Overview of

THE DANISH SOUND SYSTEM

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CONTENTS

The *Overview of the Danish sound system* is work in progress, but I hope that it may nevertheless be useful in the theoretical understanding of the Danish sound system and in the practical acquisition of the pronunciation of Danish.

"Danish" in this overview means Modern Standard Copenhagen Danish spoken distinctly by young people (appr. 30 years old). The overview is based on Grønnum 2005 and Basbøll 2005, but differs in several respects from the systems given in those publications.

In the overview Danish is referred to at two levels:

- The PHONETIC level: the pronunciation of Danish speech sounds and words is presented in square brackets, e.g. [ˈsbʁɔɣ̊ʔ].
- The ORTHOGRAPHIC level: the written representation of Danish speech sounds and words is presented in italics, e.g. *sprog*.

All the example words and sentences given here are available as audio files at *sproghistorie.dk/lydsystem/*, where a Danish version of the overview is also available.

1

INTRODUCTION

VOWELS

Danish has a rich vowel system with several distinct vowel qualities, most of which have both short and long counterparts. In stressed syllables we find the following SHORT VOWEL QUALITIES:

	unrounded			rounded		
front	[i]	[ˈmid]	*mit*	[y]	[ˈnyd]	*nyt*
	[e]	[ˈmed]	*midt*	[ø]	[ˈmød]	*mødt*
	[ɛ]	[ˈmɛd]	*mæt*	[œ]	[ˈsœmˀ]	*søm*
	[æ]	[ˈsæʊ̯ˀ]	*sav*	[ɶ]	[ˈdʁɶʊ̯]	*drøv*
	[a]	[ˈmad]	*mat*			
back				[u]	[ˈmud]	*mut*
				[o]	[ˈfoðˀ]	*fod*
				[ɔ]	[ˈɔsd]	*ost*
				[ɒ]	[ˈtˢɒʊ̯]	*tov*
				[ʌ]	[ˈtˢʌd]	*tot*
	[ɑ]	[ˈtˢɑg]	*tak*			

Distribution of short stressed vowels

- short [æ] is found only before [ðˀ] and [ʊ̯ˀ], where [a] is not found
- short [ɒ] is found only before [ʊ̯], where [ʌ] is not found
- short [ɶ] is found only after [ʁ], where [ø] is not found, and before [g̊], where [œ] is not found

In stressed syllables we find the following LONG VOWEL QUALI-TIES:

	unrounded			rounded		
front	[iː]	[ˈmiːlə]	*mile*	[yː]	[ˈsyːlə]	*syle*
	[eː]	[ˈmeːlə]	*mele*	[øː]	[ˈsøːlə]	*søle*
	[ɛː]	[ˈmɛːlə]	*mæle*	[œː]	[ˈhœːnə]	*høne*
	[æː]	[ˈmæːlə]	*male*	[ɶː]	[ˈgɶːɐ]	*gøre*
back				[uː]	[ˈmuːlə]	*mule*
				[oː]	[ˈmoːlə]	*mole*
				[ɔː]	[ˈmɔːlə]	*måle*
				[ɒː]	[ˈɒːnə]	*orne*
				[ʌː]	[ˈhʌːɪ]	*høje*
	[ɑː]	[ˈkʰɑːbə]	*karpe*			

Distribution of long stressed vowels

- long [ɶː] is found only before [ɐ], where [œː] is not found
- long [ʌː] is found only before [ɪ], where [ɒː] is not found

Distribution of short and long vowels

In some positions vowel quantity is distinctive:

- before obstruents, nasals and laterals both short and long vowels are found, e.g. [ˈpʰɑgɐ ˈpʰɑːgɐ ˈœfɐ ˈsœːfɐ ˈmenə ˈmeːnə ˈlɛgə ˈlɛːgə] *pakker, parker; øffer, surfer; minde, mene; lægge* (vb. inf.), *lægge* (sb. pl.)

In other positions vowel quantity is predictable, i.e. non-distinctive:

- before another vowel, a stressed vowel is always long, e.g. [ˈlɑːɪ ˈleːʊ ˈpʰiːɐ ˈyːð̩] *leje, leve, piger, yde*
- before a word-final semivowel, before a semivowel with *stød* and before a semivowel followed by a consonant (including semivow-

els), a vowel is always short, e.g. [ˈhaɪ̯ ˈhaʊ̯ ˈdaɪ̯ˀ ˈkʰuɐ̯ˀ ˈbaɪ̯ˀɐ ˈlyðˀɐ ˈʁaɪ̯sə ˈuɐ̯nə] *hej, hav* (sb. sg.), *dej, kur, bajer, lyder, rejse, urne*

- before a semivowel followed by a vowel, a vowel is usually half-long, e.g. [ˈlɑ·ɪ̯ɐ ˈy·ðɐ] *lejer, yder,* but the quantity may vary

Vowel chart

This chart shows the position of the Danish stressed vowels relative to each other according to place of articulation (adapted from Basbøll 2005: 48):
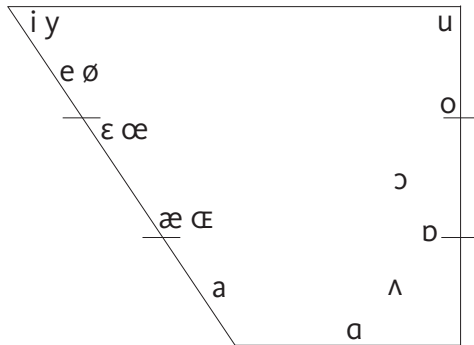
Unstressed vowels

The following short vowels are never found under stress:

vocoid			contoid		
[ɪ]	[ˈlɑːɪ]	*leje*	[m̩]	[ˈlabm̩]	*lappen*
[ʊ]	[ˈleːʊ]	*leve*	[n̩]	[ˈkʰadn̩]	*katten*
[ɐ]	[ˈpʰiːɐ]	*piger*	[ŋ̩]	[ˈtˢɑgŋ̩]	*takken*
[ə]	[ˈfadə]	*fatte*	[l̩]	[ˈsygl̩]	*cykel*
[ð̩]	[ˈfadð̩]	*fattet*			

The unstressed vowels [ɪ ʊ ɐ] are phonetically close to the stressed vowels [e o ʌ].

4

CONSONANTS

The Danish consonant system is relatively simple compared to those of other languages. Consonants are always short except in compounds of the type [ˈhussalˀ] *hussalg*.

For the OBSTRUENTS (comprising stops, fricatives and affricates) it is characteristic that the only difference between [pʰ tˢ kʰ] and [b d g] is that the former stops are aspirated (or affricate) while the latter are unaspirated. Both the [pʰ tˢ kʰ] and the [b d g] series are unvoiced and lenis.

The following obstruents are found in Danish:

		syllable-initial		syllable-final	
stops	[pʰ]	[ˈpʰas]	*pas*		
	[tˢ]	[ˈtˢɑg]	*tak*		
	[kʰ]	[ˈkʰad]	*kat*		
	[b]	[ˈbas]	*bas*	[ˈlab]	*lap*
	[d]	[ˈdas]	*das*	[ˈsad]	*sat*
	[g]	[ˈgas]	*gas*	[ˈtˢɑg]	*tak*
fricatives	[f]	[ˈfad]	*fat*	[ˈlɔf]	*luf*
	[s]	[ˈsad]	*sat*	[ˈpʰas]	*pas*
	[ɕ]	[ˈɕad]	*sjat*	[ˈhaɕ]	*hash*
	[h]	[ˈhɑg]	*hak*		
affr.	[tɕ]	[ˈtɕanˀs]	*tjans*		
	[dɕ]	[ˈdɕas]	*jazz*	[ˈbadɕ]	*badge*

The SONORANTS are divided into approximants, semivowels, nasals and laterals. Nasals and laterals behave similarly in many respects.

		syllable-initial		syllable-final	
approx.	[j]	[ˈja]	*ja*		
	[v]	[ˈvad]	*vat*		
	[ʁ]	[ˈʁad]	*rat*		
semivowels	[ɹ̯]			[ˈhaɹ̯]	*hej*
	[ʊ̯]			[ˈhaʊ̯]	*hav*
	[ɚ̯]			[ˈmoɚ̯]	*mor*
	[ð]			[ˈmað]	*mad*
nas. and lat.	[m]	[ˈmad]	*mat*	[ˈham]	*ham*
	[n]	[ˈnad]	*nat*	[ˈman]	*man*
	[ŋ]			[ˈbʌŋ]	*bon*
	[l]	[ˈlad]	*ladt*	[ˈtˢal]	*tal*

After [pʰ tˢ kʰ f] we find unvoiced [j̊ ʁ̊ l̥], e.g. [ˈpʰjad ˈkʰʁad ˈkʰjoːlə] *pjat, krat, kjole;* unvoiced [l̥] is also found after [s], e.g. [ˈsl̥eg] *slik.*

Danish *stød*, written [ˀ], consists of irregularities in the vibrations of the vocal chords, typically realised as creaky voice, but frequently as a full glottal closure, especially in careful speech. Occasionally an echo vowel is found after the *stød*, e.g. [ˈseːˀe] *se*. *Stød* is usually regarded a suprasegmental feature, not a segment.

The following structures may or may not have *stød*; in these structures *stød* is distinctive, although it is largely predictable on the basis of the morphological structure of the word:

- a long vowel, e.g. [ˈhuːˀs ˈviːˀsɐ] *hus, viser* (vb. prs.) (cf., without *stød*, e.g. [ˈviːsɐ] *viser* (sb.))
- a short vowel plus a sonorant, i.e. a semivowel (e.g. [ˈdɑɪ̯ˀ ˈbɑɪ̯ˀɐ] *dej, bajer*), a nasal (e.g. [ˈhɑmˀ ˈkʰɑmˀɐ] *ham* (sb.), *kammer* (sb.)) or a lateral (e.g. [ˈhalˀ ˈbalˀɐ] *hal, baller* (pl. of *bal*)) (cf., without *stød*, [ˈdɑɪ̯ ˈvɑɪ̯ɐ ˈhɑm ˈkɑmɐ ˈtˢal ˈbalɐ] *dig, vejer, ham* (pron.), *kammer* (vb.), *tal* (sb.), *baller* (pl. of *balle*))

The phonetic requirement for *stød* is referred to as "*stød* base".

Stød is excluded in syllables without *stød* base, i.e. syllables containing a short vowel not followed by sonorant, e.g. [ˈkʰad ˈpʰas] *kat, pas*.

STRESS

Danish stress, written [ˈ], is primarily characterised by a change in pitch. In modern standard Copenhagen Danish the pitch rises from the stressed syllable to the following syllable. Thus in a word like [ˈsbiːsə] *spise* the first syllable has lower pitch than the second.

At the sentence level a verb is often unstressed if it forms a syntactic unity with a following element. This phenomenon is referred to as *enhedstryk* or "unit stress". The most important cases of unit stress are the following:

- verb + object without determiner (always unit stress): ˈPia læser aˈvis (cf. with determiner: ˈPia ˈlæser en aˈvis), ˈNiels passer ˈbørn (cf. with determiner: ˈNiels ˈpasser ˈbørnene), ˈPia spiller ˈskak
- verb + "actual subject" *der* without determiner (always unit stress): *der mangler* ˈvand
- verb + prepositional phrase or adverb (unit stress in fixed expressions): ˈPia hører ˈefter, ˈNiels falder i ˈsøvn, ˈPia går i ˈvandet (cf. ˈbarnet ˈleger i ˈvandet)
- verb + predicative (always unit stress): ˈNiels er ˈtræt, ˈPia malede ˈhuset ˈrødt
- auxiliary verb + main verb (always unit stress): ˈPia har ˈset ˈNiels, ˈNiels skal ˈsove

Several consecutive verbs may be subject to unit stress, e.g. ˈPia har kunnet stå på ˈvandski.

When the verb is unstressed both quantity and *stød* disappear, e.g. [ˈpiːa lɛsɐ aˈviːˀs] *Pia læser aˈvis* (cf. [ˈpiːa ˈlɛːˀsɐ en aˈviːˀs] *Pia* ˈlæser en aˈvis); [ˈnels gɒ ˈjɛmˀ] *Niels går* ˈhjem (cf. [ˈnels ˈgɒːˀ pɔ ˈgæːð̩n] *Niels* ˈgår på ˈgaden).

Quantifiers except numerals are also unstressed, e.g. *et glas* ˈvand, et ton ˈstål.

SPECIAL PROBLEMS FOR NON-NATIVE SPEAKERS

The articulation of certain sounds presents special difficulties for non-native speakers. The degree and character of the difficulties obviously depend on the speaker's first language, but special attention should be paid to the following sounds:

- unrounded front vowels: [i e ɛ æ a]
- rounded front vowels: [y ø œ Œ]
- the semivowel [ð] and the vowel [ð̞], e.g. [ˈmað ˈmɑːð̞] *mad, meget*
- the approximant [ʁ] and its unvoiced variant [ʁ̥], e.g. [ˈʁad ˈtˢʁ̥ad] *rat, træt*
- the affricate alveolar stop [tˢ], e.g. [ˈtˢɑg ˈtˢʁ̥ɑgtˢɐ] *tak, traktor*
- the unvoiced pronunciation of [b d g], including the unvoiced pronunciation of the sequences [sb sd sg] (not [zb zd zg]), e.g. [ˈtˢiɐ̯ʔsda] *tirsdag*
- the articulation of [h] (not [x]), e.g. [ˈhɑɪ̯] *hej*
- the pronunciation of [ŋ] (not [ŋg]), e.g. [ˈfaŋɐ] *fanger*
- *stød*, e.g. [ˈmæːʔlɐ] *maler* (vb. prs.) vs. [ˈmæːlɐ] *maler* (sb. sg.); [ˈmanʔ] *mand* vs. [ˈman] *man*
- unit stress, e.g. ˈ*Pia kan spille* ˈ*skak*

The basis of this overview is distinctly spoken Danish. Some points where normal speech may deviate from distinct speech are the following:

- after a stressed vowel, a nasal or lateral + [ə] becomes syllabic and the [ə] is lost, e.g. [ˈfaŋə ˈkʰoːnə] *fange, kone* > [ˈfaŋ ˈkʰoːn̩] (cf., after a consonant or an unstressed vowel, e.g. [ˈvesnə ˈɛːblə ˈleːonə] *visne, æble, levende*)
- two identical consecutive vowels are contracted, e.g. [ˈlanð̩ð̩ ˈlɛŋɐɐ] *landede, længere* > [ˈlanð̩ ˈlɛŋɐ]
- after vowel + obstruent, [ə] is lost, e.g. [ˈæːbə ˈlɛːsə ˈlabə ˈlɛsə] *abe, læse, lappe, læsse* > [ˈæːb ˈlɛːs ˈlab ˈlɛs]

Distinct speech

[en ˈdæːˀ ble ˈsoːˀln̩ ʌ ˈvenˀn̩ uˈeːˀniːi ˈʌmˀ ˈvɛm da va ˈsdæɐ̯ɡəsd //
ˈneːð̩ pʰɔ ˈjoːˀen ˈsɔːˀ di en ˈmanˀ da va pʰɔ ˈvɑi̯ˀ ˈɡɛmˀm̩ en ˈsɡɒu̯ˀ
// ˈvenˀn̩ ˈsæːæ tˢe ˈsoːˀln̩ // kʰa du ˈseːˀ ˈdɛnˀ ˈmanˀ da ˈɡɒːˀ ˈdeɐ̯ˀ
ˈneːð̩ pʰɔ ˈsɡɒu̯vɑːˀin // la ʌs pʰʁœʊ ˈkʁɑfdɐ pʰɔ ˈham // ˈdɛnˀ da kʰa
fɔ ˈfʁɑɡn̩ ˈa ham a dn̩ ˈsdæɐ̯ɡəsdə // ˈɔu̯ ˈkʰɛɪ̯ / ˈsvɑːð̩ð ˈsoːˀln̩ / ˈdu
ˈsdɑːde // ˈsʌ beˈɡønˀdə ˈvenˀn̩ ʌ ˈblɛːsə ʌ ˈsdɒːmə // ˈsdoːɐ ˈtˢʁæːˀɐ
vɛldð̩ð ʌmˈkʰulˀ // ˈdyːˀɛnə i ˈsɡɒːˀʊn søɡdə lyːˀ i dæːɛs ˈhuːlɐ ʌ
ˈsɡjuːˀl // ˈmɑŋə ˈfuːləʁæːðe ble blɛsd ˈneðˀ a ˈvenˀn̩ / mɛn ˈmanˀn̩
/ da ˈsled ˈeɡə fʌˈsdoðˀ a de va ˈham da va ˈɒːsæːˀ tˢe ˈsdɒːmvæːˀɐð
/ tˢʁɑɡ ˈfʁɑɡn̩ ˈtˢed ʌmˈkʁɑŋˀ sa ʌ ˈsdʁɑðˀ sa ˈfʁɑmˀ sʌ ˈɡʌd han nu
ˈkʰunə]

Normal speech

[en ˈdæːˀ ble ˈsoːˀln̩ ʌ ˈvenˀn̩ uˈeːˀniːi ˈʌmˀ ˈvɛm da va ˈsdæɐ̯ɡəsd //
ˈneːð̩ pʰɔ ˈjoːˀen ˈsɔːˀ di en ˈmanˀ da va pʰɔ ˈvɑi̯ˀ ˈɡɛmˀm̩ en ˈsɡɒu̯ˀ
// ˈvenˀn̩ ˈsæːæ tˢe ˈsoːˀln̩ // kʰa du ˈseːˀ ˈdɛnˀ ˈmanˀ da ˈɡɒːˀ ˈdeɐ̯ˀ
ˈneːð̩ pʰɔ ˈsɡɒu̯vɑːˀin // la ʌs pʰʁœʊ ˈkʁɑfdɐ pʰɔ ˈham // ˈdɛnˀ da
kʰa fɔ ˈfʁɑɡn̩ ˈa ham a dn̩ ˈsdæɐ̯ɡəsdə // ˈɔu̯ ˈkʰɛɪ̯ / ˈsvɑːð̩ ˈsoːˀln̩ /
ˈdu ˈsdɑːde // ˈsʌ beˈɡønˀd ˈvenˀn̩ ʌ ˈblɛːs ʌ ˈsdɒːm̩ // ˈsdoːɐ ˈtˢʁæːˀɐ
vɛldð̩ ʌmˈkʰulˀ // ˈdyːˀɛnə i ˈsɡɒːˀʊn søɡd lyːˀ i dɑɛs ˈhuːlɐ ʌ ˈsɡjuːˀl
// ˈmɑŋ ˈfuːlʁæːðe ble blɛsd ˈneðˀ a ˈvenˀn̩ / mɛn ˈmanˀn̩ / da ˈsled
ˈeɡ fʌˈsdoðˀ a de va ˈham da va ˈɒːsæːˀ tˢe ˈsdɒːmvæːˀɐð / tˢʁɑɡ
ˈfʁɑɡn̩ ˈtˢed ʌmˈkʁɑŋˀ sa ʌ ˈsdʁɑðˀ sa ˈfʁɑmˀ sʌ ˈɡʌd han nu ˈkʰun̩]

Orthography

En dag blev solen og vinden uenige om hvem der var stærkest.
Nede på jorden så de en mand der var på vej gennem en skov. Vin-
den sagde til Solen: »Kan du se den mand der går dernede på sk-
ovvejen? Lad os prøve kræfter på ham. Den der kan få frakken af
ham, er den stærkeste.« – »Okay,« svarede Solen, »Du starter.« Så
begyndte Vinden at blæse og storme. Store træer væltede omkuld.
Dyrene i skoven søgte ly i deres huler og skjul. Mange fuglereder
blev blæst ned af vinden, men manden, der slet ikke forstod at det
var ham der var årsag til stormvejret, trak frakken tæt omkring sig
og stred sig frem så godt han nu kunne.

EXAMPLE TEXT

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