Asymmetrical intelligibility between the Scandinavian languages

experimental approaches

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12 July 2010
Mean intelligibility results Swedish-Danish

Question

Why is spoken Danish-Swedish mutual intelligibility asymmetric?

- Linguistic and extra-linguistic factors
Articulation

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

Speech rate in Danish-Swedish cognates

Hilton, Gooskens & Schüppert (2010)
Articulation

Knowledge of words at various ages

Bleses et al. 2008
Articulation

Phrase comprehension score by age and language

Bleses et al. 2008
Articulation

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

- Example:

  Sw. *koka* [kuːka] vs. Da. *koge* [kʰɔːɡə] ‘cook’

  Sw. *koka über* [kuːkæːˈveː] vs. Da. *koge over* [kʰɔːɡəvɔːr] ‘boil over’

Bleses et al. 2008
Articulation

Hypothesis

Danes have greater difficulty understanding their own language than Swedes
Articulation

Stimulus material
› isolated words
› semantically unpredictable sentences
› spontaneous sentences

Gooskens, Van Heuven & Van Bezooijen (2010)
Manipulations

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

1 2 3 4 5

Gooskens, Van Heuven & Van Bezooijen (2010)
Articulation

Listeners
› Swedes and Danes

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

Gooskens, Van Heuven & Van Bezooijen (2010)
Articulation

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

Gooskens, Van Heuven & Van Bezooijen (2010)
Articulation

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

Gooskens, Van Heuven & Van Bezooijen (2010)
Previous investigations suggest that attitudes and contact explain Swedish-Danish asymmetric intelligibility.
Attitude and contact neutralised by testing young children:

- little contact with neighbouring countries
- less strong attitudes towards neighbouring languages
Attitude and contact

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
Stimulus material

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

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
Example

Swedish subject hears Danish æble ‘apple’ and sees the following pictures:
Intelligibility results

Mean response time

children adults

L1
Danish Swedish

Schüppert & Gooskens (submitted)
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

Attitude results

No significant correlations with intelligibility

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

Mean contact results

No significant correlations with intelligibility
Attitude and contact

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

### Example

<table>
<thead>
<tr>
<th>Danish</th>
<th>Swedish</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>hund</em></td>
<td><em>hund</em></td>
</tr>
<tr>
<td>[hun]</td>
<td>[hund]</td>
</tr>
</tbody>
</table>

‘dog’
Orthography

Stimuli

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

Danish: gift /gift/

Swedish: gift /jift/

Schüppert & Gooskens (2010)
Orthography

Subjects

29 Danish students
25 Swedish students

Task

Translation into L1
Orthography

Schüppert & Gooskens (2010)
100 randomly chosen frequent Swedish and Danish cognates

Percentage of consistent sounds

Doetjes & Gooskens (2007)
Orthography seems to be (part of) the explanation for the Swedish-Danish asymmetric intelligibility
Conclusions

› Articulation

› Attitude

› Contact

› Orthography