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## Sociolinguistics of Nepali sign language: Orientation and movement

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### **Abstract**

*This paper presents a sociolinguistic introduction to Nepali Sign Language (NSL), focusing on its non-verbal and sociocultural features, specifically orientations and movements. Both primary and secondary sources have been utilized for data collection in the development of this paper. The researcher recorded conversations with NSL native signers as the primary source, while dictionaries, texts, videos, and research papers on NSL were used as secondary sources. NSL signs are articulated using four major regions of the body: head, arm, body, and hand. However, there are also signs in NSL that are articulated from over the head, behind the ear, and below the waist. Furthermore, based on the direction in which palms or knuckles face, there are six hand orientations found in NSL: upward, downward, leftward, rightward, forward, and backward. All six orientations are present in NSL for palms, while only five are found for knuckles. This paper is expected to contribute to further research on sign language and linguistics in Nepal.*

**Keywords:** cultural features, movements, non-manual features, orientation, NSL.

### **INTRODUCTION**

Nepali sign language, like other sign languages of the world, is a language used by the Deaf people as their primary means of communication in Nepal. It was explored and emerged some years ago to break the language barrier within predominantly Nepali and other languages-speaking communities. It is considered that there are tentatively 500,000 Deaf people in Nepal including both late deaf individuals as well as those born Deaf and other pre-lingual deaf. However, among

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the large number of deaf people only 5,743 use sign language as their primary means of communication (CBS 2002). Similarly, the National Census 2011 recorded 79,307 people were deaf in Nepal, among them only 4,476 use sign language as a mother tongue. Census 2021 records 51,373 deaf people in Nepal, among them only 1,784 use sign language as a primary means of communication (NSO, 2023). Ethnologue (2012) states that there are other three different villages where sign languages are spoken/used differently than Nepali sign languages such as Jumla sign language, Ghandruk sign language, and Jhankot sign language.

Nepali sign language emerged formally in 1966 with the establishment of the first school for the Nepali Deaf people. At first, the school was located at Bir Hospital, Kathmandu which was inconvenient for Deaf individuals then the school was shifted to Naxal, Kathmandu which is still the place for the Kathmandu Deaf Association. Green (2014) says until 1988 from its establishment, the school adhered to the oral method to teach Deaf students. However, it seemed ineffective for Deaf people to express and understand everything via oral method. As a result, some conscious Deaf individuals understood the necessity of a proper form of a language to communicate and developed NSL signs to get rid of the communication barrier with other spoken communities. In this regard, Green (2014) further says that NSL emerged from the communicative interactions of the young and energetic Deaf individuals at Naxal Deaf School, who later established the Kathmandu Association of the Deaf (KAD) in 1980 which is the first association in Nepal conducted by the Deaf people. Eventually, after KAD, several other organizations were established that played a vital role in the development of NSL, i.e., the invention of new signs, NSL development, and its standardization. In that sense, the development of NSL (in terms of the time duration) can be divided into two stages. The establishment of the deaf school, attraction for signs, publication of NSL manuals and dictionaries, etc. began in the first stage (1966 to 1989), and broadcasting NSL news, playing dramas, making documentaries, conducting research, organizing seminars, publishing NSL manuals and dictionaries, and many more are seminal achievements of the second stage i.e., 1990 onwards (Sharma, 2003). The first NSL manual was published in 1967 and the first NSL dictionary was published in 1989 (Sharma, 2003). Like spoken languages, sign languages also have their language family. Woodward (1993) puts Nepali Sign Language within the South Asian sign language family similar to the Indo-Pakistani Sign Language. NSL now has gained a separate language recognition by the government and it has multiple sociocultural impacts in a multilingual country like Nepal.

## **METHODOLOGY AND DATA COLLECTION PROCEDURE**

In this study, both primary and secondary sources have been used for the data collection. For the primary source, the researcher has recorded the conversation of NSL native signers, the topics of the conversation have been suggested to guide the

deaf signer's discussion so that the most relaxed and spontaneous signing should be recorded for the analysis whereas, available dictionaries, texts, videos, and research papers on NSL have been used as the secondary sources. In the beginning, NSL dictionaries published by the National Association of the Deaf and Hard of Hearing (NADH), and the National Federation of the Deaf Nepal (NDFN) were required for this research. During the data collection, all the data have been scanned from both primary and secondary sources.

To explore the inventories presented here, the researchers discovered the total hand shapes from the NSL dictionaries and analyzed the short recorded signed conversation of the Deaf signers. Besides, the researchers analyzed all the signs from the NSL dictionaries (2003; 2004; 2015) for the primary data. Except for sociolinguistic observations, most of the parameters in this study are arranged chronologically as handshape, orientation, movement, and non-manual characters. Various other Sign language theories and studies have also been used to develop the paper.

### **Sociolinguistic features of NSL**

Sign language is a natural way of communication that is automatically used by the deaf community, unlike other spoken languages. NSL signs and features have been created and developed in Nepalese sociocultural situations. The internal and external politics of language is very important for the recognition and development of language (Gautam, 2022, Gautam & Giri, 2024). Besides some basic or natural signs, most of the signs are created by the influence of spoken language which is now common in NSL. For this reason, most of the deaf children are at least bilingual and multilingual. Multilingualism is a state where a speaker can communicate in two or more languages and deaf people are multilingual by birth as they have to communicate in multiple languages used by spoken people. For instance, a deaf child from hearing parents can automatically be able to communicate in sign and also able to understand spoken language i.e. the language of his/ her parents. This sort of practice is common across the globe and in Nepal as well when we observe Deaf people communicating with the speaking population. Furthermore, today's generation is advancing in terms of technology and globalization where education is empowering people from various perspectives. Thus, Deaf/deaf people have now access to various forms of technology as a result they are indirectly communicating with many people belonging to multiple languages and cultures around the globe. This is the reason that they get the opportunity to observe and learn the English language and other sign languages of the world such as international sign language (ISL) or world sign language (WSL), American Sign Language (ASL), Indian sign language, and so on. So, in today's scenario, most of the Deaf/deaf people in Nepal use two or more than two sign languages which is evidence of their bilingualism/multilingualism competence. For

example, in Nepal, Deaf/deaf people use separate signs for  $d^h\lambda nj\lambda bad$ ,  $naam$ , and  $k^husi$  in Nepali sign language (NSL) and NSL signers also use 'Thank you', 'Name' and 'Happy' which are influenced by the English language because of contact and shift process (Gautam, 2020).

Like spoken languages, sign languages also have their varieties in terms of culture, ethnicity, geography, and so on. There are still communities where an unusually high proportion of deaf people results in sign language used by both deaf and hearing people (Lucas, 2004). Nepal is a culturally, ethnologically, and geographically diverse country as a result, one language may have several varieties based on those categories. One of the examples of the geographical variety of NSL is the Nepali sign language spoken in the different geographical regions containing various geographical as well as social, sign language varieties. *Ethnologue* (2012) claimed that there are three varieties of sign language used in Nepal namely, Jumla sign language, Ghandruk sign language, and Jhankot sign language besides Nepali sign language which is yet to study because no data and research has been done. However, few Nepali sign language experts and non-governmental organizations (NGOs) working for the Deaf/deaf community believe that there is no such kind of variety noticed in Nepal. Rather there are some differences in terms of word and their uses. Some observations indicate that the word  $k^hadza$  (snack) is signed differently outside the country than it is signed in Kathmandu. Likewise, the word  $mu\dot{d}\dot{d}\dot{a}$  (lawsuit) is signed differently in various parts of the country according to the personal communication with sign language interpreters in a common forum. Thus, from these examples, it is clear that there is no geographical or any type of varieties of Nepali sign language has been studied yet. In this context, it is necessary to have a detailed study of NSL to find out the peculiarities of different NSL varieties.

Another interesting aspect of Nepali sign language is the involvement of various cultural features. NSL has emerged with the sociocultural identity of Nepalese culture and Hindu religion. Many signs in NSL have been invented based on Nepalese culture and religion i.e. Hinduism. For example, the name of the months, dates, festivals, and many more used and practiced in NSL influence Hinduism. Similarly, food signs is another aspect that shows the relation between signs and culture. There are many signs in NSL to denote typical food made in special occasions such as ' $sel\ rot\ i$ ', ' $jomari$ ', ' $\ddot{t}\ddot{i}lko\ l\dot{a}d\dot{q}u$ ', and soon. Besides, some of the signs have Buddhist origin as well. There are some places such as  $baud^h\lambda na\dot{t}^h$ ,  $s^w\lambda jamb^hu$  and so on have been created based on Buddhism.

Nepali sign language has also developed many non-manual characteristics as a part of sociolinguistic study. In 1960, William Stokoe discussed the significance of non-manuals. He discovered that the negative headshakes might carry the grammatical information i.e. negation marker in sign languages independently.

Later on, many researchers like, also argue that the non-manual characteristics such as face, head, and body have a significant contribution to sign language linguistics (Wilbur et al. 2006). The non-manual characteristics found in the NSL sign described in the following table have been divided into seven categories such as, mouth shape, position of eyebrows, blink, head movements, head nods and head shakes, body movement, as well as body lean.

**Table 1**

*The non-manual characteristics of NSL*

<b>Non-manual Characteristics</b>	<b>Discovered Forms</b>
Mouth gesture	Mouthings Articulation imitation of Nepali words simultaneously while signing. of a whole Nepali word or partial articulation, simultaneously with a NSL sign Pursed lips, rounded lips, stretched mouth.
Eyebrows Position	Upward Downward
Head movement	Upward Downward Leftward Rightward
Head nod/shake	Once or twice
Movement of the body	Leftward Rightward
Body lean	Forward Back Right Left Left-right Shrugs

In addition, NSL has one handed fingerspelling system comparing to other sign languages across the world. The fingerspelling in NSL is used for code-switching i.e., to spell Nepali words, and for the development of new signs and the aspects of code-switching indicating that the impact of language contact is also prominent in NSL users (Gautam, 2021).

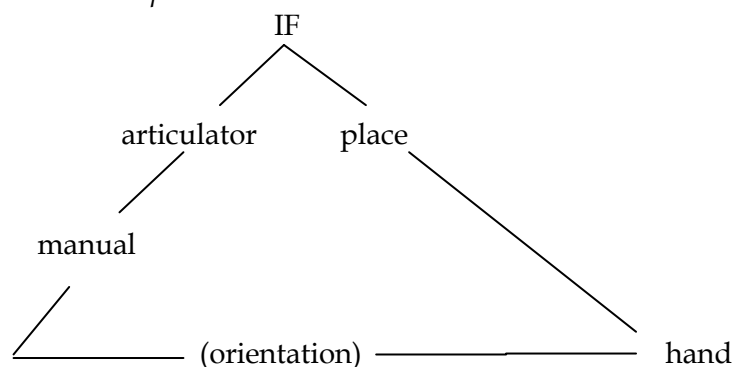
### **NSL Orientation**

Orientation is one of the important linguistic parameters in sign language studies. Within hand orientation, there are two types namely palm orientation and the fingertips or knuckles orientation. Basically orientation is traditionally regarded

as a minor parameter since there are fewer minimal pairs based on orientation alone where linguist like Brentari, Stokoe etc. do not consider orientation very important parameter like handshape and Parts of Speech (POA). For them, it is a feature within handshapes. However, because of its property of lexical contrast, Battison (1978) added orientation as an independent parameter of signs. In this way, both Stokoe and Battison analyze orientation based on the palm or the fingertips/ knuckles direction. However, Brentari (1998) has different view. She describes orientation in terms of the relationship between articulator and with POA. The following figure helps to understand Brentari's idea.

**Figure 1**

*Orientation as a two-place relation*

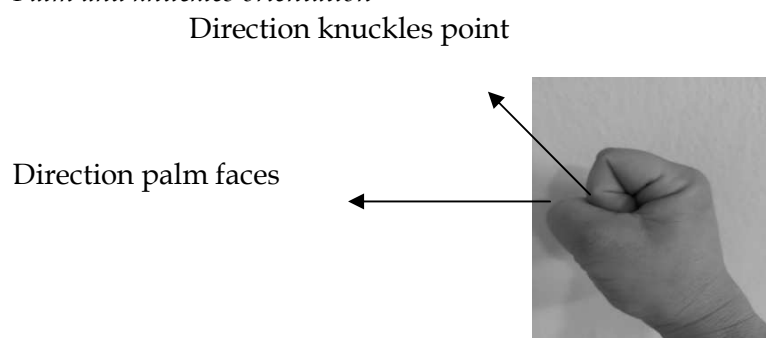


*Source: Brentari (1998, p.125)*

To this extent, the Prosodic Model of SL claims that the basic orientation refers to the relation between handpart and the place of articulation. In this regard, there are six possible orientations for both, the palm and the fingertip/ knuckle, such as, up, down, left, right, forward, and backward.

**Figure 2**

*Palm and knuckles orientation*



In NSL, signs can also be differed with respect to the palm or fingertips/ knuckles orientation. For instance, signs *may be* and *compare* have same handshape, location, and movement but they differ in terms of the palm orientation i.e. sign *may be* has palm up and the sign *compare* has palm down orientation, as a result, meaning of both signs differ with each other. Similarly, in the sign *fingerspelling*, all the fingers along with thumb oriented forward whereas, fingers oriented backward in the sign *autism*, and because of the orientation of the fingertips these signs have different meaning. Thus, the above examples demonstrate that the meaning of each sign varies on the basis of horizontal plane, a hand part specification and a movement feature ([direction] or [tracing]) (Brentari: 1998). The hand part specification comes from the eight divisions of the hand. It is chosen according to its parallel relationship with the higher part of the horizontal plane. Considering that fact, NSL signs involve many different handpart specifications during the production of signs. For example, NSL sign *b<sup>h</sup>agnu* 'run away' has hand part specified as palm, whereas the sign *muni* 'under' has hand part specified as back of the hand.

**Figure 3**

*Distinctive orientation: 'run away' palm down, 'under' palm up (NSL dictionary)*



*b<sup>h</sup>agnu* 'run away'

*muni* 'under'

The signs above have the specified handpart which is parallel to the higher surface of the horizontal plane. Besides, a plane of articulation (Wilbur et al. 2006) is also specified in the inherent features. Both of the NSL signs *run away* and *under* have path movement which specified in the Prosodic Features branch as having movement within the specified plane i.e. tracing, or movement perpendicular to the specified plane i.e. direction. Together these three specifications indicate the basic orientation of a sign, the plane of its articulation, and its movement's direction. The movement in both NSL signs i.e. *run away* and *under*, is identical to the specified plane which is also indistinguishable. However, this idea differs from Brentari only on the basis of specified handpart. By using the eight possible handparts as specifications, Brentari's analysis allows for more precise specification of orientation.

There are six basic orientations for hands on the basis of palms or knuckles facing directions, such as, upward, downward, leftward, rightward, forward, and backward. All these orientations are identified in NSL for palms, and only five are

found for knuckles. The backward palm orientation i.e. towards the signer, is the most recurrent palm orientation. Likewise, the regular knuckle orientation in NSL is forward i.e. away from the signer.

**Table 2**

*Orientation of Palm*

Palm Orientation	NSL gloss
Upward	<i>panidzʌhadz</i> 'ship'
Downward	<i>sʌʌnu</i> 'tolerate'
Leftward	<i>bʰʌndʌ</i> 'than'
Rightward	<i>pʌntsʰaunu</i> 'to remove'
Forward	<i>bʌndʌ gʌrnu</i> 'to close/ to shut'
Backward	<i>pʌdʰnu</i> 'to study'

**Table 3**

*Orientation of Knuckle*

Knuckle Orientation	NSL gloss
Upward	<i>sʌtsib</i> 'secretary'
Downward	<i>gʌrʌŋgo</i> 'heavy'
Leftward	<i>kam</i> 'work'
Rightward	-
Backward	<i>sʌmadz</i> 'society'

These different orientations show the different linguistic and sociolinguistic aspects of Nepali Sign Language in which sequentially inherent features are realized simultaneously.







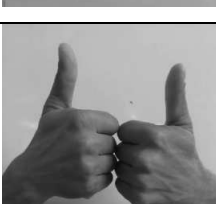
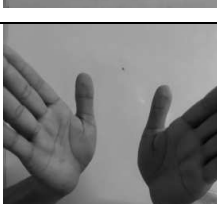


### **Orientation change**

According to Brentari (1998, p.96), orientation change is a type of movement, the features of which are expressed in the prosodic features branch of structure, they are: supination, pronation, flexion, extension, and abduction. All these movements contain a rotation system including the rotation of the palm or the rotation of the wrist. Supination movement refers to the movement where the palm rotates from down to up. Similarly, in pronation movement, the palm rotates from an up to down direction. Flexion is another movement in which the wrist rotates from straight to bent. Abduction is another movement where the palm or hand rotates from side to side.

**Table 4**

*Types of orientation change movement.*



Supination	<i>p<sup>h</sup>eri</i> 'again'		
Pronation	<i>b<sup>h</sup>ag</i> 'divide'		
Flection	<i>p<sup>h</sup>irṭa</i> 'return'		
Extension	<i>k<sup>h</sup>ulla</i> 'open'		
Abduction	<i>saṅkeṭ</i> 'sign'		

### Aperture change

The open or closed variants of handshapes specify aperture change. In IF, the fingers that are actually move are specified as 'selected fingers' which should move together as a set. In this way, when both index and middle fingers are specified as selected finger with aperture features open and closed, then both fingers tend to move together from open to closed position in IF. Thus, the specification of a movement is split into inherent features(IF) and prosodic features (PF)branches.

### NSL movements

From the analyzed data of NSL, 3 movements are found and recorded and are listed in Table 3.2 together with their glosses. There are different articulators for movements like, whole arm, the whole hand, or only the fingers which is the reason that many NSL signs contain more than one movement. Simple signs contain one movement whereas compound signs i.e. the combination of path and local movement contains two.

**Table 4**

*Movements in NSL*

<b>Movement</b>	<b>Sign gloss</b>
Upward	<i>dziʋan</i> 'life'
Downward	<i>bidzuli tsamkeko</i> 'lightning'
Upward-downward	<i>tsunab</i> 'election'
Upward- arc	<i>baɖ<sup>hi</sup></i> 'much/more'
Downward- arc	<i>muni</i> 'under'
Side to side long	<i>paɳi</i> 'also'
Side to side short	<i>daktar</i> 'doctor'
Side to side shake	<i>harijo</i> 'green'
<i>Diagonal</i>	<i>bahun</i> 'brahmin'
Towards the signer	<i>praɓ<sup>hab</sup></i> 'effect'
Apart from the signer	<i>sutana</i> 'information/notice'
Bent (at wrist)	<i>'aunu</i> 'come'
Alternating	<i>k<sup>h</sup>elnu</i> 'play'
Upward palm rotation	<i>maɖɖab</i> 'meaning'
Downward palm rotation	<i>ts<sup>h</sup>opnu</i> 'to cover'
180-degree rotation movement	<i>dɛɳb<sup>hari</sup></i> 'whole day'
360-degree rotation movement	<i>anuhar</i> 'face'
Getting near	<i>sambandɖ<sup>h</sup>a</i> 'relation'
Sending apart	<i>parpatsuke</i> 'divorce'
Grabbing	<i>adɖuwa</i> 'ginger'
Crossing	<i>dɛisa</i> 'direction'
Entering	<i>b<sup>hi</sup>ɖra</i> 'in'
Finger interlaces	<i>haru</i> 'plural marker'
Repeated finger interlace	<i>dɖ<sup>h</sup>erɳi</i> 'many'
Pointing	<i>tjo</i> 'that'
Wrist Pivot	<i>ts<sup>h</sup>ɳina<sup>no</sup></i>
Fluttering the fingers	<i>hidzdze</i> 'spelling'
All fingers open to close (touching tips)	<i>sabai</i> 'all'
Closed fist to fingers open and spread	<i>raɖɖ<sup>h</sup>ar</i> 'whole night'

Wavelike movement	<i>pʌhaq</i> 'mountain'
Bending finger/ Fingers at knuckle	<i>b<sup>h</sup>oli</i> 'tomorrow'
Hitting the hands together	<i>ɖʊrg<sup>h</sup>ʌtʌnʌ</i> 'accident'
Fast-forward (straight)	<i>sʌp<sup>h</sup>a</i> 'clean'
Slow-forward (straight)	<i>bis<sup>h</sup>ʌrʌi</i> 'slowly'

## CONCLUSION AND IMPLICATIONS

This paper presents the essential elements of Nepali sign language (NSL) and its sociolinguistic use in the Nepalese context. In comparison to other well-studied sign languages, NSL has basic parts of a sign such as handshape, place of articulation, orientation, and movements with various non-manual characteristics which are and can be used differently in various geographical and social contexts. During sign production, the inherent features (IF) remain unchanged whereas the prosodic features (PF) can be changed in different situations. Deaf people live in different societies that are dominated in every aspect by hearing people and their activities which ensures (assuming that deaf people in such societies are not isolated from each other and that sign languages can be established and flourish) that sign languages will certainly come in contact with spoken languages (Lucas, 2004)

Another important aspect of this study is the introduction and analysis of the structure and inherent features of NSL which show the major divisions like handshapes, movements, and place of articulation while communicating among the Deaf/deaf community. This small study discovered many NSL hand shapes, their uses, and orientations which are sociocultural influence. NSL signs are articulated from the four major regions of the body such as head, arm, body, and hand. Signs are articulated rarely from over the head, behind the ear, and below the waist across the globe (Sapkota, 2023). The basic hand orientations found in NSL based on the palms or knuckles facing directions are upward, downward, leftward, rightward, forward, and backward. All these six orientations are found in NSL for palms and only five are found for knuckles though there needs to be a serious sociolinguistic study of NSL with sufficient data. Similarly, there are different articulators for movements like the whole arm, the whole hand, or the fingers only which is the reason that many NSL signs contain more than one movement. Simple signs contain one movement and the compound signs i.e. the combination of path movement and local movement include two movements. In addition, the non-manual characteristics in NSL signs have been divided into seven categories such as, mouth shape, position of eyebrows, blink, head movements, head nods and head shakes, body movement, as well as body lean. To conclude, this small case study in NSL exploration and the identification of various sociolinguistic features helps to claim Nepali sign language (NSL) as an independent language and its sociolinguistic status within and beyond the deaf community in Nepal. Further, it opens the doors

for various other research on NSL phonetics, phonology, as well as on NSL grammar and its pedagogical implications.

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