

## Bodo Tones (North- Central Dialect of Bodo): 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 3 tones. There are high, low and level tones. In this topic i am trying to analysis the acoustic value of tones of Bodo language.

**Keywords:** Acoustic analysis, tones, pitch, energy.

### 1. Introduction

Bodo is a Sino- Tibetan Language spoken primarily by the Bodo people of North- East India. The Boros 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 tones found in Bodo language.. These are high, low and level. But in standard form of Bodo there are two tones found.

### 2. Aims and Objectives

- Acoustic analysis of tones of the Bodo language.
- Wave image analysis of tones. Just like
  - a) Energy -Minimum energy  
Maximum energy Mean energy
  - b) Pitch - Minimum pitch  
Maximum pitch
  - c) Intensity.

### 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. Results and Discussion

Acoustic analysis of Tones Tones are the supra-segmental phonemes in North Central- Dialect of Bodo. There are three tones – High1, low2 and level3.

High tones	Low tones	Level tones
1	2	3

Tones: pitch and energy in initial, medial and final positions.

High tone:

Word- bar1(to jump)

Sentence : barnai aw gothwua dukhu mwngdwng (when jumping the boy got hurt)

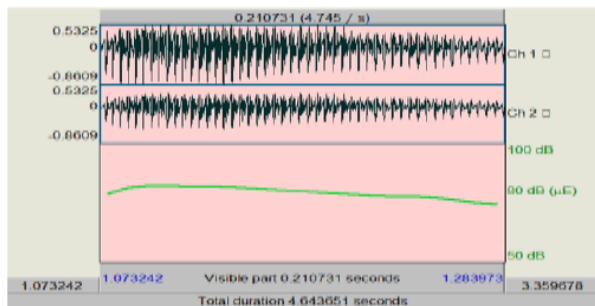
Wave image analysis of high tone

Word 'bar1'

High tone bar1 image

Here, Results are –

a) Energy

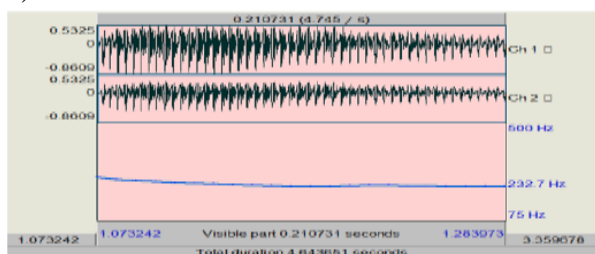


Minimum energy 74.87dB

Maximum energy 76.08dB

Mean energy 79.17dB

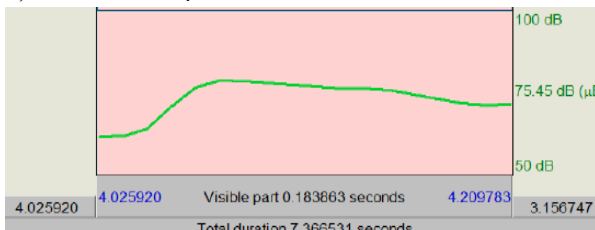
b) Pitch



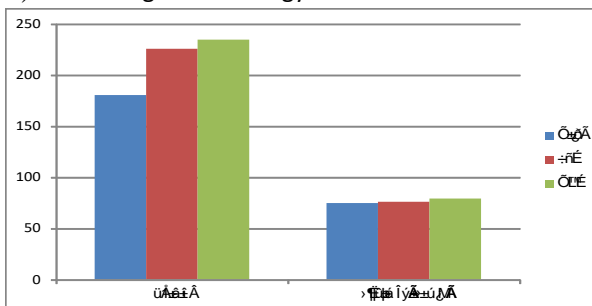
Minimum pitch 180.42Hz

Maximum pitch 234.54 Hz

c) Intensity



d) Diagram of Energy and Pitch Value



Low2 tone :

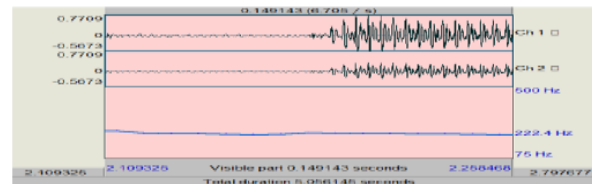
word: bar2(bloom)

sentence: barnai bibarkhw dacha (don't pluck the blooming flower)

Low tone bar2 image

Here, Results are –

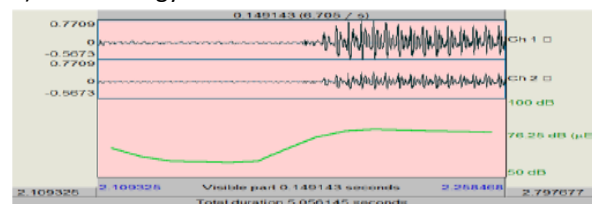
a) Pitch



Minimum pitch 145.35Hz

Maximum pitch 133.11 Hz

b) Energy

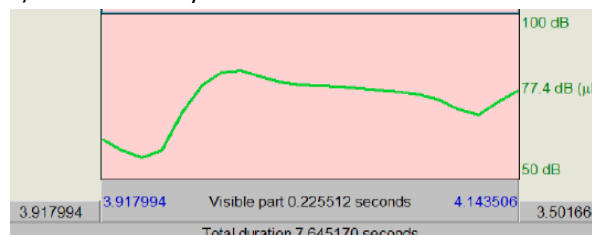


Minimum energy 59.08dB

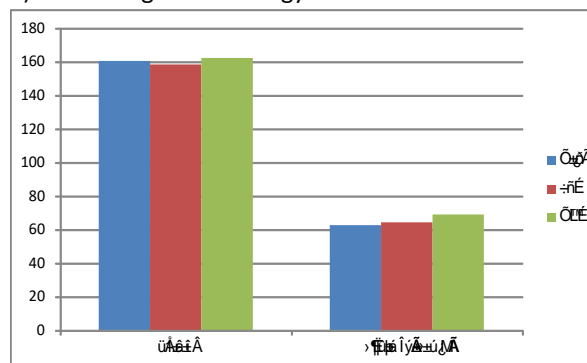
Maximum energy 56.54dB

Mean energy 62.32 dB

c) Intensity



a) Diagram of Energy and Pitch Value



Level tone :

Word : bar3 (wind)

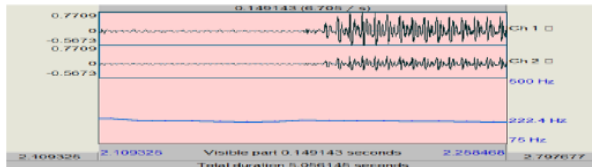
Sentence : bar bar dwng (wind is blowing)

Wave image analysis of level tone.

Word 'bar3'

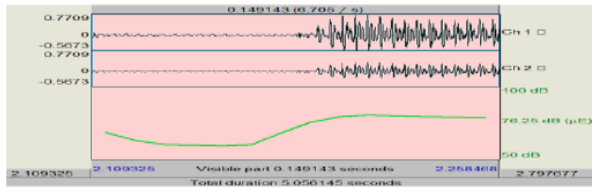
Here, Results are –

a) Pitch



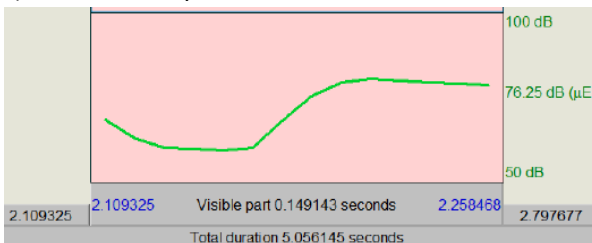
Minimum pitch 160.38Hz  
Maximum pitch 162.22Hz

b) Energy

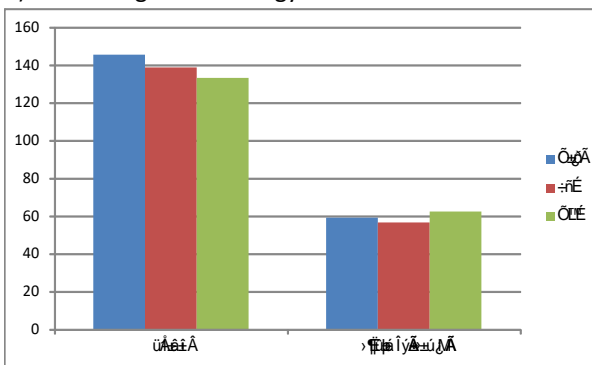


Minimum energy 62.55dB  
Maximum energy 64.25dB  
Mean energy 68.88db

c) Intensity



d) Diagram of Energy and Pitch Value



6. Conclusion

In this topic researcher fined the actual acoustic value of Bodo Tones –

Here are the Findings-

a) Acoustic value of High tone

Minimum energy 74.87dB  
Maximum energy 76.08dB  
Mean energy 79.17dB  
Minimum pitch 180.42Hz  
Maximum pitch 234.54 Hz

b) Acoustic value of Low tone

Minimum energy 59.08dB  
Maximum energy 56.54dB

Mean energy 62.32 dB  
Minimum pitch 145.35Hz  
c) Acoustic value of Level tone  
Minimum energy 62.55dB  
Maximum energy 64.25dB  
Mean energy 68.88db  
Minimum pitch 160.38Hz  
Maximum pitch 162.22Hz

Reference

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