

## On the Phonetics and Phonology of Focus marking in Boro

Shakuntala Mahanta, Kalyan Das and Amalesh Gope

Indian Institute of Technology Guwahati

{smahanta, d.kalyan, g.amalesh}@iitg.ernet.in

It has been discussed widely in the literature on tone and intonation that both these phenomenon make use of changes in the f0 (also perceived as pitch change). It is often assumed that intonation in tone languages is only slightly more limited than it is in non-tonal ones (Yip 2002). A second perspective proposes that intonation certainly exists as a phenomenon independent of tone in languages with elaborate omnisyllabic tone systems (Matisoff 1994). Owing to these widely divergent views, the precise division of labour between tone and intonation in tonal languages gains importance as a subject of enquiry. In this paper we address the question of tone assignment in Boro and investigate how it operates as a function of focus. Boro belongs to the Tibeto-Burman group of languages, and forms a branch along with Dimasa, Tiwa and Kokborok. Boro lexically distinguishes L and H tones and this tonal specification aligns to the rightmost syllable leading to a pattern of every non-derived lexical entry surfacing with only one tonal specification (Sarmah 2004). This paper studies both the phonetics and phonology of intonation in Boro to carefully delineate the ways in which the in-situ and morphological focus markers influence sentence prosody. Four speakers of Boro were asked to produce scripted sentences of the target words in a carrier frame. A series of question-answer patterns were designed so as to elicit broad focus and in-situ focus on the subject NP, object NP or on the Adverbial in the VP. The same question-answer pattern was repeated to elicit answers with the MF markers [sú/nú] attached to the target constituents to see the effect of MF markers which also indicate in-situ focus in Boro (Brahma 2012). F0 normalized pitch curves, pitch maximum, pitch minimum, average pitch and durational values of 20 tokens of each of the sentences (4 speakers x 5 iterations) were extracted with the aid of Prosody Pro (Xu 2013) in Praat. The results show that in-situ focus does not result in any change of the f0 value of the target word as shown in Figure 1. The only consistent acoustic correlate for focus marking is found to be post focus compression. The morphological focus marker leads to discrete downstepping of the following High tone and also emerges with an H\* by deleting the neighboring H tones as Figure 2 explains. One of the significant results of this experiment is that while H tones were realized at a higher f0 while co-occurring with the H\* of the MF marker, L tones did not lead to any changes unless the stem were disyllabic, showing that there are phonological factors constraining sentential prosody.

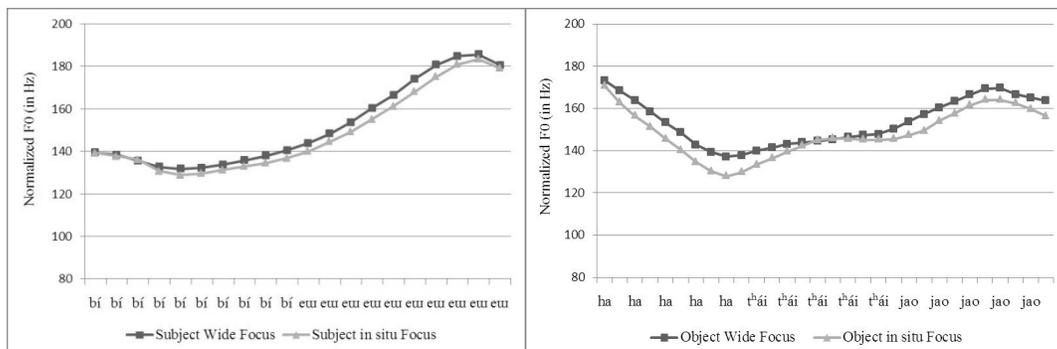


Figure 1: Time normalized mean f0 for the subject bieuú ‘he-NOM’ and hat<sup>h</sup>ájao ‘market-LOC’ in broad focus and in-situ focus condition when they feature in the sentence bieuú hat<sup>h</sup>ájao t<sup>h</sup>ánɡuun ‘he will go to market’ (tones are marked on their point of origin)

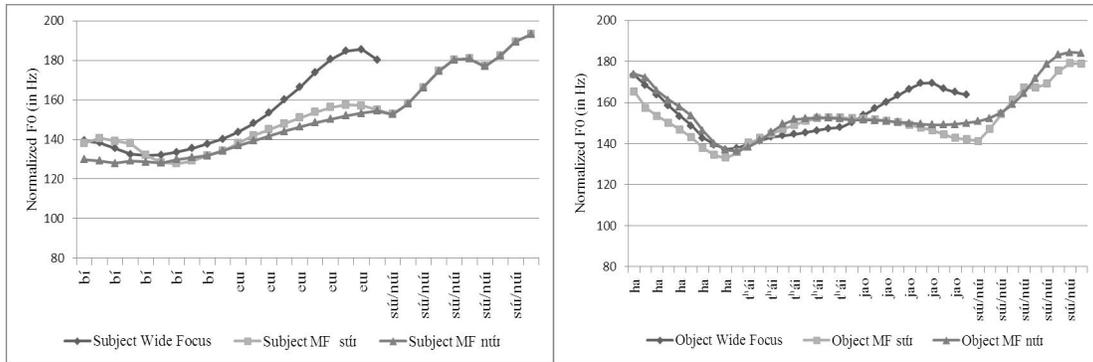


Figure 2: Time normalized mean f0 for the subject bieú-sú/nú ‘he-NOM-MF’ and hat<sup>h</sup>ájao-sú/nú ‘market-LOC-NOM’ in broad focus and in-situ focus condition when they feature in the sentence bieú-sú/nú hat<sup>h</sup>ájao-sú/nú t<sup>h</sup>áŋgum ‘he will go to market’.

References:

Brahma, Aleendra. 2012. *Modern Bado Grammar, Vol-1:Morphology:Bases and Affixes*. N L Publication: Guwahati.

Matisoff, James A. 1994. Tone, intonation, and sound symbolism in Lahu: loading the syllable canon. *Sound symbolism*: 115-129.

Sarmah, Priyankoo. 2004. *Some aspects of the tonal phonology of Bodo*. M Phil Dissertation, CIEFL, Hyderabad.

Yip, Moira. 2002. *Tone*. Cambridge University Press.