Why are the Danes so hard to understand?
An experimental study

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

Example from a Norwegian satirical program showing two Danes having problems communicating:
Research question

Is Danish an intrinsically difficult language to understand?
“An abundance of vowels, weak syllable codas, unstressed syllables without any vowel sound, and fairly inexpressive prosody makes Danish a harder nut to crack perceptually than most languages which it otherwise is reasonable to compare it to”. (Grønnun 2003)
Danish represents a HARD SEGMENTATION task not only to non-native speakers and second language learners of Danish, but also to Danish language acquiring children (Bleses et al. 2008).

Fewer and more indistinct cues to identification of segment, syllable, word and utterance boundaries than Swedish.

E.g. vocalizations of obstruents and vowel reduction:
Sw. koka [kuːka] vs. Da. koge [kʰɔɡə] ‘cook’

Sw. koka över [kuːkaœːve] vs. Da. koge over [kʰɔɡəøɹ] ‘boil over’
Swedish-Danish intelligibility

Mean results: Maurud (1976), Bø (1978), Delsing & Lundin Åkesson (2005)

% intelligibility

- Swedish for Danes
- Danish for Swedes

spoken
written
L1 acquisition by Danish and Swedish children (Bleses e.a. 2008)

› MacArthur-Bates Communicative Development Inventories (CDI)
› Parents’ knowledge about their children’s language
› Questionnaires
› Comparison across a large number of languages
› Danish children score lower on vocabulary comprehension than Swedish children
Vocabulary comprehension score by age and language

- Danish
- Swedish
- American English
- Dutch
- French (European)
- Spanish (Mexican)
- Galician
- Croatian
- Basque
- British English
- Italian

Age:
- 0.8
- 0.9
- 1.0
- 1.1
- 1.2
- 1.3

No. of items:
- 0
- 20
- 40
- 60
- 80
- 100
- 120
- 140
- 160
- 180
- 200

(Bleses e.a. 2008)
L1 acquisition by Danish and Swedish children (Bleses e.a. 2008)

Phrase comprehension score by age and language

- Danish
- Swedish
- American English
- Dutch
- Spanish (Mexican)
- Galician
- French European
Research question

Is Danish an intrinsically more difficult language to understand than Swedish?
24 isolated words

- Danish-Swedish cognates
- frequent
- monosyllabic
- singular nouns

  e.g. Da. *sag*, Sw. *sak* ‘matter’
12 read sentences
- semantically unpredictable sentences
  (SUS, Benoît et al. 1996)
- Danish-Swedish cognates
- 6 or 7 frequent words (3 or 4 content words)
- monosyllabic (except verbs)
- singular nouns

e.g. Da. *En rød nat tager et navn* ‘A red night takes a name’
Stimulus material

Speakers
- 3 Danish and 3 Swedish male students 20 to 30 years
- speakers of the Standard language

Manipulations
- descending amount of babble noise, resulting in lesser
to more intelligibility:

1  2  3  4  5
Crossed design

Listeners
› 21 young Swedes from Stockholm area
› 18 young Danes from Copenhagen area

Task
› listen to 5 versions in own language
› write down in own language
1. Swedish suffers less from noise than Danish
2. The effect is larger for sentences than for isolated words.
Results

Isolated words

% correct

version

language

Swedish

Danish
Results

Isolated words, per speaker

% correct

100
90
80
70
60
50
40

version

1 2 3 4 5

speaker
A
B
C
D
E
F

Swedish
Danish
Results

Speech rate

Mean segment duration

language
Danish
Swedish

speaker
D E F A C B
Results

Isolated words, without speaker B

- Language
  - Swedish (blue line)
  - Danish (red line)

% correct

Version

1 2 3 4 5
Results

Read sentences, without speaker B

% correct

version

language
- Swedish
- Danish
Conclusions

› Some indications that Danish is intrisically harder to understand than Swedish.
› Effect is not larger for sentences than for words.
› More speakers should be tested.
› Is there an age effect?