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).
- Identification
- Prominence perception in Albanian is affected primarily through differences in F0 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 naive listeners.