Museum or musical? – Pitch accent type affects word recognition in Australian English

Katharina Zahner1, Heather Kember2, Anne Cutler2 & Bettina Braun1
1University of Konstanz; 2 MARCS Institute, Western Sydney University

**Pitch accent type and lexical stress**
- Intonation languages (English or German) signal pragmatic functions with different pitch accent types
- Pitch accent types differ in alignment of pitch peaks (and valleys) in regard to stressed syllables [1,2]
  ➔ Example: Marking of information status [3]
- Pitch peak and metrical stress often coincide in intonation languages [4-6]
- Processing: Listeners make use of suprasegmentals as soon as available in the signal [7,8]
- Use of suprasegmental stress cues depends on payoff in language: Segmental encoding of stress in English (vowel reduction) makes use of suprasegmentals less profitable [9]

**Methods**
- **Participants**
  - 40 AusE participants (29 female, \( \bar{x} = 25.7 \) yrs, SD = 7.7 yrs)
- **Materials**
  - 64 frequency-matched cohort pairs: WS(W) vs. SW(W)
  - 1200 non-native words
- **Recordings** (natural, non-resynthesised stimuli)
  - “The next word is a TARGET” (target spliced into carrier at II)
  - Two intonation conditions (early- vs. medial-peak accent)
  ➔ Matched for syllable duration(s), and range of f0-movement

**General Discussion**
- Pitch peak on unstressed syllables in early-peak accents, H+H*, lead to temporary activation of competitors with initial stress in AusE
  ➔ In addition to signalling pragmatic functions, alignment of tonal targets immediately affects lexical activation in AusE
  ➔ More lexical competition due to utterance-level intonation

**Possible explanations for effect**
- Salience of high-pitched / rising syllables [13,14]
- Frequent occurrence of H*-accents in AusE
  ➔ Despite AusE being an “uptalk” variety [15]

**Cross-linguistic relevance for finding**
- Results for AusE comparable to results for German [10]
- English listeners make less use of suprasegmentals due to a lower payoff in the English lexicon [9,16], but pitch peaks seem to be a strong cue for stress perception [17] and for lexical activation

**Future Work will address...**
- Role of input frequency of H*-accents
  ➔ Training: Manipulate immediate input (only low-pitched accents)
- Directionality of effect of pitch accent type
  ➔ Test accent types with low-pitched stressed syllables (e.g. L+H*)

**Museum** or **musical**? Possible explanations for effect

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**References**

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**Graphical Abstract**

**Key Points**
- Intonation languages (English or German) signal pragmatic functions with different pitch accent types.
- Pitch accent types differ in alignment of pitch peaks (and valleys) in regard to stressed syllables.
- Intonation languages often coincide pitch peak and metrical stress.
- Listeners make use of suprasegmentals as soon as available in the signal.
- Use of suprasegmental stress cues depends on payoff in language: Segmental encoding of stress in English (vowel reduction) makes use of suprasegmentals less profitable.

**Research question**
Do pitch peaks on unstressed syllables (as in early-peak accents, H+H*) lead to the temporary activation of competitors with initial stress in Australian English (AusE)? (Note: Similar activation pattern has recently been found for German listeners.)