

Center for Child Language e-prints

WORKING PAPERS IN LANGUAGE ACQUISITION

Institute of Language and Communication
University of Southern Denmark

No 3 - 2006

Syllabic and morphological structure: what can be learnt from their interaction in Danish?

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WWW.SDU.DK/CFB

Ecole Doctorale "Connaissance Langage Modélisation"

Universités Européennes d'Eté

Du 29 juin 2006 au 1 juillet 2006

Paris X Université de Paris X Nanterre

Atelier de travail: « Autour de la syllabe »¹

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1. Can spoken Danish be understood?

It is a common-place observation that foreigners have problems comprehending spoken Danish. This has been confirmed in a recent large-scale study of intra- and inter-Scandinavian comprehension.² The test persons were approximately 1300 high school students (including 25% immigrants), aged 15-25, from different regional areas, and approximately 170 of the parents to the students. There were spoken language comprehension data (video sequences, radio news); reading comprehension data (articles); data on attitudes and habits; and the study included a comparison to older studies.

The questions investigated included: How good are the Scandinavians in comprehending each others' language, and have there been changes in the last decades? Among the main conclusions of the study were: Norwegians were clearly better than Swedes and Danes in comprehending their respective Scandinavian neighbours' languages (only the comprehension of Danish, Norwegian and Swedish was

¹ Organized by Bernard Laks (Laboratoire Modyco). Proceedings to be published by PRESSES UNIVERSITAIRES DE PARIS 10.

² DELSING & ÅKESSON 2005, <http://www.norden.org/pub/kultur/kultur/sk/TN2005573.pdf>.

investigated); and Danes are somewhat better comprehending Swedish than vice versa. The Norwegians' head start compared to the Swedes and the Danes has increased, but in particular the Danes' language comprehension has become worse. In Sweden it is mostly the level on Danish which has decreased, in Denmark it is both the level on Norwegian and Swedish.

The study also investigated attitudes towards the so-called neighbour languages (Swedish: grannspråk). Table 1 illustrates how easy or difficult (on a scale where 100 is maximally easy and 0 maximally difficult) test persons from different areas find the three main Scandinavian languages (Danish, Swedish and Norwegian):

Område	Danska	Svenska	Norska
DK	-	43,4	53,9
SE	33,5	-	58,4
NO	35,5	77,4	-
FS	27,2	-	61,0
FF	13,5	49,5	18,5

Tabell 5:13. Lätthetsindex för de olika språken fördelat på länder/områden.³

[Table 1 here: 'easy vs. difficult'-index for the three main Scandinavian languages (columns) according to areas (rows); DK: Denmark, SE: Sweden, NO: Norway, FS: Finland (Swedes), FF: Finland (Fins).]

Danish is thus considered, by both Norwegians and Swedes, to be clearly more difficult than the other Scandinavian neighbour languages.

Table 2 shows some interesting differences between the capitals of Denmark (Copenhagen), Sweden (Stockholm) and Norway (Oslo), and another major town in each of these countries. It is surprising that the Copenhageners stand apart as finding all the other languages (including English) more difficult than

³ DELSING & ÅKESSON 2005 p. 111, <http://www.norden.org/pub/kultur/kultur/sk/TN2005573.pdf>.

people from Aarhus, and noteworthy but hardly surprising that Danish is found (more or less) difficult by everybody.

Område	Danska	Svenska	Norska	Engelska
Århus	-	37,4	47,0	83,1
Köpenhamn	-	48,0	63,0	67,4
Malmö	43,5	-	59,8	83,7
Stockholm	23,2	-	60,8	83,0
Oslo	35,1	81,6	-	87,1
Bergen	41,4	75,9	-	83,8

Tabell 5:14. Lätthetsindex för infödda i Skandinavien fördelat på ort.⁴

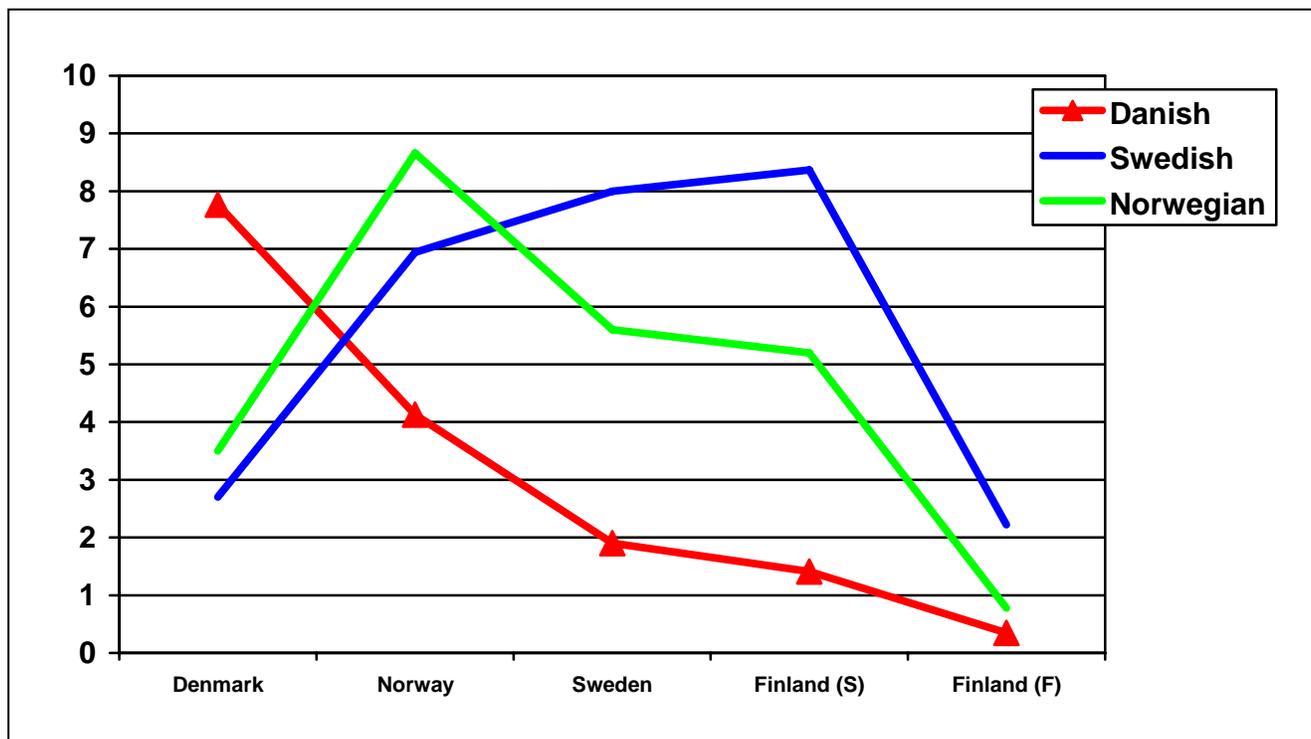
[Table 2 here: ‘easy vs. difficult’-index of the three main Scandinavian languages and English (columns) for native Scandinavians according to place (rows).]

In nearly all cases, there is a statistically significant correlation between ‘easy vs. difficult’-index and results of comprehension at an individual level,⁵ i.e. the test persons generally had a good judgment of their own comprehension of the other languages.

Figure 1 is a graph (made by my colleague Dorte Bleses) illustrating the results of the study for the test persons’ comprehension of spoken language (from radio news) according to area/country. When table 1 and fig. 1 are compared, a similar picture of the comprehension difficulties of spoken Danish emerges.

⁴ DELSING & ÅKESSON 2005 p. 111, <http://www.norden.org/pub/kultur/kultur/sk/TN2005573.pdf>.

⁵ DELSING & ÅKESSON 2005 p. 113, <http://www.norden.org/pub/kultur/kultur/sk/TN2005573.pdf>.



[Figure 1 here]

Thus foreigners (including our Scandinavian relatives) have difficulties decoding and understanding Danish. The question is why. One possible source of the challenge presented by Danish to foreign ears, is that the vocalization of consonants⁶ and the frequent but not obligatory schwa-reductions⁷ resulting in long monotonous vocalic stretches (cf. section 4) make the Danish sound structure *indistinct* ('unclear') and *weaken cues* for word and syllables boundaries or make them non-existent, which makes the sound chain hard to segment.

2. Syllables and Danish (lack of) beauty: The *stød*

The study of Inter-Scandinavian Language Understanding also considered attitudes towards language in the dimension 'fine vs. foul' (or 'nice/pretty' vs. 'ugly'). Again Danish occupies a singular place of little glamour and prestige, as is illustrated in table 3.

⁶ e.g. RISCHER 1970, BASBØLL 1972, 1980 and 2005.

⁷ cf. BRINK & LUND 1975, BRINK et al. 1991, GRØNNUM 1982, GRØNNUM & BASBØLL 2001.

	Danska	Svenska	Norska
DK	-	46,0	50,5
SE	27,8	-	53,1
NO	28,9	66,6	-
FS	45,2	-	59,9
FI	37,7	50,0	47,8

Tabell 5:11. Finhetsindex för de olika språken fördelat på de olika länderna.⁸

[Table 3 here: ‘fine vs. foul’-index (100 being maximally fine and 0 maximally foul or ugly) for the three main Scandinavian languages (columns) according to the five countries (rows): DK: Denmark, SE: Sweden, NO: Norway, FS: Finland (Swedes), FI: Faroe Islands.]

It is not a new postulate that Danish is far from being particularly beautiful, or even an “ugly language”. Consider the following quotation from a Swedish text more than three centuries old:

‘Der till medh: så wærdas de [: the Danes] icke heller att talla som annat folck, utan **tryckia ordhen fram lika som the willia hosta, och synas endeles medh flitt forwendhe ordhen i strupan, for ænde komma fram**, sammaledes *wanskapa the munnen, då the talla, wridhan och wrengan, så att the draga then offwra leppen till then wenstra sidon och den nedra till then högra sidon, menandes dett wara sig en besynnerlighe pryding och wellståndh.*’⁹ [Boldfacing and italics mine].

This text can be translated as follows: ‘Also this: nor do they [: the Danes] stoop (‘worthy themselves’) to speak like other people, but **press the words forward as if they will cough, and appear partly to deliberately turn the words around in the throat, before they come forward** (i.e. out of the mouth), partly *they misshape the mouth when they speak, twist it and sneer it, so that they pull the upper lip to the left side and the lower to the right side, thinking this to be a particular ornament and well-standing.*’ [My translation, boldfacing and italics mine]

⁸ DELSING and ÅKESSON 2005 p. 109, <http://www.norden.org/pub/kultur/kultur/sk/TN2005573.pdf>.

⁹ V. SÖDERBERG 1908. The speech is characterized as “vehemens oratio contra danos” (a vehement speech against the Danes) in the Latin original [MAGNUS [1544] 1617, see note 10], and is attributed to bishop elect Hemming Gadh at 1510 where the tension between Sweden and Denmark was extremely high.

The **text part in boldface** is probably the first literary **evidence on stød** (a syllable prosody realized by laryngealization, cf. 2.1 and 2.2), with its dramatic comparison with deliberate coughing where the words are turned around in the throat. The *italicized part* is strongly emotional -- pejorative -- of the Danes' way of speaking, *projecting ridicular attitudes* into Danish speech, and would certainly correspond to a very low score on a scale of beauty.

The Swedish text is a translation of a Latin text first published in 1544: 'Nec ut cæteri homines loqui dignantur, immò **more tussientium, aut verba in medio gutture formantium**, ita *de indust<r>ia proloquuntur, ut superius labium in sinistrum, inferiusque in dextrum latus distorquentes, ex singulari oris deformitate, singularem gloriam sese assequi posse existiment.*'¹⁰ [Boldfacing and italics mine]

This quotation emphasizes that spoken Danish sounds strikingly aberrant in Swedish ears, and that the Danish way of speaking is also notified by Swedish eyes. The passage makes implicit reference to the stød, but one cannot, obviously, from this quotation deduce that stød is particularly important for the evaluation found to-day of Danish as being ugly. I would be surprised, however, if stød is considered a linguistic embellishment by persons not having it in their own speech.

Thus the linguistic Swedish parallel to the difference between stød and non-stød, viz. the opposition between the word accents 1 and 2 (see 2.1), was and is phonetically very unlike anything found in Danish. But there are other systematic differences related to syllable structure and word structure between these prosodies in Danish and Swedish (/Norwegian) which complicate the general and historical principle: *Stød corresponds to Accent 1 and Non-stød to Accent 2*. See Table 4.

¹⁰ Johannes MAGNUS (1554), *Historia de omnibus Gothorum Sueonumque regibus* [published by Olaus Magnus], 2nd edn. [published by Schürer] (1617), p. 875.

TABLE 2.16. Systematic differences between Danish stød and Norwegian/Swedish word accents (from Basbøll 1972a: 7–8, cf. 1985a: 3–4).

Danish	Norwegian/Swedish
(1) The stød characterizes a stressed syllable (thus each part of a compound may have stød or non-stød)	(1) The word tone characterizes a (stressed) word (thus a compound as a whole has either accent 1 or accent 2)
(2) Monosyllables may have stød (<i>mand</i>) or non-stød (<i>ven, kat</i>)	(2) Monosyllables always have accent 1
(3) Stød never occurs in syllables with a short vowel followed by zero or an unvoiced consonant	(3) No such restrictions exist
(4) It follows from (3) that stød is the marked term	(4) It follows from (2) that accent 2 is the marked term

Note: (4) involves the Prague School notion of markedness, i.e. is based upon the neutralization of surface contrasts, and thus constitutes no proof as to which category is underlyingly marked (stød is unmarked in heavy syllables in my account, see Pt. Four). The relevance of the surface concept of markedness referred to in Table 2.16 is indicated by the fact that non-assimilated foreign words are stød-less

11 in Danish, but normally have accent 1 in Swedish and Norwegian (cf. ch. 14).

[Table 4 here]

As illustrated in Table 4, the issue of markedness is crucial in the comparison between Danish stød and Swedish/Norwegian (tonal) word accents, see section 2.1.

2.1. Syllables, word prosody and markedness

Markedness can be taken in different senses:

- (i) Markedness phonetically (“something extra”);
- (ii) Markedness as lack of contrast (neutralization) in certain (here: prosodic) types;
- (iii) Unmarkedness as “elsewhere” (default);
- (iv) Markedness in terms of frequency.

For *Swedish word accents*, clearly Accent 2 is the marked term both phonetically¹² and phonologically: Only Accent 1 occurs in monosyllables.

¹¹ BASBØLL 2005, p. 86.

¹² For Central Swedish, see ENGSTRAND 1995.

According to the model of BASBØLL (2003, 2005) only bimoraic syllables are eligible for stød.

To be bimoraic a syllable must have:

- (i) Full vowel;
- (ii) Long-sonority rhyme (more than a short-vowel)¹³

“Pretonal” syllables are not bimoraic, i.e. only the syllable with main stress and following syllables can be bimoraic (cf. “foot”). Stød contributes to the “perceptual strength” of a syllable.

Danish stød is clearly marked, both phonetically: something extra (a kind of creaky voice), and phonologically: it occurs only in bimoraic syllables. *For heavy bimoraic syllables, stød is distributionally unmarked (but not privative) (cf. Accent 1), i.e. non-stød only occurs under certain specifiable conditions. Danish stød is thus marked (privative), whereas its lexical and grammatical parallel in Swedish (and Norwegian), viz. accent 1, is unmarked.* These conditions concern an interplay between syllabic-moraic structure and word structure (in the sense of BASBØLL 2005).

2.2. Syllable types, stød and productivity

The greatest Danish linguist before Rasmus Rask was Jens P. Høysgaard (1698-1773) who was born in Aarhus and worked as a technical assistant at the University (in Copenhagen) 1737-59. Hereafter he was a sexton at the University Church (Trinitatis) until his death. In 1752 he published a deeply original and insightful 500 page work *Methodisk Forsøg til en dansk Syntax* (“Methodical Attempt to [make] a Danish syntax”). His most influential work was his analysis of the Danish system of “tones” (or syllabic prosodies); he briefly presented some main ideas in this domain in 1743, and in 1747 he published one of the most important works on the Danish language ever, viz. *Accentuered og Raisonnered Grammatica, Som viser Det Danske Sprog i sin naturlige Skikkelse, saa vel som dets Rime-*

¹³ It is controversial whether there should be a condition “(iii) At least secondary stress”, since it may be argued either that (iii) is an independent criterion or that it is not.

konst og Vers-regler (“Accentuated and Reasoned Grammar, which shows the Danish language in its natural shape, as well as its art of rhyming and rules of verse”).

According to modern terminology, his system of “Aandelav” or “Tone-hold” (corresponding to modern syllable types), can be summarized as follows:

	Stød	No stød
Long V	V:ʔ <i>pæn</i>	V: <i>pæn(e)</i>
Short V	VCʔ <i>pen</i>	VC <i>ven (penn(e))</i>

That stød is not just part of the lexical storage of words, but (also) available as a productive mechanism, can be illustrated by following examples:

My favorite composers (I use a rather broad phonetic transcription here, not indicating that [b d g] are voiceless, and indicating stød as a glottal stop what it is only exceptionally¹⁴.)

Bach, Telemann, Händel ['bɑk, 'tse:le,manʔ, 'hɛnʔdl]

Mozart, Schubert ['mo:sɑ:ʔt, 'ʃu:ʔbʌt]

Brahms, Wagner ['brɑ:ʔms, 'vɑwʔnɐ]

Traditional Danish pronunciation of Latin

insula, insularum ['ɛnʔsula, ensu'la:ɔm]

amare, amant [a'mɑ:a, 'æ:,manʔd]

And of Greek:

antropos, androgyn ['anʔtsɔpʰɒs, andʔɔ'gy:ʔn]

Loans: *antabus, museum, kapital* ['anʔtsabus, mu'sɛ:ɔm, khap(h)i'tsæ:ʔl]

Alain Juppé (Danish: [ʃy'pʰe])

Too many *Juppé'er* (Danish: [ʃy'pʰe:ʔɐ])

¹⁴ cf. GRØNNUM & BASBØLL, forthcoming.

Émile Zola (Danish: [so'la])

Too few *Zola* 'er (Danish: [so'læ:ʔɐ])

Clinton (Danish: ['klentsʌn])

Too many or rather too few *Clinton* 'er? (Danish: ['klen,tsʌnʔɐ])

Stød for the addressee may fulfill three different language functions, and it is expanding rather than disappearing in younger speech.¹⁵

(i) Stød can distinguish words: *mand* 'man', *man* 'one (indef. pronoun)' ['manʔ, 'man]

(ii) Stød potentially important signal for word structure: 'number (poss.)', 'neck'/'hall (poss.)' ['tsals, 'halʔs]; *tals* without stød shows that *s* is clitic (cf. *hals*); 'dressed (ptc. pl./def.)' *klædte* with stød shows that *e* is FPE, and therefore an adj-ending, hence *klædt* plus *e* ['k(h)lɛ:ʔdɔ], in contrast to 'dressed (past)' *klædte* without stød ['k(h)lɛ:dɔ]

(iii) Stød can be used as identity marker

3. Syllables and morphemes: Interaction in Danish words

According to the model of Basbøll 2003, 2005, there are three levels of integration of endings in Danish words. These depart from five steps cross-linguistically, which are grammaticalized in Danish in three steps, abbreviated FPE (Fully Productive Endings), SPE (Semi-Productive Endings) and UPE (UnProductive Endings), see fig. 3.¹⁶

¹⁵ as shown by GRØNNUM, see GRØNNUM & BASBØLL, forthcoming.

¹⁶ BASBØLL 2005, p. 428 (except for 'complex words').

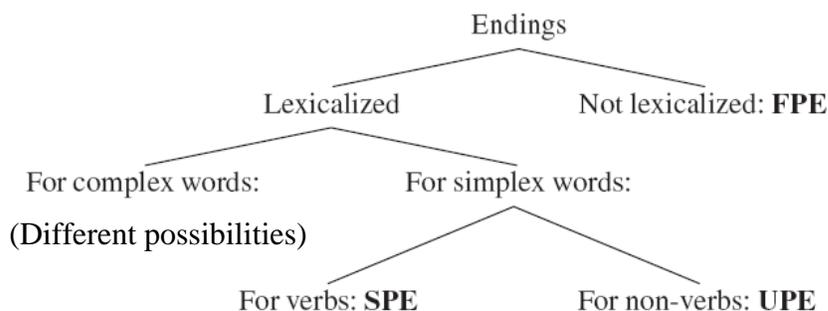


FIGURE 15.1. Classification of (inflectional) endings of simplex words according to degree of productivity.

[Figure 2 here]

The word structure can be symbolized as follows:

{ [(lexeme UPE) SPE] FPE }

(...) =min-word

[...] =basic word

{...} =max-word

According to this model, there are no stød-rules, just the *Principle of Non-Stød* which applies within the Basic word. It has two subcases: A penultimate syllable in “(...)” has non-stød, and a monosyllabic “(...)” has non-stød before a syllable. This word structure model exemplifies an interaction between syllables (where the difference between bimoraic and monomoraic syllables is important for stød) and morphemes (monosyllabic monosyllables constitute an important category for stød).

syllable represents the comparative morpheme, the fourth represents the infinitive marker, and the fifth and sixth syllable represent the root of *åre* 'blood vein' which is the first part of a lexicalized verbal compound.

GRØNNUM concluded in her « Why are Danes so hard to understand »-paper: “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.”¹⁸ These facts contribute to the opacity of words and morphology, and make Danish a particular challenge also to the language acquiring child, see BLESES et al. (submitted)¹⁹.

References

- BASBØLL Hans, « Some remarks concerning the stød in a generative grammar of Danish », in Ferenc KIEFER (ed.), *Derivational Processes*, KVAL PM ref. no. 729, Stockholm-Turku, 1972, p. 5-30.
- BASBØLL Hans, « Phonological syllabification in Danish once more. À propos Molbæk's paper », in ARIPUC 14, 1980, p. 263-83.
- BASBØLL Hans, « Prosody, productivity and word structure: the stød pattern of Modern Danish », in *Nordic Journal of Linguistics* 26.1, 2003, p. 5-44.
- BASBØLL Hans, *The Phonology of Danish*, in the series *The Phonology of The World's Languages*, Oxford University Press, 2005, 596 pages.
- BLESES, Dorthe & Hans BASBØLL, « The Danish sound structure – Implications for language acquisition in normal and hearing impaired populations », in E. SCHMIDT, U. MIKKELSEN, I. POST, J.B. SIMONSEN & K. FRUENSGAARD (eds.), *Brain, Hearing and Learning*. 20th Danavox Symposium 2003, p. 165-190.

¹⁸ GRØNNUM 2003, p. 129.

¹⁹ BLESES, Dorthe, Werner VACH, Malene SLOTT, Sonja WEHBERG, Pia THOMSEN, Thomas O. MADSEN & Hans BASBØLL, « Building the case for a Danish delay – early vocabulary development in Danish children based on a cross-linguistic comparison of CDI-studies » (submitted).

- BLESES, Dorthe, Werner VACH, Malene SLOTT, Sonja WEHBERG, Pia THOMSEN, Thomas O. MADSEN & Hans BASBØLL, « Building the case for a Danish delay – early vocabulary development in Danish children based on a cross-linguistic comparison of CDI-studies » (submitted).
- BRINK Lars & Jørgen LUND, Dansk Rigsmål 1-2, Copenhagen, Gyldendal, 1975.
- BRINK Lars, Jørn LUND, Steffen HEGER & Jens NORMANN JØRGENSEN (eds.), Den Store Danske Udtaleordbog « Copenhagen: Munksgaard », 1991.
- DELSING Lars-Olov & Katarina Lundin ÅKESSON, Håller språket ihop Norden? En forskningsrapport om ungdomars förståelse av danska, svenska och norska, in TemaNord 2005:573, 148 pages.
- ENGSTRAND Olle, « Phonetic interpretation of the word accent contrast in Swedish », *Phonetica* 52, 1995, p. 171-179.
- GALBERG JACOBSEN Henrik, Dorthe BLESES, Thomas O. MADSEN & Pia THOMSEN, Take Danish - for instance. Linguistic studies in honour of Hans Basbøll presented on the occasion of his 60th birthday 12 July 2003, Odense University Press, 2003.
- GRØNNUM Nina, « Two issues in the prosody of Standard Danish: The lack of sentence accent and the representation of sentence intonation», in ARIPUC 16, 1982, p. 19-35.
- GRØNNUM Nina, Fonetik og Fonologi – Almen og Dansk, Akademisk Forlag, 1998 (2nd edn. 2001, 3d edn. 2005).
- GRØNNUM Nina, « Why are the Danes so hard to understand? », in Henrik GALBERG JACOBSEN et al. Take Danish – For Instance, 2003, p. 119-30.
- GRØNNUM Nina, Rødgrød med Fløde – En lille bog om dansk fonetik, Akademisk Forlag, 2007.
- GRØNNUM Nina & Hans BASBØLL, « Consonant length, stød and morae in Standard Danish », in *Phonetica* 58, 2001, p. 230-53.
- GRØNNUM Nina & Hans BASBØLL, « The Danish stød – phonetic and cognitive issues », in P.S. BEDDOR, M. OHALA and M.J. SOLE (eds.), *Explorations in Laboratory Phonology*, Oxford University Press, forthcoming.
- MAGNUS Johannes, *Historia de omnibus Gothorum Sueonumque regibus*, 1554 [published by Olaus Magnus], quoted after the 2nd edn. [published by Schürer], 1617.

RISCHEL Jørgen, « Acoustic features of syllabicity of Danish », in Proceedings of the 6th International Congress of Phonetic Sciences, 1970, p. 767-70.

RISCHEL Jørgen, « The Danish syllable as a national heritage », in Henrik GALBERG JACOBSEN et al. Take Danish – For Instance, 2003, p. 273-82.

SÖDERBERG V., « Det Hemming Gadh tillskrifna talet mot danskarna », in Historiska Studier tillägnade Professor Harald Hjärne på hans sextioårsdag den 2 maj 1908 af lärjungar, Uppsala, Stockholm, Almqvist & Wiksell, 1908, p. 645-74.

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