



# Asymmetrical intelligibility between the Scandinavian languages

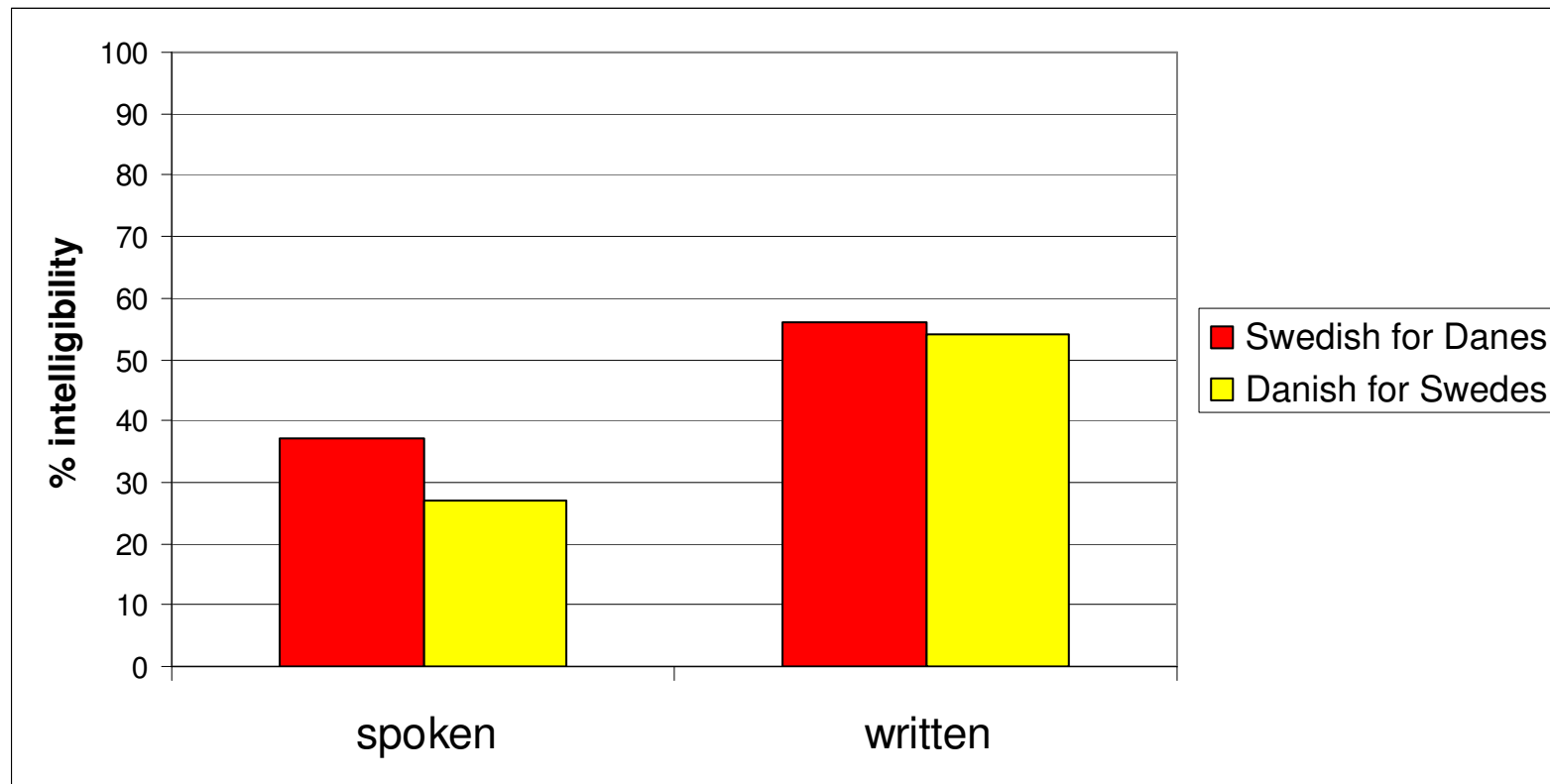
experimental approaches

Charlotte Gooskens

Christian-Albrechts-Universität zu Kiel

12 July 2010

## Mean intelligibility results Swedish-Danish



# Question

19-1-2011 | 3

Why is spoken Danish-Swedish mutual intelligibility asymmetric?

- › Linguistic and extra-linguistic factors



# Articulation

19-1-2011 | 4

Danish seems to make a smaller effort to make its speakers understood than other languages.



rijksuniversiteit  
groningen

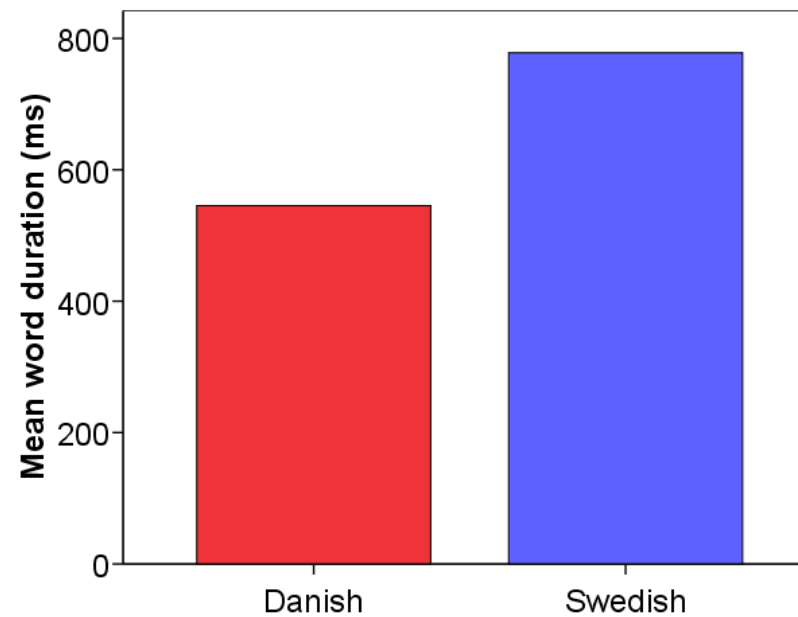
INFC 1



# Articulation

19-1-2011 | 6

## Speech rate in Danish-Swedish cognates



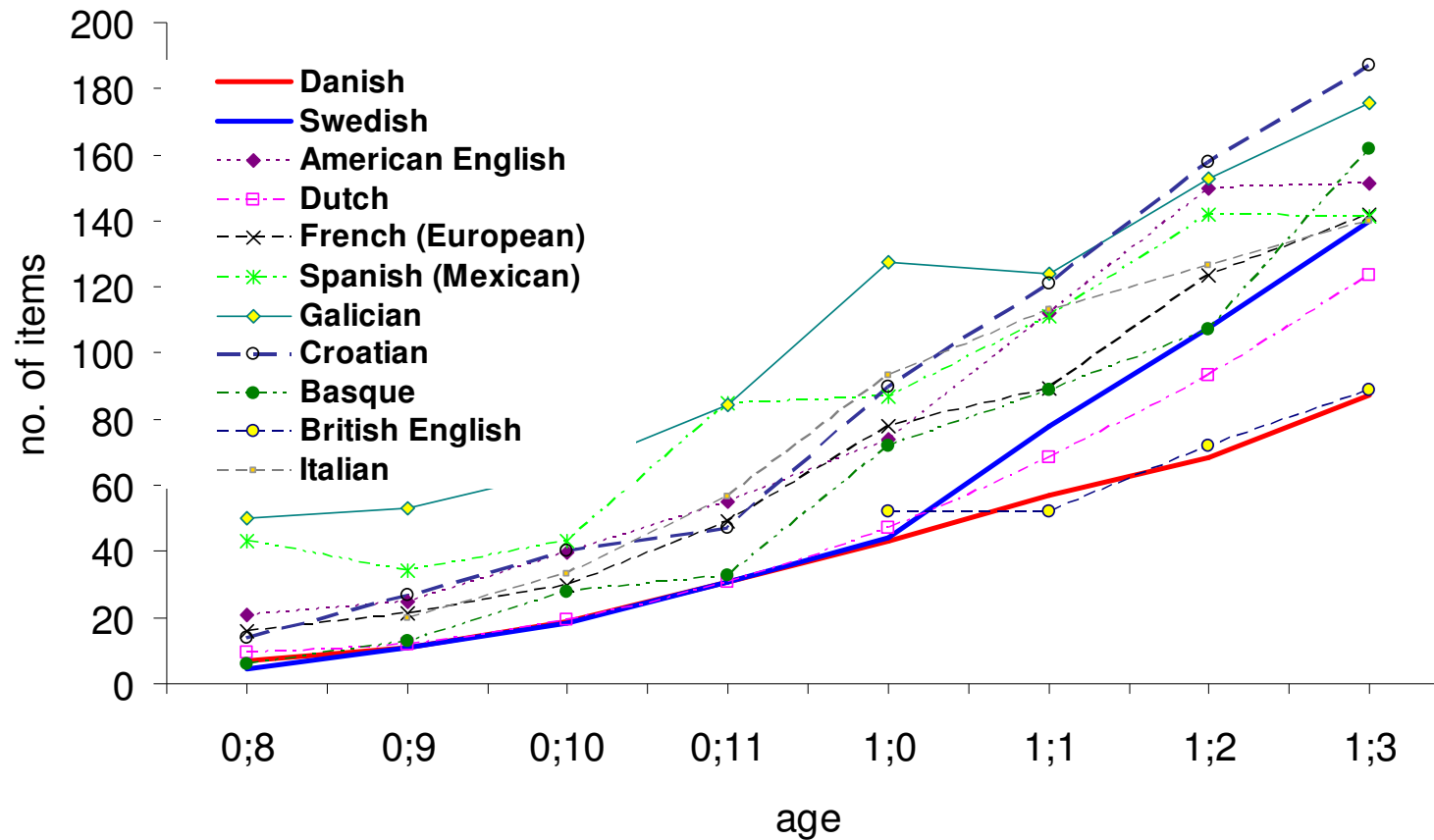
rijksuniversiteit  
groningen

Hilton, Gooskens & Schüppert (2010)

# Articulation

19-1-2011 | 7

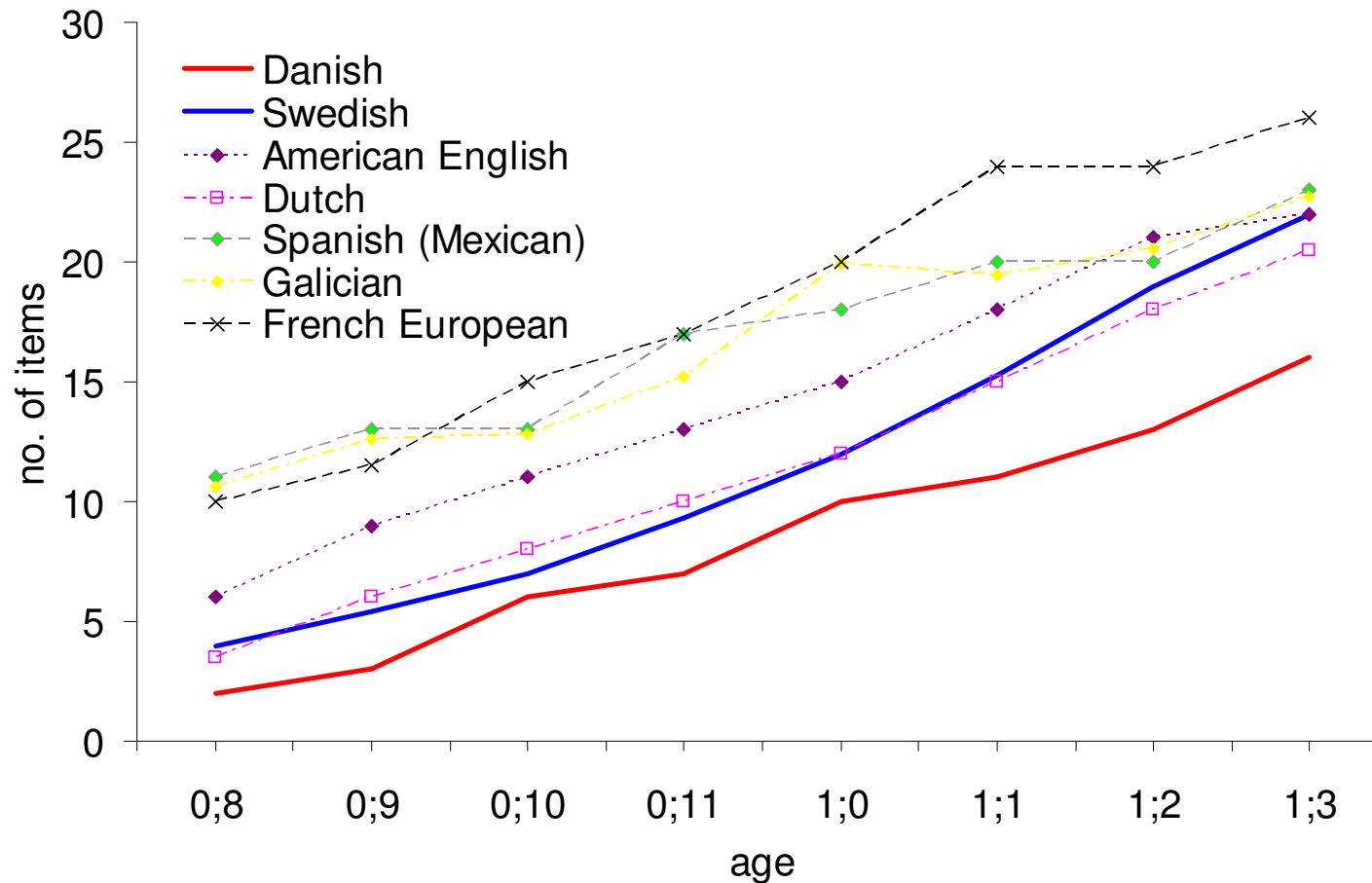
## Knowledge of words at various ages



# Articulation

19-1-2011 | 8

## Phrase comprehension score by age and language



rijksuniversiteit  
groningen

Bleses et al. 2008



# Articulation

19-1-2011 | 9

- › Danish has fewer and more indistinct cues to identification of segment, syllable, word and utterance boundaries than Swedish.
- › Example:

Sw. *koka* [ku:ka] vs. Da. *koge* [k<sup>h</sup>ɔ:ʊ] ‘cook’

Sw. *koka över* [ku:kaœ:və] vs. Da. *koge over* [k<sup>h</sup>ɔ:ʊpɔ̃ʁə] ‘boil over’



## Hypothesis

Danes have greater difficulty understanding their own language than Swedes



## Stimulus material

- › isolated words
- › semantically unpredictable sentences
- › spontaneous sentences



## Manipulations

- › descending amount of babble noise, from almost unintelligible to intelligible:



# Articulation

19-1-2011 | 13

## Listeners

- › Swedes and Danes

## Task

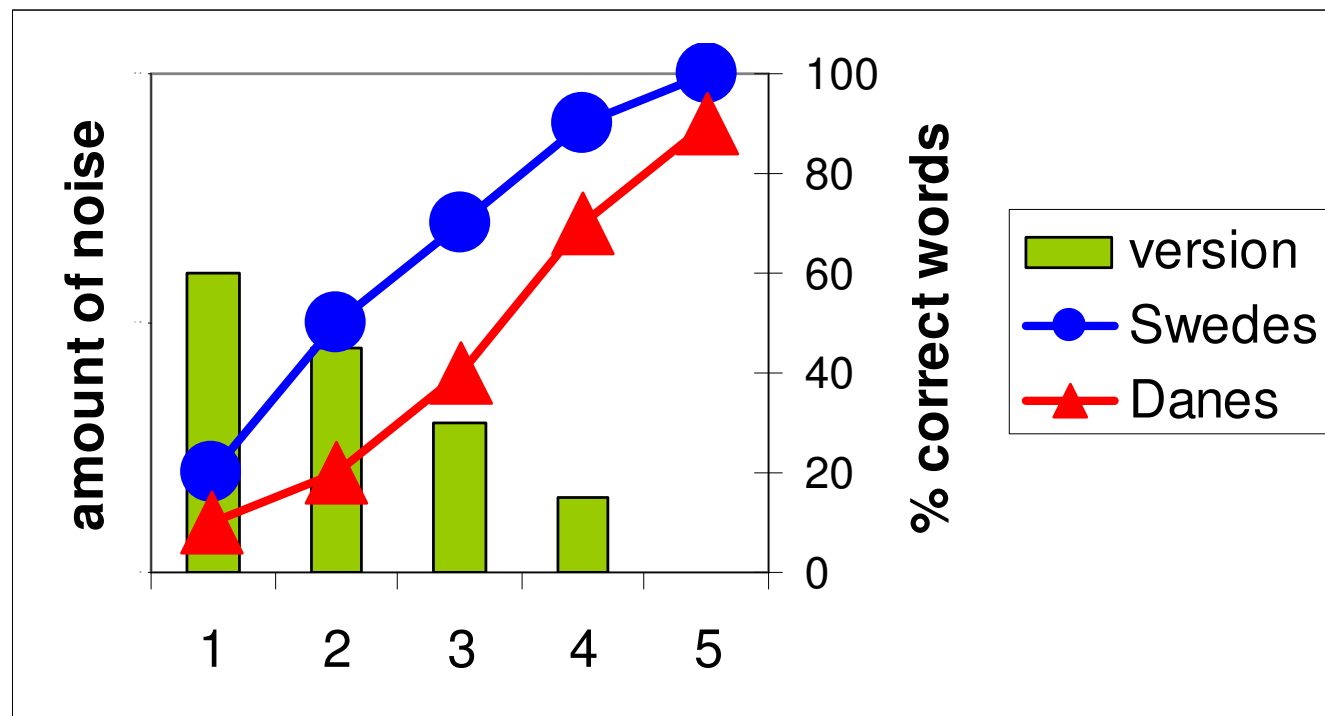
- › listen to 5 versions in own language
- › write down in own language

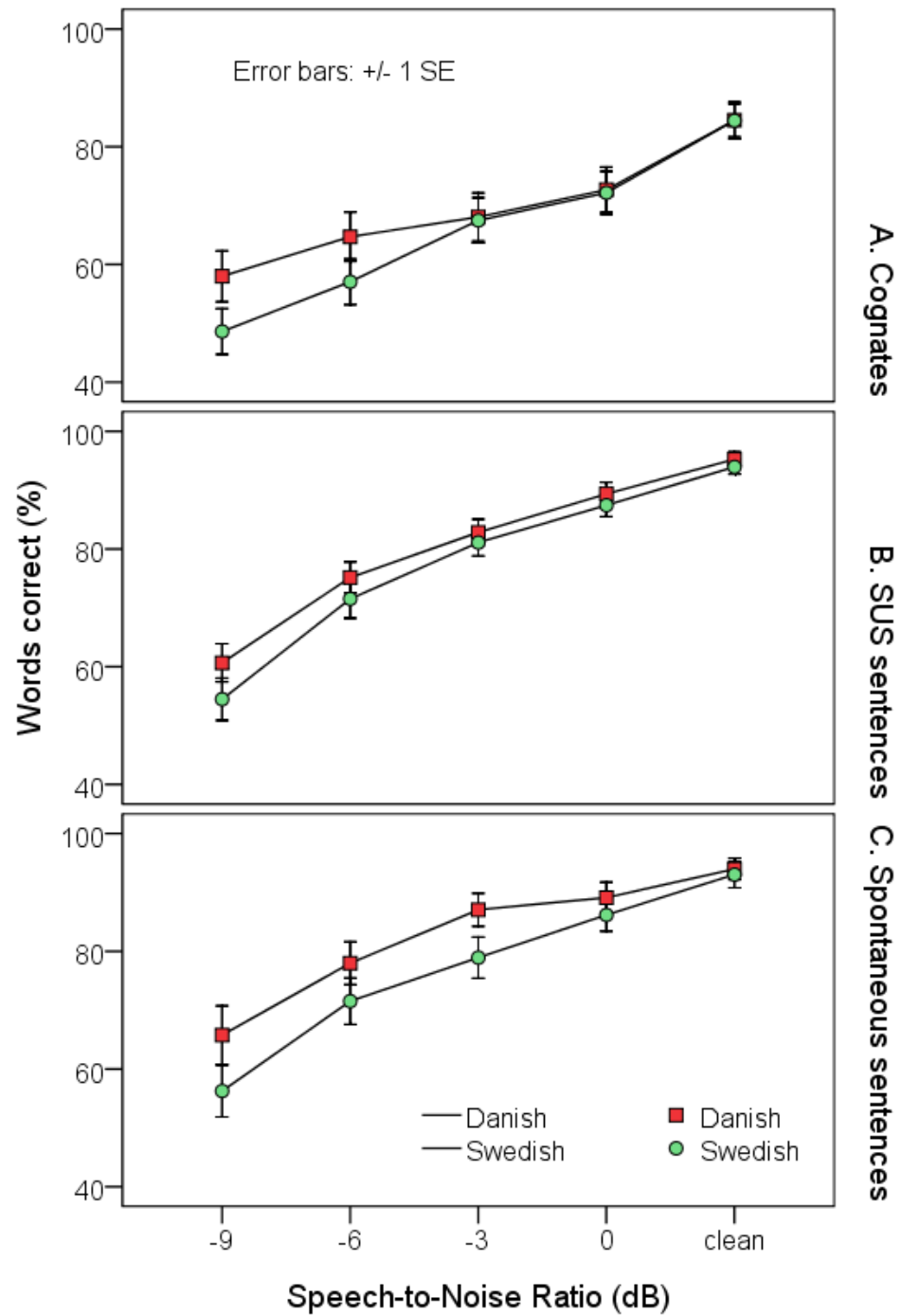


# Articulation

19-1-2011 | 14

Hypothesis: intelligibility threshold is higher for Danish than for Swedish native listeners





# Articulation

19-1-2011 | 16

- › Differences in articulation do not seem to explain the Swedish-Danish asymmetric intelligibility



rijksuniversiteit  
groningen

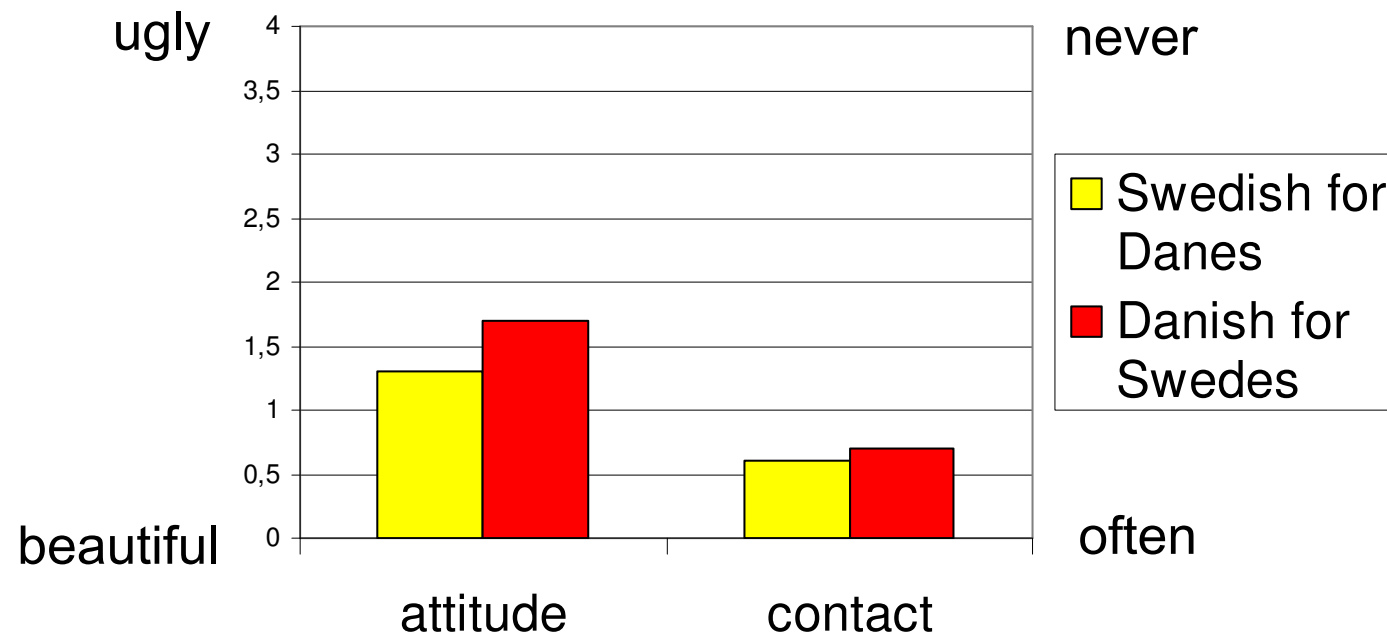
Gooskens, Van Heuven & Van Bezooijen (2010)



# Attitude and contact

19-1-2011 | 17

Previous investigations suggest that attitudes and contact explain Swedish-Danish asymmetric intelligibility



# Attitude and contact

19-1-2011 | 18

Attitude and contact neutralised by testing young children:

- › little contact with neighbouring countries
- › less strong attitudes towards neighbouring languages



# Attitude and contact

19-1-2011 | 19

## Subjects

- › 19 Danish children from Odense, 4-6 years old
- › 26 Swedish children from Vaxjö, 4-6 years old
  
- › 20 Danish adults from Odense
- › 19 Swedish adults from Vaxjö



rijksuniversiteit  
groningen

Schüppert & Gooskens (submitted)

## Stimulus material

- › 50 nouns (cognates) that are frequent in child language
- › read aloud in Danish and Swedish



## Test

- › Danes listen to Swedish words and Swedes listen to Danish words
- › Per word four pictures are presented
- › Subject points to the picture corresponding to the test word on a touch screen
- › Response time is measured

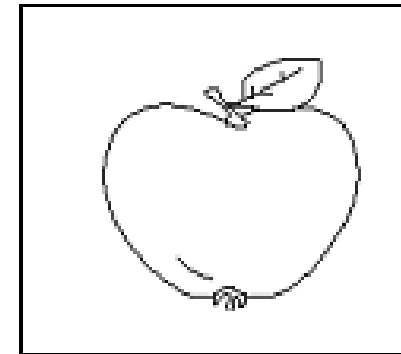
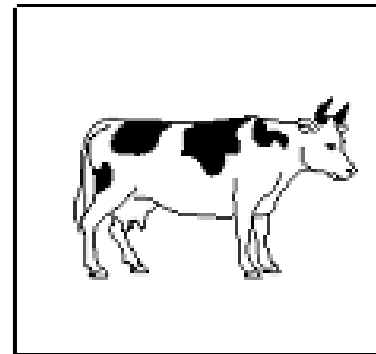
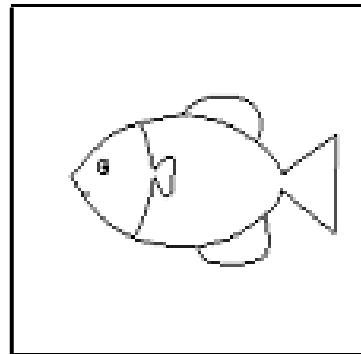


# Attitude and contact

19-1-2011 | 22

## Example

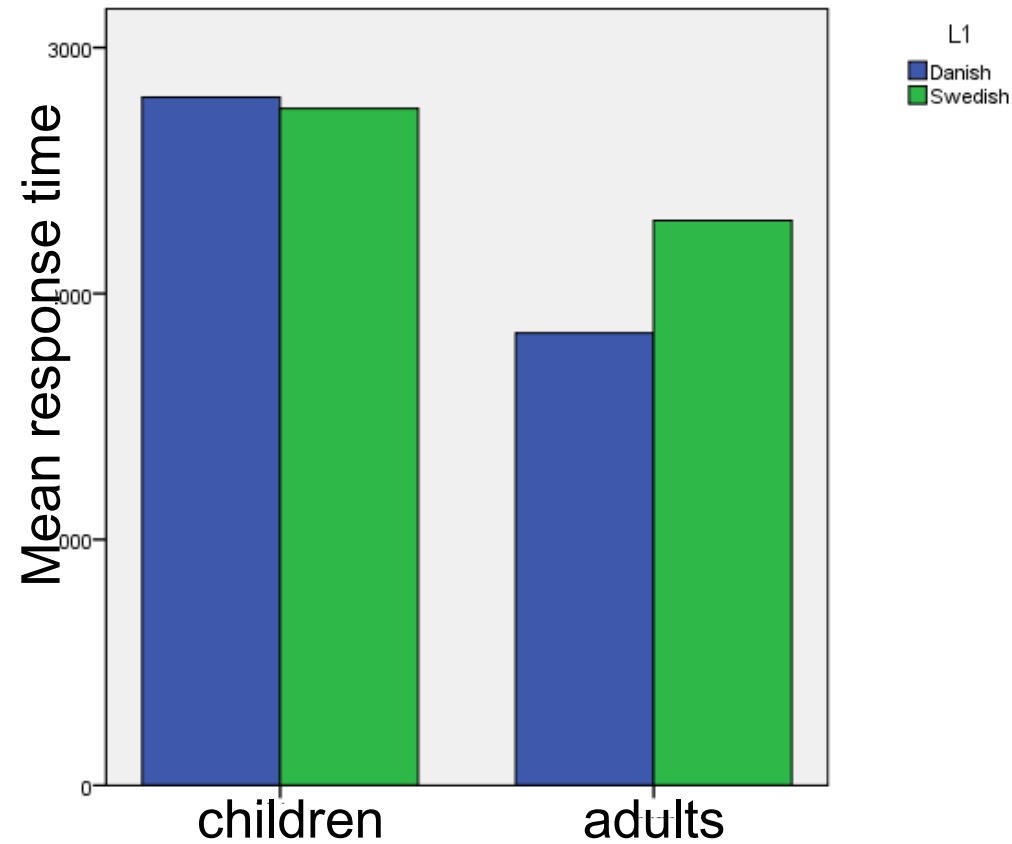
Swedish subject hears Danish *æble* 'apple' and sees the following pictures:



# Attitude and contact

19-1-2011 | 23

## Intelligibility results



## Attitude elicitation

Children and adults were asked if they thought the language sounded...

- › ...less nice than their native language (-1)
- › ...as nice as their native language (0)
- › ...nicer than their native language (1)

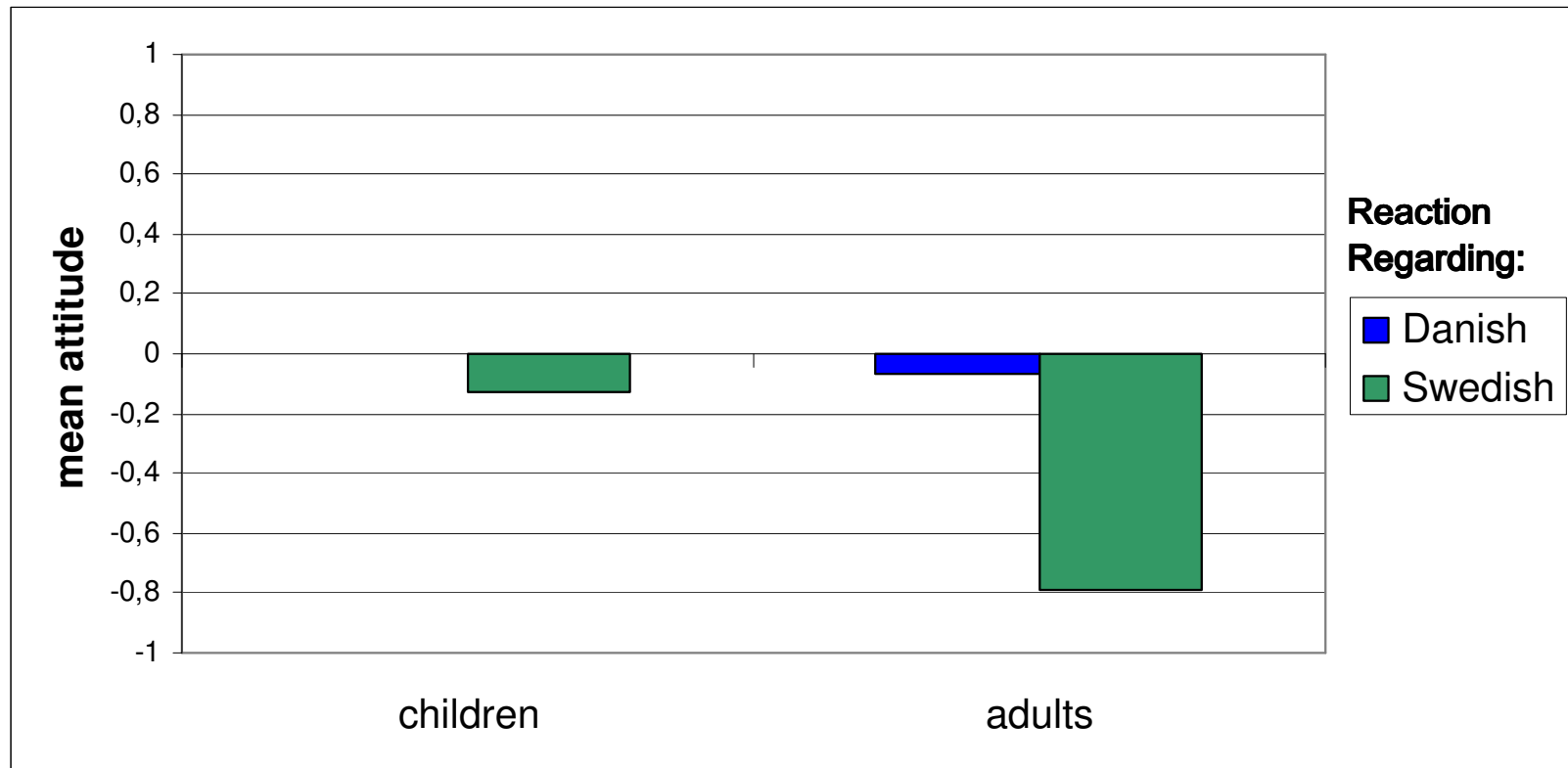




# Attitude and contact

19-1-2011 | 25

## Attitude results



No significant correlations with intelligibility



rijksuniversiteit  
groningen

Schüppert & Gooskens (submitted)

## Contact elicitation

Children and adults were asked how often they were exposed to the language through ...

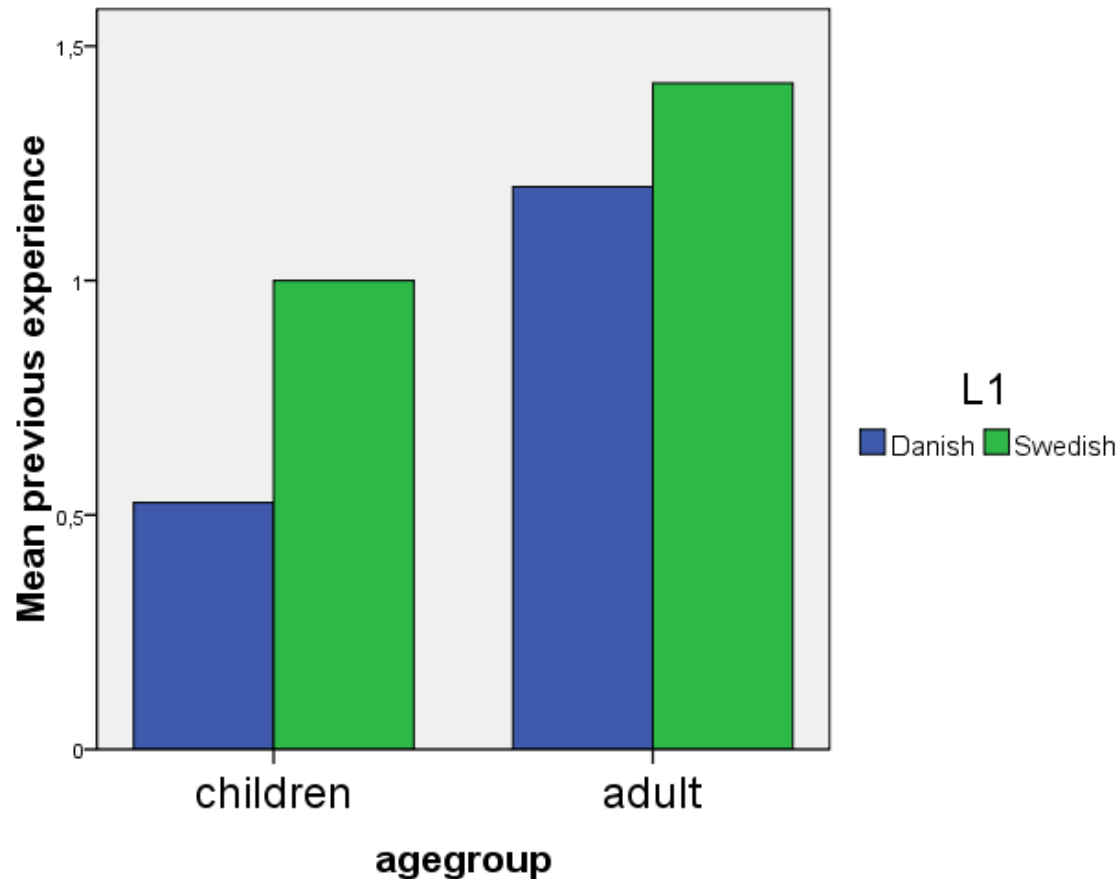
- › spoken media
- › personal contact



# Attitude and contact

19-1-2011 | 27

## Mean contact results



No significant correlations with intelligibility



# Attitude and contact

19-1-2011 | 28

- › Differences in attitude and contact do not seem to explain the Swedish-Danish asymmetric intelligibility



?



# Orthography

19-1-2011 | 30

## Example

Danish

*hund* [hun]

Swedish

*hund* [hund] ‘dog’

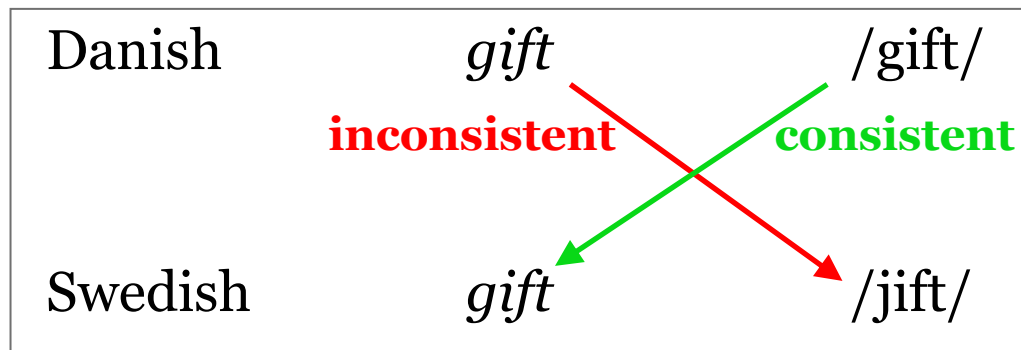


# Orthography

19-1-2011 | 31

## Stimuli

- 112 cognates
- Pronunciation differs by one phoneme
- This phoneme is consistent or inconsistent with L1 orthography:



## Subjects

29 Danish students  
25 Swedish students

## Task

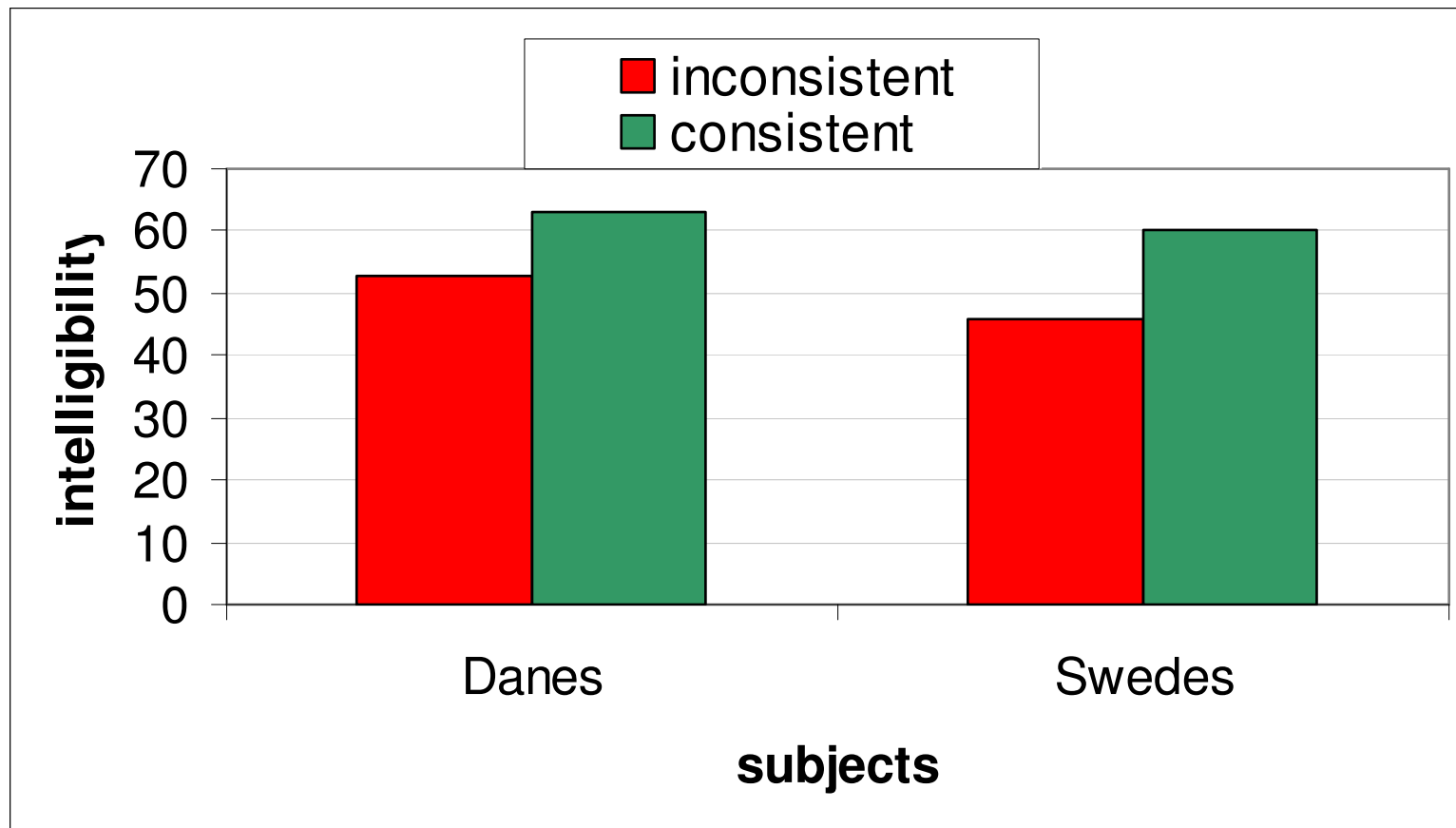
Translation into L1





# Orthography

19-1-2011 | 33

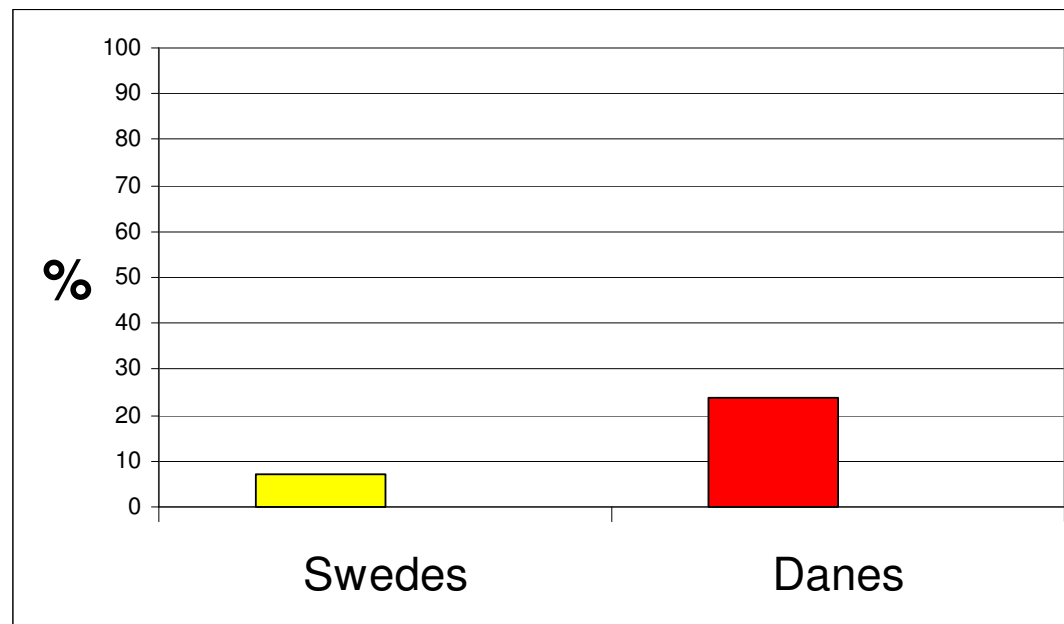


# Orthography

19-1-2011 | 34

100 randomly chosen frequent Swedish and Danish cognates

Percentage of consistent sounds



# Attitude and contact

19-1-2011 | 35

- › Orthography seems to be (part of) the explanation for the Swedish-Danish asymmetric intelligibility



# Conclusions

19-1-2011 | 36

- › Articulation
- › Attitude
- › Contact
- › Orthography

