Phonological Parameters in Nepali Sign Language

A Dissertation Submitted to the Central Department of Linguistics,
Faculties of Humanities and Social Sciences, Tribhuvan University
In Partial fulfillment of the Requirements for the
Master's Degree in Linguistics

By

Sharada Sapkota

Exam RollNo.:418

T.U.Regd.No.:6-1-2-534-2002

CentralDepartmentofLinguistics
Kathmandu,Nepal
2023

LETTER OF RECOMMENDATION

This is to certify that Ms. Sharada Sapkota has completed this dissertation on the topic

Phonological Parameters in Nepali Sign Language under my guidance and supervision. I

recommend this dissertation for evaluation.

Dr. Bhim Lal Gautam

Supervisor

Date: 12/07/2023

i

LETTER OF APPROVAL

| This is to certify that Phonological Parameters in Nepali Sign Language , a dissertation | | |
|---|--|--|
| submitted by Ms. Sharada Sapkota in partial fulfillment of the requirements for the Master's | | |
| degree in Linguistics has been duly approved for acceptance. | | |
| | | |
| | | |
| | | |
| Dr. Bhim Lal Gautam | | |
| Dissertation Supervisor | | |
| | | |
| | | |
| | | |
| | | |
| Prof. Dr. Madhav Prasad Pokhrel | | |
| External Examiner | | |
| | | |
| | | |
| | | |
| Prof. Dr. Balaram Prasain | | |
| | | |
| Head of the Department | | |
| | | |
| | | |
| Date: 18/07/2023 | | |

ACKNOWLEDGEMENTS

I express my sincere gratitude to Dr. Bhim Lal Gautam, my dissertation supervisor, who in the beginning inspired and encouraged me for admitting to the field of linguistics and Nepali sign language. Not only this, heprovided me with the appropriate resource material in sign language linguistics, especially in sign language phonetics and phonology, and continuouslyhelped me to correct, modify and present the study in rigorous way.

I would like to express my thanks to the head of the Central Department of Linguistics, Prof.Dr.Balaram Prasainwho taught me phonology and encouraged me to observe Nepali sign languagephonologically. Further, I express my thanks to Dr. Krishna Prasad Chalise who taught me phonetics, and inspired me to do research in it. Besides, I am grateful to Mr. Bhim Narayan Regmi who always supported me during this research and providednecessary feedback and suggestions as an internal examiner. I also express my thanks to the teachers, staff, and librarian at the Department forhelping me in kind and encouraging way.

I express my thanks to National Association of the Deaf and Hard of Hearing (NADH), National Federation of the Deaf Nepal (NDFN), Mrs Laxmi Devkota, Deaf friends, interpreters, who helped to collect Nepali sign languagedata and required resources of sign language. I express my special thanks to Dr. Mike W Morgan who provided me seminal resources regarding sign language in general and Nepali sign language in particular. Additionally, I express my thanks to Dr. Samar Sinha, who helped me to select appropriate topic for this research and provided me significant materials regarding sign language. I am grateful to Ms. Anisha Tamang, and Mr. Khomraj Sharma, who are the subjects and were recorded for the study. I express my thanks to them for their patience and help while recording.

Finally, I want to express my gratitude to My mother Sabitra Sapkota, brother Pawan Sapkota, most importantly my sister Shanta Sapkota, and my friend Mr Suraj KC, without their support I could not complete this research.

Sharada Sapkota

ABSTRACT

This research presents the phonological parameters of Nepali sign language (NSL), such as, handshapes, place of articulations, orientations, movements, and non-manual characteristics. Based on A Prosodic Model of Sign Language Phonology (Brentari 1998), this study organized features of NSL into two types namely, inherent features, and prosodic features. The inherent features remain unchanged whereas the prosodic features can change constantly during sign production. In this study, both primary and secondary sources have been used for data collection. For primary source, the researcher recorded the conversation of NSL native signers, whereas the available dictionaries, texts, videos, and research papers on NSL have been used as the secondary sources. The HamNoSys i.e. Hamburg Notation System has been used in this study in order to transcribe sign data. The present study discovered 62 different handshapes in NSL among which 44 are from manual alphabet. Additionally, 22 handshapes detected as basic handshapes. NSL signs are articulated from the four major regions of the body such as, head, arm, body, and hand. However, there are signs in NSL that are articulated from over the head, behind the ear, and below the waist. Furthermore, based on palms or knuckles facing directions, there are six hand orientations found in NSL such as, upward, downward, leftward, rightward, forward, and backward. All these six orientations are found in NSL for palms and only five are found for knuckles. Besides, this study identified 35 hand movements in NSL. Likewise, non-manual features in NSL have been divided into seven categories.

TABLE OF CONTENTS

| Letter of Recommendation | i |
|-----------------------------------|-------|
| Letter of Approval | ii |
| Acknowledgements | iii |
| Abstract | iv |
| Table of Contents | V |
| List of Abbreviations | vii |
| CHAPTER ONE: INTRODUCTION | 1-9 |
| 1. Background | 1 |
| 1.1 Phonological representation | 2 |
| 1.1.1 NSL phonological components | 2 |
| 1.1.2 Overall model | 2 |
| 1.1.3 Three-dimensional space | 4 |
| 1.2 Statement of problem | 4 |
| 1.3 Objectives of the study | 5 |
| 1.4 Review of literature | 5 |
| 1.5 Methodology | 7 |
| 1.5.1 Source of data | 7 |
| 1.5.2 Tools for data collection | 8 |
| 1.5.3 Analysis of the data | 8 |
| 1.6 Significance of the study | 8 |
| 1.7 Limitation of the study | 9 |
| 1.8 Organization of the study | 9 |
| CHAPTER:2 Inherent Features | 10-33 |
| 2. Introduction | 10 |
| 2.1 Handshape | 11 |
| 2.2 Place of Articulation | 24 |
| 2.3 Orientation | 29 |
| 2.4 Summary | 33 |

| CHAPTER:3 Prosodic Features | 34-42 |
|---|-------|
| 3. Introduction | 34 |
| 3.1 Analysis of prosodic features tree | 36 |
| 3.1.1 Setting change | 36 |
| 3.1.2 Path | 36 |
| 3.1.3 Orientation change | 36 |
| 3.1.4 Aperture change | 38 |
| 3.2 NSL movement | 38 |
| 3.3 Non-manual characteristics | 40 |
| 3.4 Summary | 41 |
| CHAPTER:4 MINIMAL PAIRS AND CONSTRAINTS | 43-48 |
| 4.1 Minimal pairs | 43 |
| 4.2 Constraints on sign formation | 44 |
| 4.2.1 Movement symmetry condition | 45 |
| 4.3 Constraints on two-contact signs | 47 |
| 4.4 Summary | 48 |
| CHAPTER: 5 Summary and Conclusion | 49 |
| APPENDIX 1: NSL MANUAL ALPHABET: VOWELS | 51 |
| APPENDIX 2: NSL MANUAL ALPHABET: CONSONANTS | 52 |
| APPENDIX 3: NSL NUMBERS | 53 |
| APPENDIX 4: Minimal Pairs in terms of Orientation | 54 |
| APPENDIX 4: Minimal Pairs in terms of Movements | 55 |
| References | 57-59 |

LIST OF ABBREVIATIONS

A Articulator Sign Language

adj Adjacent

ASL American Sign Language

b Bent

c Compact d Distant

u Distant

 $\begin{array}{ccc} H_1 & & \text{Active Hand} \\ H_2 & & \text{Passive Hand} \end{array}$

HS Handshape

IF Inherent Features

Mov Movement

NM Non-manuals

NSL Nepali Sign Language

O Orientation

PF Prosodic Features

POA Place of Articulation

s Small

SL Sign Language

th Thumb x Extended

[Note: Abbreviations in small case have been adopted from Sinha (2012) and Wilber et al. (2006) in order to label the distinct handshapes of NSL.]