

phrases.

The recall is measured with the following formula:

$$\text{Recall} = \frac{tp}{tp + fn}, \quad (1)$$

where tp stands for true positives, that is, the number of phonological phrase boundaries correctly found within 150 ms of the original one in the reference; fn stands for false negatives, that is, the number of missed phonological phrase boundaries (present in reference but not detected).

Precision is measured as:

$$\text{Precision} = \frac{tp}{tp + fp}, \quad (2)$$

where fp stands for false positives: phonological phrase boundaries detected where they should not be according to the reference, or more than 150 ms apart from reference phonological phrase boundary.

The recall of phonological phrase alignment-based prosodic segmentation was 82.1%, the precision was 77.7%.

The average time deviation (σ_t) of segmentation for phonological phrases was measured for true positives as:

$$\sigma_t = \frac{1}{tp} \sum_{i=1}^{tp} |t_i - t_i^{ref}|, \quad (3)$$

where tp stands again for the number of phonological phrase boundaries correctly found within 150 ms vicinity of the reference boundary. t_i is the detection time of the i^{th} phonological phrase boundary, t_i^{ref}

Of course not all phonological phrase boundaries, the author of the proposed boundary detector in this paper. In contrast to the mentioned approach, we trained the prosodic-acoustic model on examples in which phonological phrase boundaries are highly reliable. Highly reliable, in our opinion, word boundaries within a phrase boundaries. Analysis of the results on phonological phrase boundaries shows a recall rate for Hungarian of 82.1% precision and 76.8% recall rate. The 150 ms deviation between detected and reference markers (Vicsi-Szaszák, 2018), in present paper can be used to claim the conjecture that phonological phrase boundaries with syntactic phrase boundaries are more likely to be embedded in a phrase and tend to form a union bound.