifier is also potential in visualizing the abstract wavy shape of air and sea water bodies. In ISL the [HS: 5] represents the classifier WAVY, the words such as AIR, SEA and WIND are signed by the classifier WAVY handshape along with other formational components of sign.

In the lexical data set of NISL and SISL lexical variation is found at classifier WAVY handshape also. The word WIND in NISL and SISL is denoted by classifier WAVY but have different handshapes for articulation. It is presented below in the table.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="3">WIND</th></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Near Mouth</td><td>In NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">B</td><td>5</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td rowspan="3">Static</td><td>Wiggling</td></tr>
<tr><td>Size</td><td>Big</td></tr>
<tr><td>Speed</td><td>Fast</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Front</td><td>Neutral</td></tr>
<tr><td>Carpal</td><td>Towards the Sky</td><td>Towards the Sky</td></tr>
<tr><td>NMF</td><td colspan="2">Slightly closed eyes</td><td>Raised Eyebrows</td></tr>
</table>

Table 3. 29 Phonological analysis of WIND.

The lexical item WIND is signed at [LOC: mouth]; with [HS: B]; [MOV: static]; [ORI: of the palm is in front of the signer and position of the carpal is towards the sky]. While articulating the lexical item WIND the eyes of the signer remains slightly closed indicating the intensity of wind. In SISL this word is articulated in [LOC: NSP]; with [HS: 5]; [MOV: of the sign is big, fast in motion and wiggling in appearance]; [ORI: palm of the remains neutral in visibility for both signer and addressee and position of the carpal is towards the sky]. The non-manual activity for this articulation is different from the NISL because in SISL the word WIND is articulated with a raised eyebrow.

The phonological analysis of the lexical item WIND suggests that the referred lexical item is articulated in different manner in both the regions. The centre point of the

variation remains classifier WAVY handshape followed by the other variation sign components which makes the sign completely different in articulation in both the regions.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	-0.20	0	-1

Table 3. 30 The lexical score for WIND.

The above data shows zero similarity for articulation of the lexical item WIND in both the regional variety of ISL under study. The dissimilarity score is recorded maximum in the negative scale for this lexical item. This score suggests that NISL and SISL have completely their own versions of articulation for the lexical item WIND and lexical variation between NISL and SISL based on the classifier WAVY stands positive.

(g) Classifier FLAT SURFACE: The physical two dimensional appearance of a surface is articulated by classifier FLAT SURFACE, it gives the mapping of length and flatness of the flat object. In ISL it is articulated by both the hand with [HS: B]. Flat objects such as TABLE, BED and STAGE is articulated by classifier FLAT SURFACE along with the other formational components.

In the data of NISL and SISL, based on phonology no lexical variation is found between the two regions. It implies that the appearance of flatness of any object is perceived in similar manner in both the regional varieties of ISL. In the table below phonological analysis of the word TABLE is done to show the lexical similarity.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TABLE**		
Phonological Features			
Location	In NSP		In NSP
Handshape	tB		B
Movement	(lMOV)	Moving	Moving
	Path	Symmetry	To Symmetry
	Size	Big	Big
Orientation	Palm	Back	Back
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 3. 31 Phonological analysis of TABLE.

In NISL the lexical item TABLE is signed at [LOC: NSP]; with [HS: tB]; [MOV: of the sign is in the symmetry of the signer's body and the size of the movement is big]; [ORI: of the palm is back to the signer and position of the carpal is towards the ground]; [NMF: neutral].

In SISL all the sign components remains same as it is for NISL except for the classifier handshape. In SISL the lexical item TABLE is signed by [HS: B] signifying the lexical variation between the two regions.

The phonological analysis of the lexical item TABLE suggests dissimilarity in the way of articulation in NISL and SISL due to different handshape used for sign formation. The variation is completely based on the classifier FLAT SURFACE handshape. Based on the

phonological analysis possible lexical score of the lexical item TABLE is represented in the table below.

Phonological Components of A Sign						Total Score	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	0.20	0.20	0.20	0.80	-0.20

Table 3. 32: Lexical score for TABLE.

The similarity score for the lexical item TABLE is 0.80 due to common articulation components (movement, location, orientation and NMF) between NISL and SISL for this word. However the dissimilarity score moves a little bit toward the negative scale with a total of -0.20 due to use of different handshape formation for the articulation of the referred object in both the regions. The similarity lexical score for TABLE is $\neq 1$ which indicates that lexical variation for the classifier FLAT SURFACE handshape stands positive between NISL and SISL.

(h) Classifier SQUARE: In ISL this handshape classifier is used for mapping the shape and dimension of the object, it is the aerial representation of the length, breadth and size of the object. In ISL signs for the word COMPUTER, WINDOW, and TELEVISION are done by the help of [HS: G] with both the hands along with other phonological components.

Between NISL and SISL, in terms of phonological components lexical variation has been found for the word TELEVISION; the phonological variation is explained in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="3">TELEVISION</th></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Eye</td><td>NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">sF</td><td>G+(T-V)</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td rowspan="3">Static</td><td>Moving</td></tr>
<tr><td>Size</td><td>Big</td></tr>
<tr><td>Speed</td><td>Normal</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Neutral</td><td>Back</td></tr>
<tr><td>Carpal</td><td>Towards the Signer</td><td>Towards the Ground</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 33 Phonological analysis of TELEVISION.

In NISL the lexical item TELEVISION is signed at [LOC: eye]; with [HS: sF]; [MOV: static]; [ORI: of the palm remains neutral to the signer and the addressee and the position of the carpal is towards the signer]; [NMF: neutral]. In SISL the same lexical item TELEVISION is signed at the [LOC: NSP]; with [HS: G] followed by finger spelling of the two alphabets [T-V]; [MOV: sign is moving in nature, size of the movement is big and speed is small]; [ORI: of the palm is in the back of the signer's body and position of the carpal is towards the ground]. In SISL also no NMF is observed during articulation of the referred object.

The phonological analysis of the lexical item TELEVISION suggests that both the regions have their own variety of articulation for the same lexical item. The lexical variation is not only in the classifier SQUARE handshape but on the other formational components as well. Based on the phonological analysis the possible lexical scoring for similarity and dissimilarity between the articulation of lexical item TELEVISION in NISL and SISL is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	0.20	0.20	-0.80

Table 3. 34 Lexical score for TELEVISION.

The similarity score for the lexical item TELEVISION is only 0.20 due to only one common phonological component whereas the dissimilarity score is recorded high towards the negative scale with a total score of -0.80 due to maximum uncommon formation components of the sign for both the regions. The similarity score of the lexical item TELEVISION is $\neq 1$ therefore both the regions identifies the same lexical item differently. The phonological analysis and the lexical score suggest that NISL and SISL have their own method of signing square objects resulting in lexical variation.

(i) Classifier RECTANGULAR: The classifier RECTANGULAR forms a different semantic class because it maps the perimeter of the referent object. In ISL it is articulated by single hand with [HS: B]; the words like PHOTOGRAPH, CHEQUE and NOTE are signed by the classifier RECTANGULAR handshape along with the other phonological components.

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BOOK**		
Phonological Features			
Location	In NSP		In NSP
Handshape	B		B
Movement	(lMOV)	Opening	Opening
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 3. 35 Phonological analysis of BOOK.

The articulation of the lexical item BOOK is recorded identical in nature for both NISL and SISL variety. In NISL as well as SISL it is signed in the [LOC: NSP]; with [HS: B]; [MOV: is opening in appearance with medium size and normal speed]; [ORI: of the palm is in front of the signer and position of the carpal is towards the signer]; [NMF: neutral].

The phonological analysis of the lexical BOOK does not suggest any variation in the components of articulation and signs for the regions remain identical. Based on phonological data the possible lexical score is represented in the table below.

Phonological Components of A Sign						Total Score	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	0.20	0.20	0.20	0.20	1	0

Table 3. 36 Lexical score for BOOK.

The data of lexical score revels that the articulation of the lexical items with classifier RECTANGULAR handshape remains identical in both the regions therefore it is possibility that no lexical variation exists on the basis of word formation process with classifier RECTANGULAR handshape between NISL and SISL.

(j) Classifier HANDLE: This classifier represents the function of the referent more than the physical attributes of the referent object. For the objects such as FRIDGE or DOOR instead of representing the perimeter of the referent object this classifier represents the mechanism of opening FRIDGE or DOOR with the help of a handle. The classifier HANDLE is articulated by the [HS: A] along with other phonological components.

Between NISL and SISL no lexical variation has been found for the classifier HANDLE handshape. The word UMBRELLA is phonologically analyzed in the table below to represent the lexical similarity based on word formation process with classifier HANDLE.

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**UMBRELLA**	
Phonological Features		
Location	In NSP	In NSP
Handshape	A	A

Movement	Path	Upward	Upward
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	H1- Neutral	H1- Neutral
		H2- Neutral	H2- Neutral
	Carpal	H1- Towards the Sky	H1- Towards the Sky
		H2- Towards the Ground	H2- Towards the Ground
NMF	Neutral		Neutral

Table 3. 37 Phonological analysis of UMBRELLA.

The lexical item UMBRELLA is a double handed sign articulated in the [LOC: NSP]; with [HS: A]; [MOV: of the sign is towards upward in reference to the body of the signer, the shape of the movement is straight, size of the movement is big and the speed of the sign is at normal speed]; [ORI: of both the palms remains neutral for the signer and addressee and the position of the carpal for H1 is towards the sky whereas H2 is towards the ground]; [NMF: neutral]. The formational components of the lexical item UMBRELLA remains identical for both regions and hence does not show any lexical variation.

Based on the phonological analysis the possible lexical score of similarity and dissimilarity for both the regions is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	0.20	0.20	0.20	0.20	0.20	1	0

Table 3. 38 Lexical score for UMBRELLA.

The similarity score for the lexical item UMBRELLA is recorded maximum due to zero dissimilar phonological components. The maximum similarity score for the referred lexical item suggests that there are no lexical variations available for the word formation

process based on classifier HANDLE. In both the regional variety of ISL the process of word formation process for classifier HANDLE remains same.

(k) Classifier VEHICLE: In ISL the mechanism of accelerating vehicle in process to start it, sets a separate semantic class to refer the sign for vehicles; the vehicles such as CAR and SCOOTER are signed by the classifier VEHECLE with the help of [HS: A] and other phonological components. It is a double handed classifier handshape. Classifier VEHECLE and classifier HANDLE both are functional classifiers and share same handshape but still are separate semantic class because difference lies in the mechanism and function of the referent object; the function of handle and vehicle is different from each other.

<table>
<tr><td colspan="7">Regional Variety of ISL</td></tr>
<tr><td></td><td colspan="3">NISL</td><td colspan="3">SISL</td></tr>
<tr><td>Lexical Item</td><td colspan="6">BICYCLE</td></tr>
<tr><td>Phonological Features</td><td colspan="3">  </td><td colspan="3">  </td></tr>
<tr><td>Location</td><td colspan="3">On Palm</td><td colspan="3">In NSP</td></tr>
<tr><td rowspan="2">Handshape</td><td colspan="3">H1- V</td><td colspan="3">H1- A</td></tr>
<tr><td colspan="3">H2- B</td><td colspan="3">H2- A</td></tr>
<tr><td rowspan="4">Movement</td><td></td><td>H1</td><td>H2</td><td>H1</td><td colspan="2">H2</td></tr>
<tr><td>(lMOV)</td><td>Moving</td><td rowspan="3">Static</td><td rowspan="3">Symmetry-Lateral Unison</td><td colspan="2" rowspan="3">Symmetry-Lateral Unison</td></tr>
<tr><td>Shape</td><td>Straight</td></tr>
<tr><td>Speed</td><td>Medium</td></tr>
<tr><td rowspan="2">Orientation</td><td></td><td>H1</td><td>H2</td><td>H1</td><td colspan="2">H2</td></tr>
<tr><td>Palm</td><td>Back</td><td>Front</td><td>Neutral</td><td colspan="2">Neutral</td></tr>
</table>

	Carpal	Towards the Signer	Towards the Signer	Towards the Addressee	Towards the Addressee
NMF	Neutral			Neutral	

Table 3. 39 Phonological analysis of BICYCLE

In NISL the lexical item BICYCLE is double handed sign and signed on the [LOC: palm]; [HS: of the H1 is V and H2 is B]; [MOV: of H1 appears moving in nature in straight direction with medium speed whereas H2 remains static]; [ORI: of the palm of H1 is back and the carpal position is towards the signer where as orientation of the palm of H2 is in front of the signer and position of the carpal is towards the signer]; [NMF: neutral].

In SISL the sign for BICYCLE is also double handed but H1 and H2 remains identical in handshape and orientation. The sign is articulated in the [LOC: NSP]; with [HS: A]; [MOV: of the sign is in lateral unison symmetry with respect to the body of the signer]; [ORI: of the palm remains neutral for signer as well as addressee]; [NMF: neutral].

The phonological analysis revels that in both the regions the sign formation components of the lexical item BICYCLE is different and can be accounted for lexical variation based on word formation processes with the classifier VEHICLE. The phonological analysis shows no similarity between both the articulations, classifier handshape along with other formational components are also accounted for lexical variation between NISL and SISL.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	-0.20	0	-1

Table 3. 40 Lexical score for BICYCLE.

The data represented above clearly revels that there is no similarity in the articulation of BICYCLE in both the regions. The dissimilarity score is recorded maximum on the negative scale due to dissimilar phonological components. The lexical score of similarity and dissimilarity revels that both the regions, NISL and SISL have their own versions of sign formation process for the lexical item BICYCLE and classifier VEHICLE

handshape remains one of the factor responsible for lexical variation found between NISL and SISL.

(l) Classifier SHEET: This classifier represents the flatness of the referent in only single dimension and is signed by [HS: B]. Classifier SHEET contrasts with the classifier FLAT SURFACE despite sharing same [HS: B] for articulation because classifier FLAT SURFACE maps two dimensional physical appearance of the referent. In ISL the words such BOOK, MIRROR, LETTER and SKY are signed by the classifier SHEET.

Lexical variation observed in the data set for NISL and SISL is for the word SKY, it is explained by the help of phonological analysis in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="2">NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="3">SKY</th></tr>
<tr><th>Phonological Features</th><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">In front of the Forehead</td><td>Above the Head</td></tr>
<tr><td>Handshape</td><td colspan="2">5</td><td>cB</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td>Circular</td><td>Pronate</td></tr>
<tr><td>Path</td><td>To Lateral</td><td>Straight</td></tr>
<tr><td>Size</td><td>Big</td><td>Big</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Back</td><td>Neutral</td></tr>
<tr><td>Carpal</td><td>Towards the Ground</td><td>Towards the Sky</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 41 Phonological analysis of SKY.

In NISL the lexical item SKY is signed at [LOC: in front of the forehead]; with [HS: 5]; [MOV: of the sign appears in circular motion in the lateral position of the body and the size of the movement is big]; [ORI: of the palm is and the position of the carpal towards the ground]; [NMF: neutral]. In SISL the articulation of the referred lexical item is done at the [LOC: just above the head]; with [HS: cB]; [MOV: is pronate, appears straight in direction and the size is big]; [ORI: of the palm remains neutral to the signer and addressee and the position of the carpal is towards the sky]; [NMF: neutral].

The phonological analysis of SKY reveals that the lexical variation between the two regions of ISL for the same lexical item SKY is based on the classifier SHEET handshape and along with handshape other components as well show dissimilarity in articulation. Based on the phonological analysis the possible lexical score for the word SKY is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.2	-0.20	-0.20	0.20	0.20	-0.80

Table 3. 42 Lexical score for SKY.

In the above data for lexical item SKY only one phonological component is common between NISL and SISL (NMF) due to which similarity score remains only 0.20. The dissimilarity score is more inclined towards the negative scale with the total of -0.80 score due to four dissimilar phonological components. The similarity score for SKY is ≠ 1 which clears the fact that both the regions identify the referred lexical item differently and stands positive for the lexical variation between the two varieties of ISL based on the word formation process with classifier SHEET handshape.

3.3.4 Componential Signs & Generic Signs

In ISL, there are signs which comprises of two signing components. It is possible that both the components at isolation may not have any meaning, but if signed together it will form a meaningful lexicon. For example the sign for the word COMPUTER is [SQUARE SHAPE+TYPE].

Or, it is also possible that at least one or both the components have individual meaning. For the word GOOD MORNING sign is [GOOD+MORNING] and DIVORCE is signed as [MARRIAGE+BREAK]; in both the signs for above mentioned lexical item each component has independent meaning.

In ISL, componential signing method is used to form various kinship terms. For example word HUSBAND is signed as [MAN+MARRIAGE]. Also, componential signs are used to create generic terms like fruit, vegetable, furniture etc. For example in sign language for signing VEGETABLE, a signer will pick sign for any one vegetable as first component like [POTATO] and followed by signing [DIFFERENT] as second component. In the data set maximum lexical variation has been encountered for the componential sign formation processes, both kinship semantic domain and generic semantic domain has shown lexical variation between NISL and SISL.

(a) Kinship Terms: The signs for kinship terms are totally different in both the verities of sign language under study such as FATHER and MOTHER.

In the table below the phonological variation encountered for the word FATHER has been discussed as one of the example for lexical variation in NISL and SISL, it is followed with the lexical score.

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FATHER**	
Phonological Features		
Location	Upper Lips	Upper Lips

Handshape	G		Initial- G
			Final- H
Movement	(lMOV)	Shaking	Static
	Size	Small	
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 3. 43 Phonological analysis of FATHER.

In NISL the lexical item FATHER is signed on the [LOC: upper lips]; [HS: G]; [MOV: of the sign is shaking in appearance with a small size of movement]; [ORI: of the palm is neutral to the signer and addressee and the position of the carpal is towards the ground]. The [NMF] remains neutral in appearance and does not involve any non-manual activity of the signer's body. The articulation of FATHER is a little different in SISL from NISL in terms of location, handshape and movement. [LOC: starts on the upper lips of the signer and completed in the NSP]. The initial articulation is done by [HS: G] and final [HS: H]. Sign remains static for both the initial articulation and final articulation. [ORI: of the palm remains neutral to the signer and the addressee and position of the carpal is towards the ground]. In SISL also no [NMF] is accompanied with the articulation.

The phonological analysis of the articulation of lexical item FATHER in both the regional varieties indicates clear sign of variation. The variation can be observed on the sign components of location, movement and handshape whereas it only the orientation and NMF components which are similar. The possible lexical score based on phonological analysis is demonstrated in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	0.20	0.20	0.40	-0.60

Table 3. 44 Lexical score for FATHER.

The similarity score for the lexical item FATHER is 0.40 due to two similar phonological components (orientation and NMF). The dissimilarity score is inclined more towards negative scale with a total of -0.60 due to more dissimilar phonological components (handshape, movement and location). The similarity score for lexical item FATHER is ≠ 1 which indicates that NISL and SISL identify this lexical item differently.

(b) Generic Sign: The lexical variation observed in generic semantic domain is NISL and SISL is VEGETABLE. The lexical variation has been discussed through phonological analysis and lexical scoring in the table below.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><td></td><td colspan="2">NISL</td><td>SISL</td></tr>
<tr><td>Lexical Item</td><td colspan="3">VEGETABLE</td></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Initial- Lower Lips</td><td>Initial- NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">V</td><td>xH</td></tr>
<tr><td rowspan="3">Movement</td><td>(lMOV)</td><td>Shaking</td><td>Shaking</td></tr>
<tr><td>Path</td><td>To Symmetry</td><td>To Symmetry</td></tr>
<tr><td>Shape</td><td>Small</td><td>Small</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Neutral</td><td>Neutral</td></tr>
<tr><td>Carpal</td><td>Towards the Ground</td><td>Towards the Signer</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 45 Phonological analysis of VEGETABLE.

In NISL the generic lexical item VEGETABLE is articulated on the [LOC: lower lips]. It is a single handed sign articulated with [HS: V]; [MOV: shaking, it is signed in the

symmetry of the signer's body]; [ORI: of the palm remains neutral while the position of the carpal is towards the ground]. This sign does not involve any [NMF] therefore expression of the signer remains neutral.

The same lexical item in SISL is signed in [LOC: NSP]; [HS: xH]; [MOV: slight shaking and the size of the movement is small]; [ORI: of the palm remains neutral for the signer as well as addressee and the position of the carpal is towards the signer's body]. Based on phonological analysis of the articulation of VEGETABLE in NISL and SISL the possible lexical score is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	-0.20	-0.20	0.20	0.40	-0.60

Table 3. 46 Lexical score for VEGETABLE.

The similarity score for the lexical item VEGETABLE is 0.40 due to two similar articulation components (movement and NMF) whereas the dissimilarity score is inclined towards negative scale with the total of -0.60 due to different articulation components (handshape, movement and location). The score revels that both the regions; NISL and SISL have their own versions of articulation of the lexical item VEGETABLE because similarity score is $\neq 1$.

3.3.5 Finger spelling

Finger spelling is the most productive word formation processes of sign language. It is artificially created to manually represent orthography of spoken language. It is done by forming different handshapes and movement. Sign language has borrowed alphabets from spoken language, which is different in modality altogether and over the time it has undergone nativisation. Finger spelling is not just limited to represent alphabets only; it has also taken phonological properties to yield a meaningful sign.

In ISL, finger spelling is based on Roman alphabets rather on any other spoken languages of India. However, alphabetic representation of Devanagri script also exists but it is not used by the signers. In ISL finger spelling is normally used to sign; individual's name and

place, acronyms and abbreviations of English, month, days and week. Sometimes it is used to represent words of which sign signers don't know. Finger spelling can be one handed or double handed; ASL is single handed, whereas BSL and ISL are double handed.

The phenomenon of finger spelling for sign formation is also found in north India and south India varieties of ISL. In ISL, finger spelling involves three types of strategies which same for NISL and SISL. In following section the lexicon formation processes through finger spelling will be discussed followed by examples from both the varieties to encounter lexical variations.

(a) Complete finger spelling

In this method, signer signs complete alphabet in a linear sequence. Complete finger spelling is done in situations when a signer has to sign their name for eg: N-I-S-H-A, or when signer has to introduce any new concept of which there is no equivalent sign.

In the data, the informants followed the same concept to spell their name. No such lexical variations can be found based on complete finger spelling method because the handshape involved in finger spelling remains the same on both the ISL varieties.

However, the word STRAWBERRY in the word list for data set was completely finger spelled by the informants of Delhi whereas in south variety it was signed without using finger spelling. The phonological analysis is discussed in the table below.

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**STRAWBERRY**	
Phonological Features		
Location	In NSP	Lower Lips

Handshape	S-T-R-A-W-B-E-R-R-Y		Initial- G
			Final- U
Movement	(lMOV)	Static	Shaking
	Path		Circular
	Size		Small
Orientation	Palm	Back	Neutral
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 3. 47 Phonological analysis of STRAWBERRY.

In NISL the lexical item STRAWBERRY is articulated in [LOC: NSP] with no particular [HS] because complete alphabet of the word STRAWBERRY is signed in a linear sequence with the help of Roman alphabetic representation in ISL. Since it is a manual representation of alphabets it lacks any [MOV]; [ORI: of the palm is back for the signer and carpal position is towards the ground]. The articulation does not involve any [NMF], hence remains neutral in appearance. Whereas, in SISL STRAWBERRY is signed [LOC: below the lips]; [HS: G (initial) and U (final)]; [MOV: shaking movement in circular manner and the size of the movement is small]; [ORI: of the palm is neutral for both signer and addressee and position of the carpal is towards the ground]. In SISL also there is no involvement of [NMF] during the articulation of the sign.

The phonological analysis indicates the fact that in both the regions STRAWBERRY is signed differently. In NISL it is articulated with complete fingerspelling and in SISL handshape is involved for sign formation. Along with handshape there are other lexical variation components such as location, movement and orientation. Based on the variation of phonological components the possible lexical score of STRAWBERRY is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	0.20	0.20	-0.80

Table 3. 48 Lexical score for STRAWBERRY.

Since only one phonological component is common for both NISL and SISL therefore the score of similarity remains only 0.20. The dissimilarity score is more inclined towards the negative scale with a total of -0.80 due to more dissimilar components (handshape, movement, location and orientation). The lexical score of STRAWBERRY is ≠ 1 therefore it clearly indicates that lexical variation exists for this particular lexical item between NISL and SISL. It is possible that the informants of Delhi have never come across this particular fruit that is why they don't have an equivalent sign.

(b) Abbreviated fingerspelling

Instead of signing whole word sometimes two or more alphabet are picked by the signer to represent whole word. Most of the time it is used to represent English acronyms for example "World Health Organization" is signed as WHO, in English language also same abbreviation is used. In ISL abbreviation is peculiarly used to sign states of India for eg, BIHAR is signed as [BR+POINTING] (away from signer), here initial and final letter is picked by the signer. Similarly abbreviated finger spelling is observed in signing months of the year and days of the week.

In the field work, it has been observed that abbreviated finger spelling is not constant in both the regions. Signs for month, days of the week, festival and year are completely different. Therefore the FEBRUARY has been randomly picked for phonological analysis here in support of lexical variation between NISL and SISL.

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FEBRUARY**	
Phonological Features		
Location	NSP	NSP

Handshape	F-E-B		H
Movement	l(MOV)	Static	Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Sky	Towards the Ground
NMF	Neutral		Neutral

Table 3. 49 Phonological analysis of FEBRUARY.

In NISL, for articulating the word FEBRUARY signer finger spelled the first three alphabets [F-E-B] of the complete word in [LOC: NSP]. There is no movement for this articulation and remains a static sign. The [ORI: of the palm is neutral for both signer and addressee and the position of the carpal is towards the sky]; the articulation lacks any involvement of [NMF]. In SISL the word FEBRUARY is articulated with the [HS: H] which also represents the first alphabet (F) of the word FEBRUARY. The sign is articulated in the [LOC: NSP] by reduplicating the [HS: H]. There is no movement of the sign, it remains static; [ORI: of the palm is neutral and position of the carpel is towards the ground].

The articulation of FEBRUARY is different in both the regions because in NISL first three letters of the finger spelling is signed along with other formational components whereas in SISL only first letter is picked for articulating the complete lexical item. Based on the phonological analysis possible lexical score for FEBRUARY is presented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	0.20	0.20	-0.20	0.20	0.60	-0.40

Table 3. 50 Lexical score for FEBRUARY.

In the data presented above, the similarity score for FEBRUARY for both the regions is 0.60 due to similar articulation components (movement, location and NMF) whereas dissimilarity score can be observed moving towards negative scale with a total of -0.40 due to variation of the articulation components (handshape and orientation). The total for

similarity lexical score ≠ 1which suggests that both the regions identify same lexical item in a different manner.

(c) Initialized finger spelling

It is a method of sign formation in which one alphabet is picked from the spelling of the word to represent the whole sign. It is the most common phenomenon seen in word formation of ISL. For e.g. for word COMMUNICATION letter [C] is picked for signing the whole word. The lexical variation encountered for this sign formation process in NISL and SISL is WEDNESDAY; below is the phonological analysis followed by lexical score in support for lexical variation.

<table>
<tr><th colspan="4">Regional Variety of ISL</th></tr>
<tr><td></td><td colspan="2">NISL</td><td>SISL</td></tr>
<tr><td>Lexical Item</td><td colspan="3">WEDNESDAY</td></tr>
<tr><td>Phonological Features</td><td colspan="2">  </td><td>  </td></tr>
<tr><td>Location</td><td colspan="2">Ring Finger</td><td>In NSP</td></tr>
<tr><td>Handshape</td><td colspan="2">t8</td><td>W</td></tr>
<tr><td rowspan="2">Movement</td><td>(lMOV)</td><td>Static</td><td>Shaking</td></tr>
<tr><td>Size</td><td>-</td><td>Small</td></tr>
<tr><td rowspan="2">Orientation</td><td>Palm</td><td>Back</td><td>Front</td></tr>
<tr><td>Carpal</td><td>Towards the Ground</td><td>Towards the line of Bilateral Symmetry</td></tr>
<tr><td>NMF</td><td colspan="2">Neutral</td><td>Neutral</td></tr>
</table>

Table 3. 51 Phonological analysis of WEDNESDAY.

In NISL the lexical item WEDNESDAY is articulated on the body [LOC: ring finger]; [HS: t8]; [MOV: static sign with just a very small size of movement of thumb on the ring

finger]; [ORI: of the palm is back which means palm is not visible to the signer and position of the carpal is towards the ground]. The articulation does not involve any [NMF] for any visual effect. In SISL the same lexical item is signed in [LOC: NSP]; [HS: W]; [MOV: shaking movement which is small in size]; [ORI: of the palm is front and the position of the carpal is towards the line of bilateral symmetry]; like NISL it also lacks [NMF] for articulation in SISL. Both the signs differ, in not only due to mechanism of word formation process but also due to variation of the other sign formation components like handshape, movement, location and orientation. The only component which remains common for both the region is NMF.

The articulation of WEDNESDAY in NISL and SISL is strikingly dissimilar because in NISL it is not articulated with the help of initialization of finger spelling whereas in SISL it is signed with the fingerspelling of the initial letter "W" of the complete word. The possible lexical score for the word WEDNESDAY based on the phonological analysis is represented in the table below.

Phonological Components of A Sign						**Total Score**	
Scores	HS	MOV	LOC	ORI	NMF	Similarity	Dissimilarity
	-0.20	-0.20	-0.20	-0.20	0.20	0.20	-0.80

Table 3. 52 Lexical score for WEDNESDAY.

The similarity score remains only 0.20 due to common NMF involved in signing for both the regions whereas the dissimilarity score is moving towards the negative scale with the total of -0.80 due to variation of the other phonological components (handshape, movement, location and orientation). The sum of similarity score is $\neq 1$ which gives a clear indication for occurrence of lexical variation for the lexical item WEDNESDAY.

3.4 Findings

The lexical variation between NISL and ISL has been explored through a word list of five hundred words, however the study with limited set of words cannot completely justify the length of variation but rather it sets a ground for further variation related analysis. Although the five phonological features were taken as the basis for analyzing and comparing the selected word items, due to the difference in its modality the study considers investigating lexical items from the perspective of how signs are formed. This has provided an insight of the underlying phonological variations that are found to exist between the two regions. The study of lexical variation between two varieties of ISL vis-a-vis word formation process has resulted very helpful in regard to elicit data because it explores all the possible combinations of phonological components involved in formation of one lexical item. The phonological analysis tabulated in the form of lexical score has contributed in calculating the percentage of lexical variation between NISL and SISL.

3.4.1 Phonological Analysis

The lexical items from the word list were grouped according to the word formation processes involved in ISL resulting in formation of semantic domain or "Sign family". The phonological analysis of the lexical items for each "Sign family" was done on five phonological parameters of sign. The phonological analysis of the words in the wordlist for the study of lexical variation between NISL and SISL suggests that lexical variation happens at all the five phonological parameters (components) of a sign; the lexical variation encountered are location based, handshape based, movement based, orientation based and non-manual feature based. As discussed in chapter 2 (please refer section: 2.1); the minor contrastive units are orientation, movement and NMF because orientation is dependent on handshape whereas movement and NMF are prosodic features of lexeme. In the Prosodic model of phonology of sign language handshape and location is placed on the top position of the hierarchy of auto segments, therefore the major phonological contrastive units for lexical variation are; body location of the sign and handshape involved in the formation of a sign. The lexical variations observed between NISL and SISL for each major and minor phonological contrastive unit has been discussed below in the next section.

(a) Location Based Lexical Variation

The body location remains one of the important and common phonological components for lexicon formation for both the regional varieties of ISL; it is a must that sign articulation has to involve any body location of the signer or neutral space of the signer's body. The phonological analysis of the lexicons from the word list suggests that NISL and SISL have their own independent way of articulating similar lexicons item and it is clearly observed at the component of body (LOC) as one of the important parameter of sign formation processes. The data reveals that it is not necessary that NISL and SISL will have similar body location for articulating same lexical item; the signer of NISL and SISL can use their different body locations for same lexicon of same sign family thus creating distinct lexical variation between both the varieties. Location based lexical variation between NISL and SISL found during the field work is demonstrated in the table below.

Body (LOC) for Sign Formation Process	**Sign Formation body (LOC) observed**		**Lexical Item (Example)**	**Lexical Variation Observed (Yes/No)**
	NISL	**SISL**		
Temple	Temple	NSP	ANGRY	Yes
Ear	Ear	Ear	DEAF	No
Eye	Near the Eye	Below the eye	CRY	Yes
Mouth	Mouth	Near Arm	SING	Yes
Chest	Chest	NSP	CELEBRATE	Yes
Arm	Arm	Chest	BRAVE	Yes
Above the Head	In front of Face	Above the Head	CLOUD	Yes

Table 3. 53 Location based lexical variations observed between NISL & SISL.

The body locations such as temple, ear, mouth, eye, chest, arm and above the head attributes to the formation of semantic domain which in sign language is referred as "sign families"; in sign language there are certain sign which has to be articulated on the

prescribed body locations only thus such lexical items are categorized under same "sign family". The lexical item of same sign family was phonologically analyzed and the findings suggest that the lexical item of the same "sign family" in NISL and SISL can have different body (LOC) for the articulation of sign. The table mentioned above illustrates that except for the body (LOC) ear there is no similarity for body (LOC) between NISL and SISL. NISL and SISL does not co-relate with the notion of similar body (loc) for the lexicons of same sign family hence it potentially shows body (LOC) based lexical variation.

(b) Handshape based Lexical variation

In ISL some lexical items are grouped under same "sign family" or semantic domain due to use of same classifier handshape for articulation of the sign, which is also one of the important components of a sign. For having no lexical variation it is must that NISL and SISL show use of same handshape for the lexicons of the same "Sign Family" but NISL and SISL show dissimilarity in the use of classifier handshape for articulating same lexical item from the same sign family. In NISL and SISL, it is not necessary that same lexical item will be articulated by same classifier handshape. The phonological analysis of the words followed in the word list for this study illustrates that same lexical items are articulated differently in NISL and SISL; the lexical variation is based on handshape.

The classifier handshape based lexical variation found between NISL and SISL is supported with the data found during the field work in the table below.

Classifier Handshape used for lexicon formation	**Handshape Variation Found**		**Lexical Item encountered**	**Lexical Variation Observed (Yes/No)**
	NISL	**SISL**		
Classifier CYLINDRICAL	C	C	PIPE	No
Classifier ROUND	L	xH	MOON	Yes
Classfier HOLLOW	xA	scB	PURI	Yes
Classifier SMALL ROUNDISH	c3	c5	ORANGE	Yes
Classifier LIQUID	L	scB	FRUITE JUICE	Yes

Classifier WAVY	B	5	WIND	Yes
Classifier FLAT SURFACE	tB	B	TABLE	Yes
Classifier SQUARE	sF	G + (T-V)	TELEVISION	Yes
Classifier RECTANGULAR	B	B	BOOK	No
Classifier HANDLE	A	A	UMBRELLA	No
Classifier VEHECLE	H1:V H2: B	H1: A H2: A	BICYCLE	Yes
Classifier SHEET	5	cB	SKY	Yes

Table 3. 54 Classifier handshape based lexical variation between NISL and SISL.

The lexical variation between NISL and SISL was explored on twelve different classifier handshapes and their attributed lexicons of the "sign family". The findings of phonological analysis of the same lexical item suggests that lexicons of the same "sign family" in NISL and SISL not necessarily be articulated by same handshape but it potentially shows variation in the use of handshape for articulation. In the table mentioned above, it can be observed that except for classifier CYLINDRICAL, classifier RECTANGULAR and Classifier HANDLE all the other classifier handshape shows usage of different handshape for same lexicon articulation. This difference in usage of handshape makes NISL and SISL a distinct different variety of Indian Sign Language.

(c) NMF based Lexical Variation

In NISL and SISL, non-manual feature of the signer remains one of the contrastive units for lexical comparison between the varieties of ISL because its presence gives phonemic status to the lexical item. It has been observed that signers use their facial expression and body movement to express abstract emotions of emotive words such as HAPPY, SAD or ANGRY; signer also uses NMF to create visual effect of the physical properties of the lexical item such as puffiness of the lexical item PURI is signed with puffed check of the signer along with other phonological components.

In the data collected for NISL and SISL it is observed that both the varieties show different NMF for same lexical item; it is not necessary that both the varieties will show

similar body expression or movement for same lexical item. For the lexical item SING signer shows NMF to create visual image of singing and eyebrow remains in freezed position during entire articulation whereas signer of SISL does not show any NMF for this lexical item. The void of NMF during the articulation in SISL creates difference in the visual appearance of the lexical item SING thus NMF as a phonological component can be considered here responsible for the variation in articulation of the referred lexical item between NISL and SISL. Similar phonological variation has been observed for the word PURI; in NISL the NMF remains neutral due to no involvement of facial and body expression whereas in SISL the entire articulation is done with puffed check to visualize hollowness of PURI. For the emotive lexical item CELEBRATE, torso movement has been observed during the articulation by the signer of NISL whereas signer of SISL does not involve any body or facial movement.

The void of NMF as an essential phonological component for some of the emotive and textural lexical item between NISL and SISL suggests that signers of both the varieties of ISL perceive and reciprocate same lexical item differently due to which lexical variation between the two varieties of ISL is quite visible and evident. The NMF as a contrastive unit for few lexical item of all the "Sign Family" has been demonstrated in every phonological analysis table in support of lexical variation in this chapter.

(d) Orientation and Movement

In the phonological analysis of the lexical items, the difference of articulation of same lexical items in NISL and SISL has also been observed on the other phonological components such orientation and movement. Movement and orientation of the articulation of sign for the lexicons of each "Sign family" has also been observed closely and the result suggests that these two components also contribute in differentiating both ISL varieties from each other based on lexical items.

3.4.2 Lexical Score

Based on the phonological analysis of the articulation of a sign, lexical score of similarity and dissimilarity of the word list for each "sign family" has been presented in this chapter. In this chapter it is proposed that; to have no lexical dissimilarity between NISL and SISL the lexical score of the referred lexical item must be equal to 1 (one), if the lexical score shows inclination towards negative scale then the score suggests that the referred lexical item is not articulated in a similar manner in NISL and SISL.

Lexical score is an indicator of the variation between the two regional varieties and the score suggests that both the regional varieties of ISL; NISL and SISL are different from each other. The phonological components of the maximum words from the word list are not similar due to which lexical score for maximum words are recorded in negative scale. The word list contains five hundred words (500) out of which only one hundred and sixty five (165) words are recorded to have lexical score equal to one (1) and rest three hundred and thirty five (335) lexical items are recorded to have lexical score in negative scale and their score of similarity is $\neq 1$. The individual lexical score of similarity and dissimilarity of each lexical item has been presented in appendix number 6.

The total percentage of lexical dissimilarity observed between NISL and SISL is 67% and only 33% of the lexical items from the total word list are found to have similar articulation. According to Blair (1990), a lexical similarity score below 60% between two language varieties suggests that they are separate languages[44]; according to data of lexical score only 33% of the similarity is found between NISL and SISL therefore the data suggests that NISL and SISL are two distinct and different varieties of ISL in India with 67% of lexical variation.

3.5 Summary

In this chapter, lexical data of five hundred (500) words are analyzed for lexical variation between two varieties of Indian Sign Language, NISL and SISL. Ten informants each of NISL and SISL were asked to sign the words of the word list and the signs of the

[44] See, Blair, Frank. 1990. Survey on a Shoestring - a manual for small-scale language surveys. Publication in Linguistics 96. Dallas, Texas: Summary Institute of Linguistics and the University of Texas at Arlington. 113p.

informants were video graphed for further analysis. To investigate lexical variation between NISL and SISL the video graphed data was analyzed in two perspectives; first a phonological analysis of the lexical item based on their articulation components (handshape, movement, location, orientation and NMF) was done and then lexical score of similarity and dissimilarity of based on number of identical components for both the articulations of same lexical item was calculated.

To investigate maximum possibilities of lexical variation between NISL and SISL, word formation processes of ISL was explored in the broadest sense possible. In ISL word formation processes are; location based, opposite signs, handshape classifier based, componential and generic signs and finger spelling. NISL and SISL also follow these word formation process, the lexical items of the word list was grouped according to the word formation processes; the articulation of the attributed lexical item in NISL and SISL was analyzed followed by a lexical score of similarity and dissimilarity to investigate possibility of lexical variation between NISL and SISL.

The phonological comparison of the articulation of the same lexical item in NISL and SISL suggests that lexical variation between the two regional varieties, North and South happens at all the five phonological components. The findings indicate that lexical variation between NISL and SISL is observed on the major contrastive unit which are body location based (refer table no 3.51) and classifier handshape based (refer table no 3.52). NMF, orientation and movement are the minor contrastive unit but difference in articulation is also observed at these components as well.

The lexical score of similarity and dissimilarity of the words from the word list was done and out of five hundred (500) words three hundred and thirty five (335) words are found out to have different way of articulation in NISL and SISL [the phonological comparison of the lexical items of the word list is presented in appendix number 5 (A) & (B)]. The dissimilarity percentage is 67% and similarity is only 33% which fully establishes the fact that NISL and SISL are two distinct varieties of ISL in India.

Chapter 4

Phonological Variations at Intrinsic level of the regional varieties of ISL

In the previous chapter, the phonological comparison between the two regional varieties of sign language in India; NISL and SISL suggests that lexical variation occur at the inter-regional level. To understand the accurateness of heterogeneity of the sign language in India, phonological variation is investigated not only outside the regional varieties but within the varieties also. The aim of this chapter is to investigate phonological variations occurring for the articulation of same lexical item within NISL and SISL. In this chapter possibility of phonological variation at intrinsic level of NISL and SISL are observed in the broadest sense possible, the factors which influences intrinsic variation is also analyzed and explained.

4.0 Introduction

Language variation is the intrinsic part of any language whether spoken or sign and it can happen at all the possible levels. There is a saying "Languages in India changes in every 60 to 80 kilometers" (Kluck, K.A:1986:192). In the multilingual and multicultural society like India language contact and language change is a very common phenomenon for spoken language.

In the previous chapter, the lexical variations between NISL and SISL at phonological level have been discussed with the help of a data set of five hundred lexical items. From the data set, it is also observed that the phonological changes are not only restricted to inter regional variety but a certain amount of variation is observed within the signing community of the same regional variety of ISL also. Some of the informants of the same region are recorded signing double handed signs with single hand which clearly indicates that intrinsic phonological variations also exist. Similarly, from the data it is also observed that, the signs which have G handshape are also done with thumb extension.

Thumb extension might appear as a totally different handshape in these signs. This phenomenon of double handed vs single handed and thumb extension is observed in the data of both the regions. Since the intrinsic phonological properties are similar in both the regions it is possible that there are similar factors or variables of the informants due to which phonological variations occur. In this chapter, the properties of the intrinsic lexical variation observed in both the regional varieties of ISL and the factors responsible for this phonological phenomenon will be discussed.

Before moving on to the properties of intrinsic phonological variations of the regional varieties it is important to know the possible factors which are responsible for this gradual intrinsic phonological variation within the regional varieties of ISL.

It has been a long-standing observation that there is considerable language variation in the use of most well documented sign languages like; ASL documented by Stokoe (1960), BSL and Auslan (Australian Sign Language). The work over last two decades has shown that the factors responsible for variations and change in the language are broadly similar in spoken and sign language. Some factors responsible for variation in sign language are distinctive in nature for example; phonological variation which happens at the auto segments such as HS, MOV, LOC etc. discussed in the previous chapter has no direct similarity with spoken language phonology. Deaf signing communities are minority communities which co-exist with large majority spoken language communities whose language are of entirely different modality and most of the languages have their own writing system and literature, unlike sign language.

The factors which drive regional variations in both spoken language and sign language communities can be categorized in three types; linguistic or internal constraints, social or inter-speaker constraints and stylistic or inter-speaker constraints (Meyerhoff: 2006). They form a complex relationship influencing the use of language in distinctive way. The linguistic or internal constraints include phonology and phonological process which has been elaborately discussed in chapter 3. In this chapter, the main concern is inter-signer constrains; the factors responsible for the intrinsic phonological variation of NISL and SISL will be discussed.

Section 4.1 explores the social conditions responsible for the diversity of the deaf community and paradigm shift of viewing deafness in India. The motive of discussing these aspects of the background of deaf community is to segregate the possible factor groups responsible for the heterogeneity of the deaf community which eventually is reflected in their style of signing. Section 4.2 divulges the factor groups of the informants of NISL and SISL responsible for intrinsic phonological variations, factor group is decided through a small sociolinguistic profiling of the informants subjected for this study. Section 4.3 is an elaborate discussion of the factor groups responsible for the intrinsic phonological variation phenomenon found in NISL and SISL; the argument is supported with the relevant data collected for this study. Finally, the findings are summarized in section 4.4 of this chapter.

4.1 Factor groups responsible for the intrinsic phonological variation

To segregate the possible factors responsible for the internal phonological variation it is important to understand the heterogeneity of the deaf community. Like spoken language the social groups such as age, gender, education and ethnicity could be the possible group factors for this study. The journey of ISL and deaf community in India from being just a group of physically disabled people to a linguistic minority community is also a potential reason for formation of factor groups which is directly proportional to intrinsic phonological variation within the regional varieties.

4.1.1 Understanding the Diversity of the Deaf Community

Deaf community stands out from other communities in the most unique way; most of the communities are geographically bound or are transmitted biologically to the next generation but deaf community has no such restraints. Deaf culture and sign language are transmitted culturally across the generations. A deaf child grows up with acquiring sign language as their first language and their milestones of language acquisition are comparable to spoken language in every aspect. The transmission of deaf culture and sign language across the generation in India can happen in limited number of cases. In India there are cases of deaf couples or at least one spouse is deaf have deaf child/children, in these cases the deaf child grows up with sign language as its mother tongue. There are

also families where more than one child is deaf in these cases the younger sibling acquires ISL from the elder sibling. So, a deaf individual who has acquired sign language from their birth in one of these ways are called "native signers".

However, in India the majority of the deaf individuals learn sign language at much later stage of their lives, mostly when they start going to deaf school. In India, there deaf individuals who have hearing parents with no deaf siblings lack access to sign language, they learn sign language at much later stage of their life. They learn sign language at school when they meet other deaf students or they learn sign language when they start going to deaf associations. This unique way of ISL transmission or sociolinguistic situation makes it clear that, "not all deaf individuals have equal access of ISL; the opportunities of acquiring ISL in these cases are insufficient and limited".

The competence of ISL remains the important factor which contributes to the stratification of diversity within the deaf community. Therefore, it would be wrong to assume that deaf community is a homogenous entity rather it is heterogeneous in nature like most of our hearing community. Within this heterogeneous community there are number of subgroups with different characteristics. Audiological deafness in and itself does not ensure membership of this community; people can be audiologically deaf and yet have no liaison with the deaf community whereas people with no audiological deafness can be an intrinsic member of the deaf community.
Based on these sociolinguistic situations deaf community have three main sub-groups[45]; native signers, pre-lingual deaf and post-lingual deaf.

1. **Native Signers:** Native signers are those who have acquired ISL as their mother tongue from infancy. It is one of the case in which a deaf child is born with both or one parent deaf, at this circumstance the deaf child will acquire ISL from their parents as their mother tongue. This group also includes deaf individuals who have another deaf sibling; in this situation the elder deaf sibling transmits ISL

[45] See, Lane (1995) for details of how the formulation of deafness as a loss contradicts the primary foundations of the Deaf community.

linguistically and culturally to the younger deaf sibling. In both the cases, the competency level of ISL remains maximum for native signer subgroup. Within the diversity of deaf community, native signers are placed in the centre among all the other subgroups.

2. **Pre-Lingual Deaf:** This subgroup consists of those deaf individuals who have lost their hearing ability before acquiring spoken language, approximately between 2-3 months of birth to 2-3 years old. This sub-group lack interaction in sign language with family members and learn ISL at the later stage of their lives especially when they start going to a deaf school or when they join deaf associations. Deaf people in this subgroup generally use ISL as their main and preferred means of communication. The CODA (Child of deaf adult) and SODA (Sibling of deaf adult) comes under the second sub-group because they have also acquired ISL from their family members as first language, they are called "culturally deaf" because despite of being audiologically fine they acquire deaf culture from their family.
3. **Post-Lingual Deaf or Late deafened group:** This group consist of those deaf members who have become deaf after acquiring spoken language at much later age. Despite being audiologically deaf they do not learn sign language and spoken language is their viable option for communication. This sub-group consist of hard of hearing deaf people, their deafness is dependent on the percentage of their hearing loss and the late-deafened people who losses their hearing ability due to old age. This group may or may not associate themselves with deaf community. Interpreters are also sectioned under this sub-group because they learn ISL for employment purposes therefore they have choice to use or may not use sign language as their preferred medium of communication and also they may or may not be the part of deaf association and community. Post-lingual deaf sub-group is placed in the outermost section of the diversity based of the least competency and use of ISL.

4.1.2 Paradigm Shift of deafness in India

Historically, deaf community in India has undergone through two major paradigms[46]. Previously in India, deafness was only seen as an audiological ailment which needs medical attention. Deafness was as a disability which should be treated, prevented and cured as far as possible. In this medical-audiological paradigm of viewing deafness, all kind of treatments and technologies which prevents residual hearing such as hearing aids and cochlear implant surgeries was encouraged. On the side of education, lip reading method and *oralism* was used in the deaf schools and ISL was totally looked down upon. The use and existence of ISL in schools was totally neglected and overlooked, deaf children at initial stage were given assistance of speech therapist and were forced to speak. Clearly, in this paradigm this stigma of deafness being a physical disability prevails and there has been a constant suppression of the use of ISL. In the recent study, it has been observed that the older deaf generation does not have a positive attitude towards their deaf community and signing (Anand: 2016).

In the last decades, there has been a major paradigm shift in viewing deafness in India. However the medical view of deafness has not changed but gradually deaf people have acknowledged sign language and deaf culture as the foundation of the deaf community and have emerged as a minority community having their own linguistic rights. In the recent paradigm, the status of ISL is equal to a status of minority language who's value and culture needs to be protected by the deaf community on the other hand it has to be valued and respected by all the other existing communities of India. On the educational side, educating each and every deaf in their own suitable deaf environment and in sign language is the major goal of deaf education. In the recent paradigm models of deaf education has being updated from lip-reading and *oralism* to bilingual method of teaching. In the bilingual method, sign language remains the primary mode of education and one spoken language is taught for reading and writing purposes. Bilingual method of deaf education and encouragement of the use of ISL has defiantly empowered deaf community in various ways.

[46] Also see, AYJNIHH and Zeshan, U. 2002. Advanced Course in Indian Sign Language (4 hrs. VHS/VCD video & workbook). Mumbai: Ali Yavar Jung National Institute for the Hearing Handicapped (Ministry of Social Justice and Empowerment, Government of India).

Deaf community is a heterogeneous community; every deaf individual has their own background, history and life experiences which contribute to the diversity of this community. The fact that this community is optimally diverse, its impact can be seen in the phonology of the ISL and diversity of the community is one possible reason for the lexical variation found within both the regional varieties of ISL.

From the above discussion, it is clear that competency of ISL; native signers, pre-lingual or post-lingual deaf can be our one possible factor group. The age of the informants can also be a potent factor group since the younger informants have experiences of the contemporary paradigm and the older age group who have spent their educational and growing up phase in the older paradigm in which sign language was suppressed. Apart from this, gender can be also a potential factor group because in India experiences of deafness for both the genders are not same or equal (Mohapatra & Mohanty,2004).

4.2 Sociolinguistic Profiling of the informants Subjected for this Study

Before analyzing the data, sociolinguistic profiling of only those twenty deaf informants (ten is from North region and ten from South region) who participated in the word list data elicitation was conducted. Informants were then categorized according to the factor group; it will help to understand the density of factor groups which possibly is responsible for intrinsic phonological variations of both the varieties of ISL. The data is presented in the table below.

Sl.No	**Factor group**	**Factors**	**Number of informants**		**Total informants out of 20 (NISL+SISL)**	**Percentage (weightage of the factor)**
			NISL (Total 10)	**SISL** (Total 10)		
1	**Age**	a. 15-25 yrs	7	6	13	65%
		b. 26-40 yrs	3	4	7	35%
2	**Gender**	a. Male	8	7	15	75%
		b. Female	2	3	5	25%

3	**Competency of ISL**	a. Native and Pre-linguals	7	6	13	65%
		b. Post-lingual and Late deafened	3	4	7	35%
4	**School Background**	a. Deaf	8	9	17	85%
		b. Mainstream	2	1	3	15%

Table 4. 1 Background information of twenty informants (10 each from NISL & SISL).

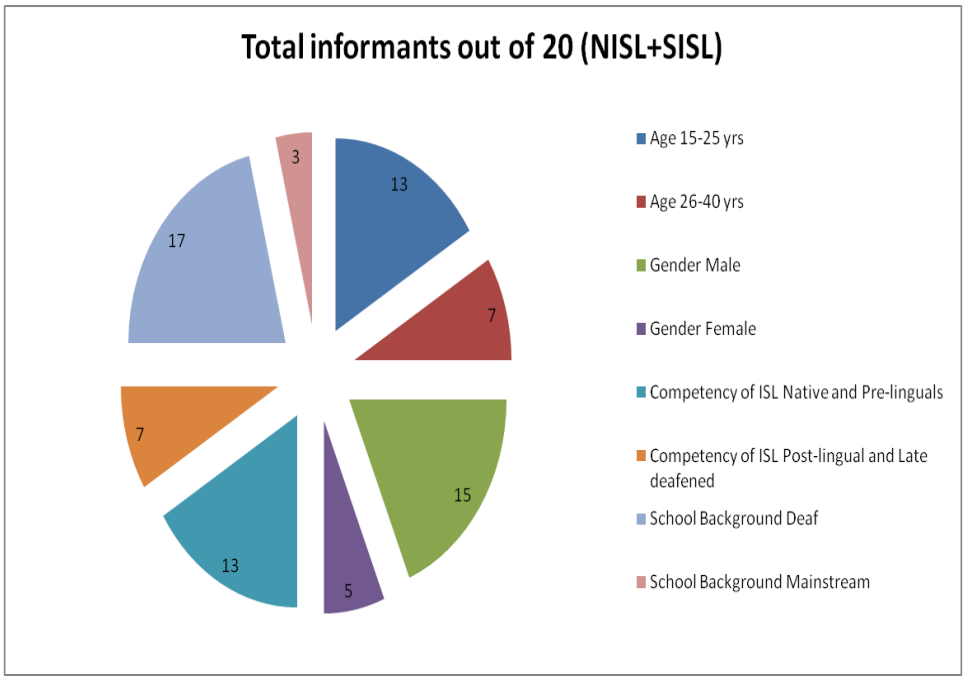


Figure 4. 1 Pictorial representation of the informants

In the above table, the group of twenty informants are further segregated based on the factor group such as age, gender, competency of ISL and school background based on which their signs will be further analysed to investigate intrinsic phonological variations. To summarize the table, age of the twenty informants ranges from 15 yrs to 40 yrs so this

factor group (age) can be subcategorized into young group and middle aged group; 65% of our informants are the younger generation category (15-25 yrs) and 35% of informants are middle aged people (26-40 yrs). Weightage factor of male informants is more than female, which is 75% and 25% respectively. In the competency of ISL factor group, the weightage of native and pre-lingual deaf are less than post-lingual deaf and late deafened people which is 45% and 55% respectively. Lastly, in the factor group school background; majority of the informants have done their schooling in deaf school then mainstream school which is 85% and 15% respectively.

The segregation of the informants according to their background information is presented above in the figure no: 4.1.

4.3 Intrinsic Phonological Variation Properties

In the following section the properties of intrinsic phonological variations in both the regional varieties observed, will be discussed in details with the help of the data set of five hundred lexical items collected from twenty deaf informants. This section will also deal with the influence of the weightage of factor group in accordance with the intrinsic phonological variation. For this study, educational background of the informants is not taken into account as a valid factor group conditioned for intrinsic phonological variation of NISL and SISL because the informants mentioned that in deaf schools the medium of instruction was not ISL, all their teachers were hearing with limited skills and knowledge of signing. Therefore, there is no uniqueness in education factor group which can influence on the signing style of the informants. For further study, deaf informants of only factor group of age, gender and competency level of ISL are subjected to study the phenomenon of intrinsic phonological variation of NISL and SISL.

4.3.1 Double handed signs vs. Single handed sign

In ISL, a sign can be articulated with the help of both the hands with same or different handshape. In double handed signs the movement and location can be in symmetry or it can be asymmetrical. For example, words like RAIN, PLAY are signed with both the hands in same symmetry and words like DOCTOR and TEACHER are double handed

asymmetrical signs. In ISL the English alphabets is particularly signed with the help of both the hands.

Interestingly, this phenomenon of using double handed signs is common in the signers of NISL and SISL. From the data it is observed that, in both the varieties of ISL (NISL and SISL) there are certain group of informants who articulate the lexical items with both the hands whereas there are also certain section of informants who sign the same lexical items with only one hand. The difference in articulation of same lexical items within the same region suggests that there is heterogeneity in the style of signing, the removal of one hand in articulation means complete deletion of HS, MOV and LOC of one sign component.

For example, the word DOCTOR is recorded to be signed by both the hands by one of the informant while the other informant signed the same lexical item with single hand. The variation in the style of signing is presented in the picture below.

Figure 4. 2 DOCTOR Double handed sign

Figure 4. 3DOCTOR Single handed sign

In the word list of five hundred words, 166 words (refer appendix 3) are found to be articulated with the help of both the hands by majority of the informants in both the regions. But a few of the informants articulated same lexical items with the help of single hand. To understand the pattern of transition from double handed sign to single handed, the twenty informants are grouped according to their background information. Then, their style of signing (double hand or single hand) was tabulated in accordance to their background information.

Sl.No	**Factor Group**	**Factor**	**Total Informnats out of 20 (NISL+SISL)**	**Use of Hand**		**Weightage (%)**	
				Double Hand	Single Hand	Constant	Transition
1	**Age**	a. 15-25 yrs	13	4	9	30.80%	69.20%
		b. 26-40 yrs	7	7	0	100%	-------
2	**Gender**	a. Male	15	6	9	40%	60%
		b. Female	5	5	0	100%	-------
3	**Competency of ISL**	a. Native and Pre-Lingual Deaf	11	2	9	18.19%	81.81%
		b. Post-Lingual deaf	9	9	0	100%	--------

Table 4. 2 Transition of Signs from Double Hand to Single Hand.

To summarize the table 4.2, it can be observed that the phenomenon of using single hand over double hand is found in all the factor groups; age, gender and competency of ISL. Therefore, to some extent it can be said that social background of the signers is responsible for the difference in style of signing within the same variety of ISL. The

influence of factor group is clearly observed in the choice of using single hand over double hand for articulating same words.

In the age group of 26-40yrs, female informants and post-lingual deaf informants any kind of deviation from double hand to single hand is not observed; 100% usage of double hand is recorded in these sub factor group which means all the participants of this sub groups use their both hands for signing 166 double handed words from the word list. Whereas, transition from double handed to single handed is recorded in the sub factor groups; age 15-25 yrs which is by 69.2%, male informants which is 60% and transition is also recorded in the competency of ISL factor sub group native and pre-lingual deaf by 81.81%.

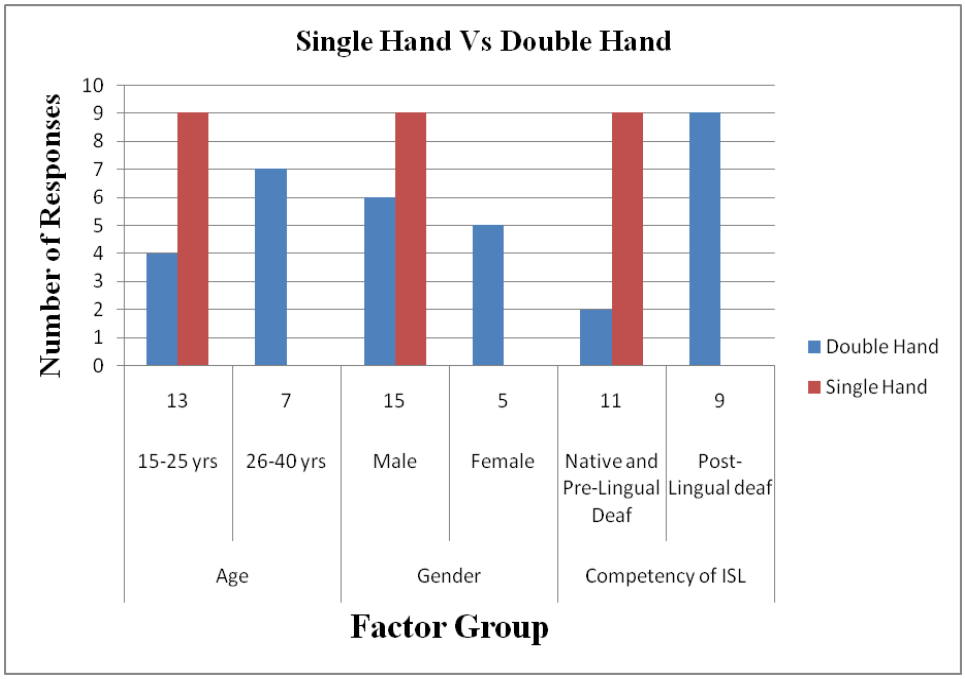


Figure 4. 4 Use of single hand over double hand.

Therefore, from the graph no (4.4) obtained from the data it can be concluded that the phenomenon of using single hand over double hand is only seen in the male deaf informants who are young and are native and pre-lingual deaf. The middle aged generation and post-lingual deaf informants do not have any inclination towards single handed signs whereas the native female informants, pre-lingual deaf and post-lingual deaf

female participants use double hand over single hand in articulating signs no matter what age group they belong.

The data reveals that, due to the heterogeneity of the deaf community in both NISL and SISL; a gradual change in style of signing is observed in the informants of both the regions. The inclination towards usage of single hand over double hand by the above mentioned deaf informants in both the regions suggests that there is a variation in style of signing due to the social aspect of the signer which ultimately results to an intrinsic phonological variation within the regional varieties of ISL.

4.3.2 Index finger vs. Thumb Extension

In chapter 1 (see section: 1.4), it has been discussed that handshape is one of the componential forms of a sign; a little change in the form of handshape keeps the potential of changing the whole meaning of the sign. In both the varieties of ISL indexing or G handshape (refer table no) is used in the most productive way; for articulating personal pronouns such as I, YOU, HIM etc, it is used to mark tense such as NOW and TODAY also indexing is used to articulate name of the places. In this work the words mentioned in the word list which are signed simply by pointing with index finger are referred as indexing lexical items.

From the data sample, it is observed that a few of the informants articulate indexing lexical items with G handshape but with the variation of extension of thumb whereas other informants use only G handshape for articulating the same sign which makes the sign appear as it has a different handshape. This phenomenon of extension of thumb along with index finger is found common in both the regional varieties of ISL; it suggests that inclination of G handshape with an extension of thumb is going on at an intrinsic phonological level within the two regional varieties of ISL. In the data sample of five hundred words, there are 10 indexing lexical items (refer appendix 3) therefore the phenomenon of thumb extension in both the regional varieties is investigated for 10 words only. Apart from the lexical item data sample, extension of thumb is also observed in the general conversation with the deaf informants recorded for their introduction.

In the data sample, the word TODAY is recorded to be signed with and without extension of thumb by some of the informants. The difference in articulation of the same lexical item TODAY is presented in the picture below.

Figure 4. 5 TODAY Signed with Index finger

Figure 4. 6 TODAY Signed with thumb extension

To investigate this transition and shift of extension of thumb while indexing in contrast to only using G handshape, the twenty informants are grouped according to their background information and their sign formation of indexing lexical items are analyzed in terms of using only G handshape and extension of thumb in accordance to their background information. It is discussed below in the table.

Sl.No	Factor Group	Factor	Total Informnats out of 20 (NISL+SISL)	Indexing		Weightage (%)	
				G Handshape	Thumb Extension	Constant	Transistion
1	**Age**	a. 15-25 yrs	13	13	0	100%	-------
		b. 26-40 yrs	7	2	5	29%	71.43%
2	**Gender**	a. Male	15	13	2	87%	13%
		b. Female	5	2	3	40%	60%
3	**Competency of ISL**	a. Native and Pre-Lingual Deaf	11	11	0	100%	-------
		b. Post-Lingual deaf	9	4	5	44%	55.56%

Table 4. 3 Transition of Indexing from G handshape to Thumb Extension.

To summarize the table (4.3), it is observed that the phenomenon of thumb extension occurs in all the factor groups; age, gender and competency of ISL. Therefore, it suggests that there is an influence of factor group for deviation of sign from G handshape to thumb extension. Any kind of transition is not observed in the younger age group which is 15-25 yrs and native and pre-lingual-lingual deaf informants. 100% usage of the G handshape over thumb extension are recorded in these sub factor group which means all the participants of this sub groups use G handshape for signing 10 indexing lexical items. Whereas, deviation from G handshape to thumb extension is recorded in the sub factor group; middle age group which is 26 -40 yrs by 71.43%, the competency of ISL factor sub group post-lingual deaf by 81.81% and influence of gender is also recorded for

transition of thumb extension in indexing. Male informants are recorded with only 13% transition and female participants are recorded with 60% of transition.

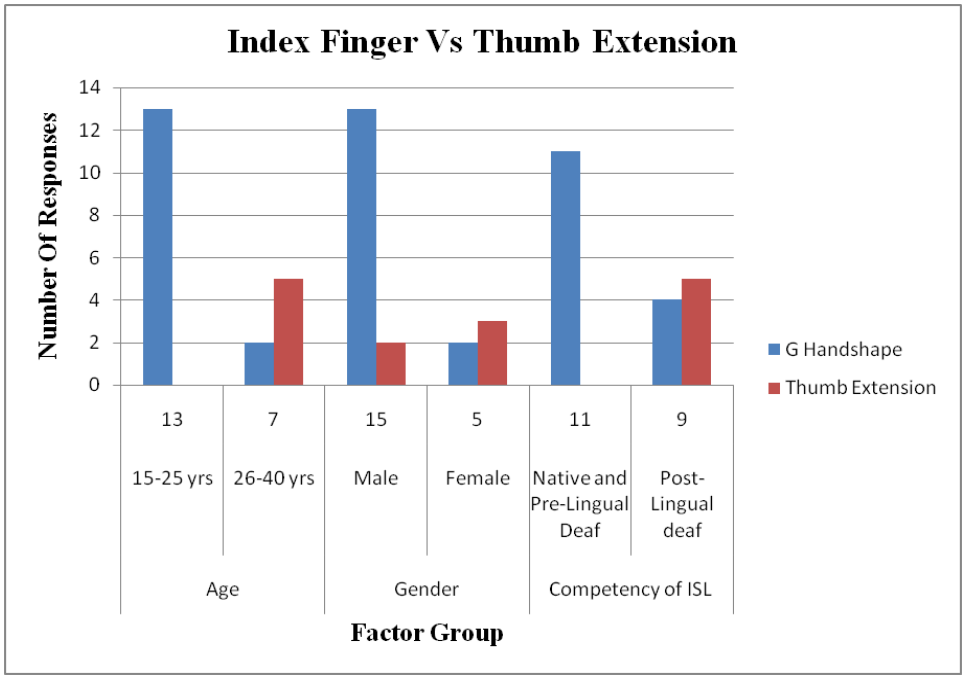


Figure 4. 7 Use of Index finger (G handshape) over thumb extension

Therefore, the graph (4.7) obtained from the data depicts that the transition of thumb extension along with the G handshape instead of only using G handshape is gradually seen in the most of the post-lingual middle aged female deaf informants and some of the male deaf informants. The extension of thumb in indexing signs suggests intrinsic phonological change within both the regional varieties of ISL.

4.3.3 Signing vs. Fingerspelling

Fingerspelling is one of the word formation process in which either the whole word is fingerspelled or only initial letter is picked for complete sign formation (please see section 3.3.5). Sign language like any other language has an extensive ways of expanding its vocabulary as discussed in the section on word formation process in chapter 3. Although it lacks a written representation, it is possible to store this language with technological support. New concepts can also be coined like in any spoken languages

such as in recent time the sign of Corona virus[47] got added into the vocabulary of ISL prior to COVID 19 pandemic[48] situation they have not come across this vocabulary. New signs are assigned based on the physical properties of the vocabulary, if the signer is unable to create a sign or is completely unaware of certain concepts of the words then they simply fingerspell the whole word. A native signer generally tries to avoid fingerspelling as much as they can because during a conversation fingerspelling becomes long and tedious, therefore fingerspelling during the conversation is considered bad in ISL.

The word list made for this study does not contain any word which is completely based on fingerspelling. However, there are few words in which initialization method of finger spelling is used; in this process one alphabet of the spelling is picked and signed followed by another form of sign. Therefore, for this phenomenon all the signs of the word list are investigated except for those in which initialization is natural. For example, in ISL months of a year is signed by initialization process therefore such lexical items are exempted for this investigation.

In the data sample, for the word PRIEST some of the informants signed the word whereas few of the informants completely fingerspelled the word instead of signing. The difference in articulation of the word PRIEST is presented in the picture below.

Figure 4. 8 PRIEST Fingerspelled

[47] Coronaviruses cause a range of illnesses, including COVID-19 (First identified in Wuhan, China); they typically affect the respiratory tract and are communicable disease.
[48] Outbreak happened in November, 2019 in China and World Health Organization (WHO) declared it a pandemic in March 2020.

Figure 4. 9 PRIEST Signed

The phenomenon of fingerspelling the lexical item instead of signing is observed in both the regional varieties of ISL. A certain section of informants in both the regions showed this tendency of fingerspelling over signing. To investigate factor group of informants which are inclined toward fingerspelling over signing, the informants were grouped according to their background information in accordance to their preference of signing. It is presented below in the table.

Sl. No	**Factor Group**	**Factor**	**Total Informnats out of 20 (NISL+SISL)**	**Fingerspelling**		**Weightage (%)**	
				Signing	Fingers pelling	Const ant	Transit ion
1	**Age**	a. 15-25 yrs	13	12	1	92.31 %	7.69%
		b. 26-40 yrs	7	1	6	14.28 %	85.72 %
2	**Gender**	a. Male	15	11	4	73.33 %	27%
		b. Female	5	2	3	40%	60%
3	**Competency of ISL**	a. Native and Pre-Lingual Deaf	11	11	0	100.0 0%	-------

		b. Post-Lingual deaf	9	2	7	22.22 %	77.78 %

Table 4. 4 Transition of Fingerspelling over Signing.

To summarize the table (4.4), it can be observed that the phenomenon of fingerspelling is found in all the factor groups; age, gender and competency of ISL. Therefore, there is an influence of factor group for preference of fingerspelling over articulation of sign. Any kind of deviation is not observed in the younger age group which is 15-25 yrs, and native and pre-lingual-lingual deaf informants; 100% usage of sign over fingerspelling is recorded in these sub factor group which means all the participants of this sub groups have preferred signing of all the lexical items (except for those where initialization method is natural). Whereas in the informants of middle age group 26-40 yrs 85.72% of informants preferred fingerspelling. 60% of the female informants prefer fingerspelling whereas only 27% of male informants prefer fingerspelling. The phenomenon of fingerspelling over signing is recorded high in the sub factor group of post-lingual deaf informants which is 77.78%.

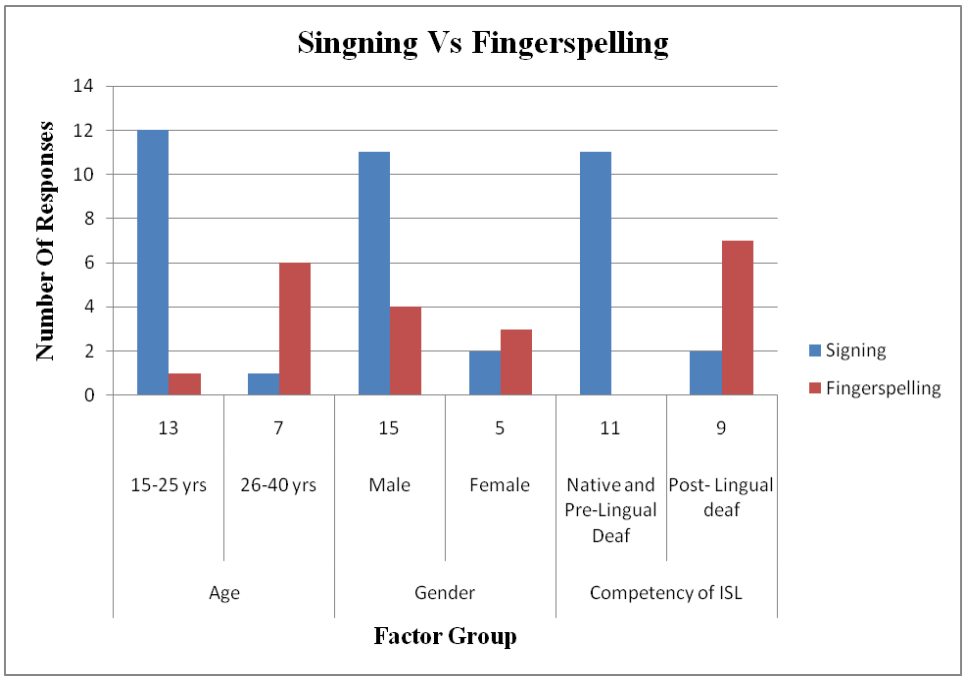


Figure 4. 10 Use of Signing over Fingerspelling

Therefore with the help of the graph (4.10) obtained through the data, it can be concluded that usage of fingerspelling instead of articulating the signs is gradually seen in the most of the post-lingual middle aged female deaf informants and some of the male deaf informants whereas the younger male and female native and pre-lingual deaf informants prefer articulating signs. The preference of fingerspelling over articulating, completely deletes the whole component of a sign which eventually has phonological implications in the variation studies. It might appear that the words which are simply fingerspelled, do not have a corresponding sign and due to the social conditions of the informants the occurrence of this intrinsic variation phenomenon within the ISL variety is evident.

4.3.4 Minimal mouthing vs. Mouthing

Mouthing is the non-manual aspect of articulation of sign; it is commonly observed that deaf people move their mouth while signing simultaneously. In sign language mouthing can result into a distinctive non-manual feature of signing by contributing in the aspect of sign, for example the rounded mouth pattern while signing WHO is a phonological feature. It is also natural for many deaf to use mouthing; however this is discouraged within the community because overdoing this non-manual activity can result in deletion of the actual expression of signing and the aspect of the sign gets incorporated with mouthing. Tendency of mouthing totally depends on the personal choice of the signer; mouthing quotient is not equal for all the signers. Generally in the sign language interpretation course interpreters are asked to avoid mouthing as much as they can because in the contemporary paradigm of sign language mouthing is not considered in good lights as it is mere imitation of speaking.

Here below is a sample example of this phenomenon obtained from the data, the lexical item SIX is recorded to be signed without lip movement by some informants whereas some informants imitate the pronunciation of SIX while signing. The difference in the articulation is presented in the picture below.

Figure 4. 11 SIX Minimal Mouthing

Figure 4. 12 SIX Mouthing

In both the regional varieties of ISL, informants are recorded doing mouthing therefore the phenomenon of mouthing is common in both the varieties of ISL. For the investigation of this phenomenon data set of complete five hundred words are investigated in accordance with the background information of the informants. The choice of mouthing over minimal use of mouthing is checked with twenty informants of both the regions. Result is discussed below in the table.

Sl. No	Factor Group	Factor	Total Informnats out of 20 (NISL+SISL)	Mouthing		Weightage (%)	
				Minimal Mouthing	Mouthing	Constant	Transition
1	**Age**	a. 15-25 yrs	13	9	4	69.23%	30.77%
		b. 26-40 yrs	7	2	5	29%	71.43%
2	**Gender**	a. Male	15	11	4	73.33%	26.67%
		b. Female	5	0	5	------	100 %
3	**Competency of ISL**	a. Native and Pre-Lingual Deaf	11	11	0	100.00%	-------
		b. Post- Lingual deaf	9	0	9	------	100.00%

Table 4. 5 Transition of Mouthing over minimal mouthing.

To summarize the table (4.5), it is quite evident from the table that tendency of mouthing over minimal mouthing is more or less visible in all the factor groups of the deaf informants therefore influence of factor groups at the phonology of regional varieties of ISL at intrinsic level is quite evident. In the sub group factor of age, 15-25 yrs old informants are recorded with only 30.77% of transition while the tendency of transition is recorded more in the middle aged group 26-40 yrs old which is 71.43%. In the gender sub group male informants are recorded with only 26.67% of transition whereas 100% of female informants are found to have tendency of mouthing. The sub group of post-lingual deaf informants is recorded with 100% tendency of mouthing whereas it is the only native signer and pre-lingual sub group of informants who do not use mouthing at all.

The sub factor group of gender and post-lingual deaf are recorded with 100% tendency of mouthing over minimal mouthing.

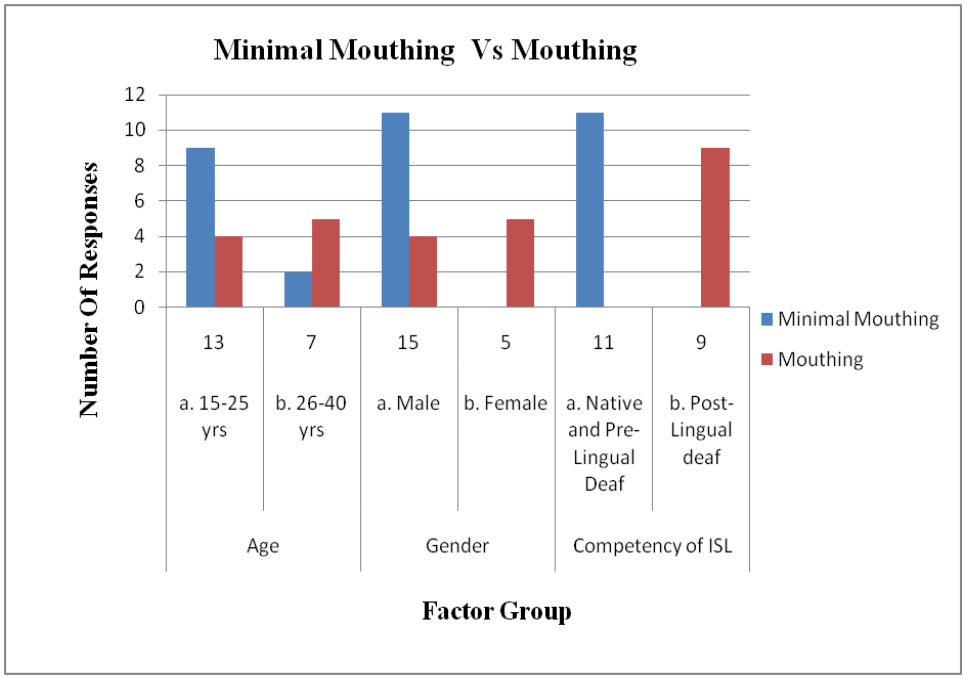


Figure 4. 13 Use of Mouthing over minimal mouthing.

The graph (4.13) obtained from the data depicts that the post-lingual female informants of both the age groups have a tendency of mouthing over minimal mouthing and male deaf post-lingual deaf informants of majorly middle age group have a tendency of mouthing. The preference of mouthing over minimal mouthing somewhere suppresses the components of sign at phonological level; it totally wipes out other important non-manual features which creates a void in the aspectual meaning of the sign. The transition of certain section of informant towards mouthing depicts that both the varieties of ISL have intrinsic phonological variations; style of signing is not same for every deaf member.

4.4 Summary

In this chapter the lexical data sample of five hundred words are investigated for inter phonological change of the two varieties of ISL which are NISL and SISL. From the data, it is observed that phonological variation in ISL is occurring not only between two regions but also at the internal phonological level as well. The informants of both the regions are recorded to have common pattern in their style of signing, it indicates that the style of signing is not same for all the deaf members because deaf community is a heterogeneous community and every deaf member has different social background. The common signing styles such as using single hand instead of double hand for double handed signs, extension of thumb with the index finger, fingerspelling instead of signing and mouthing along with signing are observed in the data of both the regional varieties of ISL. Furthermore, it is observed that the phonological phenomenon of variations in the style of signing is not uniform in all the deaf informants. Therefore, analysis of the background information vis-à-vis style of signing is a must as it will help to segregate the plausible factor group due to which intrinsic phonological variation is observed.

Regarding the factors which influence informant's style of signing is considered; it is measured on three scales. On the first scale informants are segregated based on their competency level of ISL and sub-groups formed due to this factor are native and pre-lingual deaf and post-lingual deaf. On the second scale, informants are segregated under two age groups based on the influence of the paradigm of viewing deafness; adult age group which is scaled between 15-25 years old and middle aged deaf group which is scaled between 26-40 years old. Third scale is gender; data is analyzed for both the genders male and female separately. The style of signing of the twenty deaf informants (ten each from both the regions) who participated in signing the word list for regional variation between NISL and SISL was observed. Sociolinguistic profiling exclusively for these twenty informants was done and their preference of signing style was tabulated vis-à-vis their social background.

Firstly, the data is analyzed to check intrinsic phonological variation based on the preference of using single hand over double hand for double handed signs. It is recorded that the phenomenon of using only single hand for double handed signs is only seen in

the male deaf informants who are young and a native and pre-lingual deaf. The middle aged generation and post-lingual deaf informants does not have any inclination towards using single hand over double hand. Whereas the native signer female informant, pre-lingual deaf and post-lingual deaf female participant is constant in articulating signs with both the hand no matter what age group they belong.

Secondly, the individual responses of the informants are analyzed to see the phenomenon of indexing; some of the informants are recorded with extension of thumb along with the index finger. It is recorded that transition of thumb extension along with the G handshape (index finger) instead of only using G handshape is gradually seen in the most of the post-lingual middle aged female deaf informants and some of the male deaf informants.

The third phenomenon investigated is usage of fingerspelling instead of signing and it is found that the transition of fingerspelling instead of articulating the signs is gradually seen in the most of the post-lingual middle aged female deaf informants and some of the male deaf informants whereas the younger male and female native and pre-lingual deaf informants prefer articulating signs.

Lastly, individual responses based on their background information are investigated for the phenomenon of mouthing over minimal lip movement. It is observed that the post-lingual female informants of both the age groups have a tendency of mouthing furthermore; male deaf post-lingual informants of majorly middle age group also have this tendency. It is the only young male native and pre-lingual deaf informants who show up minimal lip movement tendency. In India, the society does not expect women with disabilities to embrace the role of a mother, a wife and a homemaker, given their lack of physically measuring up to the able-bodied standards (Addlakha,2006). A research conducted by Ghosh (2010) on women with locomotor disability in Bengal found that there in fact does exist certain images of the 'ideal' suitable woman for marriage. Therefore, the reason why female deaf informants of all the factor sub groups have a tendency of mouthing can be deep rooted to Indian culture of marriage system. In India there is a lot of pressure on the girls to posses all the quintessential qualities for marriage. It is possible that a deaf girl child is forced to speak in spite of understanding the fact that

she is medically incapable of hearing and speaking, so this constant conditioning to speak results into mouthing in the female deaf informants.

Therefore, it is a standing fact that ISL has distinct regional phonological variations as discussed in the previous chapter (chapter 3) and it is also subjected to intrinsic phonological variations within the regional varieties of ISL. Sign language in India is constantly evolving, changing and adapting with the diverse heterogeneity of the deaf community in India.

This chapter is not only accounts for the effect of social conditions of a deaf on ISL but the observations on intrinsic regional variations also reveal the possibilities of errors likely to be faced by a researcher occurring due to style of signing of the informants. The phenomenon of double handed vs. single handed, indexing vs. thumb extension, mouthing vs. minimal mouthing and fingerspelling vs. signing is likely to be observed in the lexical variation studies; which occurs due to life experiences of the signers. The observations in this chapter may make informant selection procedure for lexical variation studies in ISL easier and the difference between style of signing and lexical variation might become more coherent.

Chapter 5

Path of Standardization of ISL

The aim of this chapter is to bring forth the issues and concerns emerged due to existence of lexical variation between NISL and SISL in the path of standardization and language planning of ISL. This chapter encapsulates the issue of language attitude, identity and vitality of the signers emerged due to heterogeneity of ISL. The possible solutions and suggestions related to development of ISL have been discussed.

5.0 Introduction

There are roughly 6,500 spoken languages in the world in which about 2,000 languages are at verge of extinction or are endangered[49] which means only few speakers are left of those languages. There can be many reasons for such critical situation of the language; growth or decline of any language depends on its speaker. To protect declination of language and to make sure it grows and develops, certain language policies are made. Every language works under policy it is the speakers who have to be vigilant about it. In some countries for some languages, language policy is predefined and made prominent via constitution and in few countries it is only in practice. Both the types of language policies suggests speakers consciously and sometimes unconsciously to select the language which they want to use in different societal domains like school, family, friend, religion, work places, market etc. So basically language policy is designed to promote use of one or more languages in specific domains.

The introduction section (0.6.2) encapsulates the linguistic rights given to the deaf community of India in the form of constitutional rights, acts and amendments but it fails when it comes to the implementation due to which even the basic fundamental right of the deaf as a citizen of India seems to be violated at every level; they are denied of basic linguistic rights. There can be many other reasons for why deaf community and ISL is not

[49] Moseley, Christopher, ed. (2010). *Atlas of the World's Languages in Danger*. Memory of Peoples (3rd ed.). Paris: UNESCO Publishing.

taken seriously in India but apart from all one possible reason is due to lack of a standard variety of ISL. The standard variety of any language is observed to holds a very high social prestige and path of development for that language becomes easy. In India, sign language is yet not recognized officially as the official language of the deaf community so possibly it can be achieved by standardizing the ISL but heterogeneity of the ISL is the biggest challenge in the path of standardization.

There are certain factors which affect the framing and formation of language policies; socio-linguistic settings, attitude of the language speakers and influence of politics and power. If the speaker has positive attitude for their language then they can modify the existing frame of the language policy. The speakers who will keep positive attitude for their own language will know their linguistic rights and will accordingly fight for it; no political power can stop them in achieving their linguistic rights. The goal of language planning differs from one nation or organization to other. In few cases the lower variety of language is assimilated with the higher variety of the language, the dominant language is forced upon the native speakers of some other variety of language. On the other hand in some cases language policies are framed to maintain linguistic pluralism. Other goals of language planning and policies are; language standardization, language revitalization, language reform and language maintenance.

In the coming sections the centre point of the discussion are the linguistic perspectives on the language attitude, vitality and prestige of the signers of NISL and SISL. The possible methods of standardization of ISL and obstacles faced by the language in achieving standardization due to heterogeneity of ISL will be discussed.

In section 5.1, the meaning of standardization and the ways in which standardization of ISL can be helpful in uplifting the status of sign language in India are discussed in brief. Section 5.2 brings forth the hindrances in the path of standardization of ISL due to existent regional varieties of ISL; the argument is established through statistical data collected from the deaf informants of NISL and SISL. In section 5.3, a discussion on the possible methods in which standardization process of ISL can be conducted is presented; the success and failure chances of the methods are countered with reference to the observations made through data. Section 5.4 discusses the possible methods which can be

used for codifying and ensuring the access of the standard variety of ISL. Section 5.5 presents a case study of two deaf informants of NISL and SISL; this section is completely based on their opinion on advantages and disadvantages of uniformity of sign language in India. In section 5.6, conclusion on standardization of ISL is presented; considering the opinion of the deaf community of NISL and SISL the final argument on standardization of ISL is made.

5.1 The Meaning of Standardization

Standardization is a process of setting norms consciously made or planned for the use of specific language in oral or written form in a specific domain. The standardization process is often associated with writing and literacy; i.e. development of writing system, normalization of the existing written system and representation of the language in education system. It is done within and as well as outside of the language variants; often the variety of language which has higher prestige overpowers the lower variants of the language.

What is under discussion for now in regard to ISL is consciously setting norms which will standardize ISL, so that it is easier to produce teaching material to deaf schools and sign language interpretation institutes which may not show all regional variants of ISL. For now, most of the deaf schools and interpretation institutes follow their respective regional varieties of ISL. Indian deaf community has yet not accepted any writing system of sign besides some scientific notation systems representing formational aspects have been developed over the time.

The main purposes of standardization are; producing teaching material in standard variety of the language which helps spreading literacy, inter-regional understanding in case of multilingual set up of society and nationwide recognition of that standard variant of the language. If a language has a standard form then it is easier to get official recognition, it is easier and cheaper to produce teaching material and literature in one standard variety of language which can be understood by all. The standard variety of language will also be used for official and political purposes which bring high importance of the language. Standard variety facilitates communication among users of different variety of language. Standardized language receives greater prestige and status in the society because it is

used in high status social domains like school, law making bodies, government offices etc. It provides foundation for growth and development of the language as it is all over print media, visual media and auditory media. Standardization brings a certain kind of stability to the tradition of the ethnic groups of speakers of that particular variety.

To achieve the goals of standardization conscious strategies are taken up by; influential institutions, situatory bodies, group of activists, politicians, representative of the ethnic group, representatives of economics, government, education and science. The conscious standardization is often similar to law or regulation declared by an influential authority. Having such influential bodies is the conscious standardization process, it will be not wrong to say that this kind of standardization reflects social hierarchy and power of the associated group of society. Sometimes the goals of standardization are achieved by non-conscious efforts of the respective language community such as; silence acceptance of the variety of language. Often there is not much interest or discussion within the influential group of that language community of standardizing their language. There is also a possibility that the community itself is indifferent to such processes, an implicit or enforced standardization bears the danger that the people outside the community will take over their language and will gain power to manipulate their language.

With the decline of nationalism in 20th century many minority language communities stood up for their language and linguistic rights. Post-Independence India has witnessed partition of states from the previous one on the basis of language[50]. India was always a multilingual and heterogeneous society but post-Independence it faced many language conflicts due to the concept of one National language, one National Flag, one National animal and so on. To resolve this issue Eight Schedule languages was adopted by the India constitution. At present out of 114 languages only 22 languages got place in Eight Schedule including few minority languages like Sindhi, Santali and Nepali. This Eight Schedule in itself has created drift between minority and majority language because most of the minority and majority language is still looked down upon, however in the Constitution of India certain rights and regulations have been mentioned for the development and protection of the minority language.

[50] Pandit, P. B. (1977) Language in a Plural Society, the Case of India. Delhi University Press, New Delhi.

Sign language and deaf community in India has a prehistoric ignorance record so it is not a surprise that there is no mention and acknowledgement of the ISL and deaf community anywhere in the India Constitution, however there are minority language protection acts so deaf community being a minority community has the right to plan and process ISL for the development of their community.

5.2 Linguistic Diagnosis: Issues in Standardization due to Lexical Variation

In India, till now ISL is considered pan-Indian variety of Indian sign language and regional varieties of ISL is often ignored. The previous researches only focus on lexical similarity (Zeshan 2000, Woodward 1993) and phonology, syntax, and grammar (Vasishta 1987, Zeshan 2000, 2003). Vasishta (1978) suggests that ISL have systemic variation in and between regions and would not create problems for language standardization or planning but at present there are no empirical studies available in support of this. Deaf signers of NISL and SISL identify both the regional variety as an independent and accomplished ISL variety in its own therefore, before discussing any language standardization processes it is important to examine the emotions signers have for their language. This section examines the language related issues such as language attitude, Identity and Prestige of the signers of NISL and SISL; it is checked through a statistical survey and personal interview conducted with participants of NISL and SISL signers and the conclusion is based on their responses.

The first part of the survey was conducted at the research site of New Delhi and Hyderabad to know the attitude of deaf community towards their own language, Identity and prestige concerning variety of ISL. A set of twenty closed questionnaire concerning these issues was asked to fill by the informants. At Delhi a group of 32 informants participated in this poll and 39 informants from Hyderabad participated respectively. For a better comparison responses of 32 participants from both the places are took under consideration for language attitude, identity and prestige analysis. The number of responses were tabulated on Microsoft excel sheet and formulas were used to draw out percentage of responses for each question.

The language attitude, prestige and Identity developed in the signer of NISL and SISL developed due to acknowledgement of both the varieties of ISL as a separate regional variety are discussed in the coming sections; the argument is based on the data obtained from the survey.

5.2.1 Attitude

We often form an opinion regarding certain things, in this context "language" and this opinion leads to our attitude which can be positive and negative towards a particular variety of language. From a linguist point of view, all languages and all variety of languages are equal however the evaluative attitude towards certain variety of language receives less favorable evaluation because the individuals who use that language are socially stigmatized. In India, still certain sections of hearing people do not consider ISL as natural language because the social stigma of disability is attached with the language. However in this section, the attitude of the deaf community towards their own language is discussed.

The evaluation of language attitude of the speakers holds importance in minority language because it contributes in the study of language shift and maintenance of the minority language. As proposed by Baker, "In the life history of language, attitude may be crucial. In language growth or decay, restoration of destruction, attitude may be central" (Baker, 1988). Evaluative data may help explain; the nature of the distribution of language variation, determine the level of knowledge speakers have of their first language as well as their level of everyday use of it. Language attitude surveys may also provide valuable information for language planners as they make decisions about which language or variety to use as the official language of government or in education. As very well quoted by Baker, "the success of language policy is predicted on attitude surrounding that language" (Baker, 1988).

Here is a statistical survey done with the deaf signers of North and South region of India. The findings contribute to the questions "Do Deaf people have positive attitude towards ISL?" These findings will reveal that the stigma of disability attached to the language also affects them or not.

Sl No	Questions	Number of Respondents	Number of Response	Percentage(%)	Number of Response	Percentage(%)
			NORTH		SOUTH	
1	If you have both a hearing and a deaf friend, on whom will you trust the most?	**32**				
	a. HEARING		1	3	0	0
	b. DEAF		8	25	21	66
	c. BOTH		23	72	11	34
	d. NONE		0	0	0	0
2	You are comfortable going out with?	**32**				
	a. HEARING		1	3	0	0
	b. DEAF		21	66	11	34
	c. BOTH		0	0	16	50
	d. NONE		10	31	5	16
3	You would like to marry?	**32**				
	a. DEAF PERSON		24	75	21	66
	b. HEARING PERSON		8	25	11	34
8	Do you think hearing people should learn sign language?	**32**				
	a. STRONGLY AGREE		32	100	24	75
	b. STRONGLY DISAGREE		0	0	8	25
9	How do you feel when a hearing person communicates with you in sign language?	**32**				
	a. GOOD		9	28	7	22
	b. BAD		1	3	0	0
	c. NORMAL		22	69	25	78
10	Do you think sign language should be taught in schools?	**32**				
	a. STRONGLY AGREE		28	88	32	100

	b. STRONGLY DISAGREE		4	13	0	0

Table 5. 1 Attitude of NISL & SISL informants towards their own language.

Question 1, "If you have both a hearing and a deaf friend, on whom will you trust the most?" when asked from the participants of the North region, only 3% chose hearing over deaf, 25% deaf over hearing and 75% gave a neutral reply saying they trust both. It reveals that being only deaf is not a criterion for them to make friendship and sharing their personal issues. Therefore attitude towards another deaf member for this question is neutral. The respondents of South region has a little different opinion for this, 66% of respondents chose deaf over hearing when it comes to trust, 34% chose both and none of them chose only hearing over deaf.

Question 2 "You are comfortable going out with?" aimed at the opinion they keep regarding comfort zone. Generally we go out for fun only with those people whom we are comfortable or have an intimate relationship. In the North region majority of respondents (66%) chose deaf over hearing, 3% chose hearing over deaf and 31% of respondents are not comfortable with anyone and chose "none" option. In the south region 34% chose deaf over hearing, 50% chose both, 16% chose "none" option and nobody chose only hearing over deaf. From the data we can see that in general the deaf member likes to go out with other deaf members, which reveals a positive attitude towards another deaf member of the community.

Question 3 "Whom would you like to marry". Was asked to know the opinion whether deaf people prefer to marry another deaf or not. In North region 75% of the respondents chose deaf over hearing and in South region 66% of the respondents chose deaf over hearing. In both the regions, from figures it is quite clear that the response is in favor of preferring deaf over hearing which shows that they keep a positive attitude towards another deaf member of the community. Getting married within the community is a part of culture in most of the ethnic group and the data revels that deaf community is not any

different from any other ethnic community, they want their culture and values to remain intact and inherited by their offspring therefore they want to marry within the community.

Question 8 “Do you think hearing people should learn sign language?” In the North region 100% response was recorded, the participants strongly agree to it and in South region 75% of the participants agree to it. This positive response revels that deaf people do not want to confine ISL to their community only, they want hearing people also to learn their language. This shows their positive attitude towards development of ISL.

When Question 9 “How do you feel when a hearing person communicates with you in sign language?” in the North region 69% respondents gave a neutral response saying it is quite a normal feeling when the hearing people sign back to them, 28% was recorded in favor of “good” option and only 3% of the participants gave negative response any saying they don’t like when hearing people sign back to them. In the south region 78% of respondent gave a neutral response, 22% in favor of “good” option and no negative response was recorded. The majority of the response is positive in this case, in fact the percentage falls to the neutral feeling which is a positive sign, and this reveals that for deaf community sign language is like any other language it is normal for them to see hearing people sign.

Question 10 “Do you think sign language should be taught in schools?” To this 88% of response was recorded in favor in the North region and 100% of respondents agreed to it in the South region. This kind of positive response in favor of teaching ISL in schools show how committed and loyal this community is in ISL teaching programs in schools which will lead to propagation of ISL in the deaf community and also it will help bridge the language gap which exists between the deaf and the hearing.

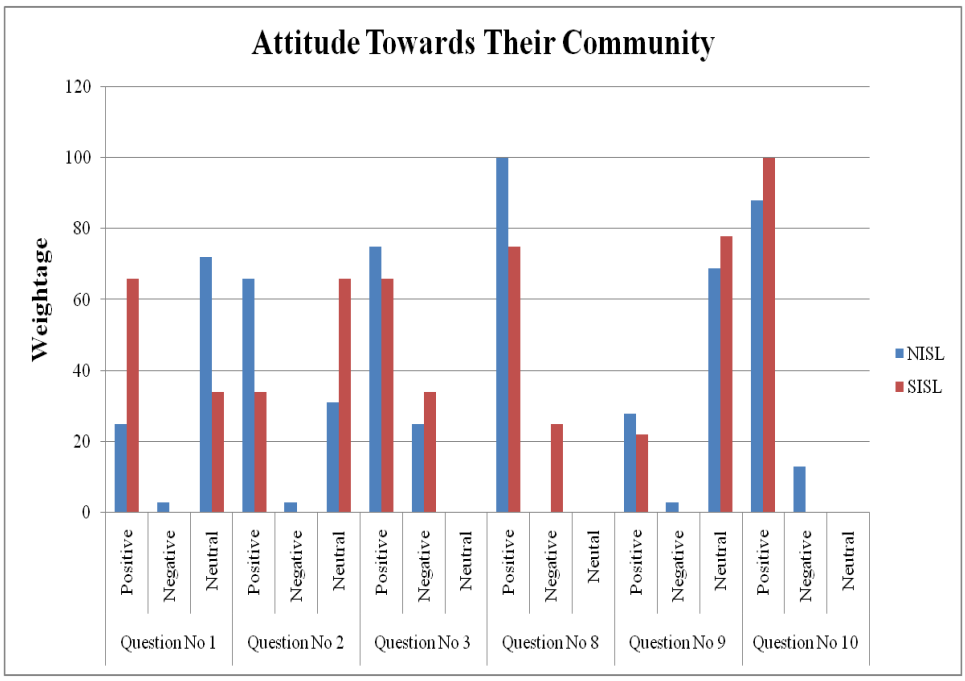


Figure 5. 1 Demonstration of attitude of the deaf towards their community.

The graph of attitude towards deaf community and being deaf obtained from the responses of the respondents have maximum positive replies; respondents of both the regional varieties embraces ISL and the deaf community whole heartedly, we can see maximum positive replies for question no 1, 2 and 3 which indicates that they have a lot of love and respect for the other members of their community. The maximum positives responses for question no 8 and 10 indicates that the community have a very positive attitude towards developmental programs of NISL and SISL. Therefore with these results it can be said that the stigma of disability attached with the community and language does not affect the love and respect the signers of NISL and SISL have for their language and community.

5.2.2 Identity and Vitality

Language plays a vital role in defining or describing the identity of the person, linguistically identity means who we are at a community level. To make such identifications over the time language has played a pivotal role in make group membership, social and community identity. Social identity is individual's identity made from language we use within a social group of setting and language is the creator of

social identity and medium to establish self-esteem and power in the society. We gain an equal treatment from the society by establishing power in the society. Language cannot be separated from an individual's social identity.

A survey was conducted in Delhi and Hyderabad to understand the sentiments of the deaf community towards their language and their fellow members. This survey will also reveal attitude towards other speaker of that language and how much they are concerned about preserving their culture and heritage.

Sl No	**Questions**	Number of Respondents	Number of Response	Percentage(%)	Number of Response	Percentage(%)
			NORTH		**SOUTH**	
11	Do you think hearing people also, should be the part of deaf club?	**32**				
	a. YES		15	47	11	34
	b. NO		17	53	21	66
12	Do you hesitate using sign language in public?	**32**				
	a. ALWAYS		10	31	7	22
	b. NEVER		10	31	20	63
	c. SOMETIME		14	44	5	16
13	Do you ever think that in sign language you cannot explain your emotions well?	**32**				
	a. ALWAYS		6	19	6	19
	b. NEVER		1	3	20	63
	c. SOMETIME		25	78	6	19
14	Sign language represents deaf community?	**32**				
	a. STRONGLY AGREE		31	97	32	100
	b. STRONGLY DISAGREE		1	3	0	0

15	Any people who knows sign language is a part of deaf community?	**32**				
	a. YES		4	13	13	41
	b. NO		28	88	19	59

Table 5. 2 Identity related issues of the informants of NISL & SISL.

Question 11 "Do you think hearing people also, should be the part of deaf club?" Motive behind asking this question is whether deaf people like the interference and intermingling of hearing people in their deaf clubs or not. Deaf clubs are the platform where they learn and express their talent to the fullest. In North region 53% participants polled for the option "no" that they don't want hearing members in deaf clubs and 47% of the participants are in favor of involving hearing members. In South region 66% of participants do not want hearing deaf club members and only 34% polled in favor of hearing participants. In both the region we can see a common belief that it is not easy for anyone to get the membership of deaf community, knowing sign language is not the only criteria for it one has to certainly identify themselves as deaf and should posses deaf culture. This also reveals that certainly deaf community do not like to compromise with their culture.

Question 12 "Do you hesitate using sign language in public?" was asked to poll the opinion of the deaf people whether they are ashamed of their language or not; to this mixed response was recorded in the North region. 31% said that they are always hesitate, 31% said they never hesitate and 44% of participants said they sometimes hesitate using sign language in public. The response regarding the use of sign language and identifying themselves as signers is not very clear here. In the South variety 66% of the participants said they never hesitate using sign language in public. 22% of participants are always hesitant whereas 16% are sometimes hesitant. From the data of south region we can conclude that deaf people identify themselves as signers and are proud of their language and have no reason to be hesitant.

Question 13 “Do you ever think that in ISL you cannot explain your emotions well?”; in the North region survey majority (78%) polled that sometimes they feel ISL as a language fails in expressing emotions. 19% said that they always fail expressing their emotions through ISL and only 3% gave a positive reply saying that they never feel that through ISL they cannot express their emotions. So overall the response was very negative. In the South region 63% of participants gave a positive reply by option “never”, i.e. they never feel short of expressing emotion through sign language. Whereas 19% always feel and 19% sometimes feel it is difficult to express through sign language. It is a common notion that we tend to express our feelings in that language in which we are most comfortable with. If we compare data of North and South region then North has a negative response maybe because every deaf have its own story and background. The confidence with the language is directly implied with the level of competency of the language; in the survey mostly post-lingual deaf participated so it is quite possible that they are not much confident with the sign language. In the South region a positive response was recorded which reveals that sign language is not a barrier for them in terms of expressing their emotions. This holds a certain kind of vitality to the language.

Question 14 “Sign language represents deaf community?” for this question there was a positive response in both the regions. In the north region 97% of poll was recorded saying they strongly agree with the question and only 3% of people strongly disagree with the fact that ISL is the identity of the deaf community. In the South region 100% participants agreed with this. The clear agreement and positive response revels that sign language is very important in terms of identity of the whole community. Deaf community has completely embraced sign language and is proud of identifying themselves as signers.

Question 15 “Is any person who knows sign language is a part of deaf community?” In the North region majority (88%) of the respondents said “NO” for them only knowing sign language does not make any one a part of deaf community. According to their opinion they do not involve any one just on the basis of sign language, knowing deaf culture is also important to be accepted in deaf community. For the acceptance for the membership of deaf community knowing both ISL and deaf culture is important.

Respondents give both culture and language a great importance. Only 14% of the respondents feel that just by knowing ISL any one can be accepted and welcomed in the community. The survey reflects that deaf people have a positive attitude for their culture and community. In the South region 59% agrees to the question and 41% disagrees, still the majority of the participants feel that knowledge of sign language is not enough for being a part of the deaf community. The data clearly revels that deaf identity is very complex and deaf community do not like trespassing, simply knowing the language dos not qualifies anyone because it is the matter of identity.

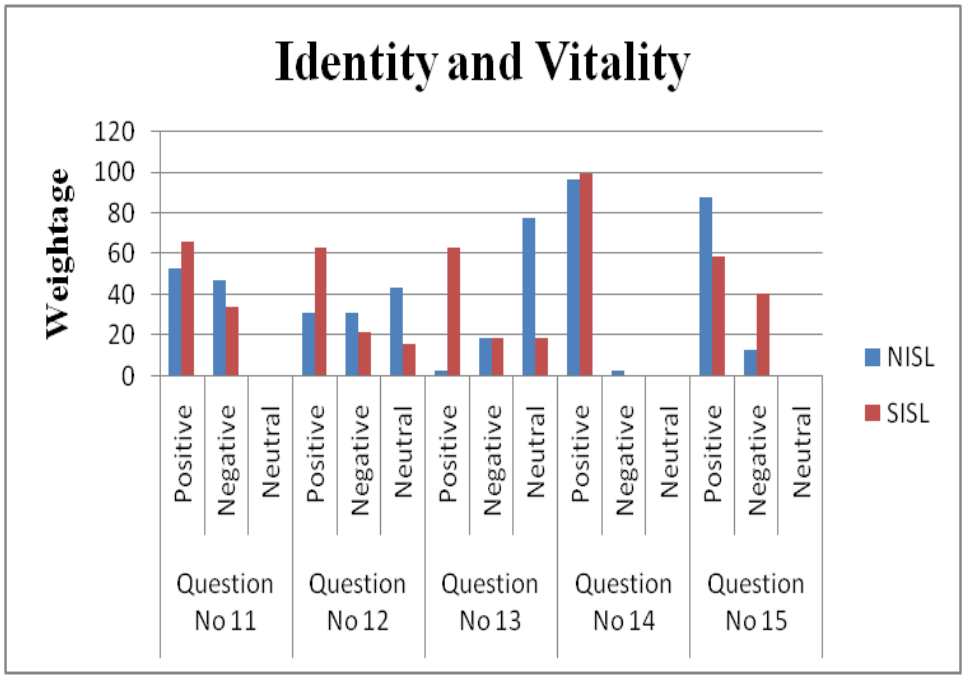


Figure 5. 2 Demonstration of attitude of Deaf community towards language identity.

The graph obtained for the language identity and vitality related issues have maximum positive replies for all the questions. The positive responses obtained for question number 14 and 15 indicates that sign language of their respective region represents them as a community, membership of their community cannot be obtained easily one must be aware of their culture as well as their language. The results revels that the respondents of NISL and SISL are committed towards preserving their language and culture because for them it is not just a language but a matter of identity.

5.2.3 Prestige

Prestige influences whether a language variety is considered as the powerful and standard language or not. Different varieties of same language can co-exist or be geographically separated. The variety which holds higher prestige is likely to be taken under consideration for standardization. As suggested by Milroy (2001), "the notions of "standard language" and "prestige language" are used interchangeably or are "lumped together" because of their analogous social implication. This simply means that if standardization of a language is a social imposition then prestige is the illusion due to which standardization of language is done. The language prestige study also reveals the social and political dominance of one community or one variety speaker on other.

In the following section, the opinion of the signers of North and South towards their regional variety of Indian Sign Language will be discussed. A survey was conducted at the respective research places; this survey contributes to the research concern that "Is there any high or low variety of Indian Sign Language?"

Sl No	Questions	Number of Respondents	Number of Response	Percentage(%)	Number of Response	Percentage(%)
			NORTH		SOUTH	
16	Is ISL same throughout India?	32				
	a. Yes		8	25	11	34
	b. No		24	75	21	66
17	Which variety you prefer most?	32				
	a. Comfortable with all		15	47	12	38
	b. Regional Variety		17	53	20	63
18	Do you understand other variety of ISL other than yours?	32				
	a. Yes, Instantly		9	28	4	13
	b. Yes, but it takes time		16	50	19	59
	c. No, not at all		7	22	9	28
19	Do you want to learn sign language from other states?	32				

	a. Yes		11	34	8	25
	b. No		17	53	21	66
	c. Maybe		4	13	3	9
20	Do you want to see same sign throughout India?	32				
	a. Yes		13	41	7	22
	b. No		19	59	25	78

Table 5. 3 Prestige related issues of the informants of NISL & SISL.

Question no 16, "Is ISL same throughout India?"; in the North region 75% of participants thinks it is not same all over India ant rest 25% thinks it is same. In the south region 66% respondents opted "no" and 34% agreed that ISL all over India is same. The data revels that maximum participants think that regional variations exists in India.

Question no 17, "Which variety you prefer most?" In the previous question data revealed that in point of view of deaf, ISL is not same all over so it is important to know which variety of sign language are they comfortable with. In the North region, there was a mix response where 53% of the participants agreed that they prefer their own regional variety whereas 47% of the participants are comfortable with all the varieties. In the South region 63% opted regional variety and 38% are comfortable with all. The data clearly indicates that the majority of deaf are not ignorant towards the regional variety of the ISL and there is some hint of prestige issue attached with this. They want to use and propagate their own variety of Indian Sign Language.

Question no 18, "Do you understand other variety of ISL other than yours?" the reason behind asking this question was to understand whether the signers are aware of other regional variety or not or are they content knowing their own variety. In the North region 28% of the participants agreed that they understand other variety instantly, 50% understands regional variety but it takes time and 22% do not understand at all. In the South region 13% of them understand instantly, for 59% it takes some time to understand and 28% of them do not understand at all. The bar for the option "yes, but it takes time"

is more in both the regions, it is quite possible that they are aware of the other varieties of ISL but prefer their own variety at the same time they respect other varieties also therefore in times of need they pay attention during interaction with a different variety of signer, ask if they do not understand the sign and they communicate. In the hearing community we often ignore communicating with the speakers of other variety of language it is seldom that we try to learn the other language and if it is a lower variety then we completely ignore the speaker. In deaf community they enjoy and respect all kinds of diversity.

Question no 19, "Do you want to learn sign language from other states?" when asked in North region only 34% polled for "yes"; 53% polled for "no" and 13% of them said may be they will consider learning it. In the South region 25% polled in favor of learning other variety, 66% do not want to learn other variety and only 9% said may be they will learn. The maximum vote went to the option "no" in both the regions, which makes it crystal clear that the deaf community does not want to leave their variety of ISL alone. They have high prestige for their own variety of ISL.

Question no 20, "Do you want to see same sign throughout India?" In North region 41% of participants agreed to it and 59% were not in favor. In the South region it's a clear victory of "no" over "yes" with 78% and 22% respectively. In the North region percentage against the notion is not very high but still it holds majority. By these figure of disagreement we can conclude that for signers their regional variety of ISL holds utmost importance. They fear that, if all over India the sign language will become same then their own variety will die down. Like deaf culture the love for their regional variety is embedded to the community and they can't leave their language alone. The above data revels the deaf community holds a high prestige for their variety of ISL and it holds a certain amount of vitality.

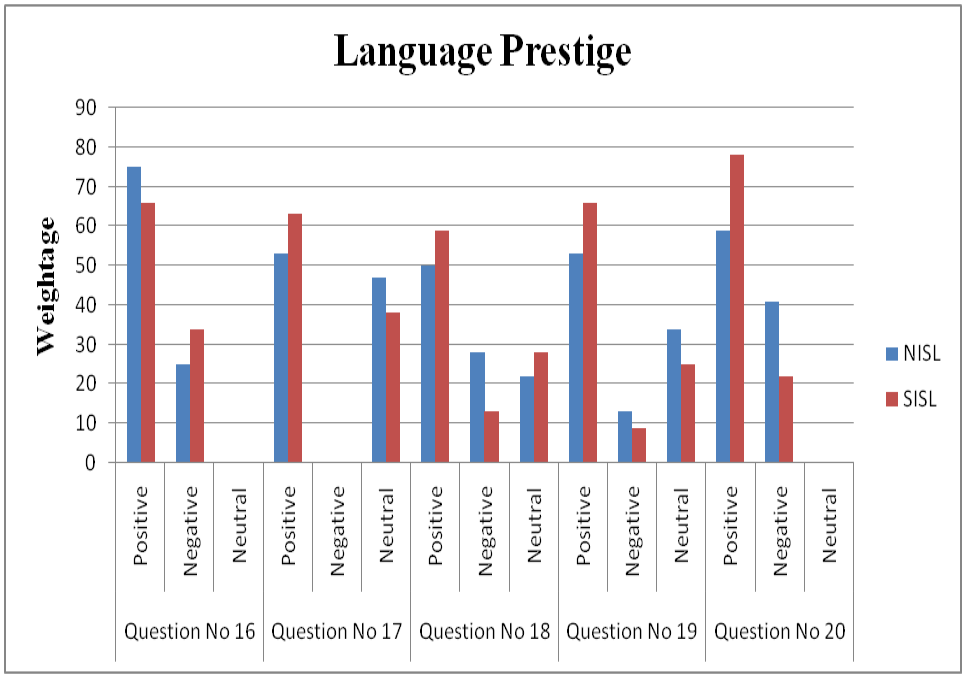


Figure 5. 3 Demonstration of language prestige of deaf community towards their respective regional variety.

The graph obtained for language prestige related questions from the respondents of NISL and SISL for their respective regional varieties of ISL have maximum positive responses. Responses observed for question no 16 and 17 clearly indicates that; ISL is not uniform throughout India and the respondents prefer their regional variety of ISL over any other language. Positive responses recorded for question number 18 and 19 implies that the respondents have a very positive attitude for their regional variety of ISL, they do not subscribe to the concept of high variety and low variety of a language. The respondents are not in favor of the uniformity of ISL. The result revels that signers of NISL and SISL do not consider their respective regional variety of ISL as a low variety and is not ready to give up on their language.

5.3 Possible Standardization Process of Sign Language

5.3.1 Do spoken Language face the same problem?

For better understanding of the problems faced by the deaf community of being constantly ignored and Sign language not recognized as an official language, the condition of ISL should be compared with other spoken languages in India which face similar social suppression and is unwritten like ISL. Here the motive of comparison is to know whether the sufferance is similar or not.

Most of the languages in India are written in Brahmi derived script such as Devanagari[51], Tamil, Telugu, Odia, Bengali, Meitei Mayek etc. The prominent languages of India such as Hindi which is also an official language of India as per Official Language Act (1963), English, Bengali, Marathi, Odia, Telugu, Tamil, Urdu etc have a linear script and hold a special status in the society. It has well developed dictionaries, literature work, media influence and also speakers are allowed to use this language as their medium of education in education system. These languages are teachable and have enough teaching sources. It will be unfair to compare sign language with these languages because it holds special status in Indian society; continuous efforts are made by the language policy makers to develop these languages.

The situation of ISL in India can be best compared with the minority, endangered language and a few regional languages of India, simply because at some point of time they have also faced the same suppression until initiative were taken to develop it whereas a few languages are still facing similar suppression and constant ignorance.

Bhojpuri and Haryanvi are the regional native languages having more than one million speakers as per the record of 2011 census of India. Bhojpuri is mainly spoken in Bihar and Uttar Pradesh whereas Haryanvi is mainly spoken in Haryana however the population of these speakers are scattered so it is possible to find their speakers in other parts of India as well. Bhojpuri[52] and Haryanvi are considered as one of the variants of Hindi language. Both the languages do not have a writing system of its own but can be

[51] Masica, Colin (1991), *The Indo-Aryan Languages*, Cambridge: Cambridge University Press.
[52] Also See, Cardona, George; Jain, Dhanesh, eds. (11 September 2003). *The Indo-Aryan Languages*. Routledge Language Family Series. Routledge. p. 500.

written in Devanagari script. In Haryana, Haryanavi language is very much alive in all social domains and is widely spoken by the population of Haryana. It is also the mother tongue of the regional residents of Haryana but it is not included in education system in those regions. There is no teaching material in Haryanavi, the Constitution of India has given right to all the communities to get education in their mother tongue but in Haryana it is completely overlooked. However, Haryanavi language holds a great importance in media and entertainment industry. They have their own regional Cinema Industry, News Channels and Music industry. Songs and films made in Haryanavi language is not only enjoyed in Haryana but in other regions of India also. Hryanavi language is also used in the mainstream cinema and mainstream Television industry. Same is the condition with Bhojpuri; its teaching material is not available in the schools but it is very well known in entertainment industry. Over the time both the languages have gained immense popularity outside the state boundaries; it will be not wrong to say that despite being ignorant towards linguistic rights of the community these languages are not socially suppressed in any manner. Bhojpuri is also struggling to get under Eight Scheduled Language of India.

Santali language has 7.6 million speakers (2011 census), it is mostly spoken in parts of Assam, Bihar, Jharkhand, Mizoram, Odisha, Tripura and West Bengal; apart from India it is also native to Bangladesh, Bhutan and Nepal. Santali is the third most language from the Austro-Asiatic language family after Vietnamese and khmer to be spoken by large group of people. Until the nineteenth century Santali had no script of its own. Over the generations until nineteenth century it has been transmitted only through oral medium. For language documentation, folklores and linguistic study; Bengali, Odia and Roman script was used. In 1925 Raghunath Murmu created Santali's very own script "Ol Chiki" which was published in 1939. This script got widely accepted by the community in India, West Bengal, Odisha and Jharkhand use Ol Chiki script for writing literature of Santali however in Bangladesh still uses Bengali script for writing Santali. In India, Santali despite being a minority language it is one of the 22 scheduled languages. Santali was honored in December 2013 when the University Grants Commission of India decided to introduce the language in the National Eligibility Test to allow lecturers to use the

language in colleges and universities, so Santali from once being just a spoken language without script is now have teaching materials for schools.

Jarawa language is the language of the Jarawa tribe found in Andaman and Nicobar Islands southeast of India in the Indian Ocean. It is one of the endangered languages of India with nearly 400 native speakers alive. It is one of the Ongan languages belong to the Andaman language family of India[53]. The Jarawa tribe only depends on hunting and gathering for their livelihood. Many Linguists and Anthropologists have worked for documentation of the Jarawa language before it extinct. Jarawa language is very well protected under the government scheme called "Protection and Preservation of Endangered Languages of India" operated by Central Institute of Indian Languages (CIIL), Mysore[54]. Apart from this, Jarawa language has official status; it is declared as official language of India specifically in the Andaman Islands by the government of India.

The above discussion suggests that there is hardly any spoken language in India which is facing similar suppression like Indian Sign language is adhering. Prior attempts have been made to develop writing system of sign language like Hamburg Notation System(1990), Sign writing developed by Sutton (1974) etc, but it is not used by the community. So it is a fact that ISL does not have script as a teaching material for schools but languages like Haryanvi and Bhojpuri also lacks script but these languages are used in media and it is open to public. It can be assumed that there is social acceptance for languages like Haryanavi and Bhojpuri but ISL is devoid of this platform also, it is not used in media as a result of which it is restricted to their members only. ISL has not been recognized as the official language of deaf community despite having 1.3 million (2011 census) population of the D/deaf community in India. Despite being the language of minority community no special protection acts has been provided to the community which can be helpful in conservation and development of the language, instead there are

[53] Also see, Anvita Abbi (1 January 2006). *Endangered Languages of the Andaman Islands*. Lincom Europa.
[54] Founded on 17th July 1969 by the Ministry of education; Government of India.

some special provisions made under disability act by the government of India like PWD Act which is inclusive in nature but unfortunately it is not followed on ground level.

Here, the argument is that the linguistic rights and disability rights are two different things they cannot solve each other's problem. Deaf linguistic rights should be taken more seriously instead of looking it under the prism of disability.

5.3.2 How to conduct Standardization process: Despite lexical variations

For now let us assume that a fully fledged language has at least one standard variety for official purposes, development of the teaching material, translocal communication and negotiating with the educational institution to teach it to the hearing people. The question lies, how should the standardization process run, from the perspective of a linguist excluding the deaf community from the whole process of standardization is unacceptable. Standardization should come from within the community or at least there should be essential contribution of the community in the whole process. As far as the community is concerned the awareness of the standardization process within the community is very low so first the community should be asked whether they want such a process or at least guide them through and motivate them for going through standardization process.

If the deaf community in India agrees on developing a standard variant of their language then a group of native signers, deaf scholars, sign linguists and deaf educators should be appointed to lead the process and the language users of the community can be motivated to contribute and participate by giving information.

From the data obtained in support of lexical variation between NISL and SISL in chapters 3 and the survey results elaborated in section (5.2) of this chapter; it is very much clear that there are two different varieties North and South variety of sign language exists, there is a separate variety of sign language in Meghalaya named Shillong Sign Language (ShSL) of which a descriptive study has been done by Melissa G. Wallang in her research work "*Sign Linguistics and Language Education for the Deaf: An Overview of North-East Region"* (2007), Christian club sign language reported by Jane E. Johnson and Russell J. Johnson in their work "*Assessment of Regional Language Varieties in Indian Sign Language*" (2008). These are the varieties of Indian sign language studied so far

there could be more which is the fact to be investigated. To avoid any language conflict standardization process should be done very wisely because as discussed in section (5.2.3) of this chapter deaf community holds a very high prestige for their native variety of sign language. The previous studies of standardization of other languages as well as sign language has suggested two methods of doing it; sorting out one language variety as the standard variety over rest of the other language varieties and assimilating or merging one variant to the other variant to achieve standardization. In case of sign language iconicity and frequency of occurrence of the sign for one lexical item can be the criteria for both the methods.

In the following section, a discussion on the approach of above mentioned two standardization processes in context to Indian Sign Language has been presented. The chances of success and failures entailed with the process will also be discussed.

5.3.2 (a) Upgradation and Assimilation Of The Lexical Items

In the most common opinion, in the standardization process the lexical items are the prime target for up gradation. In 1997 Madan Vashisht with his co-linguist Woodward conducted a sign language survey at the major metro cities of India which revealed that Indian sign language is a complete natural language. In 1998, first ISL dictionary was released based on the survey of signs conducted in four major cities; Mumbai, Delhi, Kolkata and Bangalore. Later in 2001, Ramkrishna Mission Vidyalaya in collaboration with CBM Germany released ISL dictionary comprising of over 2500 words. This dictionary has formed the base for Sign language research and deaf education over the years. Both the attempts of making ISL dictionary claims of incorporating signs from all the regions of India yet it fails at giving variants of signs. In March 2018, ISLRTC launched its first edition of ISL dictionary which consists of 3000 words. This dictionary focuses mainly on creating new lexical items and fills the lexical gap between sign language and spoken language by giving signs for technical terms used in academics, medical faculty and law faculty. The aim of ISLRTC of making ISL dictionary is good as it will produce study material of sign language at schools but it has not incorporated the region specific variations of signs.

So from a linguist point of view, the suggestion for achieving lexical up gradation for ISL is to create a lexical database which should be pragmatic in approach in which deaf colleagues should participate in planning and formation with the help of mixed hearing team helping in technicalities. In previous methods of lexical documentation the sociolinguistic variables responsible of lexical variations were ignored completely. In chapter 4, it has been discussed that the competency of the sign language, age of onset of deafness and gender are responsible for the intrinsic variations in sign; so a proper sociolinguistic profiling is must for the participants who are selected to sign for the database. In this database suppose if there are three different signs for one lexical item then all three signs should be mentioned and for creating teaching material one sign can be picked based on pragmatic usage, iconicity and frequency of occurrence of signs. The database should be open and flexible for data entry at any specific point of time so that the new researches on lexical items can be incorporated. A good database containing lexical variants can provide a good material for standardization processes and the sorted signs can become standard variety of sign afterwards. By adopting this method the process of language documentation and language standardization can go hand in hand. The formation of lexical database in also adopted by country like Austria[55] where sign language variety exists. All variety of signers contributed in the formation of the lexical database and it is a huge success.

The creation of such a lexical database will be different from previous methods of lexical documentation works so far done in India for ISL because; in previous works because the social and linguistic background of the signers were not checked despite knowing the fact that signing community has a rich diversity, sociolinguistic factors are responsible for the lexical variations in signs. The dictionaries available so far has just picked single sign for one lexical item and presented it but in this database all the variety of signs will be available so that a sign language learner can easily get to know about the variations and can pick one sign according to their pragmatic understanding.

[55] Also see Krammer, Klaudia; Bergmeister, Elisabeth; Dotter, Franz; Hilzensauer, Marlene; Okorn, Ingeborg; Orter, Reinhold; Skant, Andrea. 2001. *The Klagenfurt database for sign language lexicons.* John Benjamins Publishing Company. Austria.

Whether the suggested framework of lexical up gradation and assimilation is likely to work or not in India, cannot be answered now because such a process takes time and result of success and failure is a very slow process. But before conducting such a process we can learn from the mistakes of contemporary countries which failed in standardizing process with similar concept and framework. One such unsuccessful case is of Arabic speaking countries, so a series of meetings were conducted were signers from North Africa to Gulf Arab States came together to create a common standard Arabic Sign Language. Participants from each country presented their signs for different lexical items and then the signs were compared voted and selected for the common lingua franca. The commonly selected signs were put down together as a word list in both print and visual medium. This process seemed to look good initially but later on when it reached out to the original users; it got rejected completely despite of the fact the voting for the signs were conducted in most democratic way possible. The signers complained that the signs were mixed and created artificially; it did not match up their pragmatic knowledge of the word.

So, for now we should just put together the signs with all the lexical variations possible and let the standardization process happen organically. We should leave the decision to choose the "standard" variety of sign on the signers and let standardization take its own time. If we try to impose self picked signs on the community then it can face similar failures as faced by Arabic speaking countries.

5.3.2 (b) Choosing High Variety over low variety

In a society where more than one variety of language exists often people compare one variety of language with the other. The comparison between the languages develops a negative attitude towards a certain variety of language which analogically develops low prestige among the speakers for their language. The variety of language with high prestige often dominates the language with low prestige and it creates a drift among the varieties. In the society like this often variety of language with high prestige is chosen unanimously as the standard variety of language and overtakes all the essential societal domains like education, workplaces, market etc. In this process, the goal of standardization is achieved and fulfilled but the low variety of language faces constant

ignorance, sufferance and oppression, over the time the lower variety of language shrinks in their usage of different societal domains and perishes.

This method of standardization is often applied to spoken languages and the goal of standardization is also achieved. Before imperially applying the same method of standardization on Indian Sign Language, it is important to know if this method is tried and tested on some other countries or not and what are the results.

In Japan, Tokyo variety of sign language has become the standard variety of sign language and is used in all practical purposes despite the fact that initially there used to be different varieties of sign languages. In Japan the deaf community is concentrated to Tokyo which makes it the largest and dominant deaf community. Of all the places Tokyo had more deaf schools and sign language interpreter training centers, which made the signers from other places to leave their variety and use Tokyo variety of sign language. In the Japan the Tokyo variety of sign language got all the social platforms from where people can get to know sign language like mass media, deaf schools, deaf vocational training centers, sign language interpreter training centers as and it is well explained by the linguists as well. As a result, signers and other hearing members who wanted to learn sign language got exposed only to the Tokyo variety of sign language as much as possible. Over the last 30-40 years Tokyo variety of sign language is unanimously used by the deaf community of Japan, Tokyo variety is very well documented in books and teaching materials are available, it holds high prestige among the signers. In these circumstances, Tokyo variety has become the standard variety of sign language in Japan despite there is no such official policy to standardize sign language. This situation which leads to the standardization of the Tokyo variety of sign language appears to be good but if we look on the other side of the coin; the other varieties of Sign language in Japan was completely ignored and suppressed. The other varieties did not get any social domain for growth; all attention was concentrated towards the Tokyo variety of Sign language. Despite having heterogeneous variety of sign language Japan is restricted to just one variety which in itself is a complete loss of language.

In India, different varieties of ISL have been reported over the time in various researches, is it possible to execute such a process in India for ISL? In this research work the North

and the South variety of sign language is under study and in previous chapters it is discussed that both the varieties co-exist in India.

The statistical survey to understand the attitude and prestige of the signers of both the varieties of sign language presented in this chapter elaborately discussed in section (5.2) suggests that the deaf community holds a very positive attitude for their community, language and culture. As far as prestige is concerned, the community holds a very high prestige for their variety of sign language which they do not want to leave at any cost. For example, when question 17 (refer table no: 5.3) was asked majority of the participants from both the regions polled that they prefer their regional variety of sign language over any other variety. Similarly if we look at the statistics for question no 19 (refer table no 5.3), majority of the participants feel that knowing their own variety of sign language is enough and there is no obligation for them to learn some other variety of sign language in India.

From the statistics of the survey discussed in section (5.2.3), it is clear that deaf community in India is very particular and possessive about their regional variety of sign language, they feel that their own variety is complete in itself and there is no need to choose any other variety of sign language over their own variety of sign language. The concept of high variety and low variety of language do not exist in the heterogeneous deaf community of India. This method of standardization of unanimously selecting a variety which holds high prestige will fall flat in India because every variety of sign language in India is respected, valued and holds a high prestige in itself and if a deliberated attempt is made to impose one variety over the other then this community will collectively reject the usage of the imposed variety of sign language.

5.4 Codification and Access of the Standard Variety

The standard variety of language can directly get codified if writing system is available for the language like in spoken language. The standard variety of language is made available for the users in form of school books, literature, documentations, printed newspapers, televisions, radio and internet; access of the standard variety becomes easier if it has a readable format.

But in sign language codification and access of the standard variety is not going to be that easy and fast. As we know sign language is a visual language and yet do not have a definite transcription. In this situation the standard variety of ISL can be recorded and developed into CD'S, tapes and video cassettes and then can be made available to the deaf schools and sign language interpretation institutes. An online visual dictionary can be also developed which has the new versions of sign of different lexical items. Since sign language is a visual language, the visual media like television and internet holds utmost importance. These platforms can be used to propagate the standard variety of sign language as it can reach out to many users at the same point of time. Apart from this awareness programs should be conducted to make to community understand the benefit of using standard variety of sign language and constant effort should be done to motivate them to use the standard variety of sign language only. Eventually, it will pass on to one generation to another and flourish as a standard variety of sign language in India.

5.5 Is there a need of Standardization in India?: A Case Study

For this section a personal interview was conducted with five participants each in New Delhi and Hyderabad to know the opinion of the deaf community on standardizing Indian Sign Language. The motive of this personal interview was to know and understand the point of view the deaf community on standardization of ISL, five questions each was asked from all the ten participants. To avoid repetitive answers in this section only best two responses (one each) from both the regions are discussed here.

5.5.1 About the Participant

On the request of participants, the name of the participants has been kept hidden, for this discussion the participants are referred as "Participant A" and "Participant B". In the following table, there is a brief introduction about the background of both the participants.

Participant A	Male. 22 years old. Born Deaf. Born and brought up in Hyderabad. All four family members are deaf. Mother Tongue ISL (Native signer). Student.
Participant B	Male 35 years old. Born Deaf. Born and brought up in Bihar. Sole deaf member in family. First languages learn is Hindi (Post-lingual deaf). Hearing Spouse. He works in Delhi. Sign language Instructor.

Table 5. 4 Background information of the participant A and B.

A case study like this is important because sign language is an integral part of the community and their opinion is important to be heard and understood. As the preamble of Indian Constitution also says that Constitution of India is "Of the people, for the people and by the people"; in the light of democracy it is important to know the stand of deaf community for standardization because ultimately it is "of the deaf community by the deaf community and for the deaf community.

There are total five questions each asked from both the participants. The questions are direct in nature, its aim is to bring out the viewpoint of participants on issues related to language Identity, vitality, attitude towards their own language, prestige for their regional variety of ISL and standardization of ISL. Few question asked here are same as asked for the survey which is discussed in section (5.2), the only difference here is that in previous section the question was close ended with few options and for this section participants are allowed to talk about it as much as they want without choosing any options. In previous section data was concluded based on the statistic data and for this section conclusions are drawn based on the discussion during personal interview.

Participant A

Participant A is 22 years old young confident boy who studies at DEF, Hyderabad. As reported by the participant he is deaf by birth and in his family both the parents and elder sibling is deaf. His mother tongue is ISL and he can write and read English language in written form. This participant is the perfect candidate for native signer because sign language and deaf culture is passed on to him by his parents and elder sibling; unlike other deaf members he has never faced any ignorance and communication gap within his

family domain. He has completed his school education from a deaf school and since his childhood he has actively participated in activities organized by the deaf associations and deaf clubs. The video is ten minutes long and the responses for the question are transcribed below:

Question 1

Have you ever faced any communication gap within your family and other sections of society?

Response: "In my family my mother, father and my elder brother all are deaf, I have only know sign language since my birth. I have studied in deaf schools only where mostly students were deaf. In my school there were no deaf teachers all of them were hearing, most of the time they used to speak and use few gestures to explain the book which was a little difficult to understand but I used to discuss the topics with my deaf classmates and understand the topic. I can read and write English language very well, so I have never faced any difficulty at other places like market, banks and buses. People who stay nearby me know I am deaf so they understand me very well and try to respond in gestures if I ask about anything. Sometimes I feel it is difficult to communicate; if I have to take auto for far places it is difficult to make the auto driver to understand the rout, mostly I use map applications on my mobile phone but sometimes they don't show directions properly. So I have not faced much communication gap, I manage it myself." (Participant A 12/02/2020)

Question 2

Do you ever feel low of yourself being deaf and using sign language in public?

Response: "No never, for me this is the only language I have known since my child birth. For me signing is very normal like speaking. I mostly go out with my family and deaf friends at restaurants, so we all know sign language what else language we will use to talk. Sometimes other people stare us but may be because they want to learn sign language or other reason I don't know but I don't think about it, I just ignore." (Participant A 12/02/2020)

Question 3

Is sign language same throughout India? If not which variety of sign language do you prefer most?

Response: In deaf associations sometimes deaf people from other state come for some game participation or function. So we all communicate with each other. Sometimes I don't understand their sign may be few words because they sign differently in their places so I stop them and ask my doubt and then proceed with the conversation. The signs are a little different but we understand. I also use my sign language with them so that they can also know about my variety of sign language. I use my variety of sign language more because I have my family and friends in Hyderabad and they also use this variety. (Participant A 12/02/2020)

Question 4

Do you want to see same sign throughout India? What is your opinion on standardization of Indian Sign Language?

Response: "Same sign language cannot happen because we all come from different background. Everybody's culture is different from each other for example we celebrate Pongal here but at other places it is not celebrated so how will they understand our culture. If we have to choose one variety over other then on what basis are we going to do that, because all languages spoken or sign and also all the variety of sign languages are equal. If we choose one it will be unfair for other varieties and we don't want our variety of sign language to be suppressed." (Participant A 12/02/2020)

Question 5

What all can be done for the development of ISL as a language?

Response: "ISL can reach out people through media. There can be shows in ISL on televisions, in newspaper everyday they should print at least sign for one word so that hearing people can learn ISL slowly. There should be video clips available on the internet on sign language. Also there should be research in ISL so that it can reach to academic

level. In schools there should be more qualified sign language expert teachers so that the new generation has to not face the same problem which I faced. Now we have hope for development of ISL by the establishment of ISLRTC." (Participant A 12/02/2020)

To summaries the above conversation, Participant A is the next generation of the deaf community who is full of optimism regarding development of ISL. He keeps a very positive and progressive thought for his language. He wants a better deaf education system and research works on ISL. As far as standardization is concerned he is not very much in favor of just choosing one variety of sign language over the other because he keeps a high prestige and value for his variety of sign language.

Participant B

Participant B is a 35 yrs old man who works at NDS, as a sign language instructor. He is born and brought up in a village in Bihar and in his family no one is deaf except him. His mother tongue is Hindi as he has learned Hindi in written form before learning sign language. Although he is a pre-lingual deaf; he became deaf between the age of 0-3 yrs before learning any spoken language despite of this he learned sign language only when he went to a deaf school. He is married and his spouse is not a deaf. He now is an active member of deaf clubs and associations and is very well aware of the deaf rights. His interview is 12 minutes long and the responses to the questions are transcribed below.

Question 1

Have you ever faced any communication gap within your family and other sections of society?

Response: "In my family only I am deaf, when I was very small I became ill and due to high fever I became deaf. My parents do not know how to sign since childhood they have always communicated by gestures and I am good at reading lips. My younger brother understands me well so I am comfortable sharing my view points with him. My school also started late because I could not adjust in hearing school. My life changed when I started going to deaf school, there I met other people who were like me and teachers were also good. I became more involved with my deaf friends then family and moved out of

Bihar for vocational trainings and now I work here as instructor. I regularly attend deaf associations and motivate other young deaf students to focus on studies and figure out options in which they are good at. My parents thought I am disable so they married me with a hearing girl so that she can take care of me. She understands me but not very well like other deaf people understands me. So in family I have always faced communication problem because they never tried to learn my language, during childhood I had a different perspective about deafness but after moving out from house I became more confident that I can manage alone I don't have to be dependent on anybody for anything. Now I motivate other deaf students with my story because I regularly meet deaf students like me who have stayed in villages for years and have faced similar problems like me". (Participant B 13/02/2020)

Question 2

Do you ever feel low of yourself being deaf and using sign language in public?

Response: "Yes, sometime in metro when I travel with my deaf friends we sign and people sitting around stare us. I don't know what they are thinking but I don't feel comfortable about it. Until I was at home with my parents; I also used to think that I am incompetent of doing anything and looked down upon myself but when I went out for doing vocational training course at Hyderabad; I met other deaf students, deaf activist and instructors and their opinion about deafness completely changed my point of view. I feel more confident now and I do not feel shame about anything, I try to give the same values about sign language to my students which my teachers gave me when I was struggling with low self confidence." (Participant B 13/02/2020)

Question 3

Is sign language same throughout India? If not which variety of sign language do you prefer most?

Response: "When I was in village there was no proper sign language, we used gestures. In my school, teachers used to sign but not very good so the sign which I used with my friends was different then what I learned in school. Later on when I went to Hyderabad

for vocational training there I was surprised to see the sign. I have never seen such sign before, it took me over a month to learn sign language in Hyderabad; signs were different from what I have learned at school in my native place and was very fast. After a month I was comfortable with signs but yet was not very fast as others. After that I came to Delhi for job, I have never visited Delhi before this, so again it took me time to understand signs from Delhi. In few weeks I was comfortable signing with others. So yes, I can say with my experience that sign are different compared to village and other states but now I meet other deafs from other states also, now I don't take much time for learning signs of other variety. I am comfortable with both Hyderabad and Delhi sign language so I cannot say which is better, all are equal to me." (Participant B 13/02/2020)

Question 4

Do you want to see same sign throughout India? What is your opinion on standardization of Indian Sign Language?

Response: "During my schooling I faced a little difficulty because teachers were not very good at signing, however I learned some signing from them and other deaf classmates; due to this I learned sign language very late. When I went to Hyderabad I faced communication issues for about a month because whatever I have learned before was not of much use. Later on again I faced problem in Delhi, it took time and I learned and now I manage it very well. I know all language is equal but for schools and education there should be one format of sign language so that a deaf students studying at village also gets equal education as a deaf of cities get. From my life experience I can tell that condition of deaf education in small places is not very good as in cities therefore deaf students in villages quit their studies and do low paid jobs because of this unequal system of education. It is always good to have as many as languages possible, we can always use our variety of sign language among ourselves but for schools there should be a standardized sign language." (Participant A 13/02/2020)

Question 5

What all can be done for the development of ISL as a language?

Response: "In my opinion education system should be upgraded for overall development of the deaf community, I was also not very confident until I got good quality of education. People will treat us like disable until we know about our rights and that can come only when we get good education. I think in cities there are more options for deaf schools and deaf clubs but in villages deaf person is still in isolation. More awareness is required in villages then cities; we should try to give same quality of deaf education as it is given in cities and make sure that all that there is a collective growth of deaf despite staying in villages or cities." (Participant B 13/02/2020)

To summarize the full conversation, participant B has faced many problems throughout his life. He was born in a small village in Bihar and due to lack of the deaf awareness in village he has faced many issues in communicating and education. In village the quality of deaf education was not that good so in childhood he was not at all confident and looked down upon himself. In his family also he has faced various communication issues. His life changed when he went to Hyderabad for vocational training course, there also he faced communication issues because of the regional variations in sign language but he managed to learn it and then he came to Delhi for job. Now he advocates for deaf rights makes other deaf students aware of it. He has also picked up a serious issue that how due to lack of a standard variety of sign language other deaf students staying in smaller cities and villages face problems. He has made clear that due to unequal education system many deaf students staying in villages remain under educated and this should not happen. His stand on standardization is very clear; he adds his vote in favor of standardization of sign language by saying that it is important if we want a collective development of the deaf community.

In the case study it can be observed that there is a contrast in opinion regarding standardization of sign language, every deaf person have their own sufferance and experiences in life so it is impossible to have a uniform opinion on standardization of India Sign Language. There is a section of deaf community who thinks that standard sign

language is a threat to the regional sign language and few more who think standardization of ISL will bring out collective development of the deaf community.

Respecting the opinion of the deaf community of India, we should think of a middle path for standardization so that none of the members are hurt and feel suppressed of the decision. Franz Dotter (2006) has suggested this middle path as "Soft Standardization", in this process all the variants of sign language is respected and given space to flourish. Austria has achieved soft standardization by creating a lexical data base in which has all the regional signs for every lexical item is incorporated. In India, middle path can be achieved by developing a sign language dictionary with alternative regional signs; In India sign language dictionary holds importance for sign language enthusiasts. In this way sign language learners and deaf community will be free to choose the sign depending on their social set up. With this method no community will be forced to give up their regional variety and there is a possibility that sign language communities accepts the most used sign variety as the standard variety of ISL.

Is the fear that standard variety will result in decay of the regional variety? The answer is "yes" and "No" at the same time. If we look at Hindi, there are various regional variants of Hindi like Bhojpuri, Magahi, Maithili, Haryanvi etc; all these languages are spoken by majority of their native speakers despite being the fact that for teaching and other office works only standard Hindi is used. These languages are vital in other domains like family, friends and market places. But in India, English language dominates to certain extent; due to globalization and certain social settings English language has become obligatory for certain job opportunities and education. So it is possible that if all privilege is given to a standard variety of language then people will tend to quit their regional varieties in scope of new job opportunities and other various benefits entailed to it.

In the race of standardization, we are completely overlooking the fact that in India regional verities of sign language are emerging as standard variety of sign language. The regional variety of sign language like NISL and SISL is complete in itself for their signers; they mostly look for jobs and education in their regional states so with time the regional varieties are in developing and flourishing state. For the time being enforcement of one sign language variety on the deaf community should be stopped and focus should

divert on every section of the society were deaf community lives and try to at least provide them education in their own regional variety. Enforcing one sign language for all will definitely change the social situation of the deaf community which may result in more of losses than advantages. There is no denial that standardization process will bring out collective development and better education and job aspects for the deaf community but necessarily it does not have to be done by enforcing one variety, standardization can organically happen within the regions of regional varieties if given space and freedom.

5.6 Summary

Over the years deaf community has flourished as the minority community of India, this community identify themselves as signers who believe in the values and culture of deaf to the core. As discussed in Introduction, deaf community and sign language is facing suppression at every level and it has an ancient old history of sufferance. In our country despite having a 1.3 million population of the signing community, sign language has yet not been recognized as the official language of the community. Since, there is no language policy to protect linguistic rights of the deaf community in India, it is lagging behind socially. Standardization acts as a magic wand on any language and linguistic community, the language policies made to standardize and protect any language has been often seen as a boon for any language and its speakers. Standardization of ISL in India seems to be a little problematic due to existence of equally potential regional varieties of ISL like NISL and SISL. In this chapter the hindrances faced in the path of standardization due to heterogeneity of the language has been encapsulated. This chapter engages in an elaborate discussion on the possible suggestions to overcome this situation. The needs and possibility of standardization of ISL is also discussed.

In India, over the past 40 years deaf community has started to identify themselves as the minority community of India and has been protesting for their linguistic rights. Language development strategies and policies in any country are either mentioned in the constitution or are mentioned in separate regulatory acts. In India, sign language has been ignored in both the regulatory bodies, In section (0.6.2) of introduction chapter, an elaborate discussion on the fundamental rights given to the minority community by the

Constitution of India has been presented; the article clearly instructs that all the minority community have the right of education in their own mother tongue but sadly looking at the condition of deaf education in India it won't be wrong to say that these right are being violated for the deaf community. India after being one of the signatory of UNCRPD, issued its National Policy in 2006 and RPWD act 2016 which is entitled to provide a dignified life to the deaf community by providing an inclusive environment. All these policies have acknowledged the use of sign language in public sphere like schools, public offices etc but sadly these policies are not being implemented on the ground level; there is a need of proper plan to implement it on the ground level also to make sure these policies run smoothly and effectively regular auditing must be done. However, it is sad that the linguistic rights of the deaf community are ignored and there is no separate law or regulation to protect it, instead it is enclosed under disability act but for now it is important to implement these policies at ground level so that all the members of the deaf community despite of regional borders are benefited with it.

The aim of this chapter is to give clear ideas on possibilities of standardizing India sign language despite knowing the fact that it is heterogeneous in nature. A survey was conducted in which the signers of NISL and SISL participated, it is designed to study the issues related to language attitude, identity and prestige of the deaf community towards their language. The results recorded are positive in all the sociolinguistic aspects and substantiates that deaf community holds a high vitality towards their language, not only this but they also respect their regional variety of sign language a lot and are not willing to see uniform signing all over India. In the personal interview, discussed through a case study manifests their fear that standardizing sign language might suppress their regional identity and language.

For standardizing any language, the policy makers select one variety which has high prestige over all other regional varieties but in this case for Indian sign language it is not possible because there is no such concept as high prestige and low prestige for the regional varieties in the opinion of their respective signers. Signers respect their regional variety of ISL and are not willing to quit their language. In the chapter, the case of standardization of sign language in Japan has been discussed which signifies that

focusing on only one variety of sign language might result in extinction of the other regional varieties like it happened in the case of Japan. The other method discussed for standardization in this chapter is assimilation of the lexical items of all the different varieties but methods like this has failed miserably in contemporary Arab countries.

Standardization is an extremely slow process and should let it happen organically, so for now the deaf community and the policy makers should collectively work hard for the development of sign language so that the teaching material can be made available for every single deaf school. We should look forward for creating a lexical database where signs for all the possible lexical items in all the variations can be available for the researchers as well as sign language learners. Instead of boasting the community with one specific standard sign language we have to give space to all the regional variants to develop and flourish on its own so that they can overcome the void.

In the case study, one of the participants has discussed an extremely valid point; the deaf communities in villages are facing a lot of problems because there is no uniform teaching material and in villages deaf schools are even worst. The deaf children quit schools at a low age and are left with no options but to work. This situation is also responsible for the migration of the deaf people from their respective villages to metro cities. In these cases the void of standard variety of sign language is felt but problems like this can be eliminated if the deaf schools in the villages are linked to the respective cities and more deaf and sign language awareness programs gets initiated for the rural areas. By doing this the deaf students can get educated in their regional variety of sign language and the quality of education will be also good and at equivalent amount.

Standardization of sign language cannot happen if we exclude opinion of the deaf community; in their opinion their regional variety of sign language is enough and complete in itself, they are not ready to leave their language alone no matter what. As a linguist, the decision of standardization of ISL should be left on the deaf community completely because standardization is “of the community”, “for the community” and “from the community”.

Chapter 6

Conclusion and Future Projections

6.0 Introduction

This dissertation is a description of diversity and heterogeneity of ISL, supplemented by a comparative phonological analysis of the two regional sign language varieties of India, North India sign language (NISL) and South Indian sign language (SISL). It is an attempt to examine regional varieties of ISL for lexical variation and flag out the empirical structure, theoretically and phonologically on which lexical variation between the varieties of ISL can be established. It also addresses the need and purpose of addressing sign language varieties of ISL for an inclusive sign language development programs. The detailed linguistic study of the regional varieties of ISL (NISL and SISL) illustrated in this dissertation through measurement of lexical variation, language vitality and identity of the signers of NISL and SISL developed due to lexical variation will provide the basis for development of the regional varieties of ISL and will strengthen the efforts of sign language researchers and deaf right activists who work tirelessly for the linguistic rights of the deaf community of India.

Section 6.1 is an overview of the methodologies used to achieve research goals of this study. In, section 6.2, 6.3 and 6.4 the research question has been answered by making final conclusion and arguments on lexical variation between NISL and SISL, heterogeneity of ISL and path of standardization of ISL. In section 6.5; the use, applications and future projections of this work has been discussed. Towards the end of this chapter the limitations and shortcomings of this study are discussed.

6.1 Methodology used for centre staged research question

In this study, broadly the questionnaire method and personal interview method are implemented to contemplate; the lexical variation between NISL and SISL, intrinsic regional variation due to heterogeneous deaf community and attitude of the deaf community developed towards standardization of ISL due to the existing regional and

lexical variation of sign language in India. All of the data was collected from different vocational training centers and NGO's operational exclusively for deaf community in New Delhi and Hyderabad as NISL and SISL are the targeted regional sign languages of India for this study.

The questionnaire is divided into three parts; part I and part II of the questionnaire consists of closed ended questions. Part I (refer appendix no.1) of the questionnaire embodies twelve questions which are mainly set up to draw basic background information of the participants and elicits the heterogeneity of the deaf community in North and South region of India. The part II (refer appendix no.1) of the questionnaire embodies twenty questions which administers question related to language vitality, identity and prestige issues of the signers of NISL and SISL which are the main obstacles faced by ISL in the path of standardization process. In each data collection site; New Delhi and Hyderabad thirty deaf informants each participated and registered their response. The responses collected for part I and part II of the questionnaire forms the foundation of argument presented in chapter 4 and chapter 5 of this dissertation.

Part III (refer appendix no.2) of the questionnaire consists of five open ended questions; the questionnaire administers the personal life experience of the participant and their opinion and thoughts on standardization of ISL, it is elicited through a personal interview method. Based on the personal interview, in chapter 5 a small case study of two deaf informants; one each from north and south region respectively has been presented to discusses and argue possible obstacles faced by the ISL in India occurred due to different backgrounds and life experiences of each and every deaf individuals.

The study of phonological variation of the lexical items between NISL and SISL has been conducted through a word list of five hundred words (refer appendix no. 3). Each lexical item in the word list was asked to sign individually by the deaf informants of north and south region respectively; ten each informants from both the regions (north and south) participated to sign the lexical item from the word list. The signs were video recorded for further analysis and data elicitation process; the arguments presented in favor of

phonological lexical variation between NISL and SISL in chapter 3 is completely based on the video recorded data of the word list.

Based on the discussion in chapter 3, chapter 4 and chapter 5, conclusions of this study are presented in this chapter. In later sections applications of the findings and limitations of the methodology and this study has been discussed.

6.2 Conclusion on Lexical Variation between NISL and SISL

The signers of NISL and SISL have always been aware of the fact that both the varieties of ISL are dissimilar to each other in a certain extent but till now the studies of the regional varieties of ISL have been ignored, due to which the data regarding regional variation of ISL in India remains scant. This dissertation is entirely dedicated to tender the exact details of the phonological variations between NISL and SISL and extend a little contribution in the studies of regional varieties of ISL in India.

For the empirical establishment of NISL and SISL as two distinct regional varieties of ISL a list of five hundred lexical items were analyzed at each phonological components of the articulation of sign and then lexical score of similarity and dissimilarity of the lexical item based on number of identical components for both the articulations of the same lexical item was done. To investigate maximum possibilities of lexical variation between NISL and SISL, lexicon formation processes of ISL was explored in the broadest sense possible.

The findings elicited with the help of the data reveals that NISL and SISL have dissimilar ways of articulation of the same lexical item in citation form which makes the two varieties of ISL distinctly different from each other. The phonological analysis of the lexical items at all the five components of a sign and lexical scoring of similarity/dissimilarity has resulted to be a very crucial and a promising method for this study.

The phonological analysis of the lexical items for each “Sign family” was done on five phonological parameters of sign and the findings reveals that the lexical variation between NISL and SISL happens at both major contrastive unit and minor contrastive

unit of a sign. In a sign the major phonological contrastive units for lexical variation are; location (LOC) and handshape (HS) whereas, orientation (ORI), movement (MOV) and non-mannual features (NMF) are the minor contrastive units. Lexical items in the wordlist for the study of lexical variation between NISL and SISL suggests that lexical variation happens at all the five phonological parameters (components) of a sign; the lexical variation encountered are location based, handshape based, movement based, orientation based and non-manual feature based.

The body location being one of the important and common phonological components for lexicon formation for both the regional varieties of ISL was observed to show defined location based lexical variation between NISL and SISL. The lexical items which involves major body locations such as temple, ear, eye, mouth, chest, arm and above the head was explored through the wordlist; location based lexical variation between NISL and SISL was found at six body (LOCS) out of seven body (LOCS) (refer table no: 3.51) explored through the word list. For instance the lexical item ANGRY is signed at the body (LOC) temple in NISL whereas in SISL it is signed in the neutral space of the signer (NSP); the lexical item CRY is signed near the eye w/o body contact in NISL whereas it is signed below the eye with body contact in SISL; the lexical item SING is signed near the mouth in NISL whereas in SISL it signed at completely different body location which is at body (LOC) arm. Respectively the lexical item CELEBRATE is signed on the body (LOC) chest in NISL whereas in SISL it is signed in the neutral space of the signer; the lexical item BRAVE is recorded to be signed on the body (LOC) arm in NISL whereas in SISL it is signed at completely different body (loc) which is on chest and last but not the least the lexical item CLOUD is recorded to be signed in front of the face of the signer of NISL whereas it is recorded to be signed above the head of the signer of SISL. The only body (LOC) which does not show any location based variation is the body (LOC) ear; in both NISL and SISL the lexical items which belong to sign family ear have similar way of articulation of the sign. The data explicitly arrays that NISL and SISL have location based lexical variation.

The next major contrastive unit at which lexical variation between NISL and SISL is observed is handshape based lexical variation (refer table no: 3.52). The lexical variation

between NISL and SISL was explored on twelve different classifier handshape and their attributed lexicons of the "sign family" out of twelve handshape classifiers only three handshape classifiers show similar articulation in both the varieties of ISL whereas nine handshape are recorded to have dissimilar handshape for articulation of the same lexical item. The data revels that except for classifier CYLINDRICAL, classifier RECTANGULAR and Classifier HANDLE all the other classifier handshape shows usage of different handshape for same lexicon articulation. This difference in usage of handshape makes NISL and SISL a distinct different variety of ISL. The findings of phonological analysis of the same lexical item arrays that lexicons of the same "sign family" in NISL and SISL not necessarily be articulated by same handshape but it potentially shows variation in the use of handshape for articulation and hence shows handshape based lexical variation.

The non-manual feature is the minor phonological contrastive unit of sign at which the lexical variation between NISL and SISL has been observed. For instance, for the lexical item SING signer shows NMF to create visual image of singing and eyebrow remains in freezed position during entire articulation whereas signer of SISL does not show any NMF for this lexical item. The void of NMF during the articulation in SISL creates difference in the visual appearance of the lexical item SING thus NMF as a phonological component is absolutely responsible for the variation in articulation of the referred lexical item between NISL and SISL. Similar phonological variation has been observed for the word PURI (refer table no: 3.21); in NISL the NMF remains neutral due to no involvement of facial and body expression whereas in SISL the entire articulation is done with puffed check to visualize hollowness of PURI. For the emotive lexical item CELEBRATE (refer table no: 3.9) torso movement has been observed during the articulation by the signer of NISL whereas signer of SISL does not involve any body or facial movement. Therefore the data exhibits that it is not necessary that both the varieties will show similar body expression or movement for same lexical item which makes NISL and SISL different from each other.

On the other hand, lexical variation between NISL and SISL has been clearly transmitted through the data at the minor contrastive units such as movement and orientation as well.

For instance, if we look at phonological analysis of the lexical item WIND (refer table no: 3.27); the signing unit orientation and movement for this lexical item is totally different in NISL and SISL. In NISL the articulation of this lexical item does not involve any movement hence remains static; the orientation of the palm is in front of the signer and position of the carpal is towards the sky. In SISL, the movement of the sign is fast in motion and wiggling in appearance; the orientation of the palm remains neutral in visibility for both signer and addressee and position of the carpal is towards the sky.

The data observed at the major and minor contrastive phonological unit of a sign in this study are clearly in favor of the argument that NISL and SISL have their own independent way of articulation for the set of similar lexical items of the same sign family which makes them independent regional varieties of ISL in India.

The other method adopted to establish the lexical variation between NISL and SISL is the lexical scoring method, based on the phonological analysis of the lexical item score of similarity and dissimilarity was calculated. For the lexical item to have similar construct and articulation in NISL and SISL should have lexical scoring which is equal to 1 and if the score is recorded in the negative scale or it is $\neq 1$ indicates that articulation of that particular lexical item is dissimilar in both NISL and SISL. The data of lexical scoring reveals that out of five hundred words (500) only one hundred and sixty five (165) words are recorded to have lexical score equal to one (1) and rest three hundred and thirty five (335) lexical items are recorded to have lexical score in negative scale and their score of similarity is $\neq 1$. The total percentage of lexical dissimilarity observed between NISL and SISL is 67% and only 33% of the lexical items from the total word list are found to have similar articulation. The strength of lexical dissimilarity score is more than the strength of lexical similarity therefore the results explicitly suggests that NISL and SISL have lexical variations which makes both the varieties of ISL different and independent from each other.

With these observation and findings probably it can be concluded that, NISL and SISL are the regional varieties of ISL and the variation is lexical based. The variation is established with the help of phonological analysis method and lexical scoring method.

So, the answer to the research question “Is ISL, the only pan Indian variety of sign language?” is “No”. There are regional varieties of ISL which have been ignored over the time; NISL and SISL are one of them.

6.3 Heterogeneity of ISL

In India, every deaf individual have their own life experiences of being a deaf which might be good or bad but certainly uneven for every individual; the background set up is also not uniform for every deaf individual which makes this community like a garden with different bunch of flowers. Like other communities this community is not bound with geographical regions, religion, ethnicity or gender but there are different other social factors which makes this community a heterogeneous community.

One of the major objectives of this dissertation is to understand the possible social factors due to which regional varieties of ISL; NISL and SISL can show possible variations from each other and from the data explicitly discussed in chapter 4 of this dissertation clearly suggests that deaf community in India is an heterogeneous community and due to certain social factors NISL and SISL shows intrinsic phonological variations.

The data set of five hundred lexical items recorded from ten informants each of north and south region respectively reveals that NISL and SISL are not only phonologically different for articulation of lexical items from each other but phonological variations also occur within the regional varieties; NISL and SISL as well. The informants of the same region are recorded to sign same lexical item with minor phonological variations in both NISL and SISL respectively which cannot be ignored in this kind of study. The major phonological variation phenomenon observed for both NISL and SISL are; double handed vs. single handed signs, index finger vs. thumb extension, signing vs. fingerspelling and minimal mouthing vs. mouthing.

For the study of intrinsic phonological variation segregation of the factor groups responsible for the style of signing of the informants is our first priority, respondents were asked to give basic information such as age, gender and mother tongue and then their responses was analyzed in two perspectives; sociolinguistic condition of the deaf

community and paradigm of viewing deafness. The sociolinguistic condition of a deaf individual reveals that the style of signing of any deaf individuals can be affected by the competence of ISL under which a signer could be a native signer, pre-lingual deaf, post-lingual deaf and late-deafened group. The paradigm of viewing deafness also affects the style of signing because in the first paradigm deafness was considered as subject of medical treatment issues, in schools ISL was not encouraged and teachers followed lip-reading method to teach deaf students. But now in the latest paradigm deaf people have evolved as community with distinct linguistic and cultural identity. Deafness is not treated as illness and in most of the school bilingual education has took over lip-reading method. In bilingual method, deaf students are taught one spoken language in written form and teaching is done in ISL therefore considering the paradigm shift age of the respondent can be one possible factor group; younger generation are likely to have refined signing skills then the middle aged group. Considering the background of the informants our possible factor group which affects the style of signing can be age, gender and competency of ISL. The information provided by the informants regarding their background during the survey was analyzed and sociolinguistic profiling of the twenty informants was conducted (refer table no: 4.1) and the factor groups segregated from the sociolinguistic profiling of the informants for this study are: age; subdivided into two groups 15- 25 yrs and 26- 40 yrs respectively, gender; subdivided into male and female and competency of ISL; subdivided in two groups native and pre-lingual deaf and post-lingual and late deafened deaf respectively.

The signs for the word list recorded from the twenty informants of NISL and SISL were grouped according to the intrinsic phonological variation phenomenon observed and the factor group responsible depending on the background of the informants. The data discussed in chapter 4 establishes the fact that:-

i) The first phonological variation phenomenon “Double handed signs vs. Single handed sign” is only seen in the male deaf informants who are young and are native and pre-lingual deaf. The middle aged generation and post-lingual deaf informants does not have any inclination towards single handedness whereas the native signer female informant, pre-lingual deaf and post-lingual deaf female

participant is constant in articulating signs with both the hand no matter what age group they belong to.

ii) The second phonological phenomenon "Index finger vs. Thumb Extension" is majorly recorded for the post-lingual middle aged female deaf informants and some of the male deaf informants whereas, any kind of transition is not observed in the younger age group which is 15-25 yrs and native and pre-lingual-lingual deaf informants; 100% indexing is recorded in these sub factor group which means all the participants of this sub groups use G handshape for signing indexing lexical items of the word list.

iii) The third phonological phenomenon "Minimal mouthing vs. Mouthing" is recorded 100% for the sub factor group of female and post-lingual deaf. The data clearly indicates that post-lingual female informants of both the age groups have a tendency of mouthing over minimal mouthing and male deaf informants who are post-lingual majorly of middle age group have a tendency of mouthing.

iv) Lastly the phonological phenomenon "Signing vs. Fingerspelling" is recorded 100% for native and pre-lingual young male deaf participants, which is a good thing and indicates that future of ISL is secure in the hands of younger deaf generation whereas transition of fingerspelling over signing is majorly recorded for middle aged group and post-lingual deaf group. In comparison with the male informants female informants are recorded high in terms of preference of fingerspelling over signing.

The statistical data explicitly discussed in chapter 4 and in this section in support of the argument that ISL is a heterogeneous language which not only have regional variations but is capable of variation within the given regional ISL as seen for NISL and SISL falls completely true. The younger male who are native and pre-lingual deaf of NISL and SISL deaf community are inclined towards usage of single hand instead of both the hands for double handed signs, since it is coming from the younger generation of the deaf community this transition cannot be ignored and keeps a potential of permanent deletion of usage of both the hands in double handed signs. The male native and pre-lingual deaf of both the age group does not show any thumb extension along with the G handhsape

whereas other subgroups show a slight transition of usage of thumb. The repercussions of the medical model of the deafness in which sign language was discouraged in schools can be clearly observed in the style of signing of the middle aged male and female participants recorded for this study; this section of informants are majorly recorded to use fingerspelling over signing and they also show lip movement along with signing both of which is considered to have a negative attitude towards signing. To sum up, the background information of the informants for the study of lexical variation between any given regional varieties of ISL; in this case NISL and SISL stands very crucial because the intrinsic phonological variation developed due to heterogeneity of the deaf community might confuse the researcher and inter-regional phonological variation will be jeopardized.

With these results probably it can be concluded that; one of the aim of this dissertation is to highlight the heterogeneity of ISL which happens due to the diversity of the deaf community is fulfilled. Therefore, the answer to the research question "Is ISL a heterogeneous Language?" is "Yes"; deaf community is an heterogeneous community and the background and life experiences of every single signer is reflected in their way of signing, the style of signing of each deaf due to their background can bring out many changes in ISL and intrinsic phonological variation is one of them.

6.4 Path of Standardization of ISL in India

The journey of ISL and deaf community in India has been uphill; from being an ostracized as well as misunderstood community to now a minority linguistic community of India. With the constant efforts of the deaf community, deaf right activists and to a certain extent sign linguists, deaf community has embarked their identity as a linguistic minority community of India. The journey and efforts of the community is indeed applaud-able; having said that it is also true that it is yet far from its destination where it is destined to reach. In contemporary India, ISL remains an unrecognized language, there is no separate regulation to protect linguistic rights of the deaf community instead it is limited to disability act. The one possible way to achieve the desired status of ISL in India is trough standardization and language planning programs of ISL; standardization

of a language is a game changer method in the development of any language because the benefits entailed acts as a magic wand for any given language. Apart from other aims and objectives of this dissertation, one of the centre staged concern remains the possible path of standardization of ISL and the existence of regional varieties of ISL like NISL and SISL relevant for this study has made this path more complex.

The arguments and observations presented in chapter 5 of this dissertation indicates that standardization of ISL in India remains a far cry for now, among many other obstacles plurality of the regional varieties of ISL; NISL and SISL, makes the path of standardization of ISL more difficult. In this study, the conclusions on standardization of ISL is completely based on the opinion of the deaf community of NISL and SISL, their opinion on the concerned issue is addressed through a statistical survey and a small case study conducted during the time period of this study.

The plurality of ISL raises attitude, prestige, identity and vitality related issues of the speaker towards their language; the data revels that these language related issue are the boulders in the path of standardization of ISL. A small statistical survey was conducted in which questions related to these issues of signer with their language was asked, in this survey thirty two signers of NISL and SISL participated; the data and the results are explicitly discussed in chapter 5 (refer section 5.2) of this dissertation.

The survey conducted to know the attitude of deaf people towards their own language (refer table no: 5.1) reveals that the signers of both NISL and SISL variety of ISL holds a very positive attitude for their language. For instance, when the question was asked to the participants: “Whom would you like to marry?” to this 75% of the respondents of NISL and 66% of the respondents of SISL chose deaf people over hearing. Majority of the respondents wants to marry within the community, based on their responses it appears that signer’s of NISL and SISL hold a very positive attitude for their co-deaf members and the stigma of disability does not take over any other emotions among the community. The respondents are enthusiasts when it comes to development and propagation programs of NISL and SISL, for instance when this question was asked: “Do you think sign language should be taught in schools?” To this 88% of response was recorded in favor in the North region and 100% of respondents agreed to it in the South region. This kind of

positive response in favor of teaching ISL in schools show how committed and loyal this community is in ISL teaching programs in schools which will lead to propagation of ISL and eventually the gap between deaf and hearing community will diminish. This kind of positive attitude for any minority language is an indicator that the language will flourish and will have a brighter future; in this case it is NISL and SISL predicted to have a better future.

A small survey on language identity and vitality developed in the signers of NISL and SISL was conducted (refer table no: 5.2), the results reveals that deaf members of NISL and SISL adhere strong vitality for their language and they relate with their identity as NISL and SISL signer. For instance, when the respondents were asked: "Does Sign language represents deaf community?" to this 97% of the respondents of NISL strongly agree and 100% participants of SISL agreed with it. This clear agreement and positive response revels that sign language is important to the community in terms of identity of the whole community. The participants of NISL and SISL are very particular when it comes in accepting any person as a part of deaf community, when asked: "Is any person who knows sign language is a part of deaf community?" to this 88% of the respondents of NISL said "NO" and in the South region 59% agrees to the question; for them only knowing sign language does not make any one a part of the deaf community, in their opinion only knowing ISL is not enough one should be also aware of deaf culture. To sum up, deaf community of NISL and SISL holds a high prestige for deaf culture and their respective regional varieties of ISL as well.

Lastly the poll recorded for prestige related issue of the deaf community of NISL and SISL revels that both the community holds high prestige for their correspondent language, they think their variety of ISL is not less than any other variety of ISL and will not accept any kind on language imposition in their day to day language usage. If we look at the poll recorded for the question "Which variety you prefer most?" (refer table no:5.3): in the North region, the majority of the participant (53%) agreed that they prefer their own regional variety whereas in South region 63% prefer their regional variety of ISL. Similarly when the question related to uniformity of signs all over India was asked "Do you want to see same sign throughout India?" In North region 59% of the responded

are not in favor of the uniformity whereas in South region 78% of the responded clearly disagreed with the idea of same sign language throughout India. The huge positive response displayed through the survey reveals that deaf community of NISL and SISL holds a high prestige for their own variety of ISL, they do not subscribe to idea of having a dominant high variety of ISL and mostly they are not in favor of uniformity of ISL which can eventually lead to a standardization of ISL.

The message of the deaf community of NISL and SISL through this survey is loud and clear that they do not want to leave their language alone, the idea of standardization of ISL is difficult to implement in India because the acceptance issue among the users will always be there. Considering the results obtained in the survey the possible standardization methods like choosing high variety over low variety and assimilation of lexical items will totally fall flat in India.

The whole purpose of this investigation is to figure out the possible answer to the research question "Is standardization of ISL is possible considering the fact that it has other regional varieties?", Vasishta (1978) suggests that ISL have systemic variation in and between regions and would not create problems for language standardization or planning but the findings presented in chapter 5 suggests the probable answer to this question is "No" for now because from the perspective of a linguist; standardization is a slow process and it should be given enough space to happen organically on its own, by the time we should remain focused to the developmental programs of ISL. Standardization should not be imposed on deaf community because standardization is "of the community", "for the community" and should come "from the community".

In this study, apart from the statistical method, direct interview method is also adopted to palpate the NISL and SISL signers' opinion on standardization of ISL. A small case study was conducted with the participants of NISL and SISL(refer section no: 5.5); in the case study direct questions regarding their personal life experiences, their opinion on standardization and problems faced by them so far due to lack of a standard sign language in India was asked. "Participant A" has raised his concern that if one variety of ISL will be prioritized then there is a possibility that other varieties of ISL will die down and he does not want to leave his own variety over any other variety of ISL whereas

“Participant B” is in favor of standardization because he has faced difficulty in his education due to lack of a uniform standard variety of ISL. However, path of standardization of ISL seems to be a little problematic in the contemporary situation but opinion of each and every deaf matters therefore the concern of poor quality of deaf education due to the lack of standard variety of ISL should be addressed. This concern entails another research question: “Can ISL survive without standardization process in India?” the answer is probably “Yes”, only if we focus and work hand in hand with the deaf community on other developmental programs of ISL.

The possible suggestions which can uplift the status of ISL without rushing into the imposition of standard variety of ISL on the deaf community are as follows:-

I. The deaf right activists, NGO bodies and deaf community representatives should make sure that no deaf person is misinformed about their rights. The community has to be well informed and confident about their rights which have been guaranteed by the Constitution of India, UNCRPD and PWD Act so that they do not get suppressed easily.

II. A team of dedicated deaf educationist and law experts should be made to keep an eye on the policies mentioned by PWD (2016); the policies should be audited regularly and they should make sure that it is implemented on the ground level.

III. After struggling for years now India has its very own sign language research institute ISLRTC; it takes up sign language interpretation courses, special education courses and deaf students are trained to teach ISL at deaf schools. We need more institutes like this because it has centre only in New Delhi, it is not feasible for every deaf and sign language learning enthusiasts round the corner of India to accommodate in Delhi due to various social and economic conditions. At least we can start by establishing such Institutes in major metro cities.

IV. At the moment we need recognition of ISL as the official language of the deaf community and standardization will eventually happen. So there should be a constant effort within and outside the community to fight for recognition of ISL. We should take inspiration from our contemporary countries which have achieved this goal; definitely condition of deaf at those places is better than our country.

V. Sign language should not only be taught in deaf schools to only deaf but rather should be introduced in normal schools at the basic level so that it can reach to every strata of the society. It will surely increase awareness of the Sign language in the society and it will be no more an alien language. By adopting this, we can break the stigma of disability attached to this language.

VI. The service providers like railway ticket counters, banks, government electricity and water bill paying counters etc. should have sign language interpreters to avoid communication gap.

VII. Deaf students should be encouraged for higher education. During the field work, it came to notice that many deaf students despite of having capabilities they quit education after completion of Higher secondary examination and opt for vocational training courses like hardware repairers, photography, beautician courses etc. due to which their socio-economic status is low. The reason behind this is we don't have interpreters at the University level; if brail scripts can be made available for the blind students then providing interpreters to deaf students is also not impossible. Providing interpreters in colleges and university will raise a scope of employment as well as it will serve the purpose of deaf community.

VIII. The deaf community is facing a serious issue of migration from their home town/village to metro cities in search of good school, job and deaf associations; this is one of the reasons I have collectively named Delhi variety of sign language as NISL and Hyderabad variety of sign language as SISL. Firstly, we have to make sure that developmental and ISL awareness program of ISL should reach out to D/deaf community of rural background as well. Secondly, we have to make sure that there are deaf schools and deaf association clubs if not at least one at the district block where deaf students of nearby villages can attend school. Gram Panchayat[56] workers and Anganwadi[57] workers should be trained to spread awareness regarding deaf rights and importance of deaf education and give proper

[56] Gram Panchayats are at the lowest level of Panchayat Raj institutions (PRIs), its legal authority is the 73rd Constitutional Amendment of 1992, which is concerned with rural local democratic governments.

[57] It was set up in 1975 by the Government of India as a part of Integrated Child Development Services program to combat child hunger and malnutrition.

counseling to the parents of the deaf child. This may decrease the frequency of migration to a certain extent.

IX. Deaf students should be encouraged to work on their own language; it will certainly give us a perspective of deaf themselves on how they want their language to be. Any suggestion of policies which serves the deaf community should come by the deaf, from the deaf and for the deaf.

X. Parents of deaf also need proper counseling on how they should treat their deaf children, often a deaf child feels ignored in the hearing family which affects their social and mental growth. Generally hearing parents are not aware of deaf schools and put their child in hearing school as a result of this the deaf child struggles with the education system and drop their education. Hearing parents of a deaf child should also make an effort to learn sign language and participate in deaf activities at the deaf clubs.

XI. The broadcast ministry of India should make sure that there is sign language interpretation for at least informative shows like News, travel shows, culinary shows, geographic shows etc. on televisions. We often get to know about the world through our TV channels which this community is devoid of; they are constantly uninformed about the world. If not interpretation then at least subtitle should be provided in regional specific areas so that they can read and understand. Doing this will certainly keep the deaf community on same page as the hearing community in terms of information regarding the world an Sign Language will reach out to many hearing people at the same time. Social awareness campaigns should be conducted through visual media like Televisions, News papers and movies so that the requirements of deaf community can reach out to as many hearing people as possible.

6.5 Future projections of the Investigation

In India within past few years ISL and deaf community has seen a rapid growth, establishment of ISLRTC has accelerated the process of development of ISL and things a quickly changing in favor of ISL in India. It is the most crucial time for the development of ISL as on 30th July 2020, New Education Policy (NEP) has announced that ISL will

be standardized and National and State curriculum materials will be developed and implemented for the hearing impaired students. However, in all these years the regional varieties of ISL has been completely overlooked and the concept of pan-ISL persists. The investigation done in this study firmly states that ISL has regional varieties; the arguments and observations presented in chapter 3 has put across valid reasons for claiming NISL and SISL as two distinct regional varieties of ISL. As per the plan of NEP 2020, state curriculum materials for school needs to be developed but by ignoring the regional varieties and language variations which it entails; it is completely losing its purpose, a state curriculum study material cannot be formed without incorporating the correspondent regional variety. The methods adopted to establish lexical variation between NISL and SISL discussed in chapter 3, has yielded the desired results based on which for now a lexical data base of NISL and SISL can be created. This study is restricted to only north and south zone of India due to limited duration and space of the dissertation, a similar study can be done focusing the east and west zone of the country. Apart from NISL and SISL, Shillong Sign Language (ShSL) is already documented as a separate regional variety of ISL through various research works conducted by Melissa G. Wallang. The issue of lexical variation has to be addressed appropriately for an inclusive development of ISL before just one variety of ISL takes over and diminishes the other regional varieties. Encouraging and incorporating regional varieties of ISL will surely aid in the acceptance of the educational curriculum developed under NEP 2020 for the corresponding states of India.

In India, the linguistic investigation on ISL is currently new and in a growing phase, as a result of which the problem of scanty primary data and literature is often faced by the researchers and language development committee. In the introductory chapter (section 0.6.2) of this dissertation, a brief documentation of the rights provided to the deaf community of India by the Constitution and various other regulatory bodies has been encapsulated. The referred section has not only illustrated the deaf rights and linguistic rights provided so far but subtly, henceforth the reality of these rights on the implicational level, the discussion revels that the linguistic rights of the deaf community have been violated in every possible way due to lack of interest and poor execution of acts and regulations. This section holds importance to the deaf community of India

because it enlists the linguistic right provided by the regulatory bodies and constitution; it will make them more aware of their rights, it also holds importance to the deaf right activists because it focuses on the exact areas needs to be fixed for development of ISL in India. Apart from this, it is anticipated that it will contribute some substance in the literature development of sign linguistics in India and might be helpful for other researchers of ISL.

The other finding in this study is the situation of deaf in rural India. In chapter 5, the case study of participant A and B unveils the drift of deaf of rural India from the urban India. Participant A is born and brought up in Hyderabad, he has completed his formal education from a deaf school; from very young age he has been part of the deaf associations hence he is very confident and keeps a very positive attitude for ISL. On the other hand, participant B is born and brought up in a small village of Bihar and due to lack of the deaf awareness in village he has faced many issues in communication and education. In village, the quality of deaf education was not that good so in childhood he was not at all confident and looked down upon himself. In his family also, he has faced various communication issues. His life changed when he went to Hyderabad for vocational training course, there also he faced communication issues because of the regional variations in sign language but he managed to learn it and then he came to Delhi for job. His bad life experiences have left him bitter about this situation and it is one of the reasons why he is in favor of uniform ISL pan India. The very dominant unequal education system is the reason why many deaf students staying in villages remain under educated and this should not happen. This situation is also responsible for the migration of the deaf people from their respective villages to metro cities in search of better education, vocational training and jobs. The condition of ISL in rural area and issue of migration needs to be addressed and effective measures should to be taken to uproot this problem; the possible suggestion to uproot this problem is discussed in section no (6.4) of this chapter (refer point no: VIII).

In nutshell, the discussions, arguments and findings in this dissertation divulge that ISL is a heterogeneous language; due to diversity of India culture and deaf culture regional varieties of ISL is very much alive and thriving among the signers. In this study, NISL

and SISL stand true for having phonological lexical variation; findings suggest NISL and SISL to be regional varieties of ISL in India. The social factors of the deaf like competency of the sign language, age of onset of deafness and gender are responsible for the intrinsic variations in sign, so it would be not wrong to say that ISL in India is evolving every moment like any other language and for now it is difficult to decide its saturation point. The signers of their respective variety of ISL have a very positive attitude for their language and are not ready to leave their language alone. For now, the attitude of the signers of not considering their variety as a low variety of ISL is an obstacle for standardization of ISL; if imposition of any variety of ISL is done then there is a possibility of facing major rejection. Having said this, it is also true that the condition of ISL in India is not satisfactory. It needs better education and ISL training material for which language planning is a must. At this stage, it will be ideal to concentrate our maximum focus on lexical up gradation of ISL rather forceful attempt of standardization. Therefore, considering the present condition of ISL in India a lexical database comprising of signs from different regions of India is required. The lexical database should be should be pragmatic in approach in which deaf colleagues and mixed hearing team should collectively participate in planning and formation. In previous methods of lexical documentation the sociolinguistic variables responsible of lexical variations has been completely overlooked. The data presented in chapter 4 suggests that the competency of the sign language, age of onset of deafness and gender are the major factor groups responsible for the intrinsic variations in sign; so a proper sociolinguistic profiling is must for the participants who are selected to sign for the database. In this database suppose if three different signs are encountered for one lexical item then all three signs should be mentioned and for creating teaching material one sign can be picked based on pragmatic usage, iconicity and frequency of occurrence of signs. The database should be open and flexible for data entry at any specific point of time so that the new researches on lexical items can be incorporated. A good database containing lexical variants can provide a good material for standardization processes, the sign which is frequently used by the deaf community can become standard variety of sign afterwards. By adopting this method, the process of language documentation and language standardization can go hand in hand. The creation of such a lexical database will be different from previous

methods of lexical documentation works so far done in India for ISL because; in previous works the social and linguistic background of the signers were not checked despite knowing the fact that signing community has a rich diversity, sociolinguistic factors are responsible for the lexical variations in signs. The dictionaries available so far has just picked single sign for one lexical item and presented it but in this database all the variety of signs will be available so that a sign language learner can easily get to know about the variations and pick the sign wisely considering the location of the interlocutors.

This work can be helpful in creating such lexical data base because it has discussed a possible phonological framework on which distinct regional variety of ISL can be claimed and the sociolinguist variables responsible for language change is also brought under light. I hope this dissertation can be of some use for achieving the desired status of ISL in India.

6.6 Limitations of the study

The questionnaire based method (direct and indirect) has been used for the study and it has resulted to be very helpful to generalize observations but it requires a few changes in its construct and approach to improve further studies.

Questionnaire could have been constructed in English, Hindi and Telugu language considering the fact that in India every region and state has their own official native language. In the North region of India especially in Delhi which is my data collection site for NISL; apart from English Hindi is the most spoken language and in Hyderabad which is the data collection site for SISL, Telugu language is the most accepted language therefore the possibility of the informants of knowing their native language in written form apart from ISL is much higher than English language. Using only English language for the questionnaire was an unprofessional and ignorant behavior. I could only realize my mistake when I reached at the data collection site, at both the sites not all respondents were comfortable in English and asked if I have questionnaire in their regional language. As a researcher it is a very embarrassing situation to be in but I did handle the situation by signing each and every question and their respective options in ISL. The interpreters at the data collection sites gave me immediate `support and assistance to explain the

questionnaire in ISL to the respondents. This process took a lot of time, since at a time only chunks of few informants were explained the questions in ISL. This situation could have been avoided but my comfort in signing and assistance of interpreters filled the void, the only silver lining I could think of this situation is that the deaf informants of NISL and SISL developed trust in me and my work because I could communicate with them in sign language. It made them feel extremely involved in the research and they responded to the questionnaire in full enthusiasm.

The word list used for the data collection for lexical variation between NISL and SISL contains only five hundred words. The word list of at least thousand words would have been reasonable but due the criteria of not including iconic and pointing signs lexical items included in the word list is restricted. But none the less five hundred words have also yielded the desired results which gives coherence and relevance to this study.

Apart from the construct, there is one more mistake in the approach of the word list; absence of pictures of the correspondent words. Few semantic domains such as “animals”, “birds”, “fruits” etc could have been provided with corresponded pictures for easy understanding of the words to the informants. For smooth conduct of the video recording of the word list, the word list was given in advance to the informants so that they get a clear understanding of the lexical item, definitely due to this the data collection span exceeded the decided deadline. For the lexical domains like adjective, verb, negation etc following picture chart was not possible but enough space was given to the informants to ask their doubts regarding the word list for as many times as they want, from my end no pressure of signing each and every word was build on them; they were free to drop the words of which they are unsure.

Apart from the questionnaire the other limitation of this study is the insufficient responses from the female deaf informants. At both the data collection sites the number of male deaf informants is observed to be way more than the female deaf member. At both the sites, mostly the female deaf members refrained participation in any manner; due to both the given circumstances participation and opinion of the female deaf member is less than the male deaf member. In chapter 4, the influence of the social factors on the style of signing of the deaf members of NISL and SISL is under observation and gender

is one of the factor group; out of twenty informants only five of them are females (refer table no: 4.1). The minor number of female deaf members and non-participation has resulted in the small sample size of the female deaf opinion on the desired issue. During the data collection for this study, it was made sure that the female informants who agreed to participate are comfortable in every situation and the choice of the other female deaf member who walked out was equally respected.

The less number of female deaf members at schools or vocational training sites is a matter of research in India and this condition needs to be addressed as soon as possible. However, the sex ratio of the deaf members cannot be controlled because deafness is a natural phenomenon and cannot be manipulated also there is no relevant study in India that suggest which gender is likely to be affected by deafness.

In this study, only two varieties of ISL, NISL and SISL have been taken into account. The data of phonological comparison of few more regional varieties of ISL would have helped to establish regional variations of ISL with more conviction. Due to limited space and time for these dissertation only two varieties of ISL was taken into account.

The phonological variation of the lexical items is investigated in citation form only, this work limits in explaining whether same phonological variation will be observed when signed in a complete grammatical sentence or not.

The observations and results in this dissertation are holistic in nature; there are indeed imperfections and scope of improvement but it has tried to focus on major phonological and sociolinguistic issues of ISL in India. Hopefully it will prove beneficial in investigating different linguistic aspects of ISL.

APPENDIX 1

Individual Questionnaire in English

Date:_____ Sl.No._____

Home Town/Village: _____

Part I- Background Information

1. Name: _____

2. Sex:
   a. Male
   b. Female
   c. Third Gender

3. Age: _____

4. Place of Birth: _____

5. Date of Birth: _____

6. Marital Status:
   a. Married
   b. Single
   c. Divorced
   d. Widow

7. Highest Education Qualification: _____

8. Started Schooling In:

a. Normal School
b. Deaf School
c. Primary in Normal School, Higher in Deaf School
d. Primary in Deaf School, Higher in Normal School

9. Languages Known: _____

10. Mother Tongue: _____

11. Occupation: _____

12. Hobby: _____

Part II- Language Attitude

1 If you have both a hearing and a deaf friend, on whom will you trust the most?

a. HEARING
b. DEAF
c. BOTH
d. NONE

2 You are comfortable going out with?

a. HEARING
b. DEAF
c. BOTH
d. NONE

3 You would like to marry?

a. DEAF PERSON
b. HEARING PERSON

4 Do you like watching TV or Movies?

a. YES
b. NO

5 If yes, do you understand the whole thing without an interpreter?

a. YES
b. NO

6 Do you think, there should be shows in sign language on TV?

a. YES
b. NO

7 Do you feel ignored by the hearing people?

a. ALWAYS
b. NEVER
c. SOMETIME

8 Do you think hearing people should learn sign language?

a. STRONGLY AGREE
b. STRONGLY DISAGREE

9 How do you feel when a hearing person communicates with you in sign language?

a. GOOD
b. BAD
c. NORMAL

10 Do you think sign language should be taught in schools?

a. STRONGLY AGREE
b. STRONGLY DISAGREE

11 Do you think hearing people also, should be the part of deaf club?

a. YES
b. NO

12 Do you hesitate using sign language in public?

a. ALWAYS
b. NEVER
c. SOMETIME

13 Do you ever think that in sign language you cannot explain your emotions well?

a. ALWAYS
b. NEVER
c. SOMETIME

14 Sign language represents deaf community?

a. STRONGLY AGREE
b. STRONGLY DISAGREE

15 Any people who knows sign language is a part of deaf community?

a. YES
b. NO

16 Is ISL same throughout India?

a. Yes
b. No

17 Which variety you prefer most?

a. Comfortable with all
b. Regional Variety

18 Do you understand other variety of ISL other than yours?

a. Yes, Instantly
b. Yes, but it takes time
c. No, not at all

19 Do you want to learn sign language from other states?

a. Yes
b. No
c. Maybe

20 Do you want to see same sign throughout India?

a. Yes
b. No

APPENDIX 2

Personal Interview Questions for Case Study

Question 1: Have you ever faced any communication gap within your family and other sections of society?

Question 2: Do you ever feel low of yourself being deaf and using sign language in public?

Question 3: Is sign language same throughout India? If not which variety of sign language do you prefer most?

Question 4: Do you want to see same sign throughout India? What is your opinion on standardization of Indian Sign Language?

Question 5: What all can be done for the development of ISL as a language?

APPENDIX 3

Word List

Word list followed for the assessment of regional variations between NISL and SISL.

Enlisted below are five hundred lexical items categorized into thirty three semantic domains; in this list semantic domains are written in bold upper case letters.

- In the word list double handed signs are indicated as “2h”. Total number of 2h signs is one hundred and sixty six.
- Indexing lexical items are indicated as /G/. Total number of Inx signs in the word list is ten.

S.no	COLOURS	S.no	NUMBER	S.no	VEGETABLES
1	Black	12	Eight	23	Onion
2	White	13	Four	24	Potato (2h)
3	Green	14	Six	25	Cabbage
4	Red	15	Ten	26	Cauliflower (2h)
5	Yellow	16	One Thousand	27	Corn (2h)
6	Blue	17	Nine	28	Egg Plant
7	Pink	18	Twelve	29	Green Chilly
8	Brown	19	Twenty	30	Tomato
9	Orange	20	One Lakh	31	Rice
10	Grey	21	One Crore	32	Peas (2h)
11	Indigo	22	Seven	33	Mushroom
				34	Carrot
				35	Raddish
				36	Jackfruit

S.no	FRUITS	S.no	DAIRY PRODUCT	S.no	SPICES
37	Apple	49	Curd (2h)	57	Ginger
38	Banana (2h)	50	Milk (2h)	58	Garlic
39	Pineapple	51	Egg	59	Salt
40	Watermelon (2h)	52	Ice Cream	60	Turmeric
41	Orange	53	Paneer (Cottage Cheese)	61	Cumin
42	Grapes	54	Butter	62	Pepper
43	Mango (2h)	55	Cheese	63	Mustard
44	Strawberry	56	Ghee	64	Tamrind
45	Coconut			65	Cardamom
46	Papaya			66	Clove
47	Pomegranate				
48	Pear				

S.no	DRINKS	S.no	SNACKS	S.no	PLANT MATTER
67	Tea	74	Sandwich	85	Flower
68	Coffee	75	Samosa (2h)	86	Leaf
69	Cold Drinks (2h)	76	Puri (2h)	87	Tree
70	Fruit Juice	77	Burger (2h)	88	Seed
71	Water	78	Paratha (2h)	89	Steam
72	Lassi	79	Idlli (2h)	90	Root
73	Milkshake	80	Chocolate	91	Bush
		81	Dosa	92	Herbs
		82	Dhokla	93	Thorn
		83	Pizza	94	Cactus
		84	Cake	95	Bud

S.no	DOMESTIC ANIMAL	S.no	WILD ANIMAL	S.no	CLIMATE TERMS
96	Parrot (2h)	117	Tiger (2h)	133	Summer
97	Cat (2h)	118	Lion (2h)	134	Winter (2h)
98	Dog (2h)	119	Monkey (2h)	135	Rain (2h)
99	Cow (2h)	120	Elephant	136	Thunder
100	Fish (2h)	121	Fox (2h)	137	Wind (2h)
101	Pigeon	122	Deer (2h)	138	Rainbow
102	Duck (2h)	123	Bear (2h)	139	Fog (2h)
103	Rabbit (2h)	124	Snake	140	Snow (2h)
104	Mouse	125	Crocodile (2h)	141	Autum
105	Sheep (2h)	126	Wolf (2h)	142	Spring
106	Buffalo (2h)	127	Rhinoceros	143	Hailstone
107	Goat (2h)	128	Hippopotamus	144	Global Warming
108	Donkey (2h)	129	Porcupine	145	Earthquake
109	Pig (2h)	130	Kangaroo	146	Monsoon
110	Horse (2h)	131	Giraffe	147	Eclipse
111	Camel (2h)	132	Zebra		
112	Hen				
113	Bird (2h)				
114	Owl				
115	Yak (2h)				
116	Bee				

S.no	ABIOTIC PHYSICAL FEATURES	S.no	HUMAN BODY	S.no	TIME
148	Earth (2h)	169	Hair	181	Morning
149	Fire (2h)	170	Blood (2h)	182	Evening
150	Wood (2h)	171	Bones (2h)	183	Night
151	Gold	172	Heart	184	Tomorrow /G/
152	Ice (2h)	173	Nails	185	Today /G/
153	Stone (2h)	174	Teeth	186	Yesterday /G/
154	Star (2h)	175	Finger	187	Day
155	Sun	176	Soul	188	Week (2h)
156	Moon	177	Tear	189	Month
157	Cloud (2h)	178	Skin	190	Year
158	Mountain (2h)	179	Skeleton	191	Afternoon
159	Sky	180	Nerves	192	Soon
160	River (2h)				
161	Island				
162	Beach				
163	Sea Wave				
164	Sea				
165	Diamond				
166	Coal				
167	Iron				
168	Sea Shell				

S.no	KINSHIP TERMS	S.no	RELIGION	S.no	OTHER PEOPLE
193	Father	212	Hindu (2h)	226	Man
194	Mother	213	Muslim (2h)	227	Woman
195	Elder Brother	214	Christian	228	Teacher (2h)
196	Younger Brother	215	Sikh	229	Student

197	Elder Sister	216	Temple (2h)	230	Friend (2h)
198	Younger Sister	217	Church	231	Enemy
199	Chacha (Father's younger brother)	218	Mosque	232	King
200	Tau (Father's elder brother)	219	Priest (2h)	233	Queen
201	Bua (Father's sister)	220	Buddhist (2h)	234	Beggar
202	Mama (Mother's brother)	221	Idol	235	Boss
203	Mausi (Mother's sister)	222	Bible	236	Doctor (2h)
204	Dada (Paternal grandfather)	223	Quran	237	Blind
205	Dadi (Paternal grandmother)	224	Monk	238	Leader
206	Nana (Maternal grandfather)	225	Bhagavad Gita	239	Politician
207	Nani (Maternal grandmother)			240	Thief
208	Saas (Mother in-law)			241	Terrorist
209	Sasur (Father in-law)			242	Waiter
210	Husband (2h)			243	Deaf
211	Wife (2h)				

S.no	HOUSE HOLD ITEMS	S.no	PUBLIC TRANSPORTATION	S.no	VERB
244	Book (2h)	269	Bus	302	Dig (2h)
245	Pen	270	Train	303	Love (2h)
246	Chair (2h)	271	Car (2h)	304	Hate
247	Computer (2h)	272	Bicycle (2h)	305	Greed (2h)
248	Telephone	273	Auto rickshaw (2h)	306	Open (2h)
249	Mobile	274	Aeroplane	307	Close (2h)
250	Table (2h)	275	Metro	308	Sell (2h)
251	Television (2h)	276	Taxi	309	Buy
252	Umbrella (2h)	277	Ship	310	Jump
253	Candle	278	Truck		
254	Rope (2h)	279	Motorcycle		
255	Bed (2h)	280	Rickshaw		
256	Luggage	**S.no**	**VERB**	311	Forget
257	Window	281	Sit	312	Remember
258	Map	282	Stand	313	Fail
259	Bag	283	Walk	314	Pass
260	Note	284	Run (2h)	315	Visit
261	Dollar	285	Read	316	Celebrate (2h)
262	Packet	286	Study (2h)	317	Wait
263	Internet	287	Dance (2h)	318	Stop
264	Refrigerator	288	Sing (2h)	319	Go
265	Pipe	289	Speak	320	Swim (2h)
266	Knife	290	Kick	321	Fly
267	Fan	291	Sleep (2h)	322	Idea
268	Tubelight	292	Write	323	Brave
		293	Play (2h)	324	Dream
		294	Laugh	325	Trust
		295	Climb (2h)	326	Problem
		296	Throw	327	Cry

		297	Catch (2h)	328	See
		298	Fight (2h)	329	Explain
		299	Melt (2h)	330	Discuss (2h)
		300	Freeze (2h)	331	Order
		301	Stir	332	Argue (2h)
				333	Jealous
				334	Guilty
				335	Proud
				336	Danger
				337	Job

S.no	**ADJECTIVE**	**S.no**		**S.no**	
338	Easy	355	Different (2h)	372	Less
339	Difficult (2h)	356	Dry (2h)	373	More
340	Afraid	357	Wet	374	Young
341	Angry	358	Old	375	Old (age)
342	Good	359	New	376	Poor
343	Bad	360	Long	377	Rich (2h)
344	Ugly	361	Short	378	Right
345	Beautiful	362	Happy	379	Wrong
346	Hungry	363	Sad	380	Sick
347	Thirsty	364	Hot	381	Full
348	Fat	365	Cold (2h)	382	Empty (2h)
349	Thin	366	Dark (2h)	383	Healthy
350	Few	367	Bright (2h)	384	Fool
351	Many	368	Lazy	385	Wise
352	Small	369	Active		
353	Big (2h)	370	Far		
354	Same (2h)	371	Near		

S.no	ADPOSITION	S.no	INTEROGATIVE	S.no	NEGATION
386	At	397	How	406	No
387	On	398	Why	407	Not
388	Above (2h)	399	How Many	408	Never
389	Under (2h)	400	When	409	None
390	Behind(2h)	401	What		
391	In Front Of (2h)	402	Where	S.no	AFFIRMATIVE
392	Through (2h)	403	Who /G/	410	Yes
393	Along With (2h)	404	Whose /G/	411	Accept
394	Since	405	Which /G/	412	Agreement
395	Before				
396	After				

S.no	ACADEMIC WORDS	S.No		S.No	SERVICE PROVIDER
413	Science (2h)	425	Flash Card	437	Servant (2h)
414	Math	426	Co-Curriculum	438	Interpreter (2h)
415	History (2h)	427	Syllabus	439	Tailor (2h)
416	Geography	428	Continent	440	Labour
417	Physics	429	Solar System	441	Contractor
418	Chemistry (2h)	430	Satellite	442	Mechanic (2h)
419	Biology	431	Nervous System	443	Builder
420	Fossil	432	Digestive System	444	Vendor
421	Constitution	433	Food Chain	445	Cobbler
422	Democracy	434	Ecosystem	446	Gardener
423	Famine	435	Adaptation	447	Watchman
424	Animation	436	Pollution		

S.no	CONJUGATION	S.no		S.no	DAYS IN A WEEK
448	But /G/	459	Clearly(2h)	472	Monday
449	If /G/	460	Colorfully	473	Tuesday
450	Because	461	Daily /G/	474	Wednesday
451	And	462	Faithfully	475	Thursday
		463	Fortunately	476	Friday
S.no	**ADVERB**	464	Generously (2h)	477	Saturday
452	Quickly	465	Happily	478	Sunday
453	Slowly (2h)	466	Immediately		
454	Swiftly	467	Loudly (2h)		
455	Always /G/	468	Naturally		
456	Annually (2h)	469	Neatly		
457	Bravely (2h)	470	Sometimes		
458	Suddenly	471	Urgently		

S.no	MONTHS IN A YEAR	S.no	FESTIVALS CELEBRATED IN INDIA
479	January	491	Holi
480	February	492	Diwali
481	March	493	Dusshera
482	April	494	Ei-Dh
483	May	495	Christmas
484	June	496	Ganesh Caturthi
485	July	497	Durga Pooja
486	August	498	Pongal
487	September	499	Rakshabandhan
488	October	500	Lohri
489	November		
490	December		

APPENDIX 4 (A)

NISL Fingerspelling


A


B


C


D


E


F


G


H


I


J


K


L


M


N


O


P


Q


R


S


T


U


V


W


X


Y


Z

APPENDIX 4(B)

SISL Fingerspelling

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

APPENDIX 5(A)
Words having Lexical Score ≠ 1

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**GREEN**		
Phonological Feature			
Location	Chest		Side of the mouth
Handshape	B		tB
Movement	Static		Static
Orientation	Palm	Back	Neutral
	Carpal	Towards the Signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).1 Phonological analysis of GREEN

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**RED**	
Phonological Feature		
Location	Tongue	Below the lower lips

Handshape	G		G
Movement	L(MOV)	Static	Moving
	Shape	-	Straight
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).2 Phonological analysis of RED

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YELLOW**		
Phonological Feature			
Location	Forehead		Cheek
Handshape	G		cB
Movement	l(MOV)	Moving	Circular
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).3 Phonological analysis of YELLOW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BLUE**		
Phonological Feature			
Location	Forehead		Ridge of the nose
Handshape	H		cG
Movement	Path	Upwards	Downwards
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the ground
NMF	Puffed cheek		Neutral

Table 5(A).4 Phonological analysis of BLUE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**PINK**	
Phonological Feature		
Location	Below the lower lips	On the lower lips
Handshape	G	tV

Movement	Path	Moving	Moving
	Shape	Straight	Straight
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).5 Phonological analysis of PINK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**EIGHT**		
Phonological Feature			
Location	NSP		NSP
Handshape	L		x5
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).6 Phonological analysis of EIGHT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SIX**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		I
Movement	l(MOV)	Static	Moving
	Shape	-	Mapping 6
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).7 Phonological analysis of SIX

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TEN**	
Phonological Feature		
Location	Tip of the fingers	Index finger

Handshape	fO		fbO
Movement	l(MOV)	Nodding	Closing
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).8 Phonological analysis of TEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NINE**		
Phonological Feature			
Location	NSP		NSP
Handshape	f3		i5
Movement	l(MOV)	Static	Moving
	Shape	-	Circular
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).9 Phonological analysis of NINE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TWELVE**		
Phonological Feature			
Location	Base of the finger		Middle finger
Handshape	V		V
Movement	l(MOV)	Static	Moving
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).10 Phonological analysis of TWELVE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TWENTY**	
Phonological Feature		
Location	Middle Finger	NSP
Handshape	tV	Initial- V Final- O

Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).11 Phonological analysis of TWENTY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ONION**		
Phonological Feature			
Location	Initial- Eye Final- Fist		Initial- Eye Final-NSP
Handshape	Initial- G Final- tA		Initial- G Final- c3
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).12 Phonological analysis of ONION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**POTATO**		
Phonological Feature			
Location	NSP		NSP
Handshape	bC		f3
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).13 Phonological analysis of POTATO

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CAULIFLOWER**	
Phonological Feature		
Location	Initial- nose Final- Above head	Nose
Handshape	scB	fO

Movement	l(MOV)	Nodding	Static
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Initial- Front Final- Neutral	Front
	Carpal	Initial- Towards the signer Final- Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).14 Phonological analysis of CAULIFLOWER

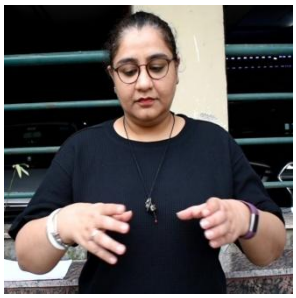
Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**JACKFRUIT**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		Initial- Color marker [WHITE] Final- bU
Movement	l(MOV)	Moving	Moving
	Shape	-	Curve
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).15 Phonological analysis of JACKFRUIT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CORN**		
Phonological Feature			
Location	Near Mouth		Ridge of the palm
Handshape	G		H1- B H2- U
Movement	l(MOV)	Supinate	Moving
	Shape	Straight	-
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).16 Phonological analysis of CORN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**EGG PLANT**	
Phonological Feature		
Location	NSP	Ear

Handshape	scB		c3
Movement	l(MOV)	Shaking	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

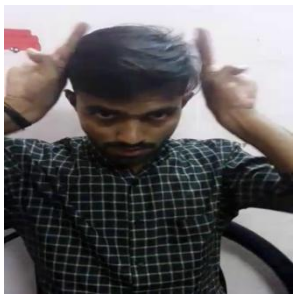
Table 5(A).17 Phonological analysis of EGG PLANT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GREEN CHILLY**		
Phonological Feature			
Location	Approximate to Mouth		Corner of the mouth
Handshape	V		G
Movement	l(MOV)	Wiggling	Static
	Size	Small	-
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).18 Phonological analysis of GREEN CHILLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PEA**		
Phonological Feature			
Location	Index finger		NSP
Handshape	G		bU
Movement	l(MOV)	Moving	Moving
	Shape	-	Semi-circle
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).19Phonological analysis of PEA

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**PINEAPPLE**	
Phonological Feature		
Location	Forehead	NSP

Handshape	4		W
Movement	l(MOV)	Moving	Opening
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).20 Phonological analysis of PINEAPPLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PEAR**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		Initial- Color marker [BROWN] Final- f3
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).21 Phonological analysis of PEAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WATERMELON**		
Phonological Feature			
Location	Initial- Tongue Final- Inner palm		Initial- Below the lower lips Final- Approximate to mouth
Handshape	Initial- G Final- B		Initial- G Final- U
Movement	l (MOV)	Moving	Moving
	Shape	Semi-circle	Semi-circle
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).22 Phonological analysis of WATERMELON

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ORANGE**	
Phonological Features		
Location	In NSP	In NSP

Handshape	c3		c5
Movement	(lMOV)	Twisting	Twisting
	Shape	Circle	Circle
	Size	Small	Small
Orientation	Palm	Front	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).23 Phonological analysis of ORANGE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GRAPES**		
Phonological Feature			
Location	Above head		NSP
Handshape	fbO		Initial- Color marker [GREEN] Final- bU
Movement	l(MOV)	Shaking	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).24 Phonological analysis of GRAPES

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STRAWBERRY**		
Phonological Features			
Location	In NSP		Lower Lips
Handshape	S-T-R-A-W-B-E-R-R-Y		Initial- G
			Final- U
Movement	(lMOV)	Static	Shaking
	Path		Circular
	Size		Small
Orientation	Palm	Back	Neutral
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(A).25 Phonological analysis of STRAWBERRY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**EGG**	
Phonological Feature		
Location	NSP	Approximate to ear

Handshape	bC		f3
Movement	l(MOV)	Supinate	Shaking
	Size	Medium	Small
	Speed	Normal	Fast
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).26 Phonological analysis of EGG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ICE CREAM**		
Phonological Feature			
Location	Approximate to mouth		Approximate to mouth
Handshape	tA		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).27 Phonological analysis of ICE CREAM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GARLIC**		
Phonological Feature			
Location	NSP		Initial- Teeth Final- NSP
Handshape	Initial- L Final- bO		Initial- G Final- sF
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).28 Phonological analysis of GARLIC

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SALT**	
Phonological Feature		
Location	Approximate to mouth	NSP

Handshape	c3		sF
Movement	l(MOV)	Crumbling	Crumbling
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).29 Phonological analysis of SALT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CUMIN**		
Phonological Feature			
Location	Index finger		NSP
Handshape	G		fO
Movement	l(MOV)	Static	Moving
	Path	-	Circular
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).30 Phonological analysis of CUMIN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BLACK PEPPER**		
Phonological Feature			
Location	NSP		NSP
Handshape	bU		sF
Movement	l(MOV)	Static	Circular
	Shape	-	Circular
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).31 Phonological analysis of BLACK PEPPER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TAMARIND**	
Phonological Feature		

Location	NSP		Side of the lips
Handshape	bU		fbO
Movement	l(MOV)	Moving	-
	Shape	Semi-circle	-
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Clinched eye

Table 5(A).32 Phonological analysis of TAMRIND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TEA**		
Phonological Feature			
Location	Mouth		Approximate to mouth
Handshape	scB		sF
Movement	l(MOV)	Static	Up
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).33 Phonological analysis of TEA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FRUIT JUICE**		
Phonological Features			
Location	In NSP		In NSP
Handshape	L		scB
Movement	(lMOV)	Circular	Supinate
	Speed	Medium	Medium
Orientation	Palm	Back	Neutral
	Carpal	Towards the Ground	Towards the Sky
NMF	Neutral		Neutral

Table 5(A).34 Phonological analysis of FRUIT JUICE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**COLD DRINK**	
Phonological Feature		
Location	Initial- Cheeks Final- Approximate to mouth	NSP
Handshape	Initial- A Final- xA	A

Movement	Path	-	Up
	l(MOV)	Moving	Moving
	Size	Small	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).35 Phonological analysis of COLD DRINK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SAMOSA**		
Phonological Feature			
Location	Index side		Tip of the index finger
Handshape	H1- G H2- V		xH
Movement	l(MOV)	Moving	Moving
	Shape	-	Mapping triangle
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).36 Phonological analysis of SAMOSA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PURI /pūrī/**		
Phonological Features			
Location	In NSP		In NSP
Handshape	xA		scB
Movement	(lMOV)	Moving	Opening
	Size	Small	Big
	Speed	Medium	Medium
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	One hand carpal towards the sky & other hand carpal towards the ground
NMF	Neutral		Puffed Cheek

Table 5(A).37 Phonological analysis of PURI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BURGER**	
Phonological Feature		

Location	Between Index and thumb		Approximate to mouth
Handshape	B		U
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).38 Phonological analysis of BURGER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PARATHA**		
Phonological Feature			
Location	Outer palm		Tip of the index finger
Handshape	B		sF
Movement	l(MOV)	Moving	Static
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).39 Phonological analysis of PARATHA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**IDLLI**		
Phonological Feature			
Location	NSP		Palm
Handshape	scB		scB
Movement	l(MOV)	Shaking	Static
	Size	Small	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the ground
NMF	Neutral		Neutral

Table 5(A).40 Phonological analysis of IDLLI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DOSA**	
Phonological Feature		
Location	Palm	Palm

Handshape	C		B
Movement	l(MOV)	Static	Circular
	Shape	-	Round
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).41 Phonological analysis of DOSA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PIZZA**		
Phonological Feature			
Location	Mouth		Mouth
Handshape	scB		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).42 Phonological analysis of PIZZA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CAKE**		
Phonological Feature			
Location	NSP		Palm
Handshape	scB		B
Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).43 Phonological analysis of CAKE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FLOWER**	
Phonological Feature		
Location	Nose	Nose
Handshape	tA	scB

Movement	Static		Static
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Inhaling action		Inhaling action

Table 5(A).44 Phonological analysis of FLOWER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LEAF**		
Phonological Feature			
Location	Palm		NSP
Handshape	xB		tB
Movement	l(MOV)	Moving	Shaking
	Shape	Mapping shape of a leaf	-
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Front	Back
	Carpal	Towards the line of bilateral symmetry	Towards the sky
NMF	Neutral		Neutral

Table 5(A).45 Phonological analysis of LEAF

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TREE**		
Phonological Feature			
Location	NSP		NSP
Handshape	LL		55
Movement	l(MOV)	Moving	Moving
	Shape	Mapping of tree	Mapping of tree
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).46 Phonological analysis of TREE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SEED**	
Phonological Feature		
Location	NSP	NSP

Handshape	fO		G
Movement		Static	Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).47 Phonological analysis of SEED

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STEAM**		
Phonological Feature			
Location	NSP		NSP
Handshape	bU		fbO
Movement	Path	Up	Up
	Shape	Straight	Mapping of branch
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).48 Phonological analysis of STEAM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ROOT**		
Phonological Feature			
Location	Wrist		NSP
Handshape	5		f5
Movement	l(MOV)	Moving	Moving
	Path	Down	Down
	Size	Medium	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).49 Phonological analysis of ROOT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BUSH**	
Phonological Feature		
Location	NSP	Wrist

Handshape	scB		tB
Movement	l(MOV)	Opening	Moving
	Path	-	Straight
	Size	Medium	Normal
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).50 Phonological analysis of BUSH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HERB**		
Phonological Feature			
Location	Shoulder		NSP
Handshape	fbO		sF
Movement	l(MOV)	Moving	Supinate
	Path	-	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).51 Phonological analysis of HERB

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CACTUS**		
Phonological Feature			
Location	Outer Palm		Wrist
Handshape	fO		fbO
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).52 Phonological analysis of CACTUS

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**THORN**	
Phonological Feature		
Location	NSP	Wrist
Handshape	fbO	fbO

Movement	l(MOV)	Moving	Moving
	Path	Up-Down Alternative	-
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).53 Phonological analysis of THORN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUD**		
Phonological Feature			
Location	Palm		Palm
Handshape	cB		tB
Movement	Path	Static	Upwards
	Size	-	Medium
	Speed	-	Slow
Orientation	Palm	Neutral	Front
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).54 Phonological analysis of BUD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CAT**		
Phonological Feature			
Location	Cheeks		Cheeks
Handshape	f5		xB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).55 Phonological analysis of CAT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DOG**	
Phonological Feature		
Location	NSP	NSP
Handshape	tB	scB

Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Barking action

Table 5(A).56 Phonological analysis of DOG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BIRD**		
Phonological Feature			
Location	Nose		NSP
Handshape	fbO		cB
Movement	Path	Moving	Moving
	Path	-	Up
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).57 Phonological analysis of BIRD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COW**		
Phonological Feature			
Location	Head		Initial- Head Final- NSP
Handshape	L		Initial- L Final- sF
Movement	Path	Static	Initial- Static Final- Up-Down alternative
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).58 Phonological analysis of COW

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FISH**	
Phonological Feature		
Location	Ridge of the palm	Back of the palm

Handshape	B		xB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Small
	Speed	Fast	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).59 Phonological analysis of FISH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PIGEON**		
Phonological Feature			
Location	Initial-Sides of the nose Final- NSP		Lateral of the body
Handshape	Initial-G Final- tB		tB
Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).60 Phonological analysis of PIGEON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PARROT**		
Phonological Feature			
Location	Nose		Nose
Handshape	cG		H
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).61 Phonological analysis of PARROT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DUCK**		
Phonological Feature			
Location	Nose		Lateral of the body
Handshape	U		cB
Movement	l(MOV)	Static	Moving
	Size	-	Medium

	Speed	-	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).62 Phonological analysis of DUCK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RABBIT**		
Phonological Feature			
Location	NSP		H1- Head H2- Teeth
Handshape	cB		H1- H H2-H
Movement	l(MOV)	Moving	Static
	Size	Medium	-
	Speed	Fast	-
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).63 Phonological analysis of RABBIT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MOUSE**		
Phonological Feature			
Location	On palm		NSP
Handshape	cB		c3
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).64 Phonological analysis of MOUSE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SHEEP**	
Phonological Feature		
Location	Chest	Head
Handshape	f5	tA

Movement	l(MOV)	Down	Circular
	Shape	Straight	Circle
	Size	Medium	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).65 Phonological analysis of SHEEP

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUFFALO**		
Phonological Feature			
Location	Head		Head
Handshape	LL		fOfO
Movement	l(MOV)	Static	Moving
	Size	-	Big
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).66 Phonological analysis of BUFFLAO

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GOAT**		
Phonological Feature			
Location	Chin		Chin
Handshape	x5		xH
Movement	l(MOV)	Shaking	Shaking
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table (5).67 Phonological analysis of GOAT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DONKEY**	
Phonological Feature		
Location	Head	Side of the torso
Handshape	tB	cG

Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Kicking action

Table 5(A).68 Phonological analysis of DONKEY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PIG**		
Phonological Feature			
Location	Nose		Nose
Handshape	f5		C
Movement	l(MOV)	Moving	Static
	Size	Small	-
	Speed	Fast	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).69 Phonological analysis of PIG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HORSE**		
Phonological Feature			
Location	Above middle finger and index		NSP
Handshape	H		cV
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Front
	Carpal	Towards the addressee	Towards the signer
NMF	Wide eye		Neutral

Table 5(A).70 Phonological analysis of HORSE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CAMEL**	
Phonological Feature		
Location	NSP	NSP
Handshape	cB	f5

Movement	l(MOV)	Nodding	Nodding
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).71 Phonological analysis of CAMEL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TIGER**		
Phonological Feature			
Location	NSP		Face
Handshape	scB		5
Movement	Path	In	Lateral
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Front
	Carpal	Towards the ground	Towards the signer
NMF	Wide eye		Wide eye

Table 5(A).72 Phonological analysis of TIGER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ELEPHANT**		
Phonological Feature			
Location	Nose		Below nose
Handshape	H1- bU H2- f5		B
Movement	l(MOV)	Static	Waving
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).73 Phonological analysis of ELEPHANT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FOX**	
Phonological Feature		
Location	Mouth	Nose
Handshape	f5	xH

Movement	l(MOV)	Static	Moving
	Size	-	Small
	Speed	-	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Neutral

Table 5(A).74 Phonological analysis of FOX

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DEER**		
Phonological Feature			
Location	NSP		Head
Handshape	Y		GG
Movement	L(MOV)	Static	Shaking
	Path	-	Lateral
	Size	-	Big
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).75 Phonological analysis of DEER

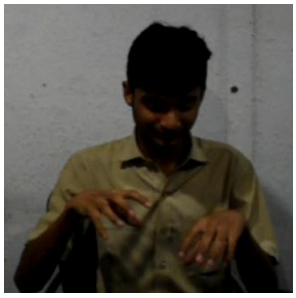
Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEAR**		
Phonological Feature			
Location	NSP		Chest
Handshape	scB		f5
Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).76 Phonological analysis of BEAR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MONKEY**	
Phonological Feature		
Location	Frontal	Head
Handshape	cB	c5

Movement	l(MOV)	Static	Moving
	Size	-	Big
	Speed	-	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the ground	Towards the sky
NMF	Puffed cheek		Neutral

Table 5(A).77 Phonological analysis of MONKEY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SNAKE**		
Phonological Feature			
Location	NSP		NSP
Handshape	cB		cB
Movement	l(MOV)	Shaking	Shaking
	Path	-	Out
	Shape	-	Straight
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the ground
NMF	Neutral		Neutral

Table 5(A).78 Phonological analysis of SNAKE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**KANGAROO**		
Phonological Feature			
Location	Stomach		NSP
Handshape	scB		cB
Movement	l(MOV)	Static	Static
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the ground
NMF	Neutral		Neutral

Table 5(A).79 Phonological analysis of KANGAROO

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SUMMER**	
Phonological Feature		
Location	Forehead	Lateral side of the body
Handshape	bC	scB

Movement	l(MOV)	Moving	Nodding
	Shape	Straight	Round
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Clinched face		Neutral

Table 5(A).80 Phonological analysis of SUMMER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SPRING**		
Phonological Feature			
Location	Nose		NSP
Handshape	f5		fO
Movement	Path	To lateral	Up-Down alternative
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Sniffing		Neutral

Table 5(A).81 Phonological analysis of SPRING

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RAIN**		
Phonological Feature			
Location	Above the head		Above the head
Handshape	cB cB		fO fO
Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).82 Phonological analysis of RAIN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**THUNDER**	
Phonological Feature		
Location	Above the head	Wrist

Handshape	G		G
Movement	l(MOV)	Shaking	Moving
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).83 Phonological analysis of THUNDER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WIND**		
Phonological Features			
Location	Near Mouth		In NSP
Handshape	B		5
Movement	(lMOV)	Static	Wiggling
	Size		Big
	Speed		Fast
Orientation	Palm	Front	Neutral
	Carpal	Towards the Sky	Towards the Sky
NMF	Slightly closed eyes		Raised Eyebrows

Table 5(A).84 Phonological analysis of WIND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SNOW**		
Phonological Feature			
Location	Above head		Front of the body
Handshape	fO		5
Movement	l(MOV)	Moving	Wiggling
	Size	Medium	Big
	Speed	Normal	Slow
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Calm face

Table 5(A).85 Phonological analysis of SNOW

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**EARTH**	
Phonological Feature		
Location	NSP	NSP

Handshape	scB scB		scB
Movement	L(MOV)	Circular	Supinate
	Shape	Round	-
	Size	Big	Medium
	Speed	Normal	Slow
Orientation	Palm	Neutral	Front
	Carpal	Towards the addressee	Towards the sky
NMF	Neutral		Neutral

Table 5(A).86 Phonological analysis of EARTH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GOLD**		
Phonological Feature			
Location	Initial- Forehead Final- Fist		Ear lobule
Handshape	Initial- G Final- tA		sF
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Small
	Speed	Normal	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).87 Phonological analysis of GOLD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**IRON**		
Phonological Feature			
Location	NSP		NSP
Handshape	Initial- Color marker [Black] Final- bU		Initial- Color marker [BLACK] Final- tA
Movement	l(MOV)	Moving	Moving
	Path	Lateral	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).88 Phonological analysis of IRON

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ICE**	
Phonological Feature		

Location	Cheek		NSP
Handshape	A		tA
Movement	Path	Static	Shaking
	Size	-	Small
	Speed	-	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).89 Phonological analysis of ICE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STONE**		
Phonological Feature			
Location	Forehead		NSP
Handshape	c3		U
Movement	l(MOV)	Moving	Moving
	Path	-	Out
	Size	Small	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Clinched face		Neutral

Table 5(A).90 Phonological analysis of STONE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STAR**		
Phonological Feature			
Location	Above the head		NSP
Handshape	f3		c3
Movement	l(MOV)	Crumbling	-
	Path	-	In
	Size	Medium	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Front
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).91 Phonological analysis of STAR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**Moon**	
Phonological Features		

Location	In NSP		In NSP
Handshape	L		xH
Movement	(lMOV)	Closing	Closing
	Shape	Semi Circle	Semi Circle
	Size	Big	Big
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Sky	Towards the Sky
NMF	Neutral		Neutral

Table 5(A).92 Phonological analysis of MOON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CLOUD**		
Phonological Features			
Location	In front of Face		Above Head
Handshape	scB		scB
Movement	(lMOV)	Crumbling	Crumbling
	Size	Medium	Big
Orientation	Palm	Back	Neutral
	Carpal	Towards the Signer	Towards the Sky
NMF	Neutral		Neutral

Table 5(A).93 Phonological analysis of CLOUD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SKY**		
Phonological Features			
Location	In front of the Forehead		Above the Head
Handshape	5		cB
Movement	(lMOV)	Circular	Pronate
	Path	To Lateral	Straight
	Size	Big	Big
Orientation	Palm	Back	Neutral
	Carpal	Towards the Ground	Towards the Sky
NMF	Neutral		Neutral

Table 5(A).94 Phonological analysis of SKY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ISLAND**	
Phonological Feature		
Location	NSP	Palm

Handshape	O		C
Movement	Path	Up-Down alternative	Static
	Shape	Straight	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the ground
NMF	Neutral		Neutral

Table 5(A).95 Phonological analysis of ISLAND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEACH**		
Phonological Feature			
Location	Wrist		Shoulder
Handshape	G		xA
Movement	l(MOV)	Round	Moving
	Size	Medium	Big
	Speed	Normal	Slow
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Closed eye

Table 5(A).96 Phonological analysis of BEACH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SEA WAVE**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		B
Movement	l(MOV)	Wiggling	Moving
	Size	Big	Medium
	Speed	Slow	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the sky
NMF	Wide mouth		Neutral

Table 5(A).97 Phonological analysis of SEA WAVE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SEA SHELL**	
Phonological Feature		
Location	Wrist	NSP
Handshape	cB	G

Movement	l(MOV)	Moving	Moving
	Path	-	Up-Down
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).98 Phonological analysis of SEA SHELL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MONK**		
Phonological Feature			
Location	Palm		NSP
Handshape	t8		U
Movement	l(MOV)	Static	Static
Orientation	Palm	Front	Front
	Carpal	Towards the line of bilateral symmetry	Towards the ground
NMF	Neutral		Neutral

Table 5(A).99 Phonological analysis of MONK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BHAGWAD GEETA**		
Phonological Feature			
Location	Mouth		Palm
Handshape	Initia- sY Final- tB		Initial- Fingerspelling[G-I-T-A] Final- tB
Movement	l(MOV)	Moving	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).100 Phonological analysis of BHAGWAD GEETA

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BIBLE**	
Phonological Feature		
Location	NSP	Chest
Handshape	Initial- fO Final- tB	Initial- tB Final- tB

Movement	l(MOV)	Moving	Moving
	Path	Lateral	Lateral
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).101 Phonological analysis of BIBLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**QURAN**		
Phonological Feature			
Location	In front of face		Between thumb and index finger
Handshape	tB		H1- cG H2- O
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).102 Phonological analysis of QURAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**IDOL**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		bC
Movement	l(MOV)	Moving	Moving
	Path	Down	-
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).103 Phonological analysis of IDOL

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BLOOD**	
Phonological Feature		
Location	Wrist	Wrist

Handshape	G		5
Movement	l(MOV)	Moving	Moving
	Shape	Straight	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).104 Phonological analysis of BLOOD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BONES**		
Phonological Feature			
Location	Jaw line		Joint of the wrist
Handshape	bC		t8
Movement	l(MOV)	Shaking	Supinate
	Size	Small	Small
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).105 Phonological analysis of BONES

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HEART**		
Phonological Feature			
Location	Chest		NSP
Handshape	5		f5
Movement	l(MOV)	Moving	Crumbling
	Size	Small	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).106 Phonological analysis of HEART

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FINGER**	
Phonological Feature		
Location	Tip of the Fingers	NSP
Handshape	G	5

Movement	L(MOV)	Moving	Wiggling
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).107 Phonological analysis of FINGER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**EVENING**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		f5
Movement	Path	Down	To lateral
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the sky	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).108 Phonological analysis of EVENING

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DAY**		
Phonological Feature			
Location	NSP		Wrist
Handshape	cG		G
Movement	l(MOV)	Moving	Moving
	Shape	Small	Semi circle
	Size	Small	Big
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).109 Phonological analysis of DAY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WEEK**	
Phonological Feature		
Location	NSP	NSP

Handshape	5V		sF
Movement	l(MOV)	Moving	Moving
	Path	-	To symmetry
	Shape	-	Straight
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).110 Phonological analysis of WEEK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MONTH**		
Phonological Feature			
Location	Palm		Palm
Handshape	xA		G
Movement	Path	To lateral	To lateral
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).111 Phonological analysis of MONTH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FATHER**		
Phonological Features			
Location	Upper Lips		Upper Lips + In NSP
Handshape	G		Initial- G
			Final- H
Movement	(lMOV)	Shaking	Static
	Size	Small	
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(A).112 Phonological analysis of FATHER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MOTHER**	
Phonological Feature		
Location	Cheek	Cheek
Handshape	cB	A

Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).113 Phonological analysis of MOTHER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CHACHA (Father's younger brother)**		
Phonological Feature			
Location	Initial-Neck Final- Shoulder		Shoulder
Handshape	Kinship Marker- [Father] [G] [cB]		Kinship Marker- [Father] cB
Movement	(MOV)	Moving down	Moving down
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).114 Phonological analysis of CHACHA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TAU(Father's elder brother)**		
Phonological Feature			
Location	Initial-Neck Final- Shoulder		Shoulder
Handshape	Kinship Marker- [Father[[G] [cB]		Kinship Marker- [Father] cB
Movement	l(MOV)	Moving up	Moving up
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).115 Phonological analysis of TAU

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BUA (Father's elder sister)**	
Phonological Feature		
Location	Top of the index finger and middle finger	Shoulder

Handshape	Gender Marker- [Women] Final- H		Kinship Marker- [Father] Final- cB
Movement	l(MOV)	Moving	Moving
	Size	Small	Big
	Speed	Medium	Medium
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).116 Phonological analysis of BUA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MAMA (Mother's brother)**		
Phonological Feature			
Location	NSP		Shoulder
Handshape	Fingerspelling- [M-A-M-A]		Kinship marker- [Mother] Gender Marker- [Man] cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the ground
NMF	Neutral		Neutral

Table 5(A).117 Phonological analysis of MAMA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MAUSI (Mother's sister)**		
Phonological Feature			
Location	NSP		Shoulder
Handshape	Gender Marker- [Woman] Final- G		Kinship marker- [Mother] Gender Marker- [Woman] cB
Movement	l(MOV)	Wiggling	Moving
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the ground
NMF	Neutral		Neutral

Table 5(A).118 Phonological analysis of MAUSI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DADA (Paternal grandfather)**	
Phonological Feature		
Location	Cheek	NSP

Handshape	Gender marker- Man Final- bC		Gender Marker- Male Final- tA
Movement	l (MOV)	Moving	Shaking
	Size	Small	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Puffed face		Neutral

Table 5(A).119 Phonological analysis of DADA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DADI (Paternal grandmother)**		
Phonological Feature			
Location	Cheek		NSP
Handshape	Gender Marker- Woman Final- bC		Gender Marker- Woman Final- tA
Movement	l(MOV)	Moving	Shaking
	Size	Small	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Puffed face		Neutral

Table 5(A).120 Phonological analysis of DADI

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NANA (Maternal grandfather)**		
Phonological Feature			
Location	Index finger		NSP
Handshape	Fingerspelling- [N-A-N-A]		Kinship Marker- Mother Final- tA
Movement	l(MOV)	Moving	Shaking
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).121 Phonological analysis of NANA

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**NANI (Maternal grandmother)**	
Phonological Feature		
Location	Index finger	NSP
Handshape	Fingerspelling- [N-A-N-I]	Kinship Marker- Mother Final- tA

Movement	l(MOV)	Moving	Shaking
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).122 Phonological analysis of NANI

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SAAS (Mother in-law)**		
Phonological Feature			
Location	Chest		Pocket of the palm
Handshape	B		Kinship Marker- [Mothe Final- L
Movement	L(MOV)	Moving	-
	Path	To lateral	To lateral
	Shape	Small	Semi-circle
	Size	Straight	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Back
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).123 Phonological analysis of SAAS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SASUR (Father in-law)**		
Phonological Feature			
Location	Vertex		Pocket of the palm
Handshape	B		Kinship Marker- Father Final- [L]
Movement	L(MOV)	Moving	-
	Path	-	To lateral
	Shape	Small	Semi-circle
	Size	-	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).124 Phonological analysis of SASUR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**HINDU**	
Phonological Feature		

Location	Inner palm		Forehead
Handshape	B		xA
Movement	l(MOV)	Static	Pronate
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).125 Phonological analysis of HINDU

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MUSLIM**		
Phonological Feature			
Location	Ear lobule		Chin
Handshape	xB		f5
Movement	l(MOV)	Static	Moving
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the ground
NMF	Head raised up		Neutral

Table 5(A).126 Phonological analysis of MUSLIM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SIKH**		
Phonological Feature			
Location	Cheek		Head
Handshape	xA		tA
Movement	l(MOV)	Moving	Circular
	Shape	-	Round
	Size	Small	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).127 Phonological analysis of SIKH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CHRISTIAN**	
Phonological Feature		
Location	Chest	Forehead

Handshape	tB		xA
Movement	l(MOV)	Moving	Moving
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).128 Phonological analysis of CHRISTIAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TEMPLE**		
Phonological Feature			
Location	Tip of the finger		Wrist
Handshape	B		tA
Movement	l(MOV)	Moving	Moving
	Shape	Triangle	-
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).129 Phonological analysis of TEMPLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CHURCH**		
Phonological Feature			
Location	Index finger		Wrist
Handshape	Initial- G Final- B		cB
Movement	Path	Down	Static
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).130 Phonological analysis of CHURCH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MOSQUE**	
Phonological Feature		
Location	NSP	NSP
Handshape	cB	cB

Movement	l(MOV)	Round	Static
	Shape	Round	-
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Head raised up

Table 5(A).131 Phonological analysis of MOSQUE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PRIEST**		
Phonological Feature			
Location	Chest		Shoulder
Handshape	fbO		cB
Movement	Path	Down	Down
	Shape	-	Straight
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).132 Phonological analysis of PRIEST

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUDDHIST**		
Phonological Feature			
Location	Palm		Wrist
Handshape	cB		sF
Movement	Static		Static
Orientation	Palm	Front	Back
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).133 Phonological analysis of BUDDHIST

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MAN**		
Phonological Feature			
Location	Philtral		Philtral
Handshape	tA		B
Movement	Path	Up	To lateral
	Size	Medium	Medium

	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).134 Phonological analysis of MAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WOMAN**		
Phonological Feature			
Location	Nose groove		Initial- Nose groove Final- Between the fingers
Handshape	G		Initial-G Final- W
Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).135 Phonological analysis of WOMAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TEACHER**		
Phonological Feature			
Location	Palm		Wrist
Handshape	Initial-G Final- tA		hG
Movement	l(MOV)	Moving	Moving
	Path	Lateral	-
	Size	Medium	Small
	Speed	Fast	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).136 Phonological analysis of TEACHER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**STUDENT**	
Phonological Feature		
Location	NSP	NSP

Handshape	cB		B
Movement	l(MOV)	Supinate	Moving
	Shape	Semi- circle	-
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).137 Phonological analysis of STUDENT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ENEMY**		
Phonological Feature			
Location	Index finger		NSP
Handshape	I		scB
Movement	Path	Out	Out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).138 Phonological analysis of ENEMY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**KING**		
Phonological Feature			
Location	NSP		Forehead
Handshape	Initial- Gender marker [MAN] Final- tA		Initial- Gender marker [MAN] Final-B
Movement	Path	Static	Static
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the sky
NMF	Wide eye		Neutral

Table 5(A).139 Phonological analysis of KING

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**QUEEN**	
Phonological Feature		
Location	NSP	Forehead
Handshape	Initial- Gender marker [WOMAN] Final- tA	Initial- Gender marker [WOMAN] Final- B

Movement	Path	Static	Static
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the sky
NMF	Wide eye		Neutral

Table 5(A).140 Phonological analysis of QUEEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BLIND**		
Phonological Feature			
Location	NSP		Eye
Handshape	5		V
Movement	l(MOV)	Moving	Static
	Path	Out	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Closed eye		Closed eye

Table 5(A).141 Phonological analysis of BLIND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CHAIR**		
Phonological Feature			
Location	Initial- Chin Final- Side of torso		Sides of the torso
Handshape	tA		tA
Movement	Path	Down	Down
	Shape	Straight	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).142 Phonological analysis of CHAIR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TELEPHONE**	
Phonological Feature		
Location	Palm	Ear

Handshape	Y		Y
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).143 Phonological analysis of TELEPHONE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TABLE**		
Phonological Features			
Location	In NSP		In NSP
Handshape	tB		B
Movement	(lMOV)	Moving	Moving
	Path	Symmetry	To Symmetry
	Size	Big	Big
Orientation	Palm	Back	Back
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(A).144 Phonological analysis of TABLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TELEVISION**		
Phonological Features			
Location	Near the Ear		In NSP
Handshape	sF		G+(T-V)
Movement	(lMOV)	Static	Moving
	Size		Big
	Speed		Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the Signer	Towards the Ground
NMF	Neutral		Neutral

Table 5(A).145 Phonological analysis of TELEVISION

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ROPE**	
Phonological Feature		
Location	NSP	NSP

Handshape	bU		tB
Movement	Path	In	In
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Medium	Medium
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).146 Phonological analysis of ROPE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NOTE**		
Phonological Feature			
Location	Thumb		NSP
Handshape	fbO		bU
Movement	l(MOV)	Moving	Moving
	Shape	-	Rectangle
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).147 Phonological analysis of NOTE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUS**		
Phonological Feature			
Location	NSP		NSP
Handshape	tA		tB
Movement	l(mov)	Circular	Static
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).148 Phonological analysis of BUS

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TRAIN**	
Phonological Feature		
Location	NSP	NSP
Handshape	B	L

Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Puffed cheek		Neutral

Table 5(A).149 Phonological analysis of TRAIN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CAR**		
Phonological Feature			
Location	NSP		NSP
Handshape	C		tA
Movement	l(MOV)	-	Moving
	Path	In	
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).150 Phonological analysis of CAR

<table>
<tr><th colspan="6">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="3">NISL</th><th colspan="2">SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="5">BICYCLE</th></tr>
<tr><td>Phonological Features</td><td colspan="3">  </td><td colspan="2">  </td></tr>
<tr><td>Location</td><td colspan="3">On Palm</td><td colspan="2">In NSP</td></tr>
<tr><td rowspan="2">Handshape</td><td colspan="3">H1- V</td><td colspan="2">H1- A</td></tr>
<tr><td colspan="3">H2- B</td><td colspan="2">H2- A</td></tr>
<tr><td rowspan="4">Movement</td><td></td><td>H1</td><td>H2</td><td>H1</td><td>H2</td></tr>
<tr><td>(lMOV)</td><td>Moving</td><td rowspan="3">Static</td><td rowspan="3">Symmetry-Lateral Unison</td><td rowspan="3">Symmetry-Lateral Unison</td></tr>
<tr><td>Shape</td><td>Straight</td></tr>
<tr><td>Speed</td><td>Medium</td></tr>
<tr><td rowspan="3">Orientation</td><td></td><td>H1</td><td>H2</td><td>H1</td><td>H2</td></tr>
<tr><td>Palm</td><td>Back</td><td>Front</td><td>Neutral</td><td>Neutral</td></tr>
<tr><td>Carpal</td><td>Towards the Signer</td><td>Towards the Signer</td><td>Towards the Addressee</td><td>Towards the Addressee</td></tr>
<tr><td>NMF</td><td colspan="3">Neutral</td><td>Neutral</td><td></td></tr>
</table>

Table 5(A).151 Phonological analysis of BICYCLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LUGGAGE**		
Phonological Feature			
Location	Above head		Lateral side of the body
Handshape	scB		A
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).152 Phonological analysis of LUGGAGE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PACKET**		
Phonological Feature			
Location	NSP		Chest
Handshape	tA		tB
Movement	Static		Static
Orientation	Palm	Neutral	Back

	Carpal	Towards the ground	Towards the addressee
NMF	Neutral		Neutral

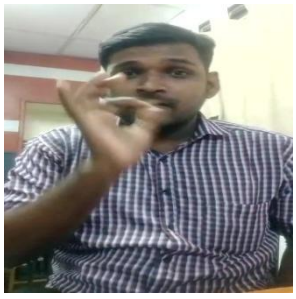
Table 5(A).153 Phonological analysis of PACKET

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SING**		
Phonological Features			
Location	Near Mouth		Near Arm
Handshape	xB		B
Movement	Path	Moving Outward Lateral Symmetry	Moving Alternate Lateral Symmetry
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Freezed Eyebrow		Neutral

Table 5(A).154 Phonological analysis of SING

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SPEAK**		
Phonological Feature			
Location	Approximate to mouth		Approximate to mouth
Handshape	tB		c3
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).155 Phonological analysis of SPEAK

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ORDER**	
Phonological Feature		
Location	Mouth	Mouth
Handshape	G	sF

Movement	l(MOV)	Moving	Moving
	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).156 Phonological analysis of ORDER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SIT**		
Phonological Feature			
Location	Index finger		Sides of the torso
Handshape	cV		tA
Movement	Path	Static	Down
	Shape	-	Straight
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).157 Phonological analysis of SIT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STUDY**		
Phonological Feature			
Location	Palm		NSP
Handshape	f5		B
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Medium	Medium
Orientation	Palm	Neutral	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Headshake		Headshake

Table 5(A).158 Phonological analysis of STUDY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**KICK**	
Phonological Feature		
Location	Palm	Palm

Handshape	cB		cV
Movement	Path	Out	Out
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Front
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).159 Phonological analysis of KICK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PLAY**		
Phonological Feature			
Location	Fist		NSP
Handshape	cB		Y
Movement	l(MOV)	Shaking	Shaking
	Size	Medium	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the ground
NMF	Neutral		Neutral

Table 5(A).160 Phonological analysis of PLAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FIGHT**		
Phonological Feature			
Location	NSP		On fist
Handshape	5		tA
Movement	Path	To symmetry	To symmetry
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).161 Phonological analysis of FIGHT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MELT**	
Phonological Feature		
Location	NSP	NSP

Handshape	f5		U
Movement	l(MOV)	Closing	Closing
	Size	Medium	Medium
	Speed	Slow	Slow
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).162 Phonological analysis of MELT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FREEZE**		
Phonological Feature			
Location	Cheek		NSP
Handshape	tA		c5
Movement	l(MOV)	Shaking	Shaking
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Clinched face

Table 5(A).163 Phonological analysis of FREEZE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STIR**		
Phonological Feature			
Location	NSP		NSP
Handshape	A		fO
Movement	l(MOV)	Circular	Circular
	Size	Big	Big
	Shape	Circle	Circle
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).164 Phonological analysis of STIR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**HATE**	
Phonological Feature		
Location	Chest	Middle finger

Handshape	Y		t8
Movement	Path	Out	Out
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Clinched face

Table 5(A).165 Phonological analysis of HATE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GREED**		
Phonological Feature			
Location	Wrist		Palm
Handshape	c3		c5
Movement	Path	In	In
	Size	Big	Big
	Speed	Fast	Normal
Orientation	Palm	Front	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Clinched face		Neutral

Table 5(A).166 Phonological analysis of Greed

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DIG**		
Phonological Feature			
Location	NSP		NSP
Handshape	tA		cB
Movement	l(MOV)	Moving	Supinate
	Size	Big	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).167 Phonological analysis of DIG

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**JUMP**	
Phonological Feature		
Location	Palm	NSP
Handshape	V	cV

Movement	l(MOV)	Moving	Moving
	Path	Up-Down unison	Up-Down unison
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).168 Phonological analysis of JUMP

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**VISIT**		
Phonological Feature			
Location	NSP		Approximate to eye
Handshape	tB		V
Movement	l(MOV)	Moving	Moving
	Path	Out	In-Out alternative
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Front
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).169 Phonological analysis of VISIT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CELEBRATE**		
Phonological Features			
Location	On the Chest		In Neutral Space
Handshape	5		5
Movement	Path	To Symmetry Lateral Unison	Out
	Shape	Circle	Straight
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Torso Movement		Neutral

Table 5(A).170 Phonological analysis of CELEBRATE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**STOP**	
Phonological Feature		
Location	Palm	NSP

Handshape	B		B
Movement	l(MOV	Moving	Moving
	Path	Down	-
	Size	Big	Small
	Speed	Fast	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the sky
NMF	Neutral		Clinched face

Table 5(A).171 Phonological analysis of STOP

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FLY**		
Phonological Feature			
Location	Lateral side of the torso		Above the head
Handshape	xB		B
Movement	l(MOV)	Moving	Moving
	Path	Up	out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the line of bilateral symmetry	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).172 Phonological analysis of FLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BRAVE**		
Phonological Features			
Location	On Arm		On Chest
Handshape	cB		A
Movement	Path	Static	Out
	Speed		Normal
Orientation	Palm	Neutral	Towards the signer
	Carpal	Towards the Sky	Towards the Addressee
NMF	Neutral		Chin Slightly Up

Table 5(A).173 Phonological analysis of BRAVE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CRY**	
Phonological Features		
Location	Near the eye	Below the eye

Handshape	tA		G
Movement	l(MOV)	Twisting	-
	Path	-	Downwards
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the Addressee	Towards the Addressee
NMF	Pursed Lips		Pursed Lips

Table 5(A).174 Phonological analysis of CRY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TRUST**		
Phonological Feature			
Location	Palm		Chest
Handshape	G		8
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).175 Phonological analysis of TRUST

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**EXPLAIN**		
Phonological Feature			
Location	NSP		Index finger
Handshape	sF		G
Movement	l(MOV)	Moving	Moving
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).176 Phonological analysis of EXPLAIN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**JEALOUS**	
Phonological Feature		
Location	Chest	Chin
Handshape	scB	Y

Movement	l(MOV)	Moving	Static
	Shape	Round	-
	Size	Small	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the ground
NMF	Clinched face		Neutral

Table 5(A).177 Phonological analysis of JEALOUS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GUILTY**		
Phonological Feature			
Location	Chest		Nose
Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Shape	Cross	Straight
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).178 Phonological analysis of GUILTY

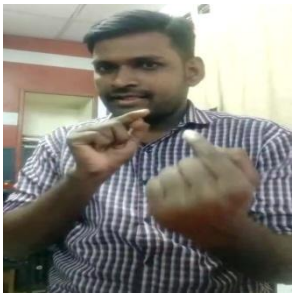
Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ARGUE**		
Phonological Feature			
Location	NSP		NSP
Handshape	bU		G
Movement	Path	In-Out	In-Out
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).179 Phonological analysis of ARGUE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**EASY**	
Phonological Feature		
Location	Nose	Outer palm
Handshape	fO	B

Movement	l(MOV)	Moving	Moving
	Path	Out	Up
	Size	Big	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the signer	Towards the sky
NMF	Clinched face		Neutral

Table 5(A).180 Phonological analysis of EASY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DIFFICULT**		
Phonological Feature			
Location	NSP		Shoulder
Handshape	tA		C
Movement	l(MOV)	Shaking	Moving
	Size	Big	Small
	Speed	Slow	Slow
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Against the line of bilateral symmetry
NMF	Neutral		Clinched face

Table 5(A).181 Phonological analysis of DIFFICULT

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**ANGRY**		
Phonological Feature			
Location	Temple of the Head		In Neutral Space
Handshape	5		t8
Movement	Path	Static	Inward
	Speed	Small	Fast
Orientation	Palm	Back	Front
	Carpal	Against the line of Bilateral Symmetry	Against the line of Bilateral Symmetry
NMF	Raised Eyebrow		Raised Eyebrow

Table 5(A).182 Phonological analysis of ANGRY

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**GOOD**	
Phonological Feature		
Location	NSP	NSP
Handshape	sF	xA
Movement	Static	Static

Orientation	Palm	Back	Neutral
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Smiling face		Smiling face

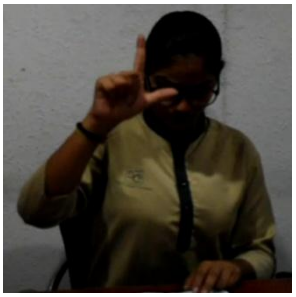
Table 5(A).183 Phonological analysis of GOOD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**UGLY**		
Phonological Feature			
Location	Face		Below the chin
Handshape	Initial- G Final- V		5
Movement	l(MOV)	Moving	Wiggling
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Clinched face		Neutral

Table 5(A).184 Phonological analysis of UGLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HUNGRY**		
Phonological Feature			
Location	Stomach		Stomach
Handshape	fO		cB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Table 5(A).185 Phonological analysis of HUNGRY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FAT**	
Phonological Feature		
Location	NSP	NSP
Handshape	L	tA

Movement	Path	Up	To lateral
	Size	Big	Big
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the line of bilateral symmetry
NMF	Neutral		Puffed Mouth

Table 5(A).186 Phonological analysis of FAT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SMALL**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		U
Movement	l(MOV)	Moving	Moving
	Path	Lateral	-
	Size	Medium	Sm all
	Speed	Slow	Slow
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the addressee
NMF	Clinched face		Clinched face

Table 5(A).187 Phonological analysis of SMALL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WET**		
Phonological Feature			
Location	Fist		Thumb and Index finger
Handshape	A		sF
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Fast	Slow
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).188 Phonological analysis of WET

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**LONG**	
Phonological Feature		
Location	Tip of the index finger	NSP
Handshape	G	B

Movement	Path	Out	Out
	Shape	Straight	-
	Size	Big	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Against the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).189 Phonological analysis of LONG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SHORT**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		B
Movement	Path	In	In
	Size	Medium	Medium
	Speed	Fast	Slow
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Against the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).190 Phonological analysis of SHORT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HAPPY**		
Phonological Feature			
Location	NSP		Stomach
Handshape	fO		xB
Movement	l(mov)	Moving	Moving
	Path	Upwards	To Symmetry-Lateral Unison
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Smiling face		Smiling face

Table 5(A).191 Phonological analysis of HAPPY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SAD**	
Phonological Feature		
Location	In Front of Face	In front of the face

Handshape	c5		f5
Movement	Path	Downwards	Downwards
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Tbale 5(A).192 Phonological analysis of SAD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HOT**		
Phonological Feature			
Location	Wrist		NSP
Handshape	5		scB
Movement	l(MOV)	Moving	Moving
	Path	Lateral	To symmetry lateral alternative
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Front
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).193 Phonological analysis of HOT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COLD**		
Phonological Feature			
Location	Cheek		NSP
Handshape	A		tA
Movement	l(MOV)	Static	Shaking
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Clinched face		Clinched face

Table 5(A).194 Phonological analysis of COLD

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**LAZY**	
Phonological Feature		
Location	Shoulder	Shoulder
Handshape	Y	L

Movement	l(MOV)	Moving	Down
	Size	Small	Medium
	Speed	Normal	Slow
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Clinched face		Clinched face

Table 5(A).195 Phonological analysis of LAZY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WISE**		
Phonological Feature			
Location	Temple		Temple
Handshape	f5		U
Movement	l(MOV)	Moving	Moving
	Path	Up	-
	Size	Small	-
	Speed	Normal	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).196 Phonological analysis of WISE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FOOL**		
Phonological Feature			
Location	Forehead		NSP
Handshape	H		L
Movement	l(MOV)	Circular	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).197 Phonological analysis of FOOL

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ACTIVE**	
Phonological Feature		
Location	NSP	NSP
Handshape	tA	5

Movement	Path	To symmetry lateral unison	Up-Down alternative
	Size	Medium	Big
	Speed	Fast	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

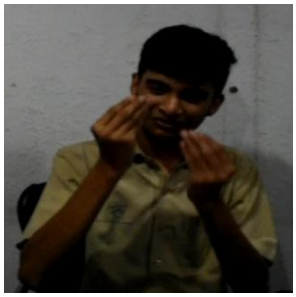
Table 5(A).198 Phonological analysis of ACTIVE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DANGER**		
Phonological Feature			
Location	Wrist		Index finger
Handshape	B		hG
Movement	l(MOV)	Static	Out
	Size	-	Medium
	Speed	-	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Wide eye		Wide eye

Table 5(A).199 Phonological analysis of DANGER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FAR**		
Phonological Feature			
Location	Side of the head		Thumb
Handshape	B		xA
Movement	Path	Up	Out
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).200 Phonological analysis of FAR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**LESS**	
Phonological Feature		
Location	NSP	NSP
Handshape	fO	U

Movement	l(MOV)	Moving	Moving
	Path	-	To symmetry
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(A).201 Phonological analysis of LESS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MORE**		
Phonological Feature			
Location	NSP		NSP
Handshape	fO		fO
Movement	Path	Up-Down unison	Up
	Size	Big	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).202 Phonological analysis of MORE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**THIN**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		I
Movement	l(MOV)	Shaking	Shaking
	Path	Down	Down
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Clinched face

Table 5(A).203 Phonological analysis of THIN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**YOUNG**	
Phonological Feature		
Location	Chin	Chin

Handshape	f5		f5
Movement	l(MOV)	Moving	Moving
	Path	Down	-
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).204 Phonological analysis of YOUNG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**OLD**		
Phonological Feature			
Location	Cheek		NSP
Handshape	8		tA
Movement	l(MOV)	Moving	Shaking
	Path	-	Down
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Clinched face		Clinched face

Table 5(A).205 Phonological analysis of OLD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**POOR**		
Phonological Feature			
Location	NOSE		Elbow
Handshape	bO		f5
Movement	l(MOV)	Twisting	In-Out alternative
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Clinched face

Table 5(A).206 Phonological analysis of POOR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WRONG**		
Phonological Feature			
Location	NSP		Chin
Handshape	G		xA

Movement	l(MOV)	Moving	Static
	Size	Big	
	Speed	Normal	
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Table 5(A).207 Phonological analysis of WRONG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SICK**		
Phonological Feature			
Location	Forehead		Forehead and Chest
Handshape	tB		8
Movement	l(MOV)	Static	Static
Orientation	Palm	Back	Back
	Carpal	Towards the sky	Towards the signer
NMF	Sad face		Sad face

Table 5(A).208 Phonological analysis of SICK

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**EMPTY**		
Phonological Feature			
Location	NSP		Palm
Handshape	sF		B
Movement	l(MOV)	Wiggling	Moving
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the bilateral symmetry
NMF	Open mouth		Neutral

Table 5(A).209 Phonological analysis of EMPTY

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**HEALTHY**	
Phonological Feature		
Location	Chest	Chest

Handshape	5		Initial- 5 Final- sF
Movement	l(MOV)	Down	Pronate
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Initial- Neutral Final-Back
	Carpal	Towards the signer	Initial- Towards the signer Final- Towards the addressee
NMF	Neutral		Neutral

Table 5(A).210 Phonological analysis of HEALTHY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AT**		
Phonological Feature			
Location	NSP		Palm
Handshape	B		8
Movement	Static		Static
Orientation	Palm	Neutral	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).211 Phonological analysis of AT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ON**		
Phonological Feature			
Location	Back of the palm		Back of the palm
Handshape	scB		B
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).212 Phonological analysis of ON

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ABOVE**	
Phonological Feature		
Location	Top of the index finger and middle finger	To the lateral
Handshape	H	cB

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).213 Phonological analysis of ABOVE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**UNDER**		
Phonological Feature			
Location	NSP		NSP
Handshape	B		cB
Movement	l(MOV)	Moving	Moving
	Path	Out	Down
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).214 Phonological analysis of UNDER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEHIND**		
Phonological Feature			
Location	Wrist		NSP
Handshape	cB		cB
Movement	l(MOV	Moving	Moving
	Path	In	In
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).215 Phonological analysis of BEHIND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**IN FRONT OF**	
Phonological Feature		
Location	Wrist	NSP

Handshape	cB		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).216 Phonological analysis of IN FRONT OF

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ALONG WITH**		
Phonological Feature			
Location	NSP		Approximate to shoulder
Handshape	G		A
Movement	l(MOV)	Moving	Static
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).217 Phonological analysis of ALONG WITH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SINCE**		
Phonological Feature			
Location	NSP		Back of the shoulder
Handshape	H1- G H2- cB		B
Movement	l(MOV)	Moving	Moving
	Path	Out	Out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).218 Phonological analysis of SINCE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WHY**	
Phonological Feature		
Location	Forehead	NSP

Handshape	cB		x5
Movement	l(MOV)	Moving	Pronate
	Size	Medium	Medium
	Speed	Normal	Fast
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Table 5(A).219 Phonological analysis of WHY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HOW**		
Phonological Feature			
Location	NSP		NSP
Handshape	xB		x5
Movement	l(MOV)	Supinate	Supinate
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(A).220 Phonological analysis of HOW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WHEN**		
Phonological Feature			
Location	Forehead		Cheek
Handshape	cG		cB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).221 Phonological analysis of WHEN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WHERE**	
Phonological Feature		
Location	NSP	Palm
Handshape	Initial- cB Final- x5	Initial- 8 Final- x5

Movement	l(MOV)	Supinate	Supinate
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(A).222 Phonological analysis of WHERE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WHICH**		
Phonological Feature			
Location	NSP		NSP
Handshape	sF		Initial- G Final- x5
Movement	Path	In-Out alternative	In-out alternative
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).223 Phonological analysis of WHICH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NO**		
Phonological Feature			
Location	Middle finger and thumb		NSP
Handshape	c3		5
Movement	l(MOV)	Closing	Shaking
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Raised eyebrow		Clinched face

Table 5(A).224 Phonological analysis of NO

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**NEVER**	
Phonological Feature		
Location	NSP	NSP
Handshape	O	5

Movement	l(MOV)	Moving	Moving
	Path	-	Lateral
	Size	Medium	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).225 Phonological analysis of NEVER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NONE**		
Phonological Feature			
Location	NSP		NSP
Handshape	O		5
Movement	l(MOV)	Moving	Moving
	Path	-	Lateral
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Clinched face		Clinched face

Table 5(A).226 Phonological analysis of NONE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUT**		
Phonological Feature			
Location	NSP		Index finger
Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Path	Out	Lateral
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the line of bilateral symmetry
NMF	Neutral		Clinched face

Table 5(A).227 Phonological analysis of BUT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**IF**	
Phonological Feature		
Location	Mouth	Back of the finger

Handshape	I		H
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Clinched face		Neutral

Table 5(A).228 Phonological analysis of IF

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BECAUSE**		
Phonological Feature			
Location	NSP		Forehead
Handshape	scB		L
Movement	l(MOV)	Moving	Moving
	Shape	-	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Back
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Clinched face

Table 5(A).229 Phonological analysis of BECAUSE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AND**		
Phonological Feature			
Location	Index finger		Middle finger
Handshape	G		tV
Movement	l(MOV)	Moving	Moving
	Path	-	Lateral
	Size	Medium	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).230 Phonological analysis of AND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**QUICKLY**	
Phonological Feature		
Location	Thumb	Middle finger

Handshape	LL		c3
Movement	l(MOV)	Moving	Moving
	Path	In	
	Size	Big	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the Signer	Towards the addressee
NMF	Neutral		Clinched face

Table 5(A).231 Phonological analysis of QUICKLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SLOWLY**		
Phonological Feature			
Location	On Palm		Back of the wrist
Handshape	B		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Slow	Slow
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Closed eye		Closed eye

Table 5(A).232 Phonological analysis of SLOWLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SWIFTLY**		
Phonological Feature			
Location	Index finger		Above the head
Handshape	tV		B
Movement	l(MOV)	Moving	Moving
	Path	In	Lateral
	Size	Medium	Big
	Speed	Fast	Fast
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Clinched face		Clinched face

Table 5(A).233 Phonological analysis of SWIFTLY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ANNUALLY**	
Phonological Feature		
Location	Thumb and index finger	Between thumb and middle finger

Handshape	bO		LL
Movement	l(MOV)	Moving	Moving
	Size	Medium	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).234 Phonological analysis of ANNUALLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BRAVELY**		
Phonological Feature			
Location	Arm		Chest
Handshape	tA		tA
Movement	l(MOV)	Moving	Moving
	Path	-	Out
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Wide eye		Wide eye

Table 5(A).235 Phonological analysis of BRAVELY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SUDDENLY**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		G
Movement	l(MOV)	Shaking	Moving
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Wide eye		Wide eye

Table 5(A).236 Phonological analysis of SUDDENLY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**COLOURFULLY**	
Phonological Feature		
Location	Chin	Below the chin
Handshape	5	Initial- 5 Final- V

Movement	l(MOV)	Moving	Moving
	Path	-	Lateral
	Size	Small	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).237 Phonological analysis of COLOURFULLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DAILY**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		hG
Movement	l(MOV)	Moving	Moving
	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).238 Phonological analysis of DAILY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FAITHFULLY**		
Phonological Feature			
Location	Wrist		Chest
Handshape	B		tA
Movement	l(MOV)	Moving	Static
	Size	Medium	
	Speed	Normal	
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).239 Phonological analysis of FAITHFULLY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FORTUNATELY**	
Phonological Feature		
Location	Face	Forehead
Handshape	C	L

Movement	l(MOV)	Moving	Moving
	Path	-	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Smiling face		Smiling face

Table 5(a).240 Phonological analysis of FORTUNATELY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GENEROUSLY**		
Phonological Feature			
Location	Chest		NSP
Handshape	f5		f5
Movement	l(MOV)	Moving	Moving
	Path	Up	Out
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Clinched face

Table 5(A).241 Phonological analysis of GENEROUSLY

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**HAPPILY**		
Phonological Feature			
Location	Lateral side of the torso		Stomach
Handshape	fO		xB
Movement	l(mov)	Moving	Moving
	Path	Upwards	To Symmetry-Lateral Unison
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Smiling face		Smiling face

Table 5(A).242 Phonological analysis of HAPPILY

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**IMMEDIATELY**	
Phonological Feature		
Location	NSP	NSP

Handshape	G		hG
Movement	l(MOV)	Shaking	Moving
	Path	Down	Out
	Size	Small	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Fierce face

Table 5(A).243 Phonological analysis of IMMEDIATELY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LOUDLY**		
Phonological Feature			
Location	Ear		Mouth
Handshape	G		GG
Movement	Path	Lateral	Out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).244 Phonological analysis of LOUDLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SOMETIME**		
Phonological Feature			
Location	Wrist		Initial- NSP Final- Wrist
Handshape	G		Initial- fO Final- G
Movement	l(MOV)	Moving	Moving
	Path	Out	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).245 Phonological analysis of SOMETIME

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**URGENTLY**	
Phonological Feature		
Location	NSP	NSP

Handshape	bU		U
Movement	l(MOV)	Shaking	Moving
	Path	-	In
	Size	Small	Medium
	Speed	Normal	Fast
Orientation	Palm	Neutral	Back
	Carpal	Against the line of bilateral symmetry	Towards the signer
NMF	Clinched face		Clinched face

Table 5(A).246 Phonological analysis of URGENTLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MONDAY**		
Phonological Feature			
Location	Lateral side of the body		Wrist joint
Handshape	scB		cB
Movement	l(MOV)	Circular	Shaking
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).247 Phonological analysis of MONDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TUESDAY**		
Phonological Feature			
Location	Philtral		Wrist joint
Handshape	H		tA
Movement	l(MOV)	Moving	Twisting
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).248 Phonological analysis of TUESDAY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WEDNESDAY**	
Phonological Features		
Location	Ring Finger	In NSP
Handshape	3	W

Movement	(lMOV)	Static	Shaking
	Size	Small	Small
Orientation	Palm	Back	Front
	Carpal	Towards the Ground	Towards the line of Bilateral Symmetry
NMF	Neutral		Neutral

Table 5(A).249 Phonological analysis of WEDNESDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**THURSDAY**		
Phonological Feature			
Location	Palm		Neck
Handshape	cB		H
Movement	l(MOV)	Moving	Static
	Size	Small	-
	Speed	Normal	-
Orientation	Palm	Neutral	Neutral
	Carpal	Against the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).250 Phonological analysis of THURSDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FRIDAY**		
Phonological Feature			
Location	NSP		Ear lobule
Handshape	xA		xA
Movement	l(MOV)	Shaking	Static
	Size	Small	-
	Speed	Normal	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Neutral		Neutral

Table 5(A).251 Phonological analysis of FRIDAY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SATURDAY**	
Phonological Feature		
Location	NSP	Lateral side of the head

Handshape	G		G
Movement	l(MOV)	Shaking	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).252 Phonological analysis of SATURDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SUNDAY**		
Phonological Feature			
Location	Lateral side of the palm		Forehead
Handshape	tB		xA
Movement	l(MOV)	Moving	Moving
	Path	Lateral	-
	Shape	Small	Cross
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).253 Phonological analysis of SUNDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FEBRUARY**		
Phonological Features			
Location	In NSP		In NSP
Handshape	Fingerspelling [F-E-B]		H
Movement		Static	Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Sky	Towards the Ground
NMF	Neutral		Neutral

Table 5(A).254 Phonological analysis of FEBRUARY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**APRIL**		
Phonological Feature			
Location	Forehead		Thumb
Handshape	Initial- Finger spelling[A] Final- bC		xA
Movement	l(MOV)	Moving	Shaking
	Size	Medium	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back

	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).255 Phonological analysis of APRIL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MAY**		
Phonological Feature			
Location	Palm		Palm
Handshape	Fingerspelling [M-A-Y]		Initial- [M-A-Y] Final- scB
Movement	l(MOV)	Moving	Nodding
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).256 Phonological analysis of MAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**JUNE**		
Phonological Feature			
Location	NSP		Palm
Handshape	B		Fingerspelling-[J-U-N-E]
Movement	l(MOV)	Moving	Moving
	Path	Opening	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).257 Phonological analysis of JUNE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**OCTOBER**	
Phonological Feature		
Location	NSP	Chest

Handshape	O		Initial- O Final- xB
Movement	l(MOV)	Circular	Moving
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).258 Phonological analysis of OCTOBER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DUSSHERA**		
Phonological Feature			
Location	Lateral side of the head		Chest
Handshape	scB		xB
Movement	l(MOV)	Moving	Moving
	Path	Lateral	-
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).259 Phonological analysis of DUSSHERA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**EI-DH**		
Phonological Feature			
Location	Ear lobule		Chest
Handshape	cB		xB
Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the signer
NMF	Closed eye		Smiling face

Table 5(A).260 Phonological analysis of EI-DH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CHRISTMAS**	
Phonological Feature		
Location	Body	Elbow

Handshape	tB		scB
Movement	l(MOV)	Moving	Circular
	Shape	Cross shape	
	Size	Big	Medium
	Speed	Normal	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).261 Phonological analysis of CHRISTMAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GANESH CHATURTHI**		
Phonological Feature			
Location	Nose		Chin
Handshape	c3		cB
Movement	Path	Down	Static
	Shape	Elephant trunk	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).262 Phonological analysis of GANESH CHATURTHI

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DIWALI**		
Phonological Feature			
Location	Wrist		NSP
Handshape	c3		t8
Movement	l(MOV)	Moving	Crumbling
	Path	To lateral	To lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).263 Phonological analysis of DIWALI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**PONGAL**	
Phonological Feature		

Location	Lateral side of the head		Mouth
Handshape	Y		xB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

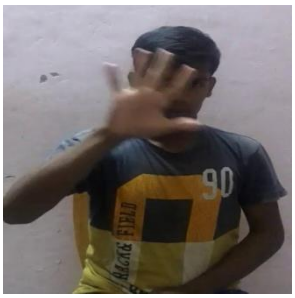
Table 5(A).264 Phonological analysis of PONGAL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BROWN**		
Phonological Feature			
Location	Wrist		Wrist
Handshape	G		cB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).265 Phonological analysis of BROWN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ORANGE**		
Phonological Features			
Location	In NSP		In NSP
Handshape	c3		c5
Movement	(lMOV)	Twisting	Twisting
	Shape	Circle	Circle
	Size	Small	Small
Orientation	Palm	Front	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).266 Phonological analysis of ORANGE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**GREY**	
Phonological Feature		
Location	NSP	Forehead

Handshape	5		xB
Movement	l(MOV)	Circular	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).267 Phonological analysis of GREY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**INDIGO**		
Phonological Feature			
Location	Forehead		Lateral side of the body
Handshape	xA		xA
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).268 Phonological analysis of INDIGO

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**1 CRORE**		
Phonological Feature			
Location	NSP		NSP
Handshape	bC		U
Movement	Path	Lateral	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).269 Phonological analysis of 1 CRORE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MUSHROOM**	
Phonological Feature		
Location	Index finger	NSP
Handshape	scB	Initial- Color marker [WHITE] Final- c3

Movement	l(MOV)	Static	Shaking
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).270 Phonological analysis of MUSHROOM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PAPAYA**		
Phonological Feature			
Location	NSP		On the palm
Handshape	cB		Initial- Color marker [BROWN] Final- xB
Movement	l(MOV)	Moving	Moving
	Shape	Iconic to shape of papaya	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).271 Phonological analysis of PAPAYA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUTTER**		
Phonological Feature			
Location	Palm		Palm
Handshape	G		B
Movement	l(MOV)	Moving	Moving
	Path	In-Out	In-Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).272 Phonological analysis of BUTTER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CHEESE**	
Phonological Feature		
Location	Index fingers	Plam

Handshape	Initial- Color Marker [WHITE] Final- sF		Initial- Color Marker [WHITE] Final- B
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Normal	Fast
Orientation	Palm	Neutral	Back
	Carpal	Against the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).273 Phonological analysis of CHEESE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GHEE**		
Phonological Feature			
Location	Wrist		Palm
Handshape	tA		xA
Movement	l(MOV)	Circular	Static
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Neutral	-
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).274 Phonological analysis of GHEE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MUSTARD**		
Phonological Feature			
Location	Thumb		NSP
Handshape	Initial- Color Marker [YELLOW] Final- bU		xA
Movement	Static		Static
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the ground
NMF	Neutral		Neutral

Table 5(A).275 Phonological analysis of MUSTARD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CARDAMOM**		
Phonological Feature			
Location	NSP		Nose
Handshape	Initial- Color Marker [GREEN] Final- tA		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium

	Speed	Normal	Slow
Orientation	Palm	Neutral	Front
	Carpal	Against the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).276 Phonological analysis of CARDAMOM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CLOVE**		
Phonological Feature			
Location	Index finger		Thumb
Handshape	fbO		Initial- Color Marker [BLACK] Final- xA
Movement	l(MOV)	Static	Moving
	Size	-	Small
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).277 Phonological analysis of CLOVE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MILK SHAKE**		
Phonological Feature			
Location	Mouth		NSP
Handshape	bU		U
Movement	l(MOV)	Moving	Shaking
	Path	Upwards	Lateral
	Size	Medium	Big
	Speed	Normal	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).278 Phonological analysis of MILKSHAKE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**HEN**	
Phonological Feature		
Location	Vertex	Mid-Sagittal plane of the body

Handshape	sF		bU
Movement	l(MOV)	Moving	Moving
	Path	-	Down
	Shape	-	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).279 Phonological analysis of HEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YAK**		
Phonological Feature			
Location	Head		Ear
Handshape	Y		bU
Movement	l(MOV)	Moving	Moving
	Path	Lateral	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).280 Phonological analysis of YAK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEE**		
Phonological Feature			
Location	Wrist		NSP
Handshape	cG		cB
Movement	l(MOV)	Moving	Wiggling
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the ground	Towards the sky
NMF	Neutral		Neutral

Table 5(A).281 Phonological analysis of BEE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**RHINOCEROS**	
Phonological Feature		
Location	Nose	Nose

Handshape	sY		bU
Movement	l(MOV)	Static	Moving
	Path	-	Out
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).282 Phonological analysis of RHINOCEROS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HIPPOPOTAMUS**		
Phonological Feature			
Location	Approximate to nose		Nose
Handshape	scB		cB
Movement	l(MOV)	Moving	Static
	Path	Mapping face shape of hippopotamus	-
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).283 Phonological analysis of HIPPOPOTAMUS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PORCUPINE**		
Phonological Feature			
Location	Back of the body		Back of the body
Handshape	G		5
Movement	l(MOV)	Moving	static
	Path	In-Out alternative	-
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).284 Phonological analysis of PORCUPINE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**GIRAFFE**	
Phonological Feature		
Location	Neck	Neck

Handshape	cB		scB
Movement	Path	Up	Up
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Stretched neck		Stretched neck

Table 5(A).285 Phonological analysis of GIRAFFE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ZEBRA**		
Phonological Feature			
Location	Chest		Chest
Handshape	V		cB
Movement	l(MOV)	Moving	Moving
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).286 Phonological analysis of ZEBRA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GLOBAL WARMING**		
Phonological Feature			
Location	NSP		Forehead
Handshape	Initial- Fingerspelling [D] Final- 5		cG
Movement	l(MOV)	Wiggling	Moving
	Path	Out	-
	Size	Big	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Clinched face

Table 5(A).287 Phonological analysis of GLOBAL WARMING

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MONSOON**	
Phonological Feature		
Location	NSP	NSP

Handshape	fO		5
Movement	l(MOV)	Moving	Moving
	Path	In-Out unison	In-Out alternative
	Size	Big	Big
	Speed	Fast	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).288 Phonological analysis of MONSOON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ECLIPSE**		
Phonological Feature			
Location	In front of the face		In front of the face
Handshape	scB		scB
Movement	l(MOV)	Supinate	Static
	Shape	Round	-
	Size	Big	-
	Speed	Slow	-
Orientation	Palm	Back	Front
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(a).289 Phonological analysis of ECLIPSE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DIAMOND**		
Phonological Feature			
Location	Index finger		Wrist
Handshape	Initial- Color marker [WHITE] Final- bU		Initial- Color marker [WHITE] Final- O
Movement	l(MOV)	Static	Moving
	Size	-	Medium
	Speed	-	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).290 Phonological analysis of DIAMOND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TEAR**	
Phonological Feature		
Location	Eye	Eye

Handshape	5		G
Movement	l(MOV)	Moving	Moving
	Path	Down	Down
	Shape	-	Spiral
	Size	Big	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).291 Phonological analysis of TEAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SKELETON**		
Phonological Feature			
Location	Shoulder		Wrist
Handshape	bU		tA
Movement	l(MOV)	Moving	Moving
	Path	Up-Down alternative	
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).292 Phonological analysis of SKELETON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NERVES**		
Phonological Feature			
Location	NSP		Chest
Handshape	Fingerspelling [N-E-R-V-E]		scB
Movement	l(MOV)	-	Crumbling
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).293 Phonological analysis of NERVES

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SOON**	
Phonological Feature		
Location	Middle finger	Middle finger
Handshape	tV	fO

Movement	l(MOV	Moving	Moving
	Path	Out	Out
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).294 Phonological analysis of SOON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FAN**		
Phonological Feature			
Location	NSP		NSP
Handshape	tB		G
Movement	l(MOV)	Moving	Moving
	Path	In-Out alternative	-
	Size	Medium	Medium
	Shape	-	Circle
	Speed	Fast	Fast
Orientation	Palm	Back	Neutral
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Neutral

Table 5(A).295 Phonological analysis of FAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**REFRIGERATOR**		
Phonological Feature			
Location	NSP		Palm
Handshape	A		B
Movement	l(MOV)	Moving	Moving
	Path	In	Up
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).296 Phonological analysis of REFRIGERATOR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**KNIFE**	
Phonological Feature		
Location	Palm	Palm

Handshape	xA		H
Movement	l(MOV)	Moving	Moving
	Path	-	Out
	Size	Small	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).297 Phonological analysis of KNIFE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SHIP**		
Phonological Feature			
Location	NSP		NSP
Handshape	5		B
Movement	l(MOV)	Static	Moving
	Path	-	Out
	Shape	-	Triangle
	Size	-	Big
	Speed	-	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).298 Phonological analysis of SHIP

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TRUCK**		
Phonological Feature			
Location	NSP		NSP
Handshape	c5		tA
Movement	l(MOV)	Static	Twisting
	Size	-	Big
	Speed	-	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Puffed cheek

Table 5(A).299 Phonological analysis of TRUCK

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**RICKSHAW**	
Phonological Feature		
Location	Inner Palm	NSP
Handshape	W	tB

Movement	l(MOV)	Moving	Circular
	Path	Out	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).300 Phonological analysis of RICKSHAW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AGREEMENT**		
Phonological Feature			
Location	Index finger		Palm
Handshape	G		tA
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the addressee
NMF	Neutral		Head shake

Table 5(A).301 Phonological analysis of AGREEMENT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SCIENCE**		
Phonological Feature			
Location	Palm		NSP
Handshape	cB		xA
Movement	Path	In	Up-Down alternative
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).302 Phonological analysis of SCIENCE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**GEOGRAPHY**	
Phonological Feature		
Location	Inner Palm	NSP
Handshape	G	scb

Movement	l(MOV)	Circular	Circular
	Shape	Round	Round
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).303 Phonological analysis of GEOGRAPHY

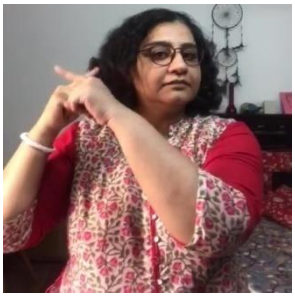
Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HISTORY**		
Phonological Feature			
Location	Index finger		Shoulder
Handshape	G		B
Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).304 Phonological analysis of HISTORY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PHYSICS**		
Phonological Feature			
Location	NSP		Wrist
Handshape	Fingerspelling [P-H-Y]		A
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).305 Phonological analysis of PHYSICS

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CHEMISTRY**	
Phonological Feature		
Location	NSP	NSP
Handshape	bU	xA

Movement	Path	In-Out alternative	In-out alternative
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).306 Phonological analysis of CHEMISTRY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BIOLOGY**		
Phonological Feature			
Location	Eye		Stomach
Handshape	cV		fO
Movement	l(MOV)	Moving	Circular
	Path	In-Out unison	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the signer
NMF	Neutral		Neutral

Table 5(A).307 Phonological analysis of BIOLOGY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FOSSIL**		
Phonological Feature			
Location	Palm		Neck
Handshape	tB		xB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).308 Phonological analysis of FOSSIL

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CONSTITUTION**	
Phonological Feature		
Location	Chest	Palm

Handshape	V		3
Movement	l(MOV)	-	Moving
	Path	Lateral	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).309 Phonological analysis of CONSTITUTION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DEMOCRACY**		
Phonological Feature			
Location	Index finger		NSP
Handshape	G		cB
Movement	l(MOV)	Moving	Moving
	Path	-	Up-Down alternative
	Size	Small	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).310 Phonological analysis of DEMOCRACY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FEMINE**		
Phonological Feature			
Location	Stomach		Palm
Handshape	xB		scB
Movement	l(MOV)	Static	Shaking
	Size	-	Medium
	Speed	-	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Neutral

Table 5(A).311 Phonological analysis of FEMINE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ANIMATION**	
Phonological Feature		
Location	Eye	Lateral side of the body

Handshape	bC		B
Movement	Path	Up-Down alternative	In-Out alternative
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

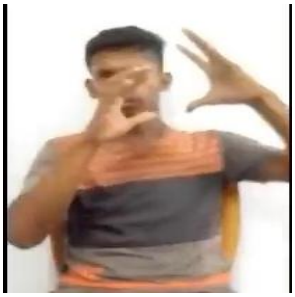
Table 5(A).312 Phonological analysis of ANIMATION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FLASH CARD**		
Phonological Feature			
Location	NSP		Back of the palm
Handshape	G		tB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).313 Phonological analysis of FLASH CARD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CONTINENT**		
Phonological Feature			
Location	NSP		Wrist
Handshape	scB		f5
Movement	l(MOV)	Circular	Circular
	Shape	Round	Round
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).314 Phonological analysis of CONTINENT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SOLAR SYSTEM**	
Phonological Feature		
Location	Palm	NSP

Handshape	scB		G
Movement	l(MOV)	Nodding	Moving
	Path	Down	Circle
	Shape	-	Round
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the ground
NMF	Neutral		Neutral

Table 5(A).315 Phonological analysis of SOLAR SYSTEM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SATTELITE**		
Phonological Feature			
Location	Wrist joint		NSP
Handshape	H		f5
Movement	l(MOV)	Twisting	Static
	Shape	Round	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the ground
NMF	Neutral		Neutral

Table 5(A).316 Phonological analysis of SATTELITE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NERVOUS SYSTEM**		
Phonological Feature			
Location	NSP		NSP
Handshape	4		sF
Movement	Path	Down	Lateral
	Shape	-	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).317 Phonological analysis of NERVOUS SYSTEM

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DIGESTIVE SYSTEM**	
Phonological Feature		
Location	Mid sagittal plane of the body	Stomach

Handshape	bU		scB
Movement	l(MOV)	Down	Circular
	Shape	Straight	Circle
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(A).318 Phonological analysis of DIGESTIVE SYSTEM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FOOD CHAIN**		
Phonological Feature			
Location	NSP		Initial- Mouth Final- Between index finger and middle finger
Handshape	fO		Initial- fO Final- bO
Movement	l(MOV)	Circular	Moving
	Path	-	Lateral
	Shape	Circle	-
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).319 Phonological analysis of FOOD CHAIN

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**ECOSYSTEM**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		5
Movement	l(MOV)	Circular	Moving
	Shape	Semi-circle	-
	Size	Big	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Back
	Carpal	Towards the sky	Towards the signer
NMF	Neutral		Neutral

Table 5(A).320 Phonological analysis of ECOSYSTEM

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**ADAPTATION**	
Phonological Feature		
Location	Fist	NSP

Handshape	tB		fO
Movement	Path	Out	In
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(A).321 Phonological analysis of ADAPTATION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**POLLUTION**		
Phonological Feature			
Location	Chin		Nose
Handshape	5		cB
Movement	l(MOV)	Wiggling	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the signer
NMF	Clinched face		Clinched face

Table 5(A).322 Phonological analysis of POLLUTION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SERVANT**		
Phonological Feature			
Location	Wrist		Wrist
Handshape	tB		H
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Towards the addressee
NMF	Neutral		Neutral

Table (A).323 Phonological analysis of SERVANT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TAILOR**	
Phonological Feature		
Location	NSP	NSP
Handshape	tA	5

Movement	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).324 Phonological analysis of TAILOR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LABOUR**		
Phonological Feature			
Location	Back of the body		Shoulder
Handshape	tA		scB
Movement	l(MOV)	Moving	Static
	Path	Out	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(A).325 Phonological analysis of LABOUR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CONTRACTOR**		
Phonological Feature			
Location	Mouth		NSP
Handshape	G		bO
Movement	l(MOV)	Moving	Static
	Path	Out	-
	Size	Medium	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).326 Phonological analysis of CONTRACTOR

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BUILDER**	
Phonological Feature		
Location	NSP	Wrist

Handshape	C		tB
Movement	Path	Up-Down alternative	Up-Down alternative
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).327 Phonological analysis of BUILDER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**VENDOR**		
Phonological Feature			
Location	NSP		NSP
Handshape	fO		B
Movement	Path	In-Out alternative	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).328 Phonological analysis of VENDOR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COBBLER**		
Phonological Feature			
Location	Wrist		NSP
Handshape	A		fbO
Movement	l(MOV)	Moving	Moving
	Path	-	In
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).329 Phonological analysis of COBLER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**GARDENER**	
Phonological Feature		
Location	NSP	NSP

Handshape	xA		A
Movement	Path	Down	Lateral
	Size	Medium	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Neutral
	Carpal	Towards the ground	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).330 Phonological analysis of GARDENER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WATCHMAN**		
Phonological Feature			
Location	NSP		Shoulder
Handshape	f3		G
Movement	l(MOV)	Circular	Static
	Shape	Circle	-
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the sky
NMF	Neutral		Neutral

Table 5(A).331 Phonological analysis of WATCHMAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TERRORIST**		
Phonological Feature			
Location	Thumb		NSP
Handshape	xH		cB
Movement	l(MOV)	Moving	Static
	Size	Big	-
	Speed	Normal	-
Orientation	Palm	Neutral	Back
	Carpal	Towards the addressee	Towards the signer
NMF	Neutral		Neutral

Table 5(A).332 Phonological analysis of TERRORIST

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WAITER**	
Phonological Feature		
Location	Arm	NSP

Handshape	W		B
Movement	l(MOV)	Static	Moving
	Speed	-	Normal
Orientation	Palm	Back	Front
	Carpal	Towards the signer	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).333 Phonological analysis of WAITER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LOHRI**		
Phonological Feature			
Location	Vertex		NSP
Handshape	O		bO
Movement	l(MOV)	Circular	Moving
	Path	-	Lateral
	Shape	Circle	-
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Back
	Carpal	Towards the sky	Towards the addressee
NMF	Neutral		Neutral

Table 5(A).334 Phonological analysis of LOHRI

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MAP**		
Phonological Feature			
Location	NSP		Index finger
Handshape	G		G
Movement	l(MOV)	Moving	Static
	Path	Downwards	-
	Size	Big	-
	Speed	Fast	-
Orientation	Palm	Back	Neutral
	Carpal	Towards the addressee	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(A).335 Phonological analysis of MAP

APPENDIX 5 (B)
Words having Lexical Score = 1

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**BLACK**		
Phonological Feature			
Location	Frontal		Frontal
Handshape	G		G
Movement	Shape	Straight	Straight
	Speed	Small	Small
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(B).1 Phonological analysis of BLACK

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**WHITE**	
Phonological Feature		
Location	Teeth	Teeth

Handshape	G		G
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 5(B).2 Phonological analysis of WHITE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FOUR**		
Phonological Feature			
Location	NSP		NSP
Handshape	4		4
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).3 Phonological analysis of FOUR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ONE THOUSAND**		
Phonological Feature			
Location	NSP		NSP
Handshape	W		W
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(B).4 Phonological analysis of ONE THOUSAND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ONE LAKH**	
Phonological Feature		
Location	NSP	NSP

Handshape	L		L
Movement	Path	To Lateral	To Lateral
	Shape	Straight	Straight
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).5 Phonological analysis of ONE LAKH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CABBAGE**		
Phonological Feature			
Location	Outer Palm		Outer Palm
Handshape	cB		cB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).6 Phonological analysis of CABBAGE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RICE**		
Phonological Feature			
Location	Palm		Palm
Handshape	scB		scB
Movement	l(MOV)	Crumbling	Crumbling
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(B).7 Phonological analysis of RICE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**APPLE**	
Phonological Feature		
Location	Approximate to Mouth	Approximate to Mouth
Handshape	scB	scB

Movement	l(MOV)	Moving	Moving
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 5(B).8 Phonological analysis of APPLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BANANA**		
Phonological Feature			
Location	NSP		NSP
Handshape	fO		fO
Movement	Static		Static
Orientation	Palm	Front	Front
	Carpal	Towards the Ground	Towards the Ground
NMF	Neutral		Neutral

Table 5(B).9 Phonological analysis of BANANA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MANGO**		
Phonological Feature			
Location	Approximate to Mouth		Approximate to Mouth
Handshape	tA		tA
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 5(B).10 Phonological analysis of MANGO

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CURD**		
Phonological Feature			
Location	NSP		NSP
Handshape	cB		cB
Movement	l(MOV)	Supinate	Supinate
	Shape	Straight	Straight

	Size	Small	Small
Orientation	Palm	Front	Front
	Carpal	Towards the Sky	Towards the Sky
NMF	Neutral		Neutral

Table 5(B).11 Phonological analysis of CURD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MILK**		
Phonological Feature			
Location	NSP		NSP
Handshape	tA		tA
Movement	Path	Up-Down Alternative	Up-Down Alternative
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).12 Phonological analysis of MILK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COFFEE**		
Phonological Feature			
Location	NSP		NSP
Handshape	bC		bC
Movement	l(MOV)	Supinate	Supinate
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neural	Neutral
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 5(B).13 Phonological analysis of COFFEE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WATER**	
Phonological Feature		
Location	Approximate to Mouth	Approximate to Mouth
Handshape	xA	xA

Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).14 Phonological analysis of WATER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SANDWICH**		
Phonological Feature			
Location	Approximate to Mouth		Approximate to Mouth
Handshape	U		U
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the Signer	Towards the Signer
NMF	Neutral		Neutral

Table 5(B).15 Phonological analysis of SANDWICH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CHOCOLATE**		
Phonological Feature			
Location	Mouth		Mouth
Handshape	H		H
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).16 Phonological analysis of CHOCOLATE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DHOKLA**	
Phonological Feature		
Location	Mouth	Mouth
Handshape	xH	xH

Movement	l(MOV)	Crumbling	Crumbling
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).17 Phonological analysis of DHOKLA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LION**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Opening	Opening
	Speed	Normal	Normal
	Size	Big	Big
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).18 Phonological analysis of LION

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WOLF**		
Phonological Feature			
Location	NSP		Nose
Handshape	scB		scB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).19 Phonological analysis of WOLF

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CROCODILE**	
Phonological Feature		
Location	NSP	NSP
Handshape	5	5

Movement	l(MOV)	Opening	Opening
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Clinched Teeth		Clinched Teeth

Table 5(B).20 Phonological analysis of CROCODILE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**OWL**		
Phonological Feature			
Location	Eye		Eye
Handshape	bC		bC
Movement	l(MOV)	Moving	Moving
	Shape	Round	Round
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Eye wide open		Eye wide open

Table 5(B).21 Phonological analysis of OWL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WINTER**		
Phonological Feature			
Location	NSP		NSP
Handshape	A		A
Movement	l(MOV)	Shaking	Shaking
	Path	To symmetry lateral unison	To symmetry lateral unison
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Clinched Mouth		Clinched Mouth

Table 5(B).22 Phonological analysis of WINTER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**AUTUM**	
Phonological Feature		
Location	NSP	NSP

Handshape	fO		fO
Movement	l(MOV)	Shaking	Shaking
	Path	Down	Down
	Size	Big	Big
	Speed	Slow	Slow
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).23 Phonological analysis of AUTUM

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**FOG**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Teeth		NSP	Teeth	NSP
Handshape	Initial		Final	Initial	Final
	G		tA	G	tA
Movement		Initial	Final	Initial	Final
		Static		Static	
	l(MOV)		Shaking		Shaking
	Size		Big		Big
	Speed		Normal		Normal
Orientation		Initial	Final	Initial	Final
	Palm	Neutral	Back	Neutral	Back
	Carpal	Towards the signer	Towards the line of bilateral symmetry	Towards the signer	Towards the line of bilateral symmetry

NMF	Clinched face	Clinched face

Table 5(B).24 Phonological analysis of FOG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FIRE**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	Path	Up-Down Alternative	Up-Down Alternative
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the sky	Towards the sky
NMF	Wide Eye		Wide Eye

Table 5(B).25 Phonological analysis of FIRE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WOOD**	
Phonological Feature		

Location	NSP		NSP
Handshape	H1- A H2- B		H1- A H2- B
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	H1- Neutral H2- Back	H1- Neutral H2- Back
	Carpal	H1- Towards the signer H2- Towards the ground	H1-Towards the signer H2- Towards the ground
NMF	Neutral		Neutral

Table 5(B).26 Phonological analysis of WOOD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SUN**		
Phonological Feature			
Location	Above the head		Above the Head
Handshape	scB		scB
Movement	l(MOV)	Nodding	Nodding
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).27 Phonological analysis of SUN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MOUNTAIN**		
Phonological Feature			
Location	NSP		NSP
Handshape	B		B
Movement	L(MOV)	Wiggling	Wiggling
	Shape	Wavy	Wavy
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).28 Phonological analysis of MOUNTAIN

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**COAL**	
Phonological Feature		
Location	NSP	NSP

Handshape	Initial- Color marker [BLACK] Final- c3		Initial- Color marker [BLACK] Final- c3
Movement	l(MOV)	Static	Static
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).29 Phonological analysis of COAL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RIVER**		
Phonological Feature			
Location	NSP		NSP
Handshape	xB		xB
Movement	l(MOV)	Wiggling	Wiggling
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).30 Phonological analysis of RIVER

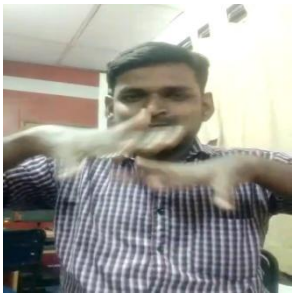
Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SEA**		
Phonological Feature			
Location	NSP		NSP
Handshape	5		5
Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).31 Phonological analysis of SEA

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**HAIR**	
Phonological Feature		
Location	Frontal	Frontal
Handshape	fO	fO

Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).32 Phonological analysis of HAIR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NAILS**		
Phonological Feature			
Location	Tip of the index finger		Tip of the index finger
Handshape	G		G
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).33 Phonological analysis of NAILS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TEETH**		
Phonological Feature			
Location	On teeth		On teeth
Handshape	G		G
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).34 Phonological analysis of TEETH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SKIN**		
Phonological Feature			
Location	Cheek		Wrist
Handshape	fbO		fbO
Movement		Static	Static
Orientation	Palm	Neutral	Back

	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).35 Phonological analysis of SKIN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NIGHT**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		f5
Movement	l(MOV)	Closing	Closing
	Path	Down	Down
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).36 Phonological analysis of NIGHT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MORNING**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		f5
Movement	L(MOV)	Opening	Opening
	Path	Up	Up
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).37 Phonological analysis of MORNING

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SOUL**	
Phonological Feature		
Location	Chest	Chest

Handshape	sF		sF
Movement	Path	To lateral	To lateral
	Shape	Semi-circle	Semi-circle
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).38 Phonological analysis of SOUL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TOMORROW**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		G
Movement	l(MOV)	Pronate	Pronate
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).39 Phonological analysis of TOMORROW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TODAY**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		G
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).40 Phonological analysis of TODAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YESTERDAY**		
Phonological Feature			
Location	Side of the neck		Side of the neck
Handshape	G		G
Movement	Static		Static
Orientation	Palm	Neutral	Neutral

	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).41 Phonological analysis of YESTERDAY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YEAR**		
Phonological Feature			
Location	NSP		NSP
Handshape	H1- L H2- G		H1- L H2- G
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).42 Phonological analysis of YEAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ELDER BROTHER**		
Phonological Feature			
Gender Marker	Male [Handshape- fbO] [Location- Philtral]		Male [Handshape- fbO] [Location- Philtral]
Location	Shoulder		Shoulder
Handshape	cB		cB
Movement	Path	Up	Up
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).43 Phonological analysis of ELDER BROTHER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**YOUNGER BROTHER**	
Phonological Feature		

Gender Marker	Male [Handshape- fbO] [Location- Philtral]		Male [Handshape- fbO] [Location- Philtral]
Location	Shoulder		Shoulder
Handshape	cB		cB
Movement	Path	Down	Down
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).44 Phonological analysis of YOUNGER BROTHER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ELDER SISTER**		
Phonological Feature			
Gender Marker	Woman [Handshape- G] [Location- Nose Groove]		Woman [Handshape- G] [Location- Nose Groove]
Location	Shoulder		Shoulder
Handshape	cB		cB
Movement	Path	Up	Up
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral

	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).45 Phonological analysis of ELDER SISTER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YOUNGER SISTER**		
Phonological Feature			
Gender Marker	Woman [Handshape- G] [Location- Nose Groove]		Woman [Handshape- G] [Location- Nose Groove]
Location	Shoulder		Shoulder
Handshape	cB		cB
Movement	Path	Down	Down
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).46 Phonological analysis of YOUNGER SISTER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HUSBAND**		
Phonological Feature			
Gender Marker	Male [Handshape- fbO] [Location- Philtral]		Male [Handshape- fbO] [Location- Philtral]
Location	Palm		Palm
Handshape	B		B
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).47 Phonological analysis of HUSBAND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WIFE**	
Phonological Feature		
Gender Marker	Woman [Handshape- G] [Location- Nose Groove]	Woman [Handshape- G] [Location- Nose Groove]

Location	Palm		Palm
Handshape	B		B
Movement		Static	Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).48 Phonological analysis of WIFE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FRIEND**		
Phonological Feature			
Location	Palm		Palm
Handshape	cB		cB
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the Signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).49 Phonological analysis of FRIEND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEGGAR**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	Static		Static
Orientation	Palm	Front	Front
	Carpal	Towards the sky	Towards the sky
NMF	Shrunk face		Shrunk face

Table 5(B).50 Phonological analysis of BEGGAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BOSS**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		xA
Movement	Path	Up	Up
	Size	Big	Big

	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Wide Eye		Wide Eye

Table 5(B).51 Phonological analysis of BOSS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DOCTOR**		
Phonological Feature			
Location	Wrist		Wrist
Handshape	U		U
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).52 Phonological analysis of DOCTOR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**THIEF**		
Phonological Feature			
Location	Palm		Palm
Handshape	cB		cB
Movement	l(MOV)	Moving	Moving
	Path	In	In
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).53 Phonological analysis of THIEF

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BOOK**	
Phonological Feature		
Location	Palm	Palm

Handshape	B		B
Movement	Static		Static
Orientation	Palm	Front	Front
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).54 Phonological analysis of BOOK

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PEN**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		xA
Movement	l(MOV)	Clicking	Clicking
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).55 Phonological analysis of PEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COMPUTER**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Moving	Moving
	Shape	Square	Square
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).56 Phonological analysis of COMPUTER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MOBILE**	
Phonological Feature		
Location	Ear Lobule	Ear Lobule

Handshape	U		U
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).57 Phonological analysis of MOBILE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**UMBRELLA**		
Phonological Feature			
Location	NSP		NSP
Handshape	tA		tA
Movement	Path	Up	Up
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).58 Phonological analysis of UMBRELLA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CANDLE**		
Phonological Feature			
Location	NSP		NSP
Handshape	bO		bO
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).59 Phonological analysis of CANDLE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BED**	
Phonological Feature		
Location	NSP	NSP
Handshape	B	B

Movement	Path	To symmetry	To symmetry
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).60 Phonological analysis of BED

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WINDOW**		
Phonological Feature			
Location	NSP		NSP
Handshape	tB		tB
Movement	l(MOV)	Opening	Opening
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).61 Phonological analysis of WINDOW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BAG**		
Phonological Feature			
Location	Shoulder		Shoulder
Handshape	xA		xA
Movement	l(MOV)	Pronate	Pronate
	Shape	Straight	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).62 Phonological analysis of BAG

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DOLLAR**	
Phonological Feature		
Location	NSP	NSP

Handshape	H		H
Movement	l(MOV)	Moving	Moving
	Shape	Iconic to dollar symbol	Iconic to dollar symbol
	Size	Medium	Medium
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).63 Phonological analysis of DOLLAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**INTERNET**		
Phonological Feature			
Location	Tip of index finger		Tip of index finger
Handshape	8		8
Movement	Path	To symmetry	To symmetry
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).64 Phonological analysis of INTERNET

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AUTO RICKSHAW**		
Phonological Feature			
Location	Side of the torso		Side of the torso
Handshape	tA		tA
Movement	Path	Supinate	Supinate
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).65 Phonological analysis of AUTO RICKSHAW

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**AEROPLANE**	
Phonological Feature		
Location	NSP	NSP
Handshape	sY	sY

Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).66 Phonological analysis of AEROPLANE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**METRO**		
Phonological Feature			
Location	NSP		NSP
Handshape	f3		f3
Movement	l(MOV)	Moving	Moving
	Shape	Straight	Straight
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).67 Phonological analysis of METRO

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TAXI**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Supinate	Supinate
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).68 Phonological analysis of TAXI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MOTORCYCLE**	
Phonological Feature		
Location	NSP	NSP
Handshape	tA	tA

Movement	l(MOV)	Twisting	Twisting
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Puffed cheek		Puffed cheek

Table 5(B).69 Phonological analysis of MOTORCYCLE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**STAND**		
Phonological Feature			
Location	Palm Surface		Palm Surface
Handshape	V		V
Movement	Static		Static
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).70 Phonological analysis of STAND

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WALK**		
Phonological Feature			
Location	NSP		NSP
Handshape	V		V
Movement	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).71 Phonological analysis of STAND

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**RUN**	
Phonological Feature		
Location	Sides of the torso	Sides of the torso
Handshape	tA	tA

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).72 Phonological analysis of RUN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**READ**		
Phonological Feature			
Location	NSP		NSP
Handshape	H1- xB H2- V		H1- xB H2- V
Movement	l(MOV)	Supinate	Supinate
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	H1- Front H2- Back	H1- Front H2- Back
	Carpal	H1- Against the line of bilateral symmetry H2- Towards the line of bilateral symmetry	H1- Against the line of bilateral symmetry H2- Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).73 Phonological analysis of READ

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SEE**		
Phonological Feature			
Location	Eye		Eye
Handshape	V		V
Movement	Path	Out	Out
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).74 Phonological analysis of SEE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DANCE**	
Phonological Feature		
Location	Sides of the torso	Sides of the torso
Handshape	sF	sF

Movement	l(MOV)	Shaking	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).75 Phonological analysis of DANCE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SLEEP**		
Phonological Feature			
Location	Side of the face		Side of the face
Handshape	B		B
Movement	Path	Static	Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Closed eye		Closed eye

Table 5(B).76 Phonological analysis of SLEEP

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LAUGH**		
Phonological Feature			
Location	Chin		Chin
Handshape	bU		bU
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Smiling face		Smiling face

Table 5(B).77 Phonological analysis of LAUGH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**CLIMB**	
Phonological Feature		
Location	NSP	NSP
Handshape	tA	tA

Movement	Path	Up-Down Alternative	Up-Down Alternative
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).78 Phonological analysis of CLIMB

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**THROW**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Supinate	Supinate
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the Signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).79 Phonological analysis of THROW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CATCH**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Closing	Closing
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).80 Phonological analysis of CATCH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**LOVE**	
Phonological Feature		
Location	On chest	On chest
Handshape	tA	tA

Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Smile		Smile

Table 5(B).81 Phonological analysis of LOVE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**OPEN**		
Phonological Feature			
Location	Middle Base		Middle Base
Handshape	xB		xB
Movement	l(MOV)	Opening	Opening
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).82 Phonological analysis of OPEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CLOSE**		
Phonological Feature			
Location	Index side		Index side
Handshape	tB		tB
Movement	Path	To symmetry	To symmetry
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).83 Phonological analysis of CLOSE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**SELL**	
Phonological Feature		
Location	NSP	NSP
Handshape	fO	fO

Movement	Path	In-Out alternative	In-Out alternative
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).84 Phonological analysis of SELL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BUY**		
Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	Path	In	In
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).85 Phonological analysis of BUY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FORGET**		
Phonological Feature			
Location	Forehead		Forehead
Handshape	tB		tB
Movement	l(MOV)	Supinate	Supinate
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).86 Phonological analysis of FORGET

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**REMEMBER**	
Phonological Feature		
Location	Forehead	Forehead
Handshape	tA	tA

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).87 Phonological analysis of REMEMBER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FAIL**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		xA
Movement	Path	Down	Down
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Pursed lips		Pursed lips

Table 5(B).88 Phonological analysis of FAIL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PASS**		
Phonological Feature			
Location	NSP		NSP
Handshape	xA		xA
Movement	Path	Up	Up
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	With smile		With smile

Table 5(B).89 Phonological analysis of PASS

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WAIT**	
Phonological Feature		
Location	Shoulder	Shoulder
Handshape	xB	xB

Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).90 Phonological analysis of WAIT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AFRAID**		
Phonological Feature			
Location	Chest		Chest
Handshape	fO		fO
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Scared face		Scared face

Table 5(B).91 Phonological analysis of AFRAID

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**GO**		
Phonological Feature			
Location	NSP		NSP
Handshape	B		B
Movement	Path	Out	Out
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).92 Phonological analysis of GO

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**SWIM**	
Phonological Feature		
Location	NSP	NSP
Handshape	cB	cB

Movement	Path	In	In
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).93 Phonological analysis of SWIM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**WRITE**		
Phonological Feature			
Location	Palm		Palm
Handshape	bO		bO
Movement	Path	Lateral	Down
	Shape	Straight	Straight
	Size	Medium	Medium
	Speed	Fast	Normal
Orientation	Palm	Back	Back
	Carpal	Against the line of bilateral symmetry	Towards the ground
NMF	Neutral		Neutral

Table 5(B).94 Phonological analysis of WRITE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**IDEA**		
Phonological Feature			
Location	Frontal		Frontal
Handshape	I		I
Movement	Path	Up	Up
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).95 Phonological analysis of IDEA

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DREAM**	
Phonological Feature		
Location	Frontal	Frontal
Handshape	G	G

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).96 Phonological analysis of DREAM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DISCUSS**		
Phonological Feature			
Location	NSP		NSP
Handshape	x5		x5
Movement	Path	To lateral	To lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).97 Phonological analysis of DISCUSS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PROUD**		
Phonological Feature			
Location	Nose		Nose
Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).98 Phonological analysis of PROUD

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**JOB**	
Phonological Feature		
Location	Index Finger	Index Finger
Handshape	H1- L H2- tA	H1- L H2- tA

Movement	l(MOV)	Supinate	Supinate
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	H1-Neutral H2- Back	H1-Neutral H2- Back
	Carpal	H1- Towards the addressee H2- Towards the signer	H1- Towards the addressee H2- Towards the signer
NMF	Neutral		Neutral

Table 5(B).99 Phonological analysis of JOB

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BAD**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		f5
Movement	l(MOV)	Supinate	Supinate
	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Pursed lips		Pursed lips

Table 5(B).100 Phonological analysis of BAD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**BEAUTIFUL**		
Phonological Feature			
Location	Face		Face
Handshape	Initial- G Final- sF		Initial- G Final- sF
Movement	l(MOV)	Circular	Circular
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Initial- Neutral Final- Back	Initial- Neutral Final- Back
	Carpal	Initial- Towards the signer Final- Towards the signer	Initial- Towards the signer Final- Towards the signer
NMF	Smiling face		Smiling face

Table 5(B).101 Phonological analysis of BEAUTIFUL

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**THIRSTY**	
Phonological Feature		

Location	Neck		Neck
Handshape	xB		xB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Sad face		Sad face

Table 5(B).102 Phonological analysis of THIRSTY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**FEW**		
Phonological Feature			
Location	NSP		NSP
Handshape	fO		fO
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Slow	Slow
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(B).103 Phonological analysis of FEW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MANY**		
Phonological Feature			
Location	NSP		NSP
Handshape	5		5
Movement	l(MOV)	Opening	Opening
	Path	Lateral	Lateral
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).104 Phonological analysis of MANY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BIG**	

Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	l(MOV)	Opening	Opening
	Path	To lateral	To lateral
	Size	Big	Big
	Shape	Round	Round
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Wide eye		Wide eye

Table 5(B).105 Phonological analysis of BIG

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SAME**		
Phonological Feature			
Location	Index side		Index side
Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Path	To symmetry	To symmetry

	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).106 Phonological analysis of SAME

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DIFFERENT**		
Phonological Feature			
Location	NSP		NSP
Handshape	V		V
Movement	l(MOV)	Opening	Opening
	Path	To lateral	To lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).107 Phonological analysis of DIFFERENT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DRY**	

Phonological Feature			
Location	NSP		NSP
Handshape	scB		scB
Movement	Path	Down	Down
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Table 5(B).108 Phonological analysis of DRY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**OLD**		
Phonological Feature			
Location	Back		Back
Handshape	B		B
Movement	l(MOV)	Moving	Moving
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back

	Carpal	Towards the sky	Towards the sky
NMF	Clinched face		Clinched face

Table 5(B).109 Phonological analysis of OLD

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NEW**		
Phonological Feature			
Location	Index finger		Index finger
Handshape	sF		sF
Movement	l(MOV)	Moving	Moving
	Path	To symmetry lateral unison	To symmetry lateral unison
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).110 Phonological analysis of NEW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DARK**		
Phonological Feature			
Location	NSP		NSP
Handshape	5		5
Movement	l(MOV)	Moving	Moving
	Path	To lateral	To lateral
	Size	Big	Big
	Speed	Slow	Slow
Orientation	Palm	Front	Front
	Carpal	Towards the addressee	Towards the addressee
NMF	Wide eye		Wide eye

Table 5(B).111 Phonological analysis of DARK

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**BRIGHT**	
Phonological Feature		
Location	NSP	NSP

Handshape	5		5
Movement	l(MOV)	Opening	Opening
	Path	To lateral	To lateral
	Size	Big	Big
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Wide eye		Wide eye

Table 5(B).112 Phonological analysis of BRIGHT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NEAR**		
Phonological Feature			
Location	NSP		NSP
Handshape	fO		fO
Movement	Path	Out	Out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).113 Phonological analysis of NEAR

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RIGHT**		
Phonological Feature			
Location	NSP		NSP
Handshape	G		G
Movement	l(MOV)	Moving	Moving
	Path	To lateral	To lateral
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).114 Phonological analysis of RIGHT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**FULL**	
Phonological Feature		
Location	Middle base	Middle base

Handshape	H		H
Movement	Path	To lateral	To lateral
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).115 Phonological analysis of FULL

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PROBLEM**		
Phonological Feature			
Location	Forehead		Forehead
Handshape	bU		bU
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Clinched face		Clinched face

Table 5(B).116 Phonological analysis of PROBLEM

Regional Variety of ISL			
	NISL		SISL
Lexical Item	**BEFORE**		
Phonological Feature			
Location	Wrist		Wrist
Handshape	xB		xB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).117 Phonological analysis of BEFORE

Regional Variety of ISL		
	NISL	SISL
Lexical Item	**AFTER**	
Phonological Feature		
Location	Wrist	Wrist

Handshape	xB		xB
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).118 Phonological analysis of AFTER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**GINGER**		
Phonological Feature			
Location	Palm		Palm
Handshape	tA		tA
Movement	l(MOV)	Moving	Moving
	Path	Up-Down unison	Up-Down unison
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).119 Phonological analysis of GINGER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HOW MANY**		
Phonological Feature			
Location	Finger		Finger
Handshape	x5		x5
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(B).120 Phonological analysis of HOW MANY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**WHAT**	
Phonological Feature		
Location	NSP	NSP
Handshape	x5	x5

Movement	l(MOV)	Pronate	Pronate
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Front	Front
	Carpal	Towards the signer	Towards the signer
NMF	Clinched eyebrow		Clinched eyebrow

Table 5(B).121 Phonological analysis of WHAT

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**WHO**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Face Mapping		NSP	Face Mapping	NSP
Handshape	Initial		Final	Initial	Final
	G		x5	G	x5
Movement		Initial	Final	Initial	Final
	l(MOV)	Circular	Pronate	Circular	Pronate
	Shape	Circular	-	Circular	-
	Size	Medium	Small	Medium	Small
	Speed	Normal	Normal	Normal	Normal
Orientation		Initial	Final	Initial	Final
	Palm	Front	Front	Front	Front
	Carpal	Towards the signer	Towards the sky	Towards the signer	Towards the sky
NMF	Clinched face			Clinched face	

Table 5(B).122 Phonological analysis of WHO

<table>
<tr><th colspan="6">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="3">NISL</th><th colspan="2">SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="5">WHOSE</th></tr>
<tr><td>Phonological Feature</td><td colspan="3">  </td><td colspan="2">  </td></tr>
<tr><td rowspan="2">Location</td><td colspan="2">Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td colspan="2">NSP</td><td>Face Mapping</td><td>NSP</td><td>Face Mapping</td></tr>
<tr><td rowspan="2">Handshape</td><td colspan="2">Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td colspan="2">A</td><td>G</td><td>A</td><td>G</td></tr>
<tr><td rowspan="5">Movement</td><td></td><td>Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td>l(MOV)</td><td>Static</td><td>Round</td><td>Static</td><td>Round</td></tr>
<tr><td>Shape</td><td>-</td><td>Circle</td><td>-</td><td>Circle</td></tr>
<tr><td>Size</td><td>-</td><td>Medium</td><td>-</td><td>Medium</td></tr>
<tr><td>Speed</td><td>-</td><td>Normal</td><td>-</td><td>Normal</td></tr>
<tr><td rowspan="3">Orientation</td><td></td><td>Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td>Palm</td><td>Back</td><td>Front</td><td>Back</td><td>Front</td></tr>
<tr><td>Carpal</td><td>Towards the addressee</td><td>Towards the signer</td><td>Towards the addressee</td><td>Towards the signer</td></tr>
<tr><td>NMF</td><td colspan="3">Clinched face</td><td colspan="2">Clinched face</td></tr>
</table>

Table 5(B).123 Phonological analysis of WHOSE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NOT**		
Phonological Feature			
Location	NSP		NSP
Handshape	5		5
Movement	l(MOV)	Shaking	Shaking
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Head bent backwards		Head bent backwards

Table 5(B).124 Phonological analysis of NOT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**ALWAYS**	
Phonological Feature		
Location	NSP	NSP
Handshape	G	G

Movement	Path	Out	Out
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Clinched face		Clinched face

Table 5(B).125 Phonological analysis of ALWAYS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CLEARLY**		
Phonological Feature			
Location	NSP		NSP
Handshape	C		C
Movement	Path	To lateral	To lateral
	Shape	Straight	Straight
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).126 Phonological analysis of CLEARLY

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**NATURALLY**		
Phonological Feature			
Location	Inner Palm		Inner Palm
Handshape	H		H
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).127 Phonological analysis of NATURALLY

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**NEATLY**	
Phonological Feature		
Location	Palm	Palm
Handshape	B	B

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Slow	Slow
Orientation	Palm	Back	Back
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).128 Phonological analysis of NEATLY

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**JANUARY**				
Phonological Feature					
Location	Index side			Index side	
Handshape	H1		H2	Initial	Final
	L		A	L	A
Movement		H1	H2	Initial	Final
	l(MOV)	Static	Supinate	Static	Supinate
	Path	-	Up-Down unison	-	Up-Down unison
	Size	-	Medium	-	Medium
	Speed	-	Fast	-	Fast
Orientation		H1	H2	H1	H2
	Palm	Neutral	Neutral	Neutral	Neutral
	Carpal	Towards the addressee	Towards the signer	Towards the addressee	Towards the signer
NMF	Neutral			Neutral	

Table 5(B).129 Phonological analysis of JANUARY

Regional Variety of ISL					
	NISL			SISL	
Lexical Item	**MARCH**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Inner Palm		Edge of the Palm	Inner Palm	Edge of the Palm
Handshape	Initial		Final	Initial	Final
	B		tA	B	tA
Movement		Initial	Final	Initial	Final
		Static	-	Static	-
	Path	-	To symmetry		To symmetry
	Size	-	Small	-	Small
	Speed	-	Normal	-	Normal
Orientation		Initial	Final	Initial	Final
	Palm	Front	Neutral	Back	Front
	Carpal	Towards the sky	Towards the signer	Towards the sky	Towards the signer
NMF	Neutral			Neutral	

Table 5(B).130 Phonological analysis of MARCH

Regional Variety of ISL					
	NISL			SISL	
Lexical Item	**JULY**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Index side		NSP	Index side	NSP
Handshape	Initial		Final	Initial	Final
	J		fO	J	Fo
Movement		Initial	Final	Initial	Final
		Static	-	Static	-
	l(MOV)	-	Moving		Moving
	Size	-	Small	-	Small
	Speed	-	Normal	-	Normal
Orientation		Initial	Final	Initial	Final
	Palm	Neutral	Neutral	Neutral	Neutral
	Carpal	Towards the addressee	Towards the signer	Towards the addressee	Towards the signer
NMF	Neutral			Neutral	

Table 5(B).131 Phonological analysis of JULY

<table>
<tr><th colspan="6">Regional Variety of ISL</th></tr>
<tr><th></th><th colspan="3">NISL</th><th colspan="2">SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="5">AUGUST</th></tr>
<tr><td>Phonological Feature</td><td colspan="3">  </td><td colspan="2">  </td></tr>
<tr><td rowspan="2">Location</td><td colspan="2">Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td colspan="2">NSP</td><td>Forehead</td><td>NSP</td><td>Forehead</td></tr>
<tr><td rowspan="2">Handshape</td><td colspan="2">Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td colspan="2">Fingerspelling-A+G</td><td>tB</td><td>Fingerspellin-A+G</td><td>tB</td></tr>
<tr><td rowspan="2">Movement</td><td></td><td>Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td></td><td>Static</td><td>Static</td><td>Static</td><td>Static</td></tr>
<tr><td rowspan="3">Orientation</td><td></td><td>Initial</td><td>Final</td><td>Initial</td><td>Final</td></tr>
<tr><td>Palm</td><td>Neutral</td><td>Back</td><td>Neutral</td><td>Back</td></tr>
<tr><td>Carpal</td><td>Towards the addressee</td><td>Towards the signer</td><td>Towards the addressee</td><td>Towards the signer</td></tr>
<tr><td>NMF</td><td colspan="3">Neutral</td><td colspan="2">Neutral</td></tr>
</table>

Table 5(B).132 Phonological analysis of AUGUST

<table>
<tr><th colspan="3">Regional Variety of ISL</th></tr>
<tr><th></th><th>NISL</th><th>SISL</th></tr>
<tr><th>Lexical Item</th><th colspan="2">SEPTEMBER</th></tr>
<tr><td>Phonological Feature</td><td>  </td><td>  </td></tr>
</table>

Location	Initial		Final	Initial	Final
	Little finger		Nose	Little finger	Nose
Handshape	Initial		Final	Initial	Final
	I		U	I	U
Movement		Initial	Final	Initial	Final
		Static	-	Static	-
Orientation		Initial	Final	Initial	Final
	Palm	Front	Neutral	Front	Neutral
	Carpal	Towards the sky	Towards the ground	Towards the sky	Towards the ground
NMF	Neutral			Neutral	

Table 5(B).133 Phonological analysis of SEPTEMBER

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**NOVEMBER**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Inner Palm		NSP	Inner Palm	NSP
Handshape	Initial		Final	Initial	Final
	H		fbO	H	Fbo
Movement		Initial	Final	Initial	Final
		Static	-	Static	-
	l(MOV)	-	Crumbling		Crumbling
	Size	-	Small	-	Small
	Speed	-	Normal	-	Normal
Orientation		Initial	Final	Initial	Final
	Palm	Front	Neutral	Back	Neutral

	Carpal	Towards the sky	Towards the signer	Towards the sky	Towards the signer
NMF	Neutral			Neutral	

Table 5(B).134 Phonological analysis of NOVEMBER

Regional Variety of ISL					
	NISL			**SISL**	
Lexical Item	**DECEMBER**				
Phonological Feature					
Location	Initial		Final	Initial	Final
	Index finger		NSP	Index finger	NSP
Handshape	Initial		Final	Initial	Final
	Finger spelling- D		tA	Fingerspelling-D	tA
Movement		Initial	Final	Initial	Final
		Static	-	Static	-
	l(MOV)	-	Shaking	-	Shaking
	Size	-	Small	-	Small
	Speed	-	Normal	-	Normal
Orientation		Initial	Final	Initial	Final
	Palm	Neutral	Neutral	Neutral	Neutral
	Carpal	Towards the Signer	Towards the signer	Towards the signer	Towards the signer
NMF	Clinched face			Clinched face	

Table 5(B).135 Phonological analysis of DECEMBER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HOLI**		
Phonological Feature			
Location	Cheeks		Cheeks
Handshape	B		B
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Smiling face		Smiling face

Table 5(B).136 Phonological analysis of HOLI

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**DURGA POOJA**	
Phonological Feature		
Location	NSP	NSP
Handshape	Y	Y

Movement	Static		
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).137 Phonological analysis of DURGA POOJA

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RAKSHABANDHAN**		
Phonological Feature			
Location	Wrist		Wrist
Handshape	tA		tA
Movement	l(MOV)	Moving	Moving
	Shape	Circle	Circle
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).138 Phonological analysis of RAKSHABANDHAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SEVEN**		
Phonological Feature			
Location	NSP		NSP
Handshape	cG		cG
Movement	Static		Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).139 Phonological analysis of SEVEN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CARROT**		
Phonological Feature			
Location	Approximate to mouth		Approximate to mouth
Handshape	Initial- Color marker [RED] Final- tA		Initial- Color marker [RED] Final- tA
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium

	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).140 Phonological analysis of CARROT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**COCONUT**		
Phonological Feature			
Location	Lateral side of the head		Lateral side of the head
Handshape	cB		cB
Movement	l(MOV)	Shaking	Shaking
	Shape	Circular	Circular
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).141Phonological analysis of COCONUT

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**POMEGRANATE**		
Phonological Feature			
Location	Palm		Palm
Handshape	xB		xB
Movement	l(MOV)	Moving	Moving
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).142 Phonological analysis of POMEGRANATE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**LASSI**	
Phonological Feature		
Location	Palm	Palm
Handshape	B	B

Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

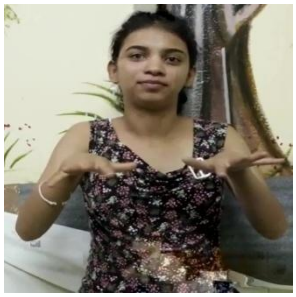
Table 5(B).143 Phonological analysis of LASSI

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**RAINBOW**		
Phonological Feature			
Location	NSP		NSP
Handshape	W		W
Movement	l(MOV)	Moving	Moving
	Shape	Semi-circle	Semi-circle
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).144 Phonological analysis of RAINBOW

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**HAILSTONE**		
Phonological Feature			
Location	NSP		NSP
Handshape	f5		f5
Movement	Path	Up-Down alternative	Up-Down alternative
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).145 Phonological analysis of HAILSTONE

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**EARTHQUAKE**	
Phonological Feature		
Location	NSP	NSP
Handshape	5	5

Movement	l(MOV)	Shaking	Shaking
	Path	Out	Out
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).146 Phonological analysis of EARTHQUAKE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**AFTERNOON**		
Phonological Feature			
Location	Near head		Near head
Handshape	scB		scB
Movement	l(MOV)	Nodding	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Front
	Carpal	Towards the signer	Towards the sky
NMF	Neutral		Clinched face

Table 5(B).147 Phonological analysis of AFTERNOON

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**LEADER**		
Phonological Feature			
Location	Shoulder		Shoulder
Handshape	L		L
Movement		Static	Static
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the sky	Towards the sky
NMF	Neutral		Neutral

Table 5(B).148 Phonological analysis of LEADER

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**POLITICIAN**	
Phonological Feature		
Location	Index finger	Index finger
Handshape	G	Initial- Fingerspelling [P] Final- G

Movement	l(MOV)	Moving	Moving
	Path	Up-Down alternative	Up-Down alternative
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).149 Phonological analysis of POLITICIAN

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PIPE**		
Phonological Feature			
Location	NSP		NSP
Handshape	O		O
Movement	Path	Lateral	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).150 Phonological analysis of PIPE

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TUBELIGHT**		
Phonological Feature			
Location	NSP		NSP
Handshape	Initial- Color marker [WHITE] Final- O		Initial- Color marker [WHITE] Final- O
Movement	Path	Lateral	Lateral
	Shape	Straight	Straight
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).151 Phonological analysis of TUBELIGHT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**RICH**	
Phonological Feature		
Location	Index finger	Index finger

Handshape	fbO		fbO
Movement	Path	To lateral	To lateral
	Speed	Normal	Normal
	Size	Big	Big
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).152 Phonological analysis of RICH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**YES**		
Phonological Feature			
Location	NSP		NSP
Handshape	tA		tA
Movement	l(MOV)	Nodding	Nodding
	Size	Small	Small
	Speed	Fast	Fast
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Head shake		Head shake

Table 5(B).153 Phonological analysis of YES

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**ACCEPT**		
Phonological Feature			
Location	Chest		Chest
Handshape	fO		fO
Movement	Path	In	In
	Size	Medium	Medium
	Speed	Fast	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Head shake		Head shake

Table 5(B).154 Phonological analysis of ACCEPT

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**MATHS**	
Phonological Feature		
Location	Fingers	Finger
Handshape	4	4

Movement	Path	Down	Down
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Front	Front
	Carpal	Against the line of bilateral symmetry	Against the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).155 Phonological analysis of MATHS

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**CO-CURRICULUM**		
Phonological Feature			
Location	Palm		Palm
Handshape	cB		cB
Movement	Path	Down	Down
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).156 Phonological analysis of CO-CURRICULUM

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**SYLLABUS**		
Phonological Feature			
Location	Palm		Palm
Handshape	4		4
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).157 Phonological analysis of SYLLABUS

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**INTERPRETER**	
Phonological Feature		
Location	Thumb	Thumb
Handshape	sF	sF

Movement	l(MOV)	Shaking	Shaking
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).158 Phonological analysis of INTERPRETER

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**MECHANIC**		
Phonological Feature			
Location	Between middle finger and index finger		Between middle finger and index finger
Handshape	V		V
Movement	l(MOV)	Twisting	Twisting
	Path	Lateral	Lateral
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the line of bilateral symmetry	Towards the line of bilateral symmetry
NMF	Neutral		Neutral

Table 5(B).159 Phonological analysis of MECHANIC

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**THROUGH**		
Phonological Feature			
Location	Below the palm		Below the palm
Handshape	cB		cB
Movement	l(MOV)	Moving	Moving
	Path	Out	Out
	Size	Big	Big
	Speed	Fat	Fast
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).160 Phonological analysis of THROUGH

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**TURMERIC**	
Phonological Feature		
Location	NSP	NSP

Handshape	Initial- Color marker [YELLOW] Final- fO		Initial- Color marker [YELLOW] Final- fO
Movement	l(MOV)	Circular	Circular
	Size	Big	Big
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the ground	Towards the ground
NMF	Neutral		Neutral

Table 5(B).161 Phonological analysis of TURMERIC

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**DEAF**		
Phonological Features			
Location	Ear		Ear
Handshape	G		G
Movement	Path	Static	Static
	Size	Small	Small
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).162 Phonological analysis of DEAF

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**TOMATO**		
Phonological Feature			
Location	Initial- Tip of the tongue Final- NSP		Initial- Lower lips Final- NSP
Handshape	Initial- Color marker [RED] Final- c3		Initial- Color marker [RED] Final- c3
Movement	l(MOV)	Shaking	Shaking
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Back	Back
	Carpal	Towards the addressee	Towards the addressee
NMF	Neutral		Neutral

Table 5(B).163 Phonological analysis of TOMATO

Regional Variety of ISL		
	NISL	**SISL**
Lexical Item	**RADDISH**	
Phonological Feature		
Location	Approximate to mouth	Mouth
Handshape	Initial- Color marker [WHITE]	Initial- Color marker [WHITE] Final- tA

	Final- tA		
Movement	l(MOV)	Moving	Moving
	Size	Medium	Medium
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).164 Phonological analysis of RADDISH

Regional Variety of ISL			
	NISL		**SISL**
Lexical Item	**PANEER (Cottage cheese)**		
Phonological Feature			
Location	NSP		NSP
Handshape	bU		bU
Movement	l(MOV)	Crumbling	Crumbling
	Size	Small	Small
	Speed	Normal	Normal
Orientation	Palm	Neutral	Neutral
	Carpal	Towards the signer	Towards the signer
NMF	Neutral		Neutral

Table 5(B).165 Phonological analysis of PANEER

APPENDIX 6

Individual Lexical Score

S.no	Lexical Item	Total Score		Similar/Dissimilar
		Similarity	Dissimilarity	
1	Black	1	0	1
2	White	1	0	1
3	Green	0.20	-0.80	≠
4	Red	0.20	-0.80	≠
5	Yellow	0.20	-0.80	≠
6	Blue	0	-1	≠
7	Pink	0.60	-0.40	≠
8	Brown	0.80	-0.20	≠
9	Orange	0.60	-0.40	≠
10	Grey	0.20	-0.80	≠
11	Indigo	0.60	-0.40	≠
12	Eight	0.60	-0.40	≠
13	Four	1	0	1
14	Six	0.60	-0.40	≠
15	Ten	0.40	-0.60	≠
16	One Thousand	1	0	1
17	Nine	0.60	-0.40	≠
18	Twelve	0.40	-0.60	≠
19	Twenty	0.40	-0.60	≠
20	One Lakh	1	0	1
21	One Crore	0.60	-0.40	≠
22	Seven	1	0	1
23	Onion	0.20	-0.80	≠
24	Potato	0.40	-0.60	≠
25	Cabbage	1	0	1
26	Cauliflower	0.40	-0.60	≠
27	Corn	0.20	-0.80	≠
28	Egg Plant	0.60	-0.40	≠
29	Green Chilly	0.20	-0.80	≠
30	Tomato	1	0	1
31	Rice	1	0	1
32	Peas	0.40	0.60	≠

33	Mushroom	0.20	-0.80	≠
34	Carrot	1	0	1
35	Raddish	1	0	1
36	Jackfruit	0.60	-0.40	≠
37	Apple	1	0	1
38	Banana	1	0	1
39	Pineapple	0.20	-0.80	≠
40	Watermelon	0.40	-0.60	≠
41	Orange	0.80	-0.20	≠
42	Grapes	0.20	-0.80	≠
43	Mango	1	0	1
44	Strawberry	0.20	-0.80	≠
45	Coconut	1	0	1
46	Papaya	0.20	-0.80	≠
47	Pomegranate	1	0	1
48	Pear	0.40	0.60	≠
49	Curd	1	0	1
50	Milk	1	0	1
51	Egg	0.20	-0.80	≠
52	Ice Cream	0.80	-0.20	≠
53	Paneer (Cottage Cheese)	1	0	1
54	Butter	0.80	-0.20	≠
55	Cheese	0.20	-0.80	≠
56	Ghee	0.20	-0.80	≠
57	Ginger	1	0	1
58	Garlic	0.60	-0.40	≠
59	Salt	0.40	-0.60	≠
60	Turmeric	1	0	≠
61	Cumin	0.40	-0.60	≠
62	Pepper	0.40	-0.60	≠
63	Mustard	0.40	-0.60	≠
64	Tamrind	0	-1	≠
65	Cardamom	0.20	-0.80	≠
66	Clove	0.40	-0.60	≠
67	Tea	0.20	-0.80	≠
68	Coffee	1	0	1
69	Cold Drinks	0.40	-0.60	≠
70	Fruit Juice	0.40	-0.60	≠
71	Water	1	0	1

72	Lassi	1	0	1
73	Milkshake	0.20	-0.80	≠
74	Sandwich	1	0	1
75	Samosa	0.20	-0.80	≠
76	Puri	0.20	-0.80	≠
77	Burger	0.20	-0.80	≠
78	Paratha	0.20	-0.80	≠
79	Idlli	0.40	-0.60	≠
80	Chocolate	1	0	1
81	Dosa	0.40	-0.60	≠
82	Dhokla	1	0	1
83	Pizza	0.80	-0.20	≠
84	Cake	0.20	-0.80	≠
85	Flower	0.60	-0.40	≠
86	Leaf	0.20	-0.80	≠
87	Tree	0.80	-0.20	≠
88	Seed	0.60	-0.40	≠
89	Steam	0.60	-0.40	≠
90	Root	0.40	-0.60	≠
91	Bush	0.20	0.80	≠
92	Herbs	0.40	0.60	≠
93	Thorn	0.40	-0.60	≠
94	Cactus	0.40	-0.60	≠
95	Bud	0.40	-0.60	≠
96	Parrot	0.80	-0.20	≠
97	Cat	0.60	-0.40	≠
98	Dog	0.60	-0.40	≠
99	Cow	0.20	-0.80	≠
100	Fish	0.20	-0.80	≠
101	Pigeon	0.60	-0.40	≠
102	Duck	0.20	-0.80	≠
103	Rabbit	0.40	-0.60	≠
104	Mouse	0.40	-0.60	≠
105	Sheep	0.20	-0.80	≠
106	Buffalo	0.40	-0.60	≠
107	Goat	0.80	-0.20	≠
108	Donkey	0	-1	≠
109	Pig	0.20	-0.80	≠
110	Horse	0.20	-0.80	≠

111	Camel	0.80	-0.20	≠
112	Hen	0.20	-0.80	≠
113	Bird	0.40	-0.60	≠
114	Owl	1	0	1
115	Yak	0.60	-0.40	≠
116	Bee	0.20	-0.80	≠
117	Tiger	0.20	-0.80	≠
118	Lion	1	0	1
119	Monkey	0	-1	≠
120	Elephant	0.40	-0.60	≠
121	Fox	0.20	-0.80	≠
122	Deer	0.20	-0.80	≠
123	Bear	0.20	-0.80	≠
124	Snake	0.60	-0.40	≠
125	Crocodile	1	0	1
126	Wolf	1	0	1
127	Rhinoceros	0.60	-0.40	≠
128	Hippopotamus	0.20	-0.80	≠
129	Porcupine	0.40	-0.60	≠
130	Kangaroo	0.40	-0.60	≠
131	Giraffe	0.60	-0.40	≠
132	Zebra	0.40	-0.60	≠
133	Summer	0	-1	≠
134	Winter	1	0	1
135	Rain	0.80	-0.20	≠
136	Thunder	0.40	-0.60	≠
137	Wind	0	-1	≠
138	Rainbow	1	0	1
139	Fog	1	0	1
140	Snow	0	-1	≠
141	Autumn	1	0	1
142	Spring	0	-1	≠
143	Hailstone	1	0	1
144	Global Warming	0	-1	≠
145	Earthquake	1	0	1
146	Monsoon	0.40	-0.60	≠
147	Eclipse	0.60	-0.40	≠
148	Earth	0.60	-0.40	≠
149	Fire	1	0	1

150	Wood	1	0	1
151	Gold	0.20	-0.80	≠
152	Ice	0	-1	≠
153	Stone	0	-1	≠
154	Star	0.20	-0.80	≠
155	Sun	1	0	1
156	Moon	0.80	-0.20	≠
157	Cloud	0.40	-0.60	≠
158	Mountain	1	0	1
159	Sky	0.20	-0.80	≠
160	River	1	0	1
161	Island	0.20	-0.80	≠
162	Beach	0	-1	≠
163	Sea Wave	0.20	-0.80	≠
164	Sea	1	0	1
165	Diamond	0.40	-0.60	≠
166	Coal	1	0	1
167	Iron	0.60	-0.40	≠
168	Sea Shell	0.20	-0.80	≠
169	Hair	1	0	1
170	Blood	0.60	-0.40	≠
171	Bones	0.40	-0.60	≠
172	Heart	0.20	-0.80	≠
173	Nails	1	0	1
174	Teeth	1	0	1
175	Finger	0.40	-0.60	≠
176	Soul	1	0	1
177	Tear	0.60	-0.40	≠
178	Skin	1	0	1
179	Skeleton	0.20	-0.80	≠
180	Nerves	0.20	-0.80	≠
181	Morning	1	0	1
182	Evening	0.60	-0.40	≠
183	Night	1	0	1
184	Tomorrow	1	0	1
185	Today	1	0	1
186	Yesterday	1	0	1
187	Day	0.20	-0.80	≠
188	Week	0.40	-0.60	≠

189	Month	0.80	-0.20	≠
190	Year	1	0	1
191	Afternoon	1	0	1
192	Soon	0.80	-0.20	≠
193	Father	0.40	-0.60	≠
194	Mother	0.80	-0.20	≠
195	Elder Brother	1	0	1
196	Younger Brother	1	0	1
197	Elder Sister	1	0	1
198	Younger Sister	1	0	1
199	Chacha(Father's younger brother)	0.60	-0.40	≠
200	Tau(Father's elder brother)	0.60	-0.40	≠
201	Bua(Father's sister)	0.20	-0.80	≠
202	Mama(Mother's brother)	0.40	-0.60	≠
203	Mausi (Mother's sister)	0.20	-0.80	≠
204	Dada(Paternal grandfather)	0	-1	≠
205	Dadi(Paternal grandmother)	0	-1	≠
206	Nana(Maternal grandfather)	0.20	-0.80	≠
207	Nani(Maternal grandmother)	0.20	-0.80	≠
208	Saas (Mother in-law)	0.20	-0.80	≠
209	Sasur (Father in-law)	0.20	-0.80	≠
210	Husband	1	0	1
211	Wife	1	0	1
212	Hindu	0.20	-0.80	≠
213	Muslim	0	-1	≠
214	Christian	0.40	-0.60	≠
215	Sikh	0.20	-0.80	≠
216	Temple	0.20	-0.80	≠
217	Church	0.20	-0.80	≠
218	Mosque	0.40	-0.60	≠
219	Priest	0.60	-0.40	≠
220	Buddhist	0.40	-0.60	≠
221	Idol	0.60	-0.40	≠
222	Bible	0.60	-0.40	≠
223	Quran	0.40	-0.60	≠
224	Monk	0.40	-0.60	≠
225	Bhagavad Gita	0.20	-0.60	≠
226	Man	0.40	-0.60	≠
227	Woman	0.40	-0.60	≠

228	Teacher	0.40	-0.60	≠
229	Student	0.40	-0.60	≠
230	Friend	1	0	1
231	Enemy	0.40	-0.60	≠
232	King	0.20	-0.80	≠
233	Queen	0.20	-0.80	≠
234	Beggar	1	0	1
235	Boss	1	0	1
236	Doctor	1	0	1
237	Blind	0.40	-0.60	≠
238	Leader	1	0	1
239	Politician	1	0	1
240	Thief	1	0	1
241	Terrorist	0.20	-0.80	≠
242	Waiter	0.20	-0.80	≠
243	Deaf	1	0	1
244	Book	1	0	1
245	Pen	1	0	1
246	Chair	0.80	-0.20	≠
247	Computer	1	0	1
248	Telephone	0.60	-0.40	≠
249	Mobile	1	0	1
250	Table	0.80	-0.20	≠
251	Television	0.20	-0.80	≠
252	Umbrella	1	0	1
253	Candle	1	0	1
254	Rope	0.60	-0.40	≠
255	Bed	1	0	1
256	Luggage	0.40	-0.60	≠
257	Window	1	0	1
258	Map	0.40	-0.60	≠
259	Bag	1	0	1
260	Note	0.40	-0.60	≠
261	Dollar	1	0	1
262	Packet	0.40	-0.60	≠
263	Internet	1	0	1
264	Refrigerator	0.20	-0.80	≠
265	Pipe	1	0	1
266	Knife	0.40	-0.60	≠

267	Fan	0.40	-0.60	≠
268	Tube light	1	0	1
269	Bus	0.40	-0.60	≠
270	Train	0.40	-0.60	≠
271	Car	0.40	-0.60	≠
272	Bicycle	0.20	-0.80	≠
273	Auto rickshaw	1	0	1
274	Aeroplane	1	0	1
275	Metro	1	0	1
276	Taxi	1	0	1
277	Ship	0.20	-0.80	≠
278	Truck	0.20	-0.80	≠
279	Motorcycle	1	0	1
280	Rickshaw	0.20	-0.80	≠
281	Sit	0.20	-0.80	≠
282	Stand	1	0	1
283	Walk	1	0	1
284	Run	1	0	1
285	Read	1	0	1
286	Study	0.40	-0.60	≠
287	Dance	1	0	1
288	Sing	0.20	-0.80	≠
289	Speak	0.80	-0.20	≠
290	Kick	0.60	0.40	≠
291	Sleep	1	0	1
292	Write	1	0	1
293	Play	0.20	-0.80	≠
294	Laugh	1	0	1
295	Climb	1	0	1
296	Throw	1	0	1
297	Catch	1	0	1
298	Fight	0.20	-0.80	≠
299	Melt	0.80	-0.20	≠
300	Freeze	0.20	-0.80	≠
301	Stir	0.80	-0.20	≠
302	Dig	0.40	-0.60	≠
303	Love	1	0	1
304	Hate	0	-1	≠
305	Greed	0	-1	≠

306	Open	1	0	1
307	Close	1	0	1
308	Sell	1	0	1
309	Buy	1	0	1
310	Jump	0.40	-0.60	≠
311	Forget	1	0	1
312	Remember	1	0	1
313	Fail	1	0	1
314	Pass	1	0	1
315	Visit	0.40	-0.60	≠
316	Celebrate	0.40	-0.60	≠
317	Wait	1	0	1
318	Stop	0.20	-0.80	≠
319	Go	1	0	1
320	Swim	1	0	1
321	Fly	0.20	-0.80	≠
322	Idea	1	0	1
323	Brave	0	-1	≠
324	Dream	1	0	1
325	Trust	0.40	-0.60	≠
326	Problem	1	0	1
327	Cry	0.40	-0.60	≠
328	See	1	0	1
329	Explain	0.40	-0.60	≠
330	Discuss	1	0	1
331	Order	0.80	-0.20	≠
332	Argue	0.80	-0.20	≠
333	Jealous	0	-1	≠
334	Guilty	0.40	-0.60	≠
335	Proud	1	0	1
336	Danger	0.40	-0.60	≠
337	Job	1	0	1
338	Easy	0	-1	≠
339	Difficult	0	-1	≠
340	Afraid	1	0	1
341	Angry	0.20	-0.80	≠
342	Good	0.40	-0.60	≠
343	Bad	1	0	1
344	Ugly	0	-1	≠

345	Beautiful	1	0	1
346	Hungry	0.60	-0.40	≠
347	Thirsty	1	0	1
348	Fat	0.20	-0.80	≠
349	Thin	0.60	-0.40	≠
350	Few	1	0	1
351	Many	1	0	1
352	Small	0.40	-0.60	≠
353	Big	1	0	1
354	Same	1	0	1
355	Different	1	0	1
356	Dry	1	0	1
357	Wet	0.20	-0.80	≠
358	Old	1	0	1
359	New	1	0	1
360	Long	0.20	-0.80	≠
361	Short	0.40	-0.60	≠
362	Happy	0.40	-0.60	≠
363	Sad	0.80	-0.20	≠
364	Hot	0.20	-0.80	≠
365	Cold	0.20	-0.80	≠
366	Dark	1	0	1
367	Bright	1	0	1
368	Lazy	0.40	-0.60	≠
369	Active	0.40	-0.60	≠
370	Far	0	-1	≠
371	Near	1	0	1
372	Less	0.40	-0.60	≠
373	More	0.60	-0.40	≠
374	Young	0.60	-0.40	≠
375	Old (age)	0.20	-0.80	≠
376	Poor	0.40	-0.60	≠
377	Rich	1	0	1
378	Right	1	0	1
379	Wrong	0.40	-0.60	≠
380	Sick	0.40	-0.60	≠
381	Full	1	0	1
382	Empty	0	-1	≠
383	Healthy	0.40	-0.60	≠

384	Fool	0.20	-0.80	≠
385	Wise	0.40	-0.60	≠
386	At	0.40	-0.60	≠
387	On	0.60	-0.40	≠
388	Above	0.60	-0.40	≠
389	Under	0.40	-0.60	≠
390	Behind	0.60	-0.40	≠
391	In Front Of	0.60	-0.40	≠
392	Through	1	0	1
393	Along With	0.20	-0.80	≠
394	Since	0.60	-0.40	≠
395	Before	1	0	1
396	After	1	0	1
397	How	0.80	-0.20	≠
398	Why	0.20	-0.80	≠
399	How Many	1	0	1
400	When	0.20	-0.80	≠
401	What	1	0	1
402	Where	0.60	-0.40	≠
403	Who	1	0	1
404	Whose	1	0	1
405	Which	0.80	-0.20	≠
406	No	0.20	-0.80	≠
407	Not	1	0	1
408	Never	0.40	-0.60	≠
409	None	0.40	-0.60	≠
410	Yes	1	0	1
411	Accept	1	0	1
412	Agreement	0.20	-0.80	≠
413	Science	0.20	-0.80	≠
414	Math	1	0	1
415	History	0.60	-0.40	≠
416	Geography	0.60	-0.40	≠
417	Physics	0.60	-0.40	≠
418	Chemistry	0.60	-0.40	≠
419	Biology	0.20	-0.80	≠
420	Fossil	0.40	-0.60	≠
421	Constitution	0.20	-0.80	≠
422	Democracy	0.40	-0.60	≠

423	Famine	0	-1	≠
424	Animation	0.20	-0.80	≠
425	Flash Card	0.20	-0.80	≠
426	Co-Curriculum	1	0	1
427	Syllabus	1	0	1
428	Continent	0.20	-0.80	≠
429	Solar System	0.20	-0.80	≠
430	Satellite	0.20	-0.80	≠
431	Nervous System	0.40	-0.60	≠
432	Digestive System	0.40	-0.60	≠
433	Food Chain	0.20	-0.80	≠
434	Ecosystem	0.40	-0.60	≠
435	Adaptation	0.20	-0.80	≠
436	Pollution	0.20	-0.80	≠
437	Servant	0.40	-0.60	≠
438	Interpreter	1	0	1
439	Tailor	0.80	-0.20	≠
440	Labour	0.40	-0.60	≠
441	Contractor	0.20	-0.80	≠
442	Mechanic	1	0	1
443	Builder	0.60	-0.40	≠
444	Vendor	0.40	-0.60	≠
445	Cobbler	0.20	-0.80	≠
446	Gardener	0.40	-0.60	≠
447	Watchman	0.20	-0.80	≠
448	But	0	-1	≠
449	If	0	-1	≠
450	Because	0	-1	≠
451	And	0.20	-0.80	≠
452	Quickly	0	-1	≠
453	Slowly	0.40	-0.60	≠
454	Swiftly	0.20	-0.80	≠
455	Always	1	0	1
456	Annually	0.20	-0.80	≠
457	Bravely	0.60	-0.40	≠
458	Suddenly	0.40	-0.60	≠
459	Clearly	1	0	1
460	Colorfully	0.40	-0.60	≠
461	Daily	0.80	-0.20	≠

462	Faithfully	0.20	-0.80	≠
463	Fortunately	0.20	-0.80	≠
464	Generously	0	-1	≠
465	Happily	0.40	-0.60	≠
466	Immediately	0.20	-0.80	≠
467	Loudly	0.20	-0.80	≠
468	Naturally	1	0	1
469	Neatly	1	0	1
470	Sometimes	0.20	-0.80	≠
471	Urgently	0.40	-0.60	≠
472	Monday	0.20	-0.80	≠
473	Tuesday	0.20	-0.80	≠
474	Wednesday	0.20	-0.80	≠
475	Thursday	0.20	-0.80	≠
476	Friday	0.40	-0.60	≠
477	Saturday	0.40	-0.60	≠
478	Sunday	0.20	-0.80	≠
479	January	1	0	1
480	February	0.60	-0.40	≠
481	March	1	0	1
482	April	0.20	-0.80	≠
483	May	0.60	-0.40	≠
484	June	0.20	-0.80	≠
485	July	1	0	1
486	August	1	0	1
487	September	1	0	1
488	October	0.40	-0.60	≠
489	November	1	0	1
490	December	1	0	1
491	Holi	1	0	1
492	Diwali	0.20	-0.80	≠
493	Dusshera	0.20	-0.80	≠
494	Ei-Dh	0	-1	≠
495	Christmas	0.20	-0.80	≠
496	Ganesh Caturthi	0.20	-0.80	≠
497	Durga Pooja	1	0	1
498	Pongal	0.40	-0.60	≠
499	Rakshabandhan	1	0	1
500	Lohri	0.20	-0.80	≠

References

Abraham, Ernest J.D. 1895. "The Deaf Mutes of India", *The Indian Magazine and Review*. (London: National Indian Association in Aid of Social Progress and Education in India).

Anvita Abbi (1 January 2006). *Endangered Languages of the Andaman Islands*. Lincom Europa.

Agheyisi,R &Fishman,J. 1970. Language Attitude Studies: *A brief survey of methodological approaches*. Anthroplogical linguistic 12 (15) .137-57.

Ajzen, I. 1988. *Attitudes, personality and behaviour*. Milton Keynes: Open University Press.

Altekar, Anant Sadashiv. 1965. Education in Ancient India, 6th edition. Varanasi.

Anand, Nisha. 2016. *A Socialinguist Study of the Use of Indian Sign Language*. Unpublished M.Phil dissertation. Jawaharlal Nehru University

Andenwalla, Dhun D. 1999. "Education of the Deaf in India" *in Global Perspectives on the Education of the Deaf in Selected Countries,* ed by William Brelje. Hillsboro: Butte Publications.

Anderson, Llyod B. 1982. Universals of aspect and parts of speech: Parallels between signed and spoken languages. In P. J. Hopper (ed.*), Typological Studies in Language 1.Tense- aspect: Between semantics and pragmatics*. 91-114. Amsterdam/Philadelphia:John Benjamins Publishing Company.

Andersson, Yerker. 1994. Deaf people as a linguistic minority. In Ingram Ahlgren & Hyltenstam (eds.), *Bilingualism in Deaf Education*. 9-13. Hamburg: Signum-Verl.

Anita, Shirin D. 1979. "Education of the Hearing Impaired in India: A Servey, "*American Annals of the Deaf.*

Armstrong, D.F., Stokoe, W. C., Wilcox, S. E. 1995. *Gesture and the Nature of Language.*Cambridge: Cambridge University Press.

AYJNIHH and Zeshan, U. 2002. *Advanced Course in Indian Sign Language (4 hrs. VHS/VCD video & workbook).* Mumbai: Ali Yavar Jung National Institute for the

Hearing Handicapped (Ministry of Social Justice and Empowerment, Government of India).

Azad, Yasmin A. 2004. Education of hearing and speech impaired. In J. S. Rajput (ed.), *Encyclopedia of Indian Education* 1: 772-778. New Delhi: NCERT. Baker-Shenk, C. & Cokely, D.1980. *American Sign Language: A teacher's resource text on grammar and culture.* Washington DC: Gallaudet University Press.

Baker, C. 1992. *Attitudes and Language*. Clevedon: Multilingual Matters.

Baker, Charlotte. 1977. Regulators and turn-taking in American Sign Language discourse. In Lynn Friedman (ed.), *On the Other Hand: New Perspectives on American Sign Language.* 215-236. New York/San Francisco/London: Academic Press.

Banerji JN. 1928. India. *International Reports of Schools for the Deaf*, 18-19. Washington City. Volta Bureau.

Battison, Robbin. 1978. *Lexical borrowing in American Sign Language*. Silver Spring, MD: Linstok Press.

Baynton, D. 1996. Forbidden Signs: *American culture and the campaign against sign language*. University of Chicago press. London.

Bhattacharya, K. 1939. "*A statistical Survey of the Education of the Infirm in India*". Journals of the Department of Letters. (Calcutta : University of Calcutta).
bilingualism. In J. McNamara (Ed.) *Journal of Social Issues*.

Blair, Frank. 1990. Survey on a Shoestring - a manual for small-scale language surveys. Publication in Linguistics 96. Dallas, Texas: Summary Institute of Linguistics and the University of Texas at Arlington.

Bradac, J.J. 1990. Language Attitudes and Impression Formation. In H. Giles & W.P. Robinson (eds.), *Handbook of Language and Social Psychology*.

Brentari, D & Coppola, M . 2012. *What sign language creation teaches us about language*. WIREs Cogn Sci 2012. doi: 10.1002/wcs.1212. John Wiley & Sons, Ltd.

Briggs, C.L. 1986. *Learning how to ask. A sociolinguistic appraisal of the role of the interview in social science research*. Cambridge: Cambridge University Press.

Brodie, Dorthy. 1935. "*Education of the Deaf in India*" Teachers of the Deaf 33.

Burke, J. (2014). Deaf History- Milan 1880: Event with powerful repercussions. Www.verywell.com. Retrieved May 31, 2016.

Cardona, George. 1994. Indian linguistics. In Giulio Lepschy (ed.), *History of Linguistics.Vol 1. The Eastern Traditions of Linguistics*. 25-60. London/New York: Longman.

Cargile, A.C., H. Giles, E.B. Ryan and J.J. Bradac 1994. Language attitudes as a social process: a conceptual model and new directions. *Language & Communication* 14 (3), 221-236.

Cassell,E. 2007. *Understanding Community Linguistic Diversity : An Ecological approach to Examining language use patterns of International Graduate Students*. PHD. Diss. Purdue University. Indiana.

Chomsky, Noam. 2000. New Horizons in the Study of Language and Mind. Cambridge, England: Cambridge University Press.

Corina, David, Bellugi, Ursula, Kritchevsky, M., O'Grady-Batch, L., Norman, F. 1990.Spatial relations in signed vs. spoken language: Clues to right parietal functions. A paper presented at *the Academy of Aphasia*, Baltimore.

Croneberg, C. 1965. The linguistic community. In W. Stokoe, D. Casterline, & C. Croneberg (Eds.), *A dictionary of American sign language*. Washington, D.C.: Gallaudet College Press.

Cross, Jeannie. 1977. "Towards a Standard Sign Language for India," *Gallaudet Today*, vol.8no.1

Cruse, D.A. 2000. Meaning in Language: An introduction. Oxford: Oxford University Press.

Culshaw, Murray. 1983. It *will soon be dark…The situation of the disabled in India*. New Delhi: Lithouse Publications.

Cummins J. 1981. *The role of primary language development in promoting educational success For language minority students.* In:California State Department of Education ed. Schooling And Language minority students: A theoretical framework. Los Angeles: Evaluation, Dissemination and Assessment Center, California State University.

DeMatteo, Asa. 1977. Visual imagery and visual analogues in American Sign Language. In Lynn Friedman (ed.), *On the Other Hand: New Perspectives on American Sign Language*. 109-136. New York/San Francisco/London: Academic Press.

Deshmukh, Dilip. 1996. *Sign Language and Bilingualism in Deaf Education*.(Ichalkaranji :Ranjan Deshmukh).

Dotter,Franz .2006. 'Soft' standardisation of sign languages?. Alpen-Adria-University Klagenfurt.

Durant, Alessendro. 2009. *Linguistic Anthropology A reader*. Blackwell publishing ltd. USA.

Edwards, J.R. 1985. *Language, Society and Identity*. Oxford: Blackwell.

Edwards, John. 1994. Multilingualism. London & New York: Routledge, *'Language attitude'*, 97-102).

Eiser, R.J. 1986. *Social psychology. Attitudes, cognition and social behaviour*. Cambridge: Cambridge University Press.

Emmorey, Karen. 1999. Do signers gesture? In L.S. Messing & Ruth Cambell (eds.), *Gesture, Speech, and Sign*. 133-159. New York: Oxford University Press.

Erting, C. 1978. Language policy and deaf ethnicity in the United States. *Sign Language Studies*.

Erting,C, Johnson,R, Smith,D & Snider,B. 1994. *The Deaf Way: Perspectives from the International conference on Deaf culture*. Gallaudet University press. Washington.

Fasold, R. 1984. *The sociolinguistics of society*. Oxford: Basil Blackwell.

Fereidoni, J. 2010. *A Study on Multilingualism: A Domain Analysis Perspective.* Proceedings of the Second Summer School of Sociolinguistics. The University of Edinburgh.

Finkelstein, V. 1980. Attitudes and Disabled People: Issues for Discussion. New York: World

Fishaman,J.A. 1999. *Handbook of Language and Ethnic Identity*. Oxford University press. New York.

Fishaman,J.A. 2006 .Do not leave your language alone: “Hidden status agendas within corpus planning in language policy.New York University Lawrence associate publishers. London.

Fisher & Siple. 1990. “*Theoretical Issues in Sign Language Reasearch*”. Vol1: Linguistics. University of Chicago press. London.

Fishman, Herasimchuk, Eleanor. 1969. “*The Multiple prediction of phonological variables in a Bilingual speech community*”, American Anthropologist. 71: 4. 648-57.

Fishman, J. 1991. *Yiddish : Turning to Life*. John Benjamin publishing company. Philadelphia.

Fishman, J. A. 1967. Bilingualism with and without diglossia; diglossia with and without

Fishman, Joshua A. 1971. *The relationship between micro- and macrosociolinguistics in the study of who speaks what language to whom and when*, in: Joshua A. Fishman, Robert L. Cooper, and Roxana Ma et al. Bilingualism in the Barrio.

Fishman, Joshua A. 1972. Domains and the relationship between micro- and macrosociolinguistics. In: J. Gumperz and D. Hymes, eds. Directions in sociolinguistics. *The ethnography of speaking*. New York: Holt, Rinehart and Winston, 407-434 [originally 1971, several reprints].

Fishman,J. 1965. “The status and perspects of Bilingualism in the United States”, *The Modern Linguistic Journal*. 49 : 3. 143-55.

Fishman,J. 1965. “*Who speaks what language to whom and when*?”. La Linguistique.

Fishman,J. 1968. *Readings in the Sociology of Language.* The Hague: Mouton publisher. Germany

Fishman,J. Cobarraubias (Ed.) . et al. 1983. *Progress in Language Planning*: Contribution to Sociology of Language. Mouton publisher. Germany.

Fishman,J.A.(2001). *Can threatened languages be saved? Reversing Language shift Revisted*: A 21st century Perspective. Multilingual matters Ltd. U.K.

Gaillard,H. 2002. Gaillard in Deaf America *: A Portrait of the Deaf Community*, 1917. Buchanan (Ed.). Sayer,W (Trans.) Gaullaudet University press. Washington,D.C.

Gallaudet University (2005). Collection of International Congress on the Education of the Deaf, 1963. Gallaudet University Deaf Collections and Archives. Retrieved June 1, 2016.

Gardner, R.C. 1985. *Social psychology and second language learning: the role of attitudes and motivation*. London: Edward Arnold.

Giles, H. and N. Coupland 1991. *Language: contexts and consequences*. Milton Keynes: Open University Press.

Giles, Howard, Miles Hewstone, and Peter Ball. 1983. ``Language attitudes in multilingual settings: prologue with priorities." *Journal of multilingual and multicultural development 4*, 2&3, 81-96.

Goldin-Meadow, Susan. 1999. When does gesture become language? *A study of gesture used as a primary communication system by deaf children of hearing parents*. In Kathleen R. Gibson, et al. (eds.), Tools, Language and Cognition in Human Evolution. 63-85. Cambridge, England UK: Cambridge University Press. Rehabilitation Fund.

Gopalakrishnan,V. 1998. Sign Language: A deaf person's hope and vision for the future. In: P. Immanuel, et al. (eds.), *Listening to Sounds and Signs*. Bangalore: Books for Change.

Greenfield, Lawrence and Joshua A. Fishman 1971. Situational measures of normative languageviews of person, place and topic among Puerto Rican bilinguals, in: Joshua A. Fishman,

Gray, Charlotte. (2006). *Reluctant Genius: Alexander Graham Bell and the Passion for Invention*. New York: Arcade Publishing.

Groce, N. E. 1985. *Everyone Here Spoke Sign Language: Hereditary Deafness on Martha's Vineyard.* Cambridge: Harvard University Press.

H.Hartmut.(2005). *Domains and domain loss*. Department of language and culture. Roskilde University. Denmark.

H.Hartmut.(2005). *Domains and domain loss*. Department of language and culture. University of Roskilde. ISBN 87-7349-651-0. 227-237. Denmark.

Hasseler. 2008. *Studies in the History of the Language Science: History of Linguistics*. John Benjamins publishing company. Philadelphia.

Hockett, Charles F (1960) The Origin of Speech, Scientific American 203, 88–111 Reprinted in: Wang, William S-Y. (1982) Human Communication: Language and Its Psychobiological Bases, Scientific American.

Humphries,T.1977. *Communicating across cultures: Deaf/hearing and language Learning*. Ph.D. Diss. Union Graduate School, Cincinnati.

Hymes, D. 1968. The ethnology of speaking. In J. Fishman (Ed.), *Readings in sociology of language.* The Hague: Mouton.

Indian Sign Language Dictionary. 2001. Coimbatore: Sri Ramakrishna Mission Vidyalaya Printing Press.

International Covenant on Civil and Political Rights (1966): (United Nations).National Policy on Education (1968): (New Delhi: Ministry of Human Resource Development, Government of India).

Jasper.J, Ostman.J &Verschueren.J. 2010. *Society and Language Use: Pragmatics Highlight*. Jon Benjamin publication. USA.

Jena: Eugen Diederichs Simonsen, Dag F. 2002. Å velge bort norsk. Om begrepene 'domene' og 'domenetap' anvendt på skandinaviske land. Norsklæreren 2.

Jepson J. 1991. *Some aspects of the deaf experience in India. Sign Language Studies*. AYJNIHH and Zeshan, U. 2001. *Basic Course in Indian Sign Language (6hrs. VHS/VCD video & workbook)*. Mumbai: Ali Yavar Jung National Institute for the Hearing Handicapped (Ministry of Social Justice and Empowerment, Government of India).

Jepson, Jill. 1991. "Urban and Rural Sign Language in India, "in *Language and Society 20.*

Jepson, Jill. 1991c. *Some aspects of deaf experience in India*. Sign Language Studies 20.73: 453-459.

Johnson, Jane E. and Johnson,Russell J. 2008. *Assessment of Regional Language Varieties in Indian Sign Language.* SIL International.

Johnson, Russell J and Johnson, Jane E. 2014. Distinction between West Bengal Sign Language and Indian Sign Language Based on Statistical Assessment: *Sign Language Studies*, Vol. 16, No. 4 (Summer 2016), pp. 473-499. Gallaudet University Press.

Kidwai,Ayesha. 2012. *The SLL & CS Research Handbook*. Jaharlal Nehru University. A SLL & CS Publication. New Delhi.

Laurén,C. Myking,J & Picht,H. 2002. *Language and domains: a proposal for a domain Dynamics Taxonomy*. ISSN. 1601-1929. Published in LSP & Professional Communication. Vol 2. LSP Centre. Sandler,W. Padden,C & Aronoff,M. In M. Marschark & P. E. Spencer (eds.): *Oxford Handbook of Deaf Studies, Language, and Education,* Volume 2. Oxford: Oxford University Press.

Liddell, Scott K. 2003. *Grammar, gesture, and meaning in American Sign Language*. Cambridge: Cambridge University Press.

Lucas, C. 1989.The sociolinguistics of the deaf community. Academia press, INC. USA.

Lucas, C. 2002. *Language and the Law in Deaf communities. Gallaudet University press.* Washington,D.C.

Lucas,C and Bayley,R. 2001. The Importance of Variation Research for Deaf Communities: Volume 7 Issue 3 Papers from NWAV 29. University of Pennsylvania.

Lucas,C. 2002 .*Turn taking,fingerspelling and contact in signed language*.Gallaudet university press. Washington, D.C.

Maher, Jane. 1996. *Seeing Language in Sign: The Work of William C. Stokoe*. Washington DC: Gallaudet University Press.

Markowicz, H. & Woodward, J. 1978. Language and the maintenance of ethnic boundaries in the Deaf community. Communication and Cognition.

Markowicz, H. 1972. Some sociolinguistic considerations of American sign language. *Sign Language Studies*.

Masica, Colin (1991), *The Indo-Aryan Languages*, Cambridge: Cambridge University Press.

McKee, D., McKee, R., & Major, G. 2011. Numeral variation in New Zealand Sign Language. *Sign Language Studies.*

McKee, R., Schembri, A., McKee, D., & Johnston, T. (2011). Variable subject expression in Australian Sign Language and New Zealand Sign Language. *Language Variation and Change.*

Meadow, K. P. 1972. Sociolinguistics, sign language, and the deaf subculture. InT. J. O'Rourke (Ed.),*Psycholinguistics and total communication*: *The state of the art*. Washington, D.C.:American Annals of the Deaf.

Miles M. (2000). *Studying responses to disability in South Asian history: approaches personal prakrital and pragmatical*. Disability and Society.

Narang, Vaishna. 2004. *Sign language: Issues and challenges Ahead*. JSL, Spring 2004: 47-157.

Napier,J. (2002). The D/deaf—H/hearing Debate. *Sign Language Studies.* Vol. 2, No. 2 (Winter 2002), pp. 141-149 (9 pages*).* Gallaudet University Press.

Omoniyi,T & Fishman.J.A.(2006).*Exploration in the sociology of language and religion*. Benjamin Publishers. Philadelphia.

Ostman, J. 1981. *You know: A Discourse Functional Approach*. University of Finland and Berkely. John Benjamin publication. Amsterdam.

Padden, C. & Markowicz, H. 1975. Cultural conflicts between hearing and deaf communities. In Proceedings of the seventh world congress of the world federation of the deaf. Silver Spring, Md.: National Association of the Deaf.

Padden, C.1980. The deaf community and the culture of deaf people. In. C. Baker & R. Battison (ed.), *Sign Language and the Deaf Community: Essays in honor of William C. Stokoe.* Silver Spring MD: NAD. 186-203.

Polish, L. 2002. The Emmergence of Deaf Community in Nicaragua "*With Sign Language you can Learn so much*. Gallaudet University press. Washington,D.C.

Pandit, P. B. (1977) Language in a Plural Society, the Case of India. Delhi University Press, New Delhi.

Programme of Action (1992): (New Delhi: Ministry of Human Resource Development, Government of India). United Nations Convention for Rights of Persons with Disabilities (2006): (United Nations).

Pust,C.P & Morales,L. 2008 .Sign Bilingualism: "*Language development,interaction and maintenance in sign language contact situation*".Benjamin Publications. Philadelphia.

Quinto,D. 2007 . Lucan. C (ed) . *Sign language in Contact*. Gallaudet University press. Washington, D.C.

Ramsey, C. 1989. Language planning in deaf education. In C. Lucas (Ed.*), The sociolinguistics of the deaf community* (pp. 123-146). New York: Academic Press.

Reagan, T. 1992. The deaf as a linguistic minority: Educational considerations. Reprinted in T. Hehir & T. Latus (Eds.), Special education at the century's end: *Evolution of theory and practice since 1970* . Cambridge, MA: Harvard Educational Review.

Reagan, Timothy. 1995. A Sociocultural understanding of Deafness: American Sign Language and the Culture of Deaf people. *International Journal of Intercultural Religion*.19/2. 239-251.

Robert L. Cooper, Roxana Ma et al. *Bilingualism in the Barrio*. Bloomington, Indiana: Indiana University and The Hague: Mouton. 233-253. (Indiana University Publications, Language Science Monographs, 7).

Ryan, E.B., H. Giles and M. Hewstone 1988. The measurement of language attitudes. In U. Ammon, N. Dittmar and K.J. Mattheir (eds.*), Sociolinguistics: an international handbook of the science of language and society* 2. Berlin: Walter de Gruyter, 1068-1081.

Ryan, E.B., H. Giles and R.J. Sebastian 1982. An integrative perspective for the study of attitudes toward language variation. In E.B. Ryan and H. Giles (eds.*), Attitudes towards Language Variation. Social and Applied Contexts*. London: Edward Arnold, 1-19.

Sacks, Oliver. Seeing Voices--A Journey into The World Of The Deaf. Los Angeles: University of California Press, 1990.

Samarin, William J. "Demythologizing Plains Indian Sign Language History." International Journal of American Linguistics. Chicago: University of Chicago Press, Jan. 1987.

Sandler, Wendy & Lillo-Martin, Diane. 2001. Natural Sign Languages. In M.Aronoff & Rees-Miller (eds.), *Handbook of Linguistics*. 533-562. Oxford: Blackwell.

Schein, Jerome D. Speaking the Language of Sign. Garden City, N.Y.: Doubleday and Co., Inc., 1984.

Schembri, A., & Johnston, T. 2007. Sociolinguistic variation in the use of fingerspelling in Australian Sign Language (Auslan): A pilot study. Sign Language Studies 7: 319–47.

Schembri, A., & Johnston, T. 2013. *Sociolinguistic Variation and Change in Sign Languages*. The Oxford Handbook of Sociolinguistics.

Schembri, A., McKee, D., McKee, R., Pivac, S., Johnston, T., & Goswell, D. 2009. Phonological variation and change in Australian and New Zealand sign languages: The location variable. Language Variation and Change 21: 193–231.

Schmidt-Rohr, Georg 1933. *Mutter Sprache – Vom Amt der Sprache bei der Volkwerdung*.

Seboek, William C. "Semiotics and Sign Language Research and Practice." Recent Developments in Theory and History. New York: The Semiotic Webb, 1991.

Seigel, Jules Paul. 1969. The enlightenment and the evolution of a language of signs in France and England. *Journal of History of Ideas* 30.1: 96-115.

Sharma, Onkar. 1995. Sign language - controversy - status. *All India Federation of the Deaf Newsletter* Dec. 1995. 2. New Delhi.

Sinha, Samar & Richa. 2006. The Manner of incorporation of incorporation of manner in Indian Sign Language. A paper presented at the *First SCONLI*, CIEFL, Hyderabad.

Sinha, Samar. 2003. *A Skeletal Grammar of Indian Sign Language*. Unpublished M.Phil. Diss., Jawaharlal Nehru University, New Delhi, India.

Sinha, Samar. 2006. *Towards Empowering Indian Sign Language*. A paper presented at 28th All India Conference of Linguists, Banaras Hindu University, Varanasi, India.

Sinha,Samar. 2012. A. *Grammar of Indian Sign Language*. PHD (Dissertation). Jawaharlal Nehru University. New Delhi.

Spolsky,B.(2006).*Towards the theory of language policy*.Bar Ilan University. 22/1: 1-14, 2007.

Stokoe & Marschak. 1999. Signs, gestures, and signs. In L.S. Messing & Ruth Cambell (eds.), *Gesture, Speech, and Sign*. 161-181. New York: Oxford University Press.

Stokoe, W. (Ed.). 1980. Sign and culture: *A reader for students of American Sign Language.* Silver Spring, MD: Linstok Press.

Stokoe, W. C, Casterline, D. C, & Croneberg, C. G. 1965. *A dictionary of American sign language*. Washington, D.C.: Gallaudet College Press.

Stokoe, W. C.1969. *Sign language diglossia*. Studies in Linguistics.

Stokoe, William C. 1960. *Sign Language Structure: An outline of the visual communication system of the American deaf.* Studies in Linguistics, Occasional Papers 8. New York: University of Buffalo.

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 (1996): in the Extraordinary Gazette of India (New Delhi: Ministry of Law and Justice and Company Affairs, Government of India).

Tomaszewski, P. 2001. *Sign language development in young Deaf Children*. Institute of Deaf. Pl. Trzech Krzy¿y 4/6, 00-499 Warszawa. Poland.

Valli, C., & Lucas, C. 1992. *Linguistics of American Sign Language: A resource text for ASL users.* Washington, DC: Gallaudet University Press.

Van Cleve, J. V., & Crouch, B. A.1989. *A place of their own: Creating the deaf community in America.* Washington, D.C: Gallaudet University Press.

Vashishtha, Madan. 2006. *Deaf in Delhi: A Memoir*. Gaulladet University press.Washington, D.C.

Vasishta M, Woodward J,and Wilson K.L. 1978. *Sign language in India: regional variation Within the deaf population*. Indian Journal of Applied Linguistics.

Vasishta M., Woodward J, De Santis S. 1981. An Introduction to Indian Sign Language: *Focus On Delhi. New Delhi*: All India Federation of the Deaf.

Vasishta, Madan & Meher Sethna. 1994. Clubs for deaf people in India. In Carol J. Erting, et al. (eds.), *The Deaf Way: Perspectives from the International Conference on Deaf Culture.* 532-4. Washington, DC: Gallaudet University Press.

Vasishta, Madan, Woodward, James & deSantis, Susan. 1986. *An Introduction to the Bombay Variety of Indian Sign Language.* Washington, D.C.: Gallaudet University Press (Gallaudet Research Institute Monograph, No. 4).

Vasishta, Madan, Woodward, James & deSantis, Susan. 1987. *An Introduction to the Calcutta Variety of Indian Sign Language.* Washington, D.C.: Gallaudet University Press (Gallaudet Research Institute Monograph, No. 4).

Vasishta, Madan, Woodward, James & deSantis, Susan. 1987b. Indian Sign Language. In J. V. van Cleve (ed.), *Gallaudet Encyclopedia of Deaf People and Deafness* 3. 79-81. New York: McGraw-Hill Book Company.

Vasta, Rajendra Singh. 1972. History of the education and training of the Deaf-Mutes in India 1884-1915. *Teacher Education* 6.4: 23-36.

Vohra, Roopa. 1998. "Institutional Services for the Speech and Hearing Impaired Person in India. "*Disabilities and Impairement*". Delhi. Akshat.

Von. H, Ammon.V, Dittmar. N, Matheier.K &Trudgill. 2005. Sociolinguistics/ Soziolinguistik : *An International Handbook of the Science of the Language and Society*. Vol.2. Germany.

Wallang, Melissa G. 2014. *Introduction to Sign Language: The Visual Dictionary* Lakshi Publishers & Distributors, New Delhi.

Wallang, Melissa G. 2015. The Making of the Shillong Sign Language Multimedia Lexicon (ShSL MML). *Sign Language Studies*, Vol. 15, No. 3 (Spring 2015), pp. 296-321: Gallaudet University Press.

Woodward, J. 1972.Implications for sociolinguistic research among the deaf. *Sign Language Studies.* 1: 1-7.

Woodward, J. 1978. Historical bases of American sign language. In P. Siple (Ed.), *Understanding language through sign language research*. New York: Academic Press.

Woodward, J. 1993. The Relationship of Sign Language Varieties in India, Pakistan, & Nepal. *Sign Language Studies*.

Zeshan, U. 2002. Towards a notion of 'word' in sign languages. In Dixon, R.M.W. & A.Y. Aikhenvald (eds.), *Word. A cross-linguistic typology*. 153-179. Cambridge: Cambridge University Press.

Zeshan, Ulrike. 2000. *Sign Language in Indo-Pakistan: A Description of a Signed Language*. Philadelphia/Amsterdam: John Benjamins Publishing Company.

Zeshan, Ulrike. 2001. Mouthing in Indopakistani Sign Language: Regularities and variation. In P. Boyes-Braem & R. Sutton-Spence (eds.), *The Hand is the Mouth: The Mouth as Articulator in Sign Language*. Hamburg: Signum.

Zeshan, Ulrike. 2003. 'Classificatory' constructions in Indo-Pakistani Sign Language: Grammaticalization and lexicalisation processes. In K. Emmorey (ed.), *Perspectives on Classifier Constructions in Sign Languages*. 113-141. Mahwah, New Jersey & London: Lawrence Erlbaum Associates.

Zeshan, Ulrike. 2003. Indo-Pakistani Sign Language Grammar: A typological outline. Sign Language Studies 3.2: 157-212.

Zeshan.Ulrike, Vashistha.M & Sethna.M. 2005. Implementation of Sign Language in Educational Settings. *Asia Pacific Disability Rehabilitation Journal.* 6. 16: 1 2005.