



# Revisiting intonational pitch accents in Swedish: Evidence from lexical accent neutralisation

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## Background

Standard Swedish is often assumed to have “**essentially only one intonation contour**”,

while most other European languages exhibit “a large number of pitch accents to signal various shades of information status” (Gussenhoven 2004).

But: Hardly any “shades of information status” have been treated for Swedish yet.

Standard Swedish (Central, Sveamål) pitch accents in the **Lund model** (Bruce 1977, 2005; Bruce and Granström 1993)

Lexical : H+L\* (accent I)  
(word level) H\*+L (accent II)

Intonational : H-  
(phrase level)

## Research question

Is the standard model adequate?

This study: Word accents and intonation in new information vs. given information statements (confirmations).

## Conclusion

**Swedish has at least one additional intonational pitch accent:**

“H+L-” (“early peak”)

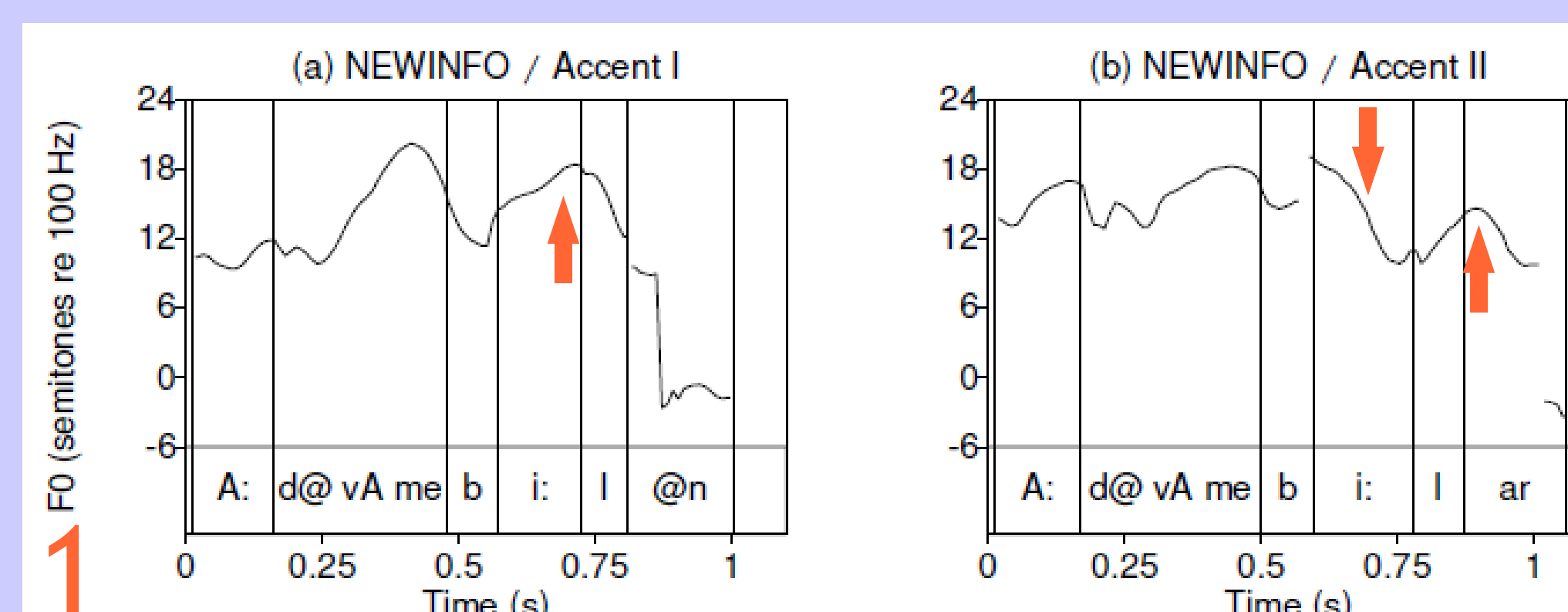
## Study 1: confirmations vs new information Production data

- Prepared dialogues, read by pairs of speakers, containing test sentences like *Ja, det var med bilen* “Yes, (it was) by car”
- Test word either accent I (bilen “the car”) or accent II (bilar “cars”)
- Sentence placed in different contexts, where test word either represents given information (confirmation) or new information
- 9 speakers, 5 pairs of test words → 180 utterances in total

## Results and Discussion

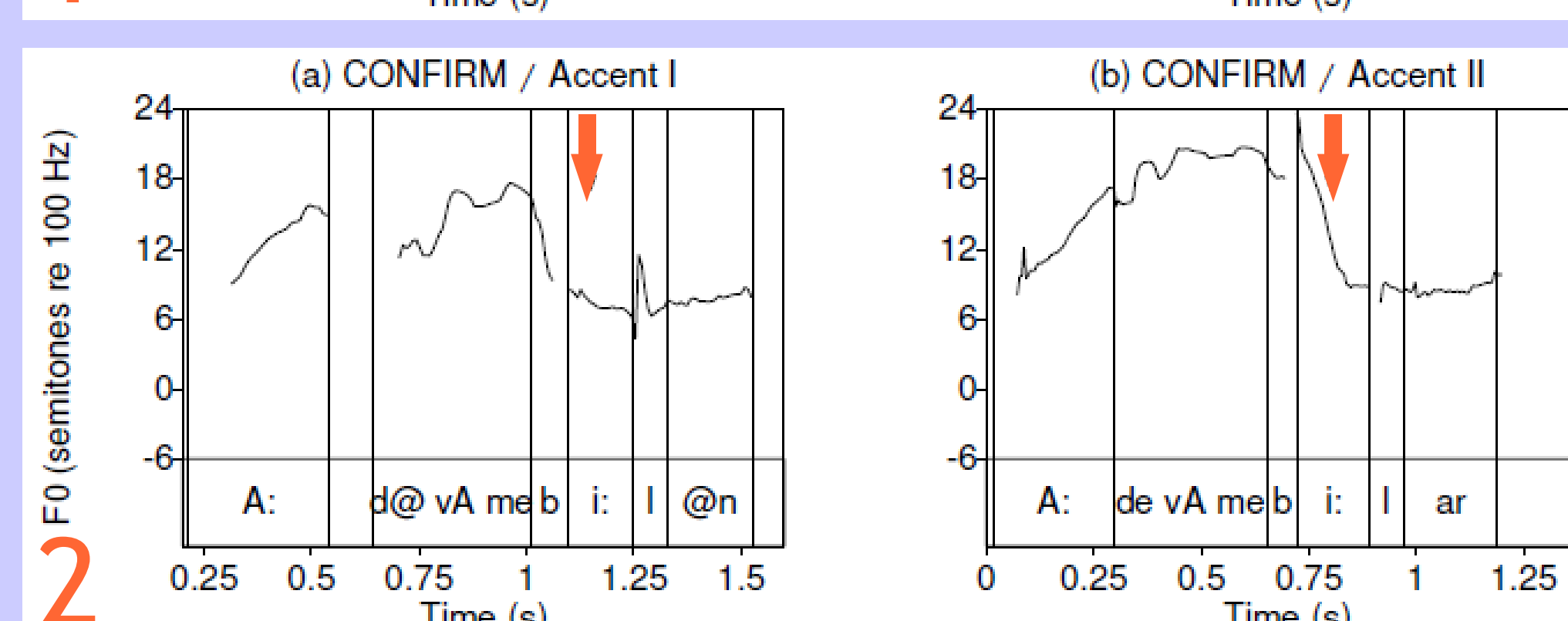
96 % of the new-information cases produced with an H- (focal accent) on the test word, e.g. Fig. 1.

Fig. 1



87 % of the confirmations produced **without** an H- accent; word accent distinction often maintained in these cases, see Fig. 2.

Fig. 2



Are the accents found on the test words in confirmations simply the “pure”, non-focal word accents? - This “lack of H-” is better analysed as a falling sentence accent, i.e. “H+L-”. Why?

23 % of accent II cases lacking H- produced with an “accent I like” pattern, e.g. Fig. 3.

Why does this word accent neutralisation occur?

→ Low functional load of word accents and given information only part of the explanation!

→ Test words produced with a falling sentence accent (H+L-)

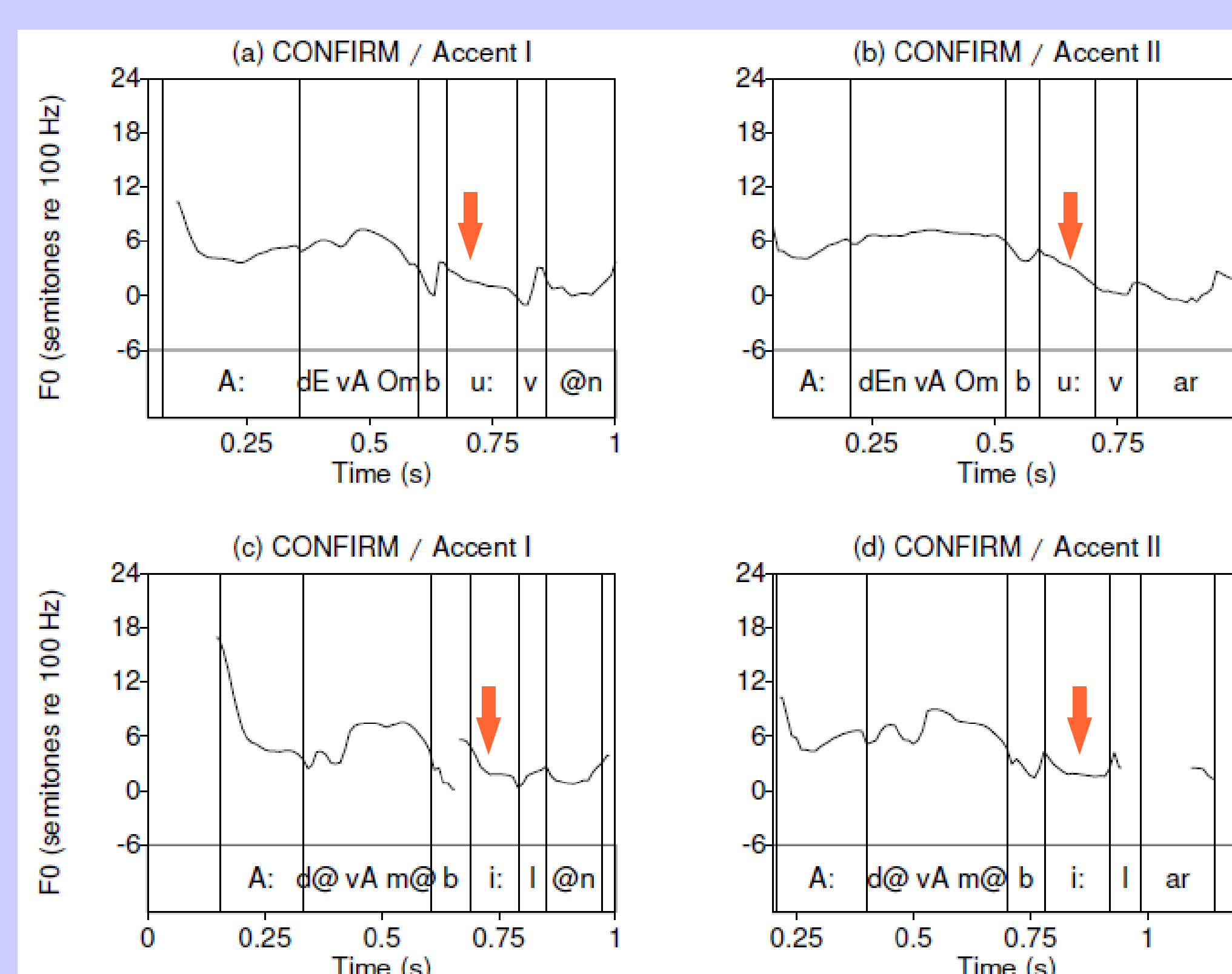
→ H+L- in connection with accent II (perceptually) similar to H- with accent I; both have a high-pitch vowel onset

→ Reduction of the word accent gesture implies perceptual enhancement of the contrast between H- and H+L-

→ Word accent neutralisation motivated by sentence intonation (H+L-)

Are the claims made here concerning perceptual aspects plausible?

Fig. 3



## Study 2: confirmations vs new information Perception (reaction time) data

- Stimuli:** 12 phrases containing accent I, e.g. *han ljuger* “he’s lying”, 12 phrases containing accent II, e.g. *det regnar* “it’s raining”; all stimulus phrases spoken both by a female and a male speaker; 4 pitch patterns (Fig. 4), combined with each stimulus phrase

→ 96 stimuli represent a match of word type and pitch pattern

→ 96 stimuli represent mismatch conditions

- 20 subjects; task: identify a stimulus as a *bekräftelse* (“confirmation”) or a *nyhet* (“new information statement”)

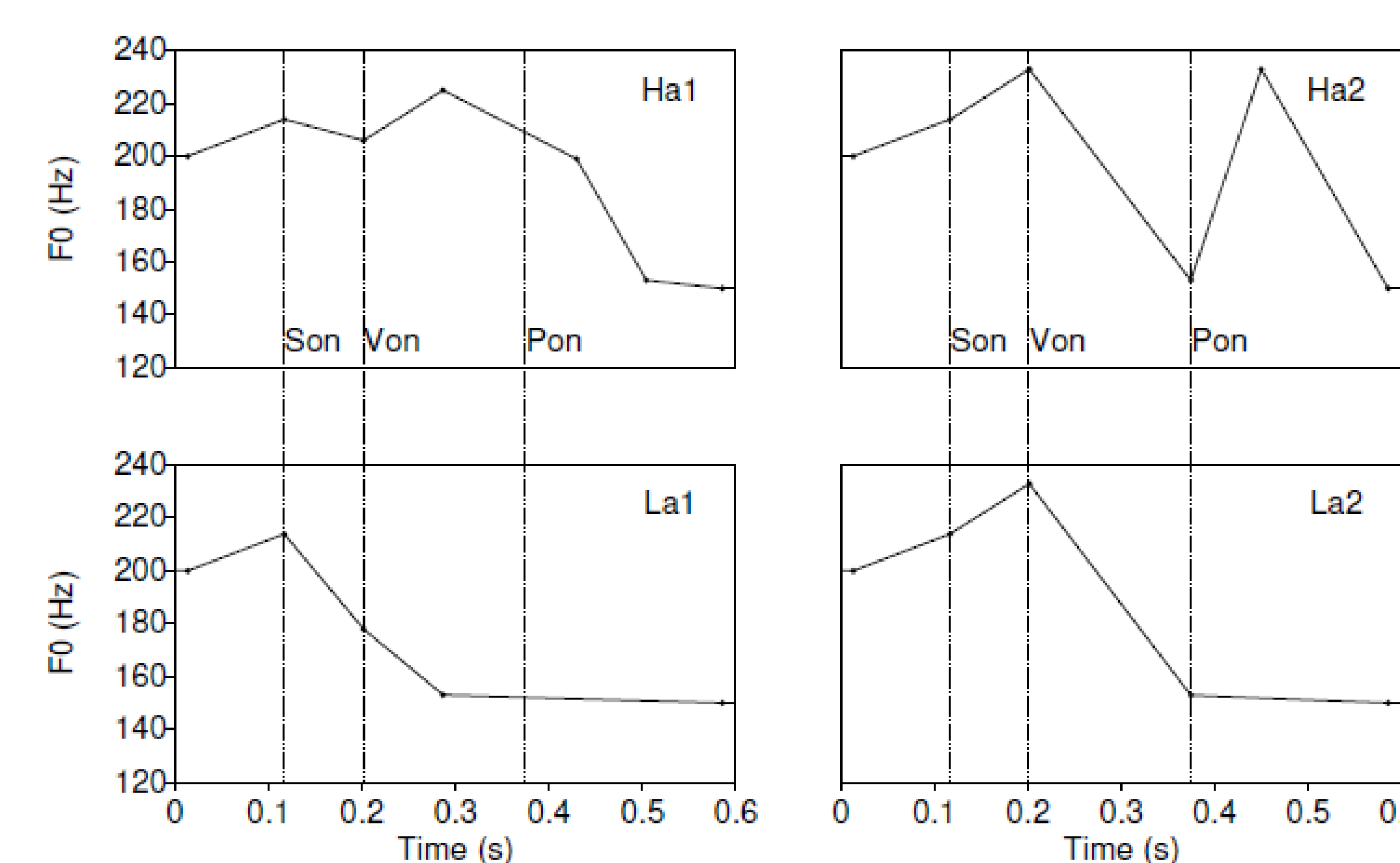


Fig. 4

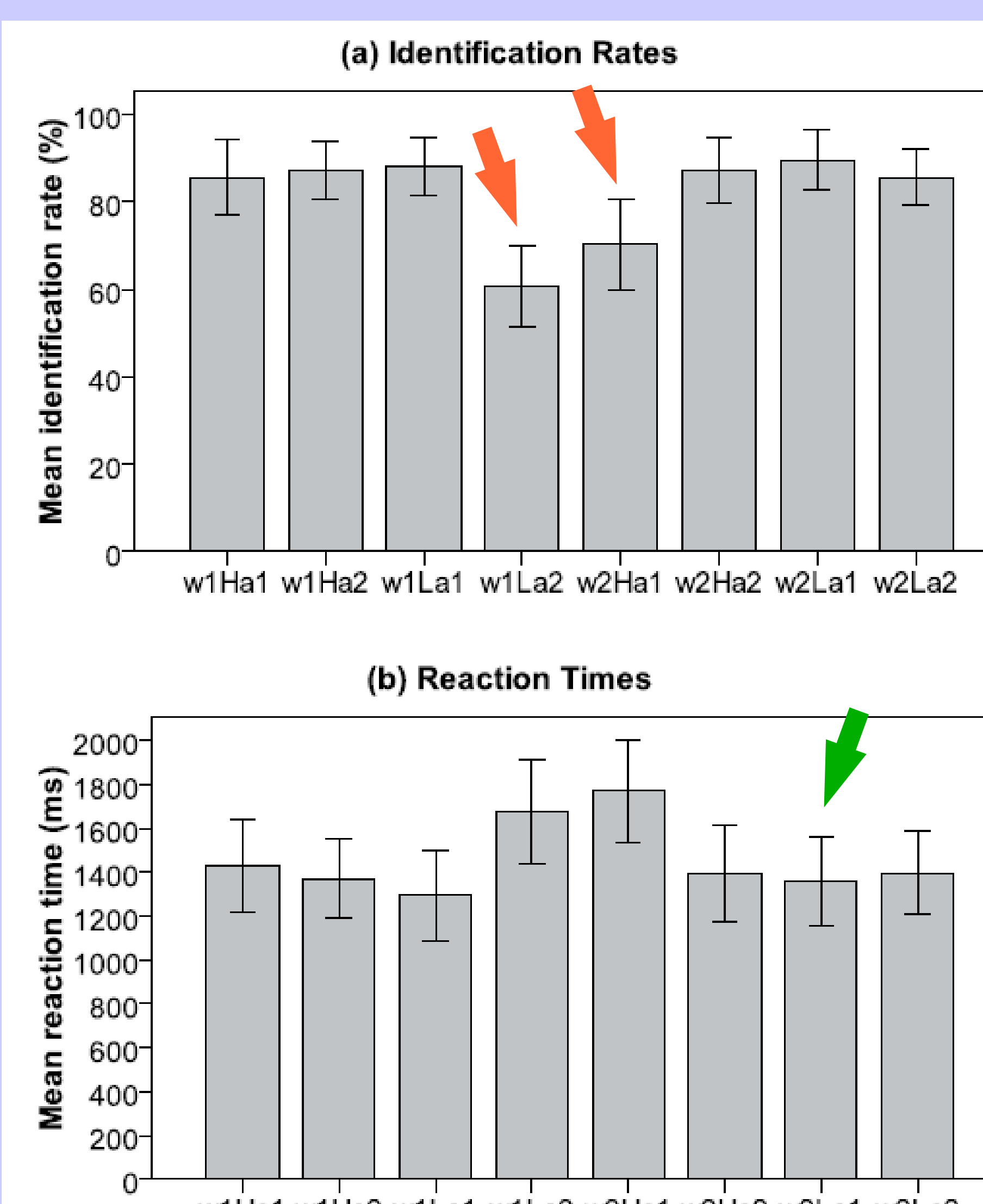


Fig. 5

Word type	Tonal pattern			
	H-	H+L*	H+L*	H+L*
-er (I)	w1Ha1	w1Ha2	w1La1	w1La2
-ar (II)	w2Ha1	w2Ha2	w2La1	w2La2

See Ambrazaitis (2009) for further details and discussions.

## References

Ambrazaitis, G. (2009): *Nuclear Intonation in Swedish - Evidence from Experimental-Phonetic Studies and a Comparison with German*. Travaux de l'institut de linguistique de Lund 49.

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✓ Stimuli with an accent II verb and an accent I pattern, when combined with H+L- (“confirmation intonation”) not perceived as a mismatch (cf. the short reaction time for w2La1, Fig. 5).

→ Word accent neutralisation (in confirmations) acceptable

✓ In a mismatch condition, H+L- in connection with H\*+L (accent II) is confused with H-, and H- with H+L\* (accent I) is confused with H+L- (cf. results for w1La2 and w2Ha1).

→ Contrast enhancement between a H- and a hypothetical H+L- is perceptually plausible.

Factor	ANOVA	Dependent Variable	
		Identification Rate	Reaction Time
WORDTYPE	by subjects	$F(1, 19) = 4.74$ $p = .042^*$	$F(1, 19) = 1.79$ $p = .197$
	by items	$F(1, 46) = 2.84$ $p = .099$	$F(1, 46) = 1.12$ $p = .295$
PITCHPATTERN	by subjects	$F(1.57, 29.90) = 12.38$ $p < .001^{***}$	$F(3, 57) = 13.79$ $p < .001^{***}$
	by items	$F(3, 138) = 33.87$ $p < .001^{***}$	$F(2.53, 116.20) = 24.84$ $p < .001^{***}$
WORDTYPE × PITCHPATTERN	by subjects	$F(2.17, 41.30) = 26.72$ $p < .001^{***}$	$F(3, 57) = 16.37$ $p < .001^{***}$
	by items	$F(3, 138) = 41.82$ $p < .001^{***}$	$F(2.53, 116.20) = 24.13$ $p < .001^{***}$