1. INTRODUCTION

AIM OF THE PRESENT STUDY:
- Exploring the role of melodic cues, i.e., F0 alignment and scaling, in boundary perception in Catalan.

BACKGROUND:
- Prosodic breaks easier to perceive when they occur at syntactically or semantically congruent locations (Ladd 1996:236).
- However, still hard to indentify in some of these cases.
- For example, the prosodic boundary that follows left-dislocated (LD) elements in languages such as Catalan.
- In Catalan, LB-boundary most often realized with a high boundary tone (Feldhausen 2018), as shown in Fig.1.
- Problem: potential confusion with late prenuclear peaks, causing ambiguity (cf. Fig.2).

- Prenuclear peaks are very late in Catalan (see Prieto et al 2009: de-la-Mota et al 2009), in the point that in proparoxytonic words (SWM), they are often aligned past the boundaries of the postonic syllable and well into the final syllable of the word.

QUESTION:
- To what extent do Catalan listeners rely on melodic cues, that is, on F0 scaling and alignment?
- Can Catalan listeners reliably discriminate between late prenuclear peaks and high boundary tones?

2. METHODOLOGY

STIMULUS:
- Same sentence uttered by a trained native speaker phonetically:
  (a) with a prosodic boundary, as a clitic left-dislocated phrase (3): (b) without it, as a declarative (2)
  (1) [La Bárbara vol venir demà] [CLLD] ‘Barbara wants to come tomorrow.’
  (2) [La Bárbara vol venir demà] ‘Barbara wants to come tomorrow.

- Special care was taken in the selection of the base stimuli to exclude rhythmic cues to the prosodic boundary (up to the extent that this is possible in natural speech).
- Both base sentences read at the same speech rate.
- They did not contain pauses, excessive preboundary lengthening or creakiness at the potential boundary location.
- Resynthesized stimuli (Fig.3).

- Separate manipulation of F0 scaling and alignment in equidistant steps.

EXPERIMENTS:
- First step, classical categorical identification experiment (e.g. Liberman et al 1957; Repp 1984)
  => Two original sentences used as base for manipulation of scaling (Exp 1) and alignment (Exp 2)

- Second step, extended identification experiment (e.g. Kuhl 1999; Schneider et al 2006)
  => Original CLLD sentence used as base for manipulation of scaling (Exp 3) and alignment (Exp 4).

- Following the method in Schneider et al (2006)
- Just one base stimulus is used, which is shifted in each direction until it becomes unnatural.
- The exact position of the peak is not important for the perception of a syllable, of course.
- They perceived generally, i.e. in 70% of the cases, a boundary from very often across a tonal boundary.
- The exact position of the peak is not important for the perception of a syllable.

3. RESULTS

- Clear categorical effect for the scaling task (cf. Fig. 6):
  a) While speakers generally perceive a boundary from stimulus 101 (being the starting point of the manipulation, located at 295Hz) to b012 (being the stimulus with the lowest scaling).
  b) They perceive generally, i.e., 70% of the cases, a boundary from b01 (being a stimulus close to the starting point) to b012 (being the stimulus with the highest scaling).

- Overall, extended identification experiments seem to be more sensitive than the classical identification tasks.
- It is neither scaling than alignment that tells the difference between a boundary that is perceived.
- The exact position of the peak is not important for the perception of a boundary: If scaling already signals a boundary, the peak can also be located before the word edge.
- The result that scaling is more robust than alignment is in line with the findings byavanell (2007), Savino & Grice(2007), and Vizcaino et al (2009).

REFERENCES


4. CONCLUSIONS

- Overall, extended identification experiments seem to be more sensitive than the classical identification tasks.
- It is rather scaling than alignment that tells the difference between a sentence-final prosodic break and a late peak.
- The exact position of the peak is not important for the perception of a boundary: If scaling already signals a boundary, the peak can also be located before the word edge.
- The result that scaling is more robust than alignment is in line with the findings byavanell (2007), Savino & Grice(2007), and Vizcaino et al (2009).