

# Formal Germans and dominant Danes – why you should teach intonation

Kerstin Fischer, kerstin@sdu.dk  
Institut for Design og Kommunikation

Oliver Niebuhr, olni@sdu.dk  
Mads Clausen Institutet

Maria Alm, mhalms@sdu.dk  
Institut for Design og Kommunikation

Research conducted within the project *Improving Second Language Pedagogy at the Prosody-Pragmatics Interface Using Human-Robot Interaction*

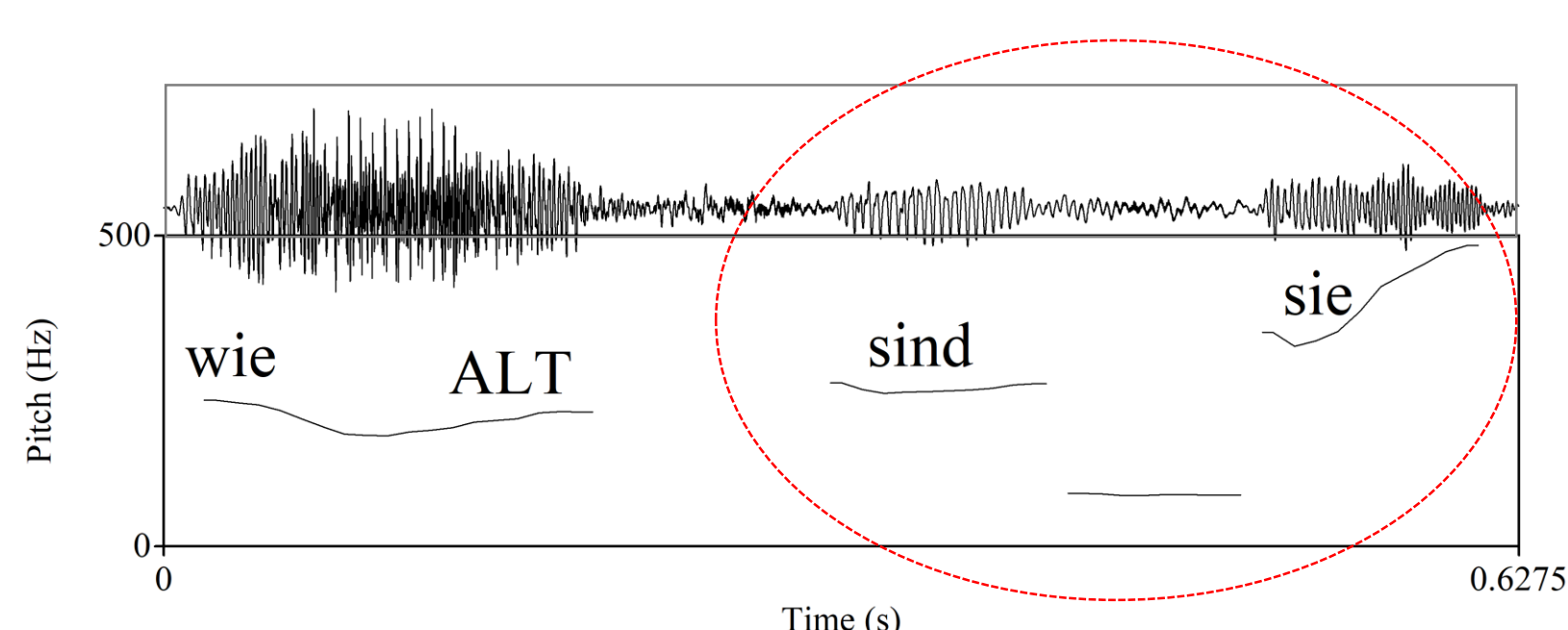
Text books on Danish as a second language hardly deal with intonation (“speech melody”).

Our study shows that transferring intonation from the speaker’s native tongue leads to spontaneous negative judgements about the speaker’s personality.

Teach it!

## Speech Melody

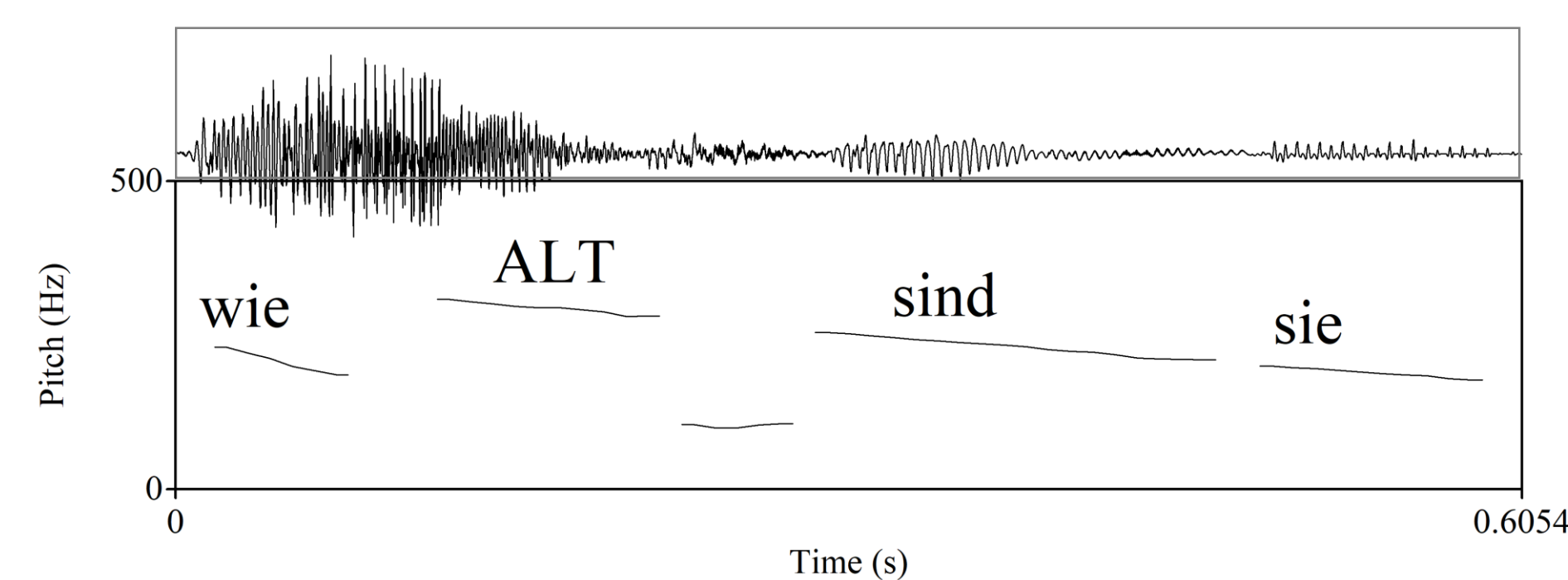
In **German and English**, the tonal pattern at the very end of an utterance are associated with important communicative functions (cf. Selting 1995; Gunlogson 2003).



*End intonation: German speaker asking "How OLD are you?" with a clearly rising end intonation.*

## Method: Intonation Swap and HRI

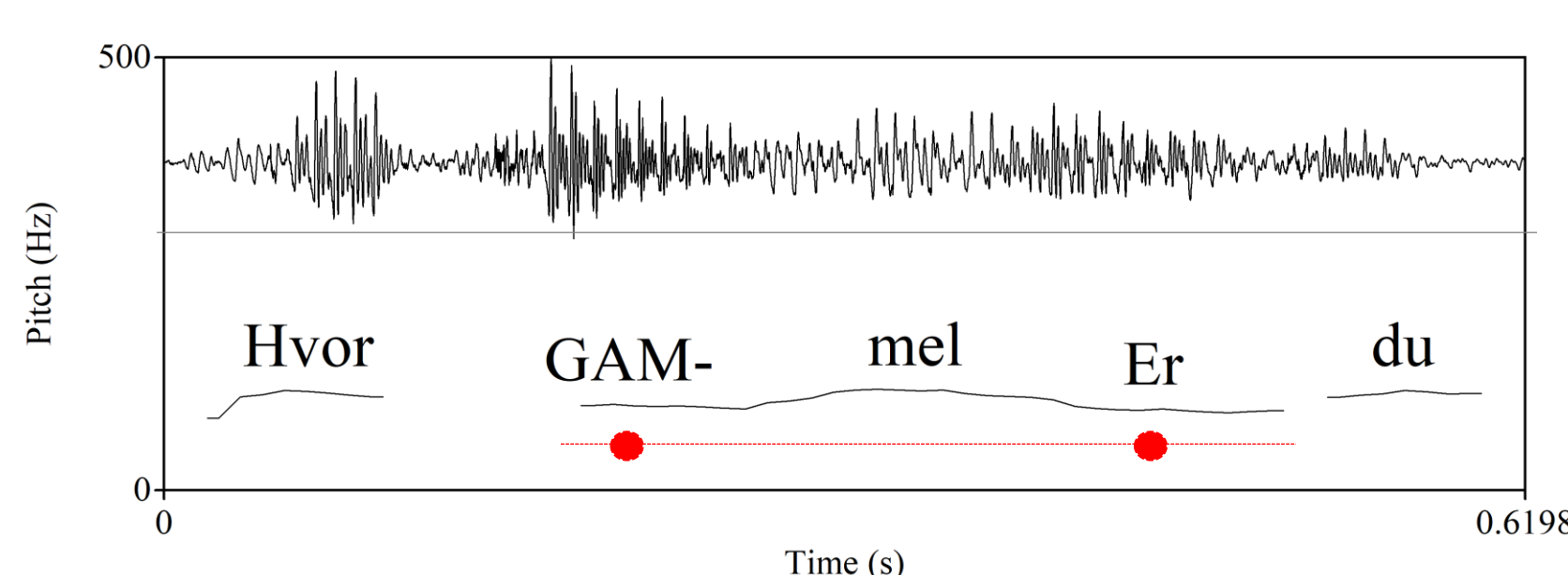
We had native speakers of Danish, German and English record a set of demographic questions. Then we swapped the intonation contours around using the computer program PRAAT (Boersma 2011).



*Manipulated question: German voice with Danish intonation.*

In **Danish**, the tonal pattern is associated with the so-called stress group. All stress groups *repeat the same tonal pattern*.

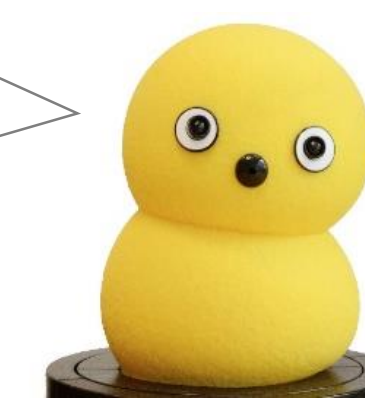
Communicative functions are instead signaled by the steepness of the pitch slope (declination) formed by the stressed syllables throughout the whole of the utterance (Grønnum 2007).



*"Slope intonation": Danish speaker asking "How OLD Are you?" with a nearly horizontal slope.*

In an online survey, two Keepon robots took turns in asking the questions; one used the original questions, the other one used non-native intonation, see picture. Afterwards, people had to rate how engaging, friendly, polite, dominant or formal the two Keepons robots were.

*Danish with native intonation.*



*Danish with German intonation.*



## Hypothesis

Tonal movements and their meanings are mostly used intuitively and are easily transferred into the target language.

In line with the research on conversational styles (e.g. Tannen 2011), we hypothesized that native speakers react to unexpected intonation in terms of judgements about the speaker’s personality.

## Results

The results show significantly different evaluations of the two robots for the German participants ( $N=45$ ;  $X^2=15.5$ ;  $p=0.0165$ ) and near-significant differences for the native speakers of English ( $N=18$ ;  $X^2=10.75$ ;  $p=0.0964$ ); the Danish evaluations were not significant ( $N=52$ ;  $\chi^2=3.24$ ;  $p=0.777$ ).

Post-hoc analyses show that

- Danes perceived the robot with German intonation as formal.
- Germans found the robot with Danish intonation dominant.

## Conclusion

- Uninstructed learners risk giving the wrong impression of themselves when communicating in their new language.
- Intonation should be addressed and taught.
- This may influence their chances of forming personal relationships and the success in reaching their goals.

This research is supported by



## References

- Boersma, P. 2001. PRAAT: A system for doing phonetics by computer. In: *Glott International* Vol. 5(9/10), 341-347.
- Grønnum, Nina. 2007. *Rødgrød med fløde: En lille bog om dansk fonetik*. Copenhagen: Akademisk Forlag.
- Gunlogson, C. 2003. *True to form: Rising and falling declaratives as questions in English*. New York & London: Routledge.
- Selting, M. 1995. *Prosodie im Gespräch: Aspekte einer interaktionalen Phonologie der Konversation*. Niemeyer: Tübingen.