

Discrete and continuous-valued prosodic cues to prominence perception in Albanian



Enkeleida Kapia
IPS, LMU, Munich & ASA, Tirana
ekapia@bu.edu

Felicitas Kleber
IPS, LMU, Munich
kleber@phonetik.uni-muenchen.de

Alejna Brugos
Simmons University, Boston, MA, USA
abrugos@bu.edu



1. Introduction/Background

- Prominence as a perceptual phenomenon is influenced by many factors [1].
- Little is known about how these factors interact in communication [2,3].
- This study explores prominence/boundary perception in Albanian using RPT [4].
- Prominence in Albanian is marked both by the head (L^* for non-focused and $L+H^*$ for focused items) and the edge of the phrase, which is either an accentual (Ha , La) or an intonation phrase [$5,6$].
- Some morpho-syntactic factors affect listeners' prominence/boundary perception [7]

2. Methodology

Stimuli: Short (~8-second) sound files extracted from longer interviews

- 4 speakers (2 female) described 2-picture sequences (from QUIS [8])

Task: Rapid Prosodic Transcription [4]

- A text transcript of each file presented on screen, with no punctuation
- Listeners asked in separate trials to click words:
a) if they perceived them as highlighted in relation to surrounding words or b) if they perceived a group boundary after them
- 26 naive listeners responded online via Percy [9]

Calculation of p-score and b-score: continuous-valued measures of perceived prosody

- Proportion of listeners who marked word as prominent or followed by a boundary

Further annotations: 1) ToBI labels 2) morpho-syntactic factors [5]

Duration measure: Recordings were forced-aligned using WebMAUS, then converted into an EMU speech database for manual correction of the segment boundaries.

- t-test was used to investigate whether duration of accented vowels (L^* , $L+H^*$) changed from that of unaccented ones.

3. Analysis & Results

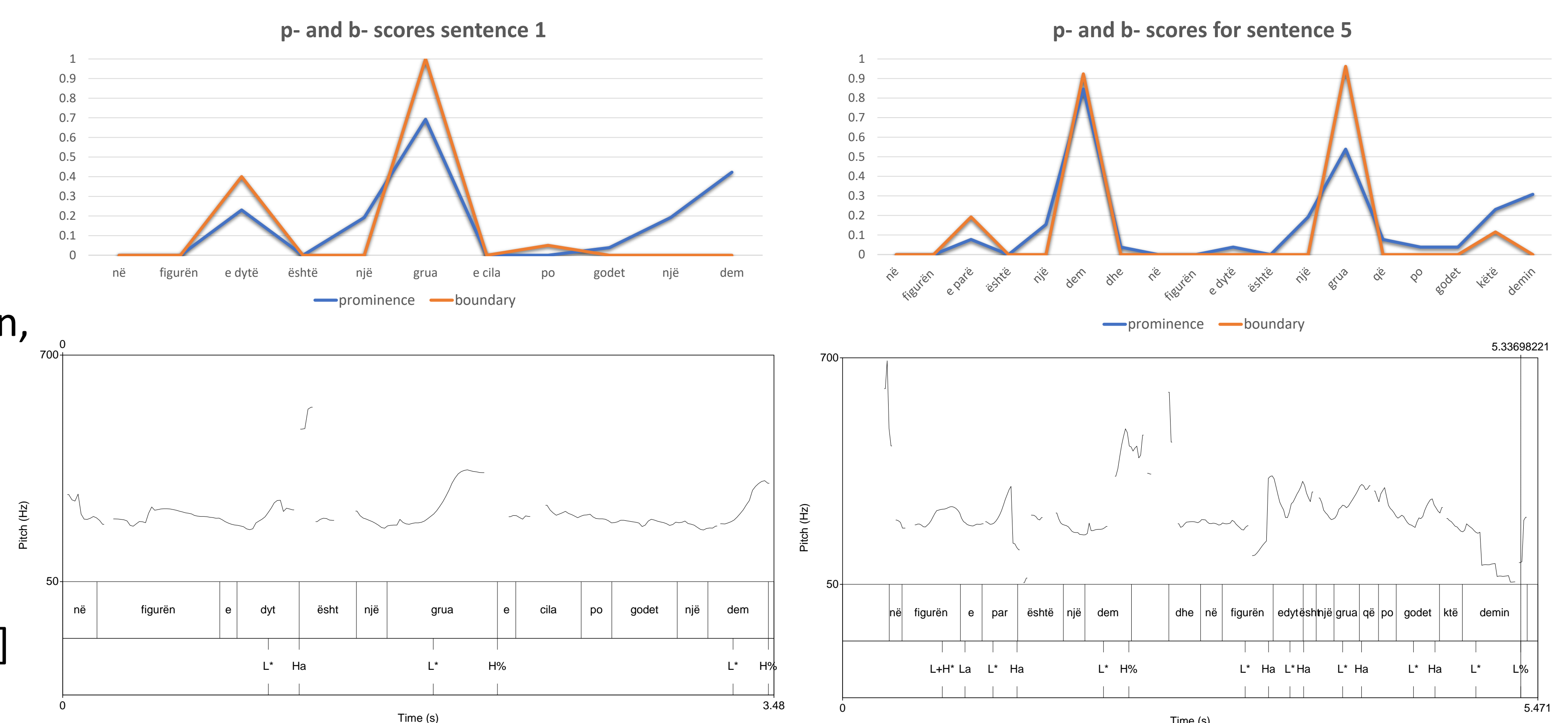


Figure 1: p- and b- scores for two sentences (top), and pitch contours with TextGrids and ToBI labels. Sentence 1 (left) translation: "In the second picture there is a woman who is hitting a bull". Sentence 5 (right) translation: "In the first picture there is a bull and in the second picture there is a woman who is hitting this bull".

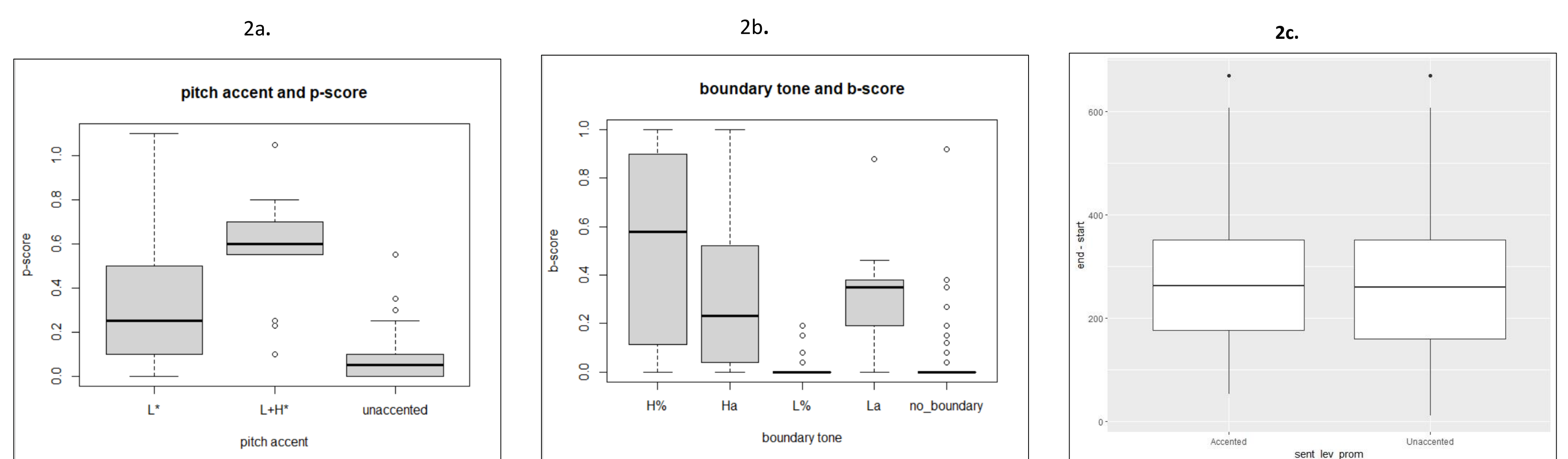


Figure 2: (a) Effect of pitch accent type of p-scores; (b) Effect of boundary tone type on b-scores; (c) Effect of syllable duration on accented and unaccented labels

4. Discussion & Conclusion

- Fleiss' K scores were calculated and showed that agreement was higher for b-scores ($\kappa = 0.62$) than p-scores ($\kappa = 0.32$), a result found in many RPT studies so far [10].
- Mean p-scores increase as a function of accent type, starting with no accent, L^* and $L+H^*$ pitch accent (Fig. 2a).
- Mean b-scores increase as a function of boundary type, starting with no boundary, $L\%$, Ha , La and $H\%$ (Fig. 2b).
- The low b-score for $L\%$ indicates that listeners almost never marked the end of an utterance
- Syllable duration did not affect the choice of the word either a) having been labelled as prominent by a trained annotator (Fig. 3) or b) having been perceived as prominent by the 26 participating subjects (Fig. 2c).
- In conclusion
 - prominence perception in Albanian is affected primarily through differences in F_0 as in Tamil [11], and not by syllable duration
 - pitch accent and boundary tone distinctions in the AlbToBI annotation system [5,6] relate to the categories perceived by naïve listeners.