

Bodo Nasal Sounds: An Acoustic Analysis

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ABSTRACT

Bodo is a Sino- Tibetan Language spoken primarily by the Bodo people of North-East India. It is an official language of the state of Assam and the Bodoland Territorial Region of India. Since 1975 the language has been written using Devanagari Script. The Bodo language has 16 consonants. There are three Nasal sounds found in Bodo language. These are /m,n,ng/. In this topic researcher is trying to analysis the acoustic value of nasal phoneme of Bodo language.

KEYWORDS: Acoustic analysis, Consonant, Nasal Sound, Phoneme

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1. INTRODUCTION

Bodo is a Sino- Tibetan Language spoken primarily by the Bodo people of North-East India. The Bodos are known by different names in some regions of Assam and its few adjacent areas. In this Brahmaputra valley, the Bodo native speakers identity themselves as Boro while the Hindu Asamiya Speakers and speakers of other linguistic communities address them as Kachari or Boro Kachari.

Since 1975 the language has been written using Devanagari Script. The Bodo language has 16 consonants. There are three nasal sounds found in Bodo language.. These are /m,n,ng/.

Nasal are the speech sounds in the production of which the velum is lowered, so that some air escapes through the nose during the production of the sound by the mouth. The nasal sounds used in the Bodo language are /m, n, ng/.

2. Aims and objectives

- Acoustic analysis of nasal sounds of the Bodo language.
- Wave image analysis of nasal sound. Just like

- A. Energy -Minimum energy
Maximum energy
Mean energy
- B. Pitch - Minimum pitch
Maximum pitch
- C. Frame length
Finding F1 and F2 value.

3. Literature Survey

Here, the selected thesis, books and articles are considered for the purpose of view Pratima Brahma, Ph.D. thesis “phonology and Morphology of Bodo and Dimasa: A comparative study (2013)”, here she discusses shortly about Bodo phonological and morphological structure.

Phukan Basumatary, he has published many books on language. Among them “ A Introduction to the Boro Language (2005)”, here he discusses descriptively about Bodo phonology.

Swarna Prabha Chainary, She has published many books on language and literature. Among them Boro Raothanthi(2006), Tibeto- Burman language of North-East India (2014), she discusses shortly about Bodo Language.

4. Methods

- In this research work Descriptive and Acoustic Analysis methods have been applied.
- The data for the proposed study has been collected from both primary and secondary sources.

For Primary data the researcher has visited different places of the Bodo Language speaking dominated areas.

Secondary data has been gathered from various sources like the Bodo texts, lexicons, Bodo Dictionary, monthly and annual magazines, journal etc.

5. Discussion

Acoustic analysis of Nasal sound /m, n, ng/

Phonetic Description

/m/- voiced bi- labial nasal

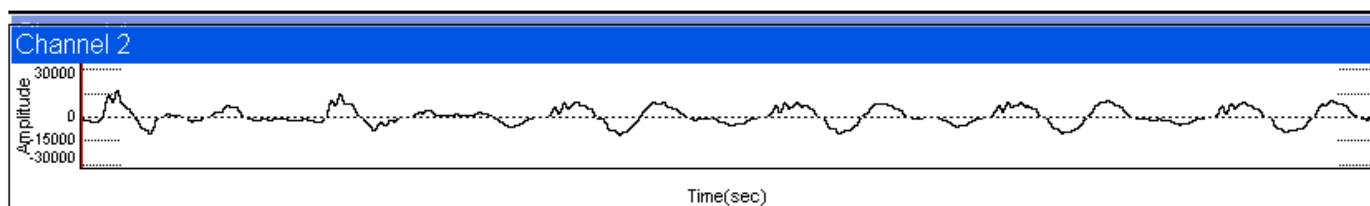
/n/- voiced alveolar nasal

/ng/- voiced velar nasal

/m,n,ng/ fricative phonemes have Initial, Medial and Final position of word. Example are as follows

	Initial	Medial	Final
/m/	ma(what)	zumai(wine)	kham(burn)
/n/	na(fish)	zunar(chest)	dain(eight)
/ng/	sanggrang(alert)	swng(ask)

Wave image analysis of Initial position of /m/ phoneme



Word 'ma'

/m/ image

Here, Results are –

A. Energy

Minimum energy 48.43dB

Maximum energy 66.71dB

Mean energy 53.55dB

B. Pitch

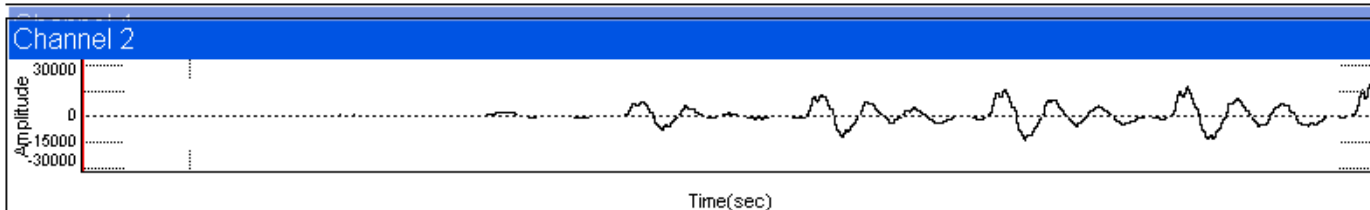
Minimum pitch (-)1.00Hz

Maximum pitch (-)1.00 Hz

C. Frame length 25 M.sec, mean Period 4.22 M.sec

D. Value of F1 =2110.62 F2 =3496.57

Wave image analysis of medial position of /n/ phoneme



Word 'na'

/n/ image

Here, Results are –

A. Energy

Minimum energy 72.02dB

Maximum energy 75.63dB

Mean energy 73.83db

B. Pitch

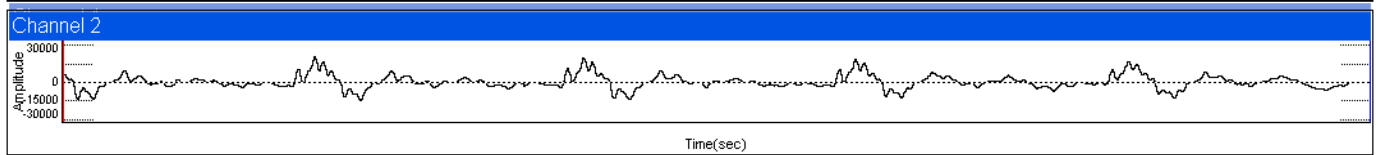
Minimum pitch 135.38Hz

Maximum pitch 135.38Hz

C. Frame length 25 Msec Mean period 7.39Msec

D. Value of F1 =1202.34 F2 =3588.71

Wave image analysis of final position of /ng/ phoneme



Word 'swng'

/ng / image

Here, Results are –

A. Energy

Minimum energy 47.65dB

Maximum energy 65.57dB

Mean energy 55.82dB

B. Pitch

Minimum pitch 133.56Hz

Maximum pitch 1206.39Hz

C. Frame length 25 M.sec mean period 5.82M.sec

Value of F1 =98.40 F2 = 2963.81

6. Conclusion

- /m/- voiced bi- labial nasal
- /n/- voiced alveolar nasal
- /ng/- voiced velar nasal.
- F1 value of /m/ 2110.62
- F1 value of /n/1202.34
- F1 value of /ng/98.40
- F2 value of /m/3496.57
- F2 value of /n/3588.71
- F2 value of /ng/2963.81

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