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SUPPLEMENTARY NOTES ON VOWEL LENGTHENING IN DANISH

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The recordings which formed the basis of Fischer-Jørgensen "Segmental duration of Danish words in dependency on higher level phonological units", ARIPUC 16, 1982, were supplemented by a number of new recordings containing mostly actual disyllables (i.e. words without apocope). The four West Jutlandish speakers read a supplementary list, and recordings were made of a number of new informants: seven dialect speakers from East Jutland, five from North Zealand, and two younger Copenhagen informants. It turned out that both West- and East Jutlandish speakers have vowel lengthening in actual disyllables but not in apocopated words (the same was true of the North Zealandish speakers who had apocope). There is thus more lengthening in the dialects than assumed in my 1982 report. Very conspicuous lengthenings were found in three North Zealandish coastal dialects, but somewhat less lengthening than expected in the speech of the two Copenhagen informants. The rejection of the hypothesis of a connection with apocope or with a special pitch contour was confirmed by the new recordings. The assumption of a connection with the weakness of the following consonant is upheld.

I. INTRODUCTION

In the preceding volume of this series I published a report (Fischer-Jørgensen 1982) showing that the tendency, found in many languages, to shorten the segments of disyllables compared to monosyllables was counteracted in Danish by a tendency to lengthen the short stressed vowel of the structure CV́CV(C) in disyllables (and also in words with more syllables). Thus in

Standard Danish as spoken in Copenhagen, represented by seven informants, the stressed vowel of *danne* ['d̥anə][1] is significantly longer than the vowel of *Dan* [d̥an] and, similarly, the stressed vowel of *natte* ['nad̥ə] is significantly longer than the vowel of *nat* [nad̥], the average difference of all pairs investigated being 3.2 cs. The stressed vowel of trisyllables of the type *dannede* ['d̥anəðə] is slightly shorter than that of ['d̥anə] but longer than in [d̥an]. The same difference is found when the structures CVC and CVCV are members of compounds, e.g. ['d̥anəˌvaŋʔ] vs. ['d̥anˌfɔs]. The tendency seemed to be stronger in words with the ending *-e* [ə] than with the ending *-er* (pronounced [ɒ] or [ɔ]), and stronger before stops and nasals than before *s*. Before consonant clusters (*bast/baste*) the difference is small and in most cases non-significant. The words were placed in frames of the type *Han sagde* ..., or *Han sagde ... fem (to) gange* 'he said ... five (two) times', a few also in small sentences.

In the lower sociolect of Copenhagen there is an audible lengthening of short vowels, which has been noticed by various observers, and according to the general impression it is more pronounced in disyllables than in monosyllables. This impression was supported by the recordings of a speaker of this sociolect (ST).

All the main informants had lived in Copenhagen for many years, but some of them had a still perceptible dialectal background (Jutlandish, and in one case Funish). The question was now whether their vowel lengthening was solely due to Copenhagen influence, or whether similar tendencies could be found in the dialects.

In order to throw some light on this problem I recorded samples of some Danish dialects and regional standards (RSD). There were three Zealandish, seven Funish, and six Jutlandish speakers. The test words were placed in small sentences.

Of the three Zealandish speakers, one (EP from Dragør on Amager near Copenhagen) had a considerable vowel lengthening in disyllables before single consonant. She had preserved the final vowel. The other two had apocope of final *-e*. One (from Bjeverskov near Køge) had few significant lengthenings, the other had a significant lengthening before nasals and in *takker* but no lengthening in other cases. Listening to older tape recordings of North Zealandish dialects revealed audible lengthenings in two cases, but there were also informants without audible lengthenings. The conclusion was that there are clear lengthenings in at least some Zealandish dialects, which may be connected with the lengthenings found in Copenhagen.

For the Funish speakers the results were very heterogeneous. Only one informant (IP from Western Funen) had significant vowel lengthening in most words (there were two exceptions). One informant (from Eastern Funen) had consistent lack of lengthening except in the actual disyllabic *bassen* [b̥asn̩]. (Both had apocope.) For the others there was no consistent

pattern, and the examples of significant differences were found in different word pairs for different persons. In table II of the 1982-report the comparison between *bas* and *bassen* was left out, and since the table moreover contained a number of misprints (mostly lacking minus-signs, but fortunately only for non-significant differences), it is given here again in a corrected form. The definite forms of *bas* and *basse* (in both cases: *bassen*) were originally included in the list in order to see whether there would be any difference between old accent 1 and accent 2 words, which was not the case; but a comparison with *bas* is also of interest.

The recordings of Jutlandish informants gave much more consistent results. A typical speaker of the Århus RSD had lengthenings in exactly the same cases and of the same magnitude as the Copenhagen Standard speakers, and the same was, on the whole, the case for the RSD of five dialect speakers, one from Northern Jutland (Vendsyssel) and four from various parts of the West Jutlandish dialect area (with a number of exceptions for the speaker from Thy, TA).

In the recordings of the dialect forms of these five informants the lengthenings were quite different. All Jutlandish dialects have obligatory apocope of final [-ə]. The informant from Vendsyssel had, as should be expected for his dialect, a considerable lengthening of the vowel in apocopated forms, also before consonant clusters (there may be coalescence with phonologically long vowels). He had no lengthening in the actual disyllable *sønner* but some lengthening of *takker* and *danne*. Only for the latter two words was there agreement between his dialect and his RSD. The four West Jutlandish speakers had no lengthening in apocopated forms before stop consonant (in this case there is West Jutlandish stød), nor (for the two speakers who read these words) before *s*, but they had lengthening of the vowel and (with one exception) also of the consonant in *komme* and in the actual disyllable *takker*, two also in *sønner*. These were the only words in which all four informants had approximately the same lengthening in their dialect and their RSD. For other words there were only some scattered cases.

From these facts I drew the conclusion that the vowel lengthening in the RSD of the North- and West Jutlandish speakers is not based on their dialects, but is a different norm, which is in accordance with the Århus RSD. Further I concluded that this latter norm cannot be based on East Jutlandish dialects since it is well known that in East Jutlandish there is complete phonological merger between old disyllables with apocope and monosyllables without stød, also before sonorants, and in this case an allophonic lengthening of the old disyllables would be very unlikely. The lengthening in the Jutlandish RSD must thus be due to influence from the Copenhagen standard, which is now spreading rapidly.

Table I

Funish

Differences in vowel duration (in cs) between disyllables and monosyllables with phonologically short vowels for Funish speakers. Speakers are indicated by initials. - indicates shorter duration in disyllables, a star indicates that the difference is significant at the 1% level, a star in parentheses that it is significant at the 5% level (each average covers six tokens). ap. means apocope. D means dialect, RSD "Regional Standard Danish". A point after the words indicates final position.

	MA	LA	HV	IP	EK	EH	HC
	Frørup	Frørup	Haastrup	Vissen-bjerg	Odense	Odense	Odense/ Svendborg
	D +ap.	D +ap.	D -ap.	D +ap.	RSD -ap.	RSD -ap.	RSD -ap.
maḍ(ə). maḍ.	-0.1	0.8	1.7*	0.5	1.1	2.5*	1.9*
snɑǧ(ə). snɑǧ.	0.3	1.6(*)	1.9*	1.5*	0.4	-0.8	
kʰɛḅ(ə). kʰɛḅ.	0.2	3.0*		2.7*			
tʰɑǧ(ə). tʰɑǧ.				-0.4			1.1
sœnɒ sœn	-0.1	-0.7	1.0	1.8*	-0.3	0.8	0.5
kʰɔm(ə). kʰɔm.	-2.0*	-1.7	1.4	4.1*	2.8*	0.8	
ḅas(ə). ḅas.	0.9	4.3*	0.0	2.4*	2.3*	-0.9	-0.6
lasḍ(ə). lasḍ.				2.0*			
ḅasɳ.I ḅas.	1.3*	-0.2	0.6	3.3*	2.2*	-0.5	
ḅasɳ.II ḅas.	2.2*	0.3	-0.8	2.8*	1.8(*)	-0.8	

However, after a while, I was no longer so sure of the validity of my conclusions, particularly after having discussed the problems with Peter Molbæk Hansen, who told me that his East Jutlandish dialect in Himmerland had vowel lengthening in actual disyllables with short vowel + single consonant. If this should turn out to be a general phenomenon in East Jutlandish dialects, also in those closer to Århus, it would be conceivable that the lengthening of the vowels in the disyllables of the RSD, also in those disyllables which corresponded to dialectal monosyllables without lengthening (e.g. RSD [tʰɑg̊ə] vs. dialectal [thɑʔg̊] with apocope), was due to a generalization from the dialectal actual disyllables.

I therefore found it necessary to undertake recordings of Eastern Jutlandish dialects, and also some extra recordings of actual disyllables in Western Jutlandish. Moreover, I found that more recordings of North Zealandish dialects were required to find the basis of the Copenhagen lengthening.

II. NEW RECORDINGS OF JUTLANDISH DIALECTS

A. INFORMANTS AND MATERIAL

The informants for West Jutlandish were the same as in the preceding investigation, i.e. BT, TA, EA, and JD.

For the recordings of East Jutlandish the following informants were used:

PM, born 1946 in Himmerland, East Jutland, about 40 km south of Aalborg and about 70 km northwest of Århus. He spoke dialect as a child and still speaks it when visiting his family. His Standard Danish has a clear Jutlandish rhythm, but he has adopted the Copenhagen pitch contour. He has lived in Copenhagen since 1960.

NE, born 1906 in Hadbjerg, about 20 km north of Århus, still living in the same area (Halling), well preserved dialect.

NG, born 1917 in Røgen, about 35 km east of Århus, still living there, speaks genuine dialect.

SJN, born 1902 in Gl. Rye about 30 km southwest of Århus and still living there, has preserved his dialect, but there was some interference from the standard language when he translated from the written text.

MK, born 1903 in Tiset about 15 km southwest of Århus, still living in the same area (Astrup), speaks dialect, but somewhat closer to the standard language.

MN, born 1899 in Hundslund about 30 km south of Århus, where she also lives now. She has spent some years near Århus as a teacher of domestic science, and speaks both dialect and standard language, but keeps them apart.

IR, born 1930 in Malling, about 15 km south of Århus. She now lives in Århus and speaks the Århus RSD. Her dialect does not seem quite genuine. It has some West Jutlandish features, and in some cases she did not have apocope of [-ə].

The last three informants were female, the first four male. The places recorded are shown in the map, figure 1.

The West Jutlandish speakers read sentences containing the following supplementary words: *læs*, *læsse*, *læsset*, *søn*, *sønner*, *ven*, *vende*, *venner*, *tal*, *kalde*, *kalder*, *Kalle*.

The East Jutlandish speakers read the same words and, moreover, their list contained the following words: *tak*, *takke*, *takker*, *tæt*, *tætte*, *tættet*, *sæt*, *sætte*, *sætter*, *danse*, *danser*, *last*, *laster*. PM read more words than the other East Jutlandish informants. His recordings were used as a basis for the choice of a more restricted number of words for the other informants. Besides the words listed above his lists contained the words: *mat*, *matte*, *tække*, *tækker*, *tækket*, *tætter*, *bas*, *basse*, *basser*, *læsser*, *kande*, *kander*, *kom*, *komme*, *dans*, *danse*, *lasten*. Moreover, some of the words in his list were also placed finally in the sentence, but as the difference between monosyllables and disyllables was almost the same in medial and final position, only medial position was used for the other speakers.

The words ending in *-e* have apocope in the dialects, with the exception of the name *Kalle*. (In the tables (ə) indicates old disyllables, not facultative [ə], the apocope being obligatory in Jutlandish.) The ending *-er* is weak and comes very close to [ə] in most Jutlandish dialects. But since at least some of the informants for the present investigation do make a distinction between e.g. *kalder* and *Kalle*, the ending *-er* being slightly lower, I have transcribed *-er* by [ʌ].

No words with stop consonants were included in the West Jutlandish list because they would have West Jutlandish stød, which in the preceding recording had turned out to make difficulties for the segmentation, and which also made the comparison with the monosyllables somewhat problematic.

A few words had to be left out for some speakers because they had special forms, and the words *sæt*, *sætte*, *sætter* were not read by PM and IR.

The words were placed in small sentences, generally consisting of three stress groups with the test word placed in the second group, e.g. *'Else vil 'kalde på'Søren* 'Else will call Søren', *'Drengen hed 'Kalle til'fornavn* 'The boy's first name was Kalle'. In some cases, however, the first potentially stressed word had syntactically reduced stress (but it was less reduced

Figure 1

Map showing the Jutlandish recordings. The vertical line separates West and East Jutlandish.

in the pronunciation of the dialect speakers than in the standard language), e.g. *Han ˌkørte sin 'ven til statiónen* 'He took his friend to the station' and *Han ˌkørte sine 'venner til 'toget* 'He took his friends to the train'.

The first word after the test word always started with a consonant in the Standard Danish version of the sentences. However, as West Jutlandish - in contradistinction to the standard language - has a proclitic definite article [ɛ], *vende* and *læse* were followed by a vowel in the dialect. Moreover, since the preposition *på* in the connection *kalde på* was *o*, *kalde* was also followed by a vowel. This was somewhat disturbing because it might be expected to influence the vowel length. Molbæk Hansen had informed me that in his East Jutlandish dialect the vowel lengthening was not restricted to actual disyllables but also took place in monosyllables followed by unstressed vowels. In order to see whether this should be the case in the dialects investigated here, the words *læs* [lɛs/las], *søn* [sœn], and *tal* [tʰal] were placed in two different sentences, in one case followed by the preposition *til* [tʰe], in the other by the preposition *i* [i], e.g. *Han ˌsendte sin 'søn til 'Århus* 'He sent his son to Århus' and *Han 'traf sin 'søn i 'Randers* 'He met his son in Randers'.

The sentences were written in Standard Danish in lists with three or four different randomizations. The lists were read twice, so that there are six or eight examples of each word for each informant. During the recording of MK, the tape recorder broke down, so that there are only 2-4 examples of some words. Therefore, and because she differed from the other informants by having no vowel lengthening in actual disyllables, her measurements are not included in the averages.

The recordings of the West Jutlandish speakers were made at the Institute for the Study of Jutlandish Language and Culture in Århus on a Nagra tape recorder. The recordings of PM were made at the Institute of Phonetics in Copenhagen on a semi-professional Revox tape recorder. The other East Jutlandish recordings were made on a transportable UHER recorder in the homes of the informants. All recordings were processed in the same way as the recordings described in the preceding report. Significance has been calculated by means of the Mann-Whitney U-test.

B. RESULTS

1. WEST JUTLANDISH

The results for the West Jutlandish speakers are given in tables II-IV and in figure 2A. The measurements from the two recordings (1982 and 1983) have been combined. The new measurements are indicated by a cross in the tables.

Table II

West Jutlandish

Difference in vowel duration (in cs) between old disyllables with apocope and old monosyllables with phonologically short vowels. Each individual average is based on 6 or 8 tokens. x refers to measurements from the supplementary list. (ə) in parentheses indicates that the word is an old disyllable; it is not a facultative [ə]. Apocope is obligatory. See further the caption to table I.

		BT	TA	EA	JD	average
	maʔd̥(ə)/mad̥	0.4	0.1	-2.4*	0.3	
	tʰɑʔg̊(ə)/tʰɑg̊	1.9*	-0.2	-0.8	-0.2	
	av.	1.2	0	-1.6	0.1	-0.1
	b̥as(ə)/b̥as	0.5				
x	lɛs(ə)/lɛs	0.6		0.4		
	av.	0.6		0.4		0.5
	kʰɔm(ə)/kʰɔm	1.5*	2.1*	1.6*	2.3*	1.9
x	wɛn(ə)/wɛn	0.5	-1.3(*)	0.2	-0.6	
x	kʰal(ə)/tʰal	-1.8*	-0.8	-2.5*	-1.1(*)	
	av.	-0.7	-1.1	-1.2	-0.9	-1.0
	d̥ans(ə)/d̥ans	0.6	-0.1	0.8	-0.2	
	lasd̥(ə)/lasd̥	-0.6	(6.5*)	0.3	0.2	
	av.	0	-0.1	0.6	0	0.1

Table II gives the differences in cs between old disyllables with apocope and monosyllables. It is obvious that there is no difference before stops (average -0.1 cs), nor before *s* (average 0.5 cs). (There are very few examples before *s* because the words used were inadequate (see section IIA).) Nor is there any difference before consonant clusters (average 0.1 cs). (TA is not included in the average for [lasd̥] because he has phonologically long vowel in this position.) The postvocalic consonant did not show any clear difference either.

The results before sonorants are confusing. All four informants have a significant lengthening of the vowel in the apocopated form of *komme* compared to *kom*, and three of the four informants also have a significant lengthening of the postvocalic consonant. However, in *vende* [wɛn] compared to *ven* and in *kalde* [kʰal] compared to *tal* there is no lengthening, neither of the vowel nor of the consonant, rather a tendency

to shorten both vowel and consonant ([kʰal] was compared to [tʰal i], not to [tʰal tʰe], because it was followed by a vowel). According to Ringgaard (1959 and 1963) old West Jutlandish disyllables with short vowel followed by sonorant consonant are distinguished from monosyllables by having "dynamic circumflex". This is a somewhat problematic concept. In 1959 Ringgaard describes it as an extra intensity peak. But no measurements are mentioned. What is meant is probably the auditory impression of an extra stress peak or a syllable peak, but stress and syllabicity are more often related to duration and to pitch than to intensity. As mentioned all informants have a lengthening in *komme*, and JD, who is the one who does not lengthen the consonant, has a stronger fall in Fo and in intensity in *komme* than in *kom* (but not two peaks). The others do not have any difference, neither in Fo nor in intensity in any of the word pairs. But the speaker from Vendsyssel (PA) has a second intensity peak in *komme*. - The reason why *komme*, but not *vende* and *kalde* have lengthening should probably be looked for in the segmental and prosodic features of the environment. *komme* and *kom* were followed by a stressed word with initial consonant (*de vil 'komme 'snart, han sagde: 'kom 'så!*), whereas *vende/ven* and *kalde/tal* were followed by an unstressed word which (except for *ven*) had initial vowel. Now, according to oral information from Bent Jul Nielsen and Peter Molbæk Hansen the difference between words of the type *kom/komme* in West Jutlandish is only clearly audible in utterance-final position or before a syntactic break, and at any rate not before unstressed syllables starting with a vowel, unless there is a very clear syntactic break. I did not know this when I constructed the sentences. This may explain the different treatment of the word pairs, but moreover, the imperative *kom!* seems to have an extra short vowel.

Table III gives the differences in vowel duration between actual disyllables and monosyllables. The (very few) examples before *s* do not show any lengthening, but in other cases there is a tendency to a certain lengthening in disyllables, which is very clear and significant in *takker* vs. *tak* (average: 2.4 cs), but which is also - though less consistently - found before sonorants (here the average is 1.2 cs, and the difference is positive in 87% of the cases, though only significant in 56%). The tendency seems to be stronger before *n* (1.6 cs) than before *l* (0.4 cs).

A graphic display of the differences before stops and sonorants is found in figure 2A.

There is a clear tendency to shorten the postvocalic consonant in disyllables. This is true of 19 (or 83%) of the 23 word pairs, the general average being -1.0 cs, but the difference is only significant in six pairs (26% of the cases).

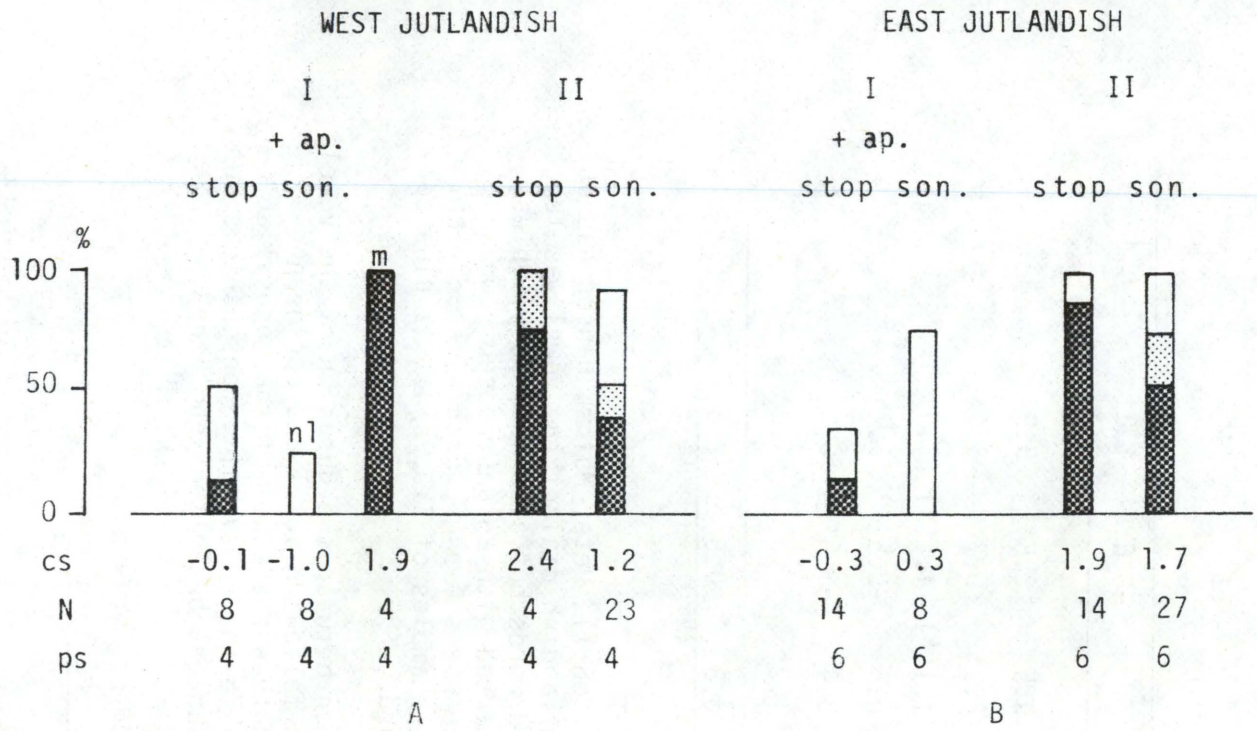

Figure 2

Vowel lengthening in CV́CV(C) words in West and East Jutlandish. I: Old disyllables with apocope of -e (+ap.). II: Actual disyllables. stop = position before stops, son. = position before sonorants. cs = vowel lengthening in cs compared to corresponding monosyllables. N = number of individual word pairs, each comprising 6-8 tokens. PS = number of involved speakers. The height of the column gives the percentage of positive averages.

Percentage of significant differences at the 1% level.

Percentage of significant differences at the 5% level.

Table III

West Jutlandish

Difference in vowel duration (in cs) between actual disyllables and (old) monosyllables (see further the caption to table I).

		BT	TA	EA	JD	average
	tʰɑʔg̊ʌ/tʰɑg̊	3.5*	2.2*	2.3*	1.5(*)	2.4
	b̥asʌ/b̥as	1.3				
x	kʰasʌ/kʰas(ə)				1.0(*)	
x	lɛsʌ/lɛs(las)	0		-0.6		
	av.	0.7		-0.6	1.0	0.4
	sœnʌ/sœn	0.6	0.5	2.8*	3.9*	
x	sœnʌ/sœn	1.7*	2.0*	0.7	3.4*	
x	wɛnʌ/wɛn	1.5*	1.1(*)	1.1(*)	2.5*	
	d̥anə-/d̥an-	0.8	-0.4	-0.5	3.2*	
x	kʰalʌ/tʰal	0.7	0.4	-1.6*	0.5	
x	kʰalə/tʰal	0.7	1.2*		1.2*	
	av.	1.0	0.8	0.5	2.5	1.2

As mentioned above (in section I), Peter Molbæk Hansen has observed that in his East Jutlandish dialect the vowel was lengthened not only in disyllabic words but also in monosyllables, when the following word started with an unstressed vowel. Therefore, in Table III the words *læsser*, *sønner*, *kalder* and *Kalle* were compared to the examples of *læs*, *søn*, *tal* plus consonant in the following word.

Table IV brings a comparison between the duration of the vowels of *læs*, *søn* and *tal* before following vowel and consonant. There is a tendency to lengthen the vowel of the monosyllable before a vowel. In this case the postvocalic consonant is not shortened as in the disyllables, but often lengthened.

Table IV

West Jutlandish

Difference in word duration (in cs) between old monosyllables before unstressed vowel and unstressed consonant in the following word (see further the caption to Table I).

		BT	TA	EA	JD	average
x	las i / las[1] tʰe	0.6	0.9	0.6	0.4	0.6
x	sœn i / sœn tʰe	1.0(*)	1.3(*)	1.1(*)	1.2*	1.2
x	tʰal i / tʰal tʰe	2.9*	1.2(*)	-0.3	-0.2	0.9

[1]) BT lɛs

2. EAST JUTLANDISH

The most comprehensive material for East Jutlandish was read by the informant PM, and he also read some of the sentences in Standard Danish. His results are therefore given in a separate table (table V). It appears from the table (V,A) that PM has no lengthening in apocopated disyllables in his dialect but significant lengthening of the corresponding words (with preserved[ə] in his Standard Danish except before consonant clusters, as was also the case with the other speakers of Standard Danish. Before *s* he has a significant shortening of the vowel in his dialect recording. The unexpected shortening of *basse* [bas] compared to *bas* [bas] can be explained by the fact that *bas* stood before an unstressed vowel (*hans bas er for dyb*), whereas *basse* stood before a consonant. In this case the vowels of *bas* and *basser* have the same length. In his SD version, where both *basse* and *bas* have a vowel after *s*, the vowel of the disyllable is longer than that of the monosyllable. In contradistinction to the West Jutlandish speakers PM has no lengthening of the vowel in *komme*, but in his case the following word was unstressed (*de vil 'komme til 'aften*). The same was the case for *kande* (but here the *n* was lengthened).

In actual disyllables (table V,B) PM has significant lengthening of the vowel both in his dialect and in his SD before stops and sonorants, and the lengthening is of approximately the same magnitude. Before *s* the length is more irregular, like in the standard language; and before consonant clusters there is no significant lengthening. (Since he had no difference between old monosyllables and apocopated disyllables, this latter type has in some cases been used for comparison with the disyllables.)

Table V

PM, East Jutlandish (Himmerland)

Difference in vowel duration (in cs) between (A) old disyllables with apocope and old monosyllables, (B) actual disyllables and monosyllables, (C) monosyllables before vowel and before consonant in the informant's dialect (D) and in standard language (SD). - indicates shorter duration in the disyllable. Stars indicate significance at the 1% level, stars in parentheses at the 5% level. Each individual average is based on 8 tokens. (ə) in parentheses indicates the old disyllables. PM has obligatory apocope in the dialect, but no apocope in the SD words.

A. old disyllables

	D	SD		D	SD
maḍ(ə)/maḍ	-0.2	1.2*	kʰan(ə)/kʰan	0.3	2.0*
maḍ(ə)/maḍ	-0.5	1.9*	kʰɔm(ə)/kʰɔm	0.4	4.0*
tʰɑg̊(ə)/tʰɑg̊	-0.5	4.8*	av.	0.4	3.0
tʰɛḍ(ə)/tʰɛḍ	0.2				
av.	-0.3	2.6	lasḍ(ə)/lasḍ	0.6	-0.4
			ḍans(ə)/ḍans	-0.3	-0.2
lɛs(ə)/lɛs	-1.5*				
bas(ə)/bas	-2.3*	1.5*			

Table V (cont.)

B. actual disyllables

	D	SD		D	SD
tʰɑg̊ʌ/tʰɑg̊	4.3*	4.5*	sœnʌ/sœn	1.9*	1.0(*)
tʰɛg̊ʌ/tʰɛg̊(ə)	2.4*		sœnʌ/sœn	2.0*	
tʰɛg̊əd̥/tʰɛg̊(ə)	3.2*		sœnʌ./sœn.	1.5*	
tʰɛd̥ʌ/tʰɛd̥	1.8*		kʰanʌ/kʰan	2.1*	2.1*
tʰɛd̥əd̥/tʰɛd̥	1.6*		d̥anə-/d̥an-	1.1(*)	0.7(*)
tʰɛd̥əd̥./tʰɛd̥.	1.8*		kʰalʌ/kʰal(ə)	1.5*	
			kʰalə/tʰal(ə)	2.6*	
av.	2.5		av.	1.8	1.3
lɛsʌ/lɛs	-0.3				
lɛsəd̥/lɛs	1.5*		d̥ansʌ/d̥ans(ə)	-0.1	
b̥asʌ/b̥as(ə)	2.3*		l̥asdn̥/l̥asd̥	0.1	
			l̥asd̥ʌ/l̥asd̥	0.6	
av.	1.2		av.	0.2	
b̥asʌ/b̥as(+ə)	0.1	0.9			

C. monosyllables +V / +C

b̥as ə / b̥as(ə) tʰe	2.3*
sœn i / sœn pʰɔ	1.3*
d̥ans(ə) i / d̥ans(ə) pʰɔ	0.1
l̥asd̥ i / l̥asd̥ mɛ	0.3

The results for the other East Jutlandish speakers are given in tables VI-VIII. Parentheses indicate averages of less than five tokens. They are not included in the general averages. MK has been left out altogether in the general averages because she differs from the other informants in the duration of actual disyllables.

Table VI shows that there is no consistent difference between monosyllables reflecting respectively old disyllables with apocope and old monosyllables (just as for the other Jutlandish speakers). However, three informants have a significant lengthening of the vowel in *læsse* compared to *læs*. A possible explanation is that for two of these informants the word *vognen*, following *læsse*, started with a vowel (the diphthong [uə]), whereas for the others it started with a [v], and the third (IR), who was influenced by West Jutlandish, had a proclitic article [ɛ] before the [v].

Table VI

East Jutlandish

Difference in vowel duration (in cs) between old disyllables with apocope and old monosyllables. - indicates shorter duration in old disyllables. Stars indicate significance at the 1% level, stars in parentheses at the 5% level. Speakers are indicated by initials. Each individual average is based on 6 tokens. Numbers in parentheses are based on 2-4 tokens and are not included in the general averages. (ə) in parentheses indicates the old disyllable. There is obligatory apocope.

	NE Hadbjerg	NG Røgen	SJN Gl. Rye	IR Malling	MN Hunds-lund	MK Tiset	av.
sɛd(ə)	-1.4(*)	0.1	-1.0(*)		0.2	(0.8)	
sɛd							
tʰɛd(ə)			-1.0	(2.1)	1.3*	(1.2)	
tʰɛd							
tʰɑg(ə)	-0.9	0.2	[1]	0	-0.1	-0.3	
tʰɑg							
	-1.2	0.2	-1.0	0	0.5		-0.3
lɛs(ə)	-0.2	2.0*	0	1.4(*)	1.2(*)	1.6	0.9
lɛs							
vɛn(ə)			(0.1)	0.3	(2.1)	(1.7)	
vɛn							
kʰal(ə)	0.8	-0.5	0.1	-0.4	0.8	(-0.8)	
tʰal							
	0.8	-0.5	0.1	-0.1	0.8		0.2

[1] SJN's pair *tak/takke* has been left out, because translating from the written list he had pronounced final ə in *takke* in five of the six cases. And in all these cases he had a lengthening of the *a* (2.3 cs), whereas there was no lengthening in the example pronounced with apocope.

Table VII shows that also these East Jutlandish speakers have lengthening of the vowel in actual disyllables with a single consonant, with the exception of MK (who is not included in the general averages). Although in many cases MK had few examples, it was evident that she did not make any distinction.

For *læs*, *søn* and *tal* the examples before following consonant have been used for the comparison with disyllables.

Table VII

East Jutlandish

Difference in vowel duration (in cs) between actual disyllables and monosyllables (see further the caption to table VI).

	NE	NG	SJN	IR	MN	MK	av.
tʰɑg̊ʌ tʰɑg̊	2.7*	1.4*	2.7*	2.1*	0.9	(0.5)	
tʰɛd̥əd̥ tʰɛd̥			0.1	2.3*	1.9*	(0.5)	
sɛd̥ʌ[1] sɛd̥	(1.1)	(2.9)(*)	(-0.9)		(1.1*)	(0.5)	
av.	2.7	1.4	1.4	2.2	1.4		1.8
lɛsʌ lɛs	0	1.7(*)	0.3	1.3*	1.4*	0.6	0.9
sœnʌ sœn	1.4*	0.9(*)	2.1*	1.9*	3.8*	(0.3)	
vɛnʌ vɛn	0.8	2.1*	1.3	2.4*	1.2	(-0.3)	
kʰalʌ tʰal	1.6(*)	0.5	1.6	-0.1	2.4*	(-2.5)	
kʰalə̀ tʰal	0.8	1.2	2.6*	1.6(*)	2.3*	(0.2)	
av.	1.2	1.2	1.9	1.5	2.4		1.6
dansʌ d̥ans(ə)			0.5		0.4	(-0.8)	
lasdʌ lasd̥	0.4	0	0.5	-1.2(*)	0.4	(0.7)	
av.	0.4	0	0.5	-1.2	0.4		0

[1]) The pair *sætter/sæt* has been excluded from the averages, although there were sufficient examples, because *sæt* was followed by a vowel. The pair is, however, not consistently different from *tak/takker*.

The lengthening of the vowel before stop consonant is of somewhat smaller magnitude than for the informant PM and, on the whole, there is less significance. Whereas PM had significant lengthening in all 13 pairs before stop and sonorant consonant, the lengthening for the other East Jutlandish speakers - though positive in 27 of the 28 pairs - is only significant in 18 (or 64%) of the pairs.

PM and the other East Jutlandish speakers have been combined in the graphic illustration of vowel lengthening before stops and sonorants in figure 2B. Both PM and the other East Jutlandish speakers have a clear tendency to shortening of the following postvocalic consonant in disyllables. It is shortened in 91% of the cases (in 61% significantly), the general average being -1.8 cs.

Table VIII shows that these speakers also have a tendency to lengthening in monosyllables before a following unstressed vowel, though not of the same magnitude as within a disyllabic word. The following consonant is shortened in *søn* and mostly in *tak* before vowel.

Table VIII

East Jutlandish

Difference in vowel duration (in cs) between monosyllables before vowel and before consonant in the following word (see further the caption to table VI).

	NE	NG	SJN	IR	MN	MK	av.
tʰɑg̊ i tʰɑg fɒ	1.5*	0.5	0.9(*)	0.5	1.1	(-0.3)	0.9
lɛs i lɛs tʰe	-1.1(*)	0.5	-0.2	1.2*	1.2*	(0.2)	0.7
sœn i sœn tʰe	0.4	0.9(*)	0.6	2.8*	2.6*	(-0.2)	1.4

There is thus more vowel lengthening in Jutlandish dialects than I assumed in my previous report, but only in actual disyllables (except for some cases before sonorants in West Jutlandish).

III. NEW RECORDINGS OF NORTH-ZEALANDISH DIALECTS

A. INFORMANTS AND MATERIAL

The following new informants were used:

PA, born 1898 in Hove about 20 km west-northwest of Copenhagen and still living there. She has consistent apocope, and her dialect seems genuine.

LJS, born 1900 in Snostrup about 30 km northwest of Copenhagen. He has now for some years lived in Slagslunde, 10 km closer to Copenhagen. His dialect is also well preserved. He does not have apocope except in *takke* and *vende*.

OJ, born 1902 in Gundsømagle about 25 km west-northwest of Copenhagen; he has now for some years lived in Frederiksværk about 55 km north-west of Copenhagen. He is somewhat closer to the standard language.

LJF, born 1897 in Auderød near Frederiksværk, now living in Frederiksværk; also somewhat closer to the standard language.

KJ, born 1890 in Gilleleje on the north coast of Zealand, about 60 km north-northwest of Copenhagen. He speaks a more genuine dialect.

LJS, OJ, LJF and KJ did not have apocope in the recordings; this has also been controlled in free conversations for LJF and OJ. Here, too, apocope was rare except after sonorants.

Moreover, a new recording was made of EP, Dragør, because the first recording was technically bad.

The text used for the five new informants was the same as that used for the East Jutlandish speakers, i.e. it contained the words *tak, takke, takker, sæt, sætte, sætter, tæt, tætte, tættet, læs, læsse, læsser, søn, sønner, ven, vende, venner, tal, kalde, kalle, kalder, danse, danser, laste, laster*, placed medially in short sentences. The words *læs, søn* and *tak* were found in two positions: before an unstressed word beginning with a vowel, or with a consonant. LJF did not read the sentences with the words *sæt, sætte, sætter*. The new recording of EP comprised the words: *tak, takke, takker, væk, vække, vægge* [vɛ·gə], *mat, matte, søn, sønner, kom, komme, ven, penne, pæne, vask, vaske*. The sentences were read six times by all speakers except by KJ, who got tired and stopped at the third reading.

The recordings were made in the homes of the speakers, using a Nagra tape recorder. The material was processed in the same way as in the other cases.

Since the recordings covered only parts of North Zealand (particularly the dialects directly north of Copenhagen were missing), I also listened to a number of older tapes of connected texts, recorded by the Institute of Danish Dialectology. Those mentioned in my 1982 report (from Stenløse, Uvelse, Karlebo, Græse and Tisvilde) were supplemented by recordings from Farum, Blovstrød, Alsønderup, Tårbæk, Skovshoved, Esbønderup and Hornbæk, all north of Copenhagen, and Greve, south-west of Copenhagen. The places are indicated on the map, figure 3.

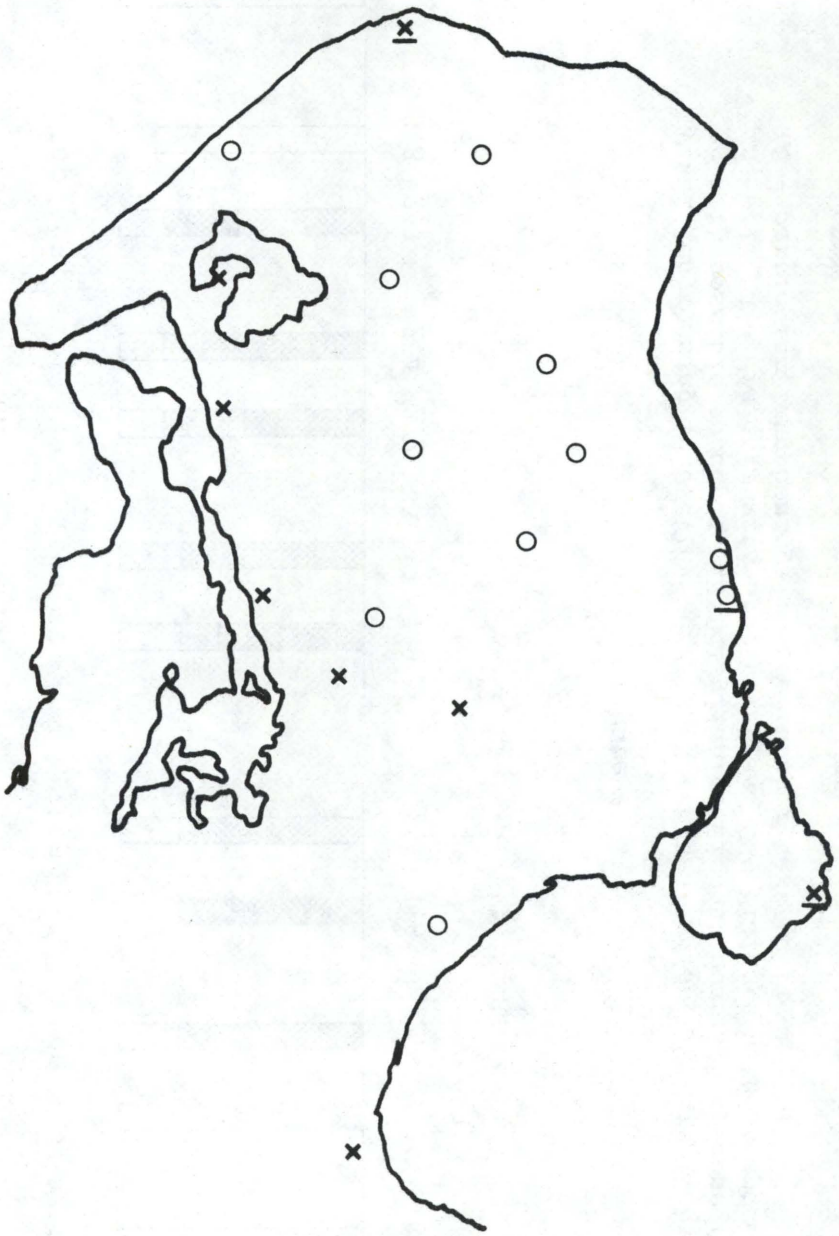

Figure 3

Map showing the recordings of test words (crosses) and of connected texts (small circles). The places with particular lengthening (group C) are underlined.

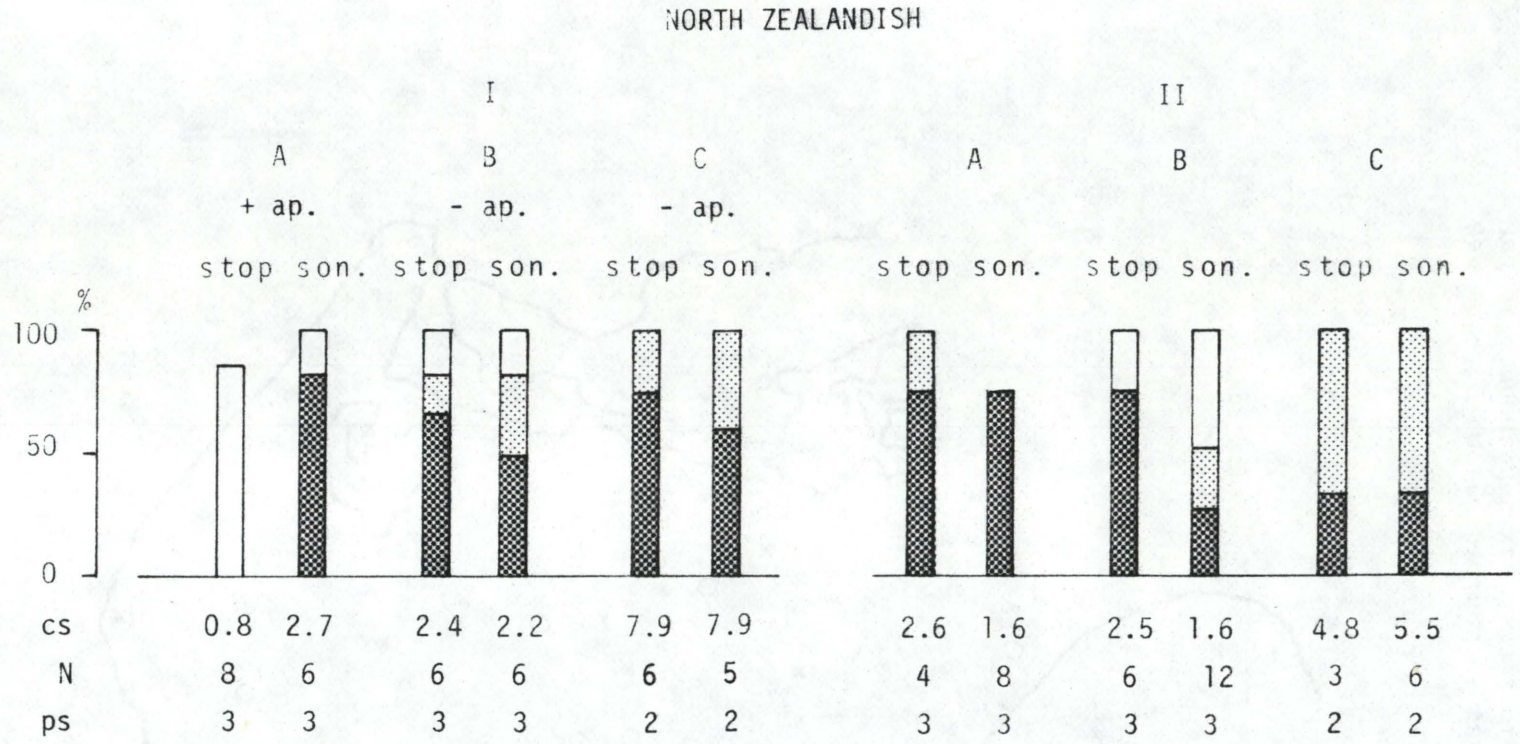

Figure 4

Vowel lengthening in CV́CV(C) words in North Zealandish. I: disyllables in -e with possible apocope. II: disyllables without possible apocope (mostly in -er). A = dialects with apocope, B and C = dialects without apocope (C = particular lengthenings). See further text to figure 2.

Percentage of significant differences at the 1% level.

Percentage of significant differences at the 5% level.

B. RESULTS

The results of the measurements are given in tables IX and X and (for stops and sonorants) in graphical form in figure 4. The two earlier informants (KH and OJ) have been included, and the two recordings of EP have been combined (the tempo was the same). The 8 informants are divided into three groups: A with apocope, B without apocope, and C without apocope and with very conspicuous vowel lengthening. The speakers with apocope do not belong to a geographically coherent area (PA 20 km west-northwest of Copenhagen, KH 40 km northwest, and OJ 40 km south of Copenhagen). It is rather a question of more or less influence from the standard language. The two with particular lengthening (EP and KJ, group C) are not close to each other either, but this strong lengthening may be characteristic of the coastal dialects. Similar lengthenings were found in a connected text read by an old speaker in Skovshoved at the coast about ten km north of Copenhagen.

It appears from tables IX-X that the speakers who have apocope (group A) are in agreement with the Jutlandish speakers (who all had apocope) in so far as they do not generally have any significant vowel lengthening in apocopated words with obstruents (table IX), whereas they have a significant lengthening in actual disyllables (table X).[2] There is, however, disagreement between the Jutlandish and the North Zealandish speakers in the case of old disyllables with sonorant consonants. Here the East Jutlandish speakers did not have any lengthening (there was merger between old disyllables with apocope and old monosyllables in all cases), and the West Jutlandish speakers had only lengthening in some cases, but the North Zealandish speakers have a clear and significant lengthening of the vowel before nasals and before *l*. With the exception of PA's *kalde* there is also lengthening of the following sonorant consonant, so that the sequence vowel + consonant is 5-11 cs longer than in the monosyllable, i.e. there is not merger between monosyllables and apocopated disyllables with sonorant consonant.

Group B (without apocope) has vowel lengthening in all cases before stops and sonorants (but not before *-s* in *læsse*). Sonorant consonants are slightly longer in disyllables with [-ə], whereas other consonants are shorter (2.0 cs, on the average). In disyllables with the endings *-er* [ɒ] and *-et* [əð], both group A and B have shortening of a following obstruent (2.8 cs, on the average), significant in 14 out of 18 averages (78%), whereas sonorants are variable (average 0.2 cs).

Table IX

North Zealandish

Differences in the duration of vowels (in cs) between (old) disyllables and monosyllables. (ə) indicates the old disyllable; ap. means apocope; - indicates shorter duration in old disyllables; a point after the word indicates final position; stars indicate significance at the 1% level, stars in parentheses at the 5% level.

	A (+ap.)				B (-ap.)				C (-ap.)		
	PA (Hove)	KH (St. Havelse)	OR (Bjeverskov)	av.	LJF (Auderød)	OJ (Gundsø-magle)	LJS (Snostrup)	av.	KJ (Gille-leje)	EP (Dragør)	av.
maḍ(ə)/maḍ.	-	1.1	2.8		-	-	-		-	7.9*	
maḍ(ə)/maḍ	-	0.5	0.8		-	-	-		-	4.8*	
sɛḍ(ə)/sɛḍ	(-1.2)	-	-			(0.6)	(1.3*)		(3.2)	-	
tʰɛḍ(ə)/tʰɛḍ	0.7	-	-		1.5	2.0*	4.2*		7.0(*)	-	
tʰɑg̊(ə)/tʰɑg̊	0.9	-0.7	0.6		2.7*	1.3*	2.8(*)		10.9(*)	6.0*	
vɛg̊(ə)/vɛg̊.										8.5*	
av.	0.8	0.3	1.4	0.8	2.1	1.7	3.6	2.4	9.0	6.8	7.9
lɛs(ə)/lɛs	-0.4	-	-		0.1	-0.2	0.6		9.5(*)		
b̥as(ə)./b̥as.		-0.1	2.0				-			2.7*	
mis(ə)./mis.		-0.5	1.8*		-		-			2.2*	
av.	-0.4	-0.3	1.9	0.4	0.1	-0.2	0.6	0.2	9.5	2.5	
vɛn(ə)/vɛn	2.9*	-	-		1.1	2.8*	1.6(*)		9.9(*)	8.6*	
lan(ə)-/lan-		3.7*	3.4*		-	-	-		-	6.4*	
kʰɔm(ə)/kʰɔm	-	2.3*	1.9			-	-			4.9*	
kʰal(ə)/tʰal	2.2*		-		1.4(*)	2.2*	4.1*		8.5(*)	-	
av.	2.6	3.0	2.7	2.7	1.3	2.5	2.9	2.2	9.2	6.6	7.9
lasd̥(ə)/lasd̥		0.5								1.2	

Table X

North Zealandish

Differences in vowel duration (in cs) between actual disyllables and monosyllables (see further the caption to table IX).

	A				B				C		
	PA (Hove)	KH (St. (Havelse)	OB (Bjever-skov)	av.	LJF (Auderød)	OJ (Gundsø-magle)	LJS (Snostrup)	av.	KJ (Gilleleje)	EP (Dragør)	av.
sɛd̥ɒ/sɛd̥[1])	(0.7)	-	-			(0.8)	(0.8)		(1.7)	-	
tʰɛd̥əð/tʰɛd̥	1.4(*)		-		1.4	2.5*	4.2*		5.3(*)	-	
tʰɑg̊ɒ/tʰɑg̊	2.5*	2.8*	2.9*		2.8*	0.7	3.3*		7.2(*)	3.4*	
av.	2.0	2.8	2.9	2.6	2.1	1.6	3.8	2.5	6.3	3.4	4.8
sœnɒ./sœn.		3.7*	-1.9(*)						4.5(*)	3.9*	
sœnɒ/sœn	2.6*	2.2*	-0.2		1.7(*)	0.7	1.8(*)				
vɛnɒ/vɛn	2.7*	-	-		0.5	1.6(*)	2.5*		4.4(*)	6.2*	
kʰalɒ/tʰal	2.3*	-	-		1.6	0.3	1.1		4.5(*)		
kʰalə/tʰal[2])	3.8*	-	-		0.2	2.4*	4.2*		10.1(*)		
av.	2.9	3.0	-1.1	1.6	1.0	1.3	2.4	1.6	5.9	5.1	5.5
lasd̥ə/lasd̥	-1.3	-			0.4	0.8	-2.1	-0.3	-2.0	4.3	

[1]) The words *sæt*, *sætte*, *sætter* have not been included in the averages because *sæt* was followed by a vowel.

[2]) The name *Kalle* has been listed together with the words in *-er* and *-et* because (just as in Jutlandish) it does not have apocope.

Group C comprises the two speakers KJ from Gilleleje and EP from Dragør. EP's two recordings (from 1982 and 1983) have been combined in the tables. The pairs *tak/takker*, *mat/matte* and *søn/sønner* were found in both lists. The averages for these pairs are therefore based on 12 tokens. For the first two pairs the difference was exactly the same in the two recordings, but for *søn/sønner* the difference is considerably larger in the second recording. Both speakers have a conspicuous lengthening in disyllables. For KJ the difference beweeen monosyllables and disyllables in [-ə] is 9.2 cs on the average, and for words with other endings 6.1 cs. The distinction is thus very clear, and there are no overlappings, but as he has read only three examples of each word the significance for the individual pairs is only 5% (Mann-Whitney test). His "short" vowels are so long (21.4 cs on the average in words in [-ə]) that one may wonder whether he makes any distinction between short and long vowels. Unfortunately, this cannot be tested since he was not interested in further recordings.

For EP the differences between monosyllables and disyllables is 5.2 cs for disyllables with [-ə] and 4.3 cs for words with other endings. Her short vowels are not as long as KJ's vowels, except in final position. The second recording contained two short/long pairs in this position: [vɛg̊ə/vɛ·g̊ə]: 17.9 and 18.2 cs, and [pɛnə/pɛ·nə]: 19.4 and 24.0 cs. In the first pair the duration of the short vowel is 98% of the long vowel, and there is complete overlapping; in the second pair the percentage is 82, and there is no overlapping. In both cases the short vowel sounds as a long vowel to a speaker of the standard language.

KJ has generally shortening of the following consonant in disyllables (2.1 cs). For EP this could not be measured, since the delimitation of the consonants was uncertain in the first recording and, moreover, most words were found in final position.

As can be seen in table XI, all three groups have longer vowels in monosyllables before an unstressed vowel in the following word when the consonant is a stop or *-n*, though the lengthening is slightly less than in disyllables (before *-s* most speakers have no difference, but in this case there is hardly any lengthening in disyllables either).

For KJ and EP the lengthening is significantly less than in disyllables (only 2.2 cs on the average).

As for the speakers of connected texts to which I listened at the Institute of Danish Dialectology, I did not - with one exception - hear any particularly lengthened vowels. This does not mean that they did not have any vowel lengthening before single consonant, only that this lengthening did not exceed what I expected from the standard language. I had listened beforehand to three of the speakers of the supplementary list, PA, LJS and KJ. In the case of PA I did not notice any lengthenings, although her lengthening before sonorant is approximately as in the standard language (before stops (in non-

Table XI

North Zealandish

Differences in vowel duration (in cs) between monosyllables before unstressed vowel and before unstressed consonant in the following word (see further the caption to table IX).

	A		B		C	
	PA	LJF	OJ	LJS	KJ	EP
tʰɑg̊ i/ tʰɑg̊ fɒ	0.9(*)	2.6*	0.5	1.8	2.7	3.0*
sœn i/ sœn pʰɔ	2.1*	1.5*	0.8	1.9*	-0.5	3.0*
lɛs i/ lɛs tʰe	1.2*	-0.9	-0.3	-0.1	3.3(*)	

apocopated words) it is not quite of the same extent). I had heard some slightly lengthened vowels in the case of LJS, who also has somewhat more lengthening, his vowels in disyllables often being 2-3 cs longer than those of PA. In the case of KJ there was, of course, no doubt. Thus the speakers of connected texts, who generally did not have apocope, may have lengthenings of the same extent as other speakers of group B.

The exception was EM from Skovshoved (born 1890), who had clearly audible lengthenings, particularly before a pause (she does not have apocope). Recordings of selected examples confirmed this impression, e.g. [jɔlɒ] 23 cs, [sɔmɒ] 20 cs, [tʰʁabə̥] 20 cs.

IV. NEW RECORDINGS OF COPENHAGEN INFORMANTS

A. INFORMANTS AND MATERIAL

The 1982 recordings contained only one speaker of the lower sociolect (ST), and she was not an extreme case. I did not succeed in finding any typical speakers of the lower sociolect who could also read naturally and fluently, but I recorded two young Copenhageners who did not really speak the lower sociolect.

JBC, born 1953 in Copenhagen (Christianshavn). He has spoken the lower sociolect until recently, but it turned out that, as a student of phonetics, he had consciously changed his speech somewhat, not specifically the vowel duration but the quality of the *a*-sounds, which might have involved some other changes, so that he was not the best choice.

ODL, born 1960 in Copenhagen (Gladsaxe). He was one of Molbæk's subjects (see my 1982 report), and one who had overlapping between short and long vowels. But his speech did not sound very pronouncedly "low sociolect".

The words read by the two new informants were: *mat*, *matte*, *tak*, *takke*, *takker*, *væk*, *vække*, *vægge*, *bas*, *basse*, *base*, *søn*, *sønner*, *ven*, *venner*, *kom*, *komme*, *tal*, *kalde*, *last*, *laste*. *mat/matte* were found both finally and medially in the sentence, *væk*, *vække*, *vægge* [vɛ·ǧə] only finally, the others only medially.

B. RESULTS

The results are given in tables XII and XIII and, for vowels before stops and sonorants, in abbreviated form in figure 5C. (The results for the Standard Copenhagen and for the informant ST are given in figure 5A and 5B for comparison.)

The two new informants have less vowel lengthening than ST, and before nasals + *-er* they have no significant lengthening at all, thus also less than the Standard Copenhagen speakers. They have apocope of *-e* after sonorants, and here they have a significant lengthening of the vowel (see table XII) (it is 1.7 cs on the average for JBC and ODL) and of the consonant (3.9 cs). But the vowel lengthening is of slightly smaller magnitude than in Standard Copenhagen (and the small difference is not due to a longer duration in monosyllables).

Before stops ODL has the same difference between mono- and disyllables as Standard Copenhagen, whereas JBC has a larger difference before [ǧ], and particularly finally. In the pair [vɛǧə/vɛǧ] in final position both ST and JBC have a considerable difference (8.1 and 5.7 cs, respectively). Before [s] they have more lengthening than in the standard language, and JBC has a rather short and weakly voiced [s] in *basse*. Both JBC and ODL also have a longer vowel in monosyllables before vowel, like the other informants.

The difference between long and short vowels is relatively small for these speakers. The percentual duration of the short vowel is for [vɛǧə/vɛ·ǧə]: ST 82%, JBC 82%, ODL 88%, and for [b̥asɒ/b̥a·sə]: ST 90%, JBC 89%, and ODL 86%. There is overlapping for ODL [vɛǧə/vɛ·ǧə] and ST [b̥asə/b̥a·sə]. Bundgaard (1980) found for 5 Copenhagen speakers 74% for [ɛ] and 78% for [a] before [b̥]. But there is also a difference in absolute duration. For [ɛ] before [b̥] Bundgaard gives the averages: [ɛ] 11.7 cs, [ɛ·] 15.9 cs. But in the present data short [ɛ] before [ǧ] is longer than the long [ɛ·] in Bundgaard's material (ST 21.6, JBC 17.0, and ODL 17.7 cs), and JBC and ODL even read the sentences quickly. The difference from a somewhat more conservative norm is still larger. Personally, I read the examples with [vɛǧə/vɛ·ǧə] with the durations 12.2 cs and 19.3 cs (63%).

Table XII

Copenhagen

Difference in vowel duration (in cs) between disyllables in [-ə] *and monosyllables (see further the caption to table IX).*

	ST	JBC	ODL	av.
maḍə./maḍ.	-	4.1*	3.5*	
maḍə/maḍ	2.9*	1.2(*)	3.3*	
vɛǧə./vɛǧ.	8.1*	5.7*	4.0*	
tʰɑǧə/tʰɑǧ	-	5.1*	3.6*	
av.	5.5	4.0	3.6	4.4
baṣə./baṣ.	4.0*			
baṣə/baṣ		3.8*	3.7*	3.8
vɛnɒ/vɛn		1.2*		
lanə-/lan-	3.2*			
kʰɔmə/kʰɔm		2.1*	1.8*	
kʰalə/tʰal		2.5*	0.9	
av.	3.2	1.9	1.4	2.1
lasḍə/lasḍ	-	0.1	-0.6	

Table XIII

Copenhagen

Difference in vowel duration (in cs) between disyllables in -er [-ɒ] *and -en* [n] *and monosyllables (see further the caption to table IX).*

	ST	JBC	ODL	av.
mɔḍn/smɔḍ	5.9*			
sḍɔǧn./ sḍɔǧ.	4.3*			
tʰɑǧɒ/tʰɑǧ	-	3.2*	3.3*	
av.	5.1	3.2	3.3	3.9
sœnɒ/sœn	2.0*	-0.4	1.1(*)	
vɛnɒ/vɛn	-	0.2	0.7	
av.	2.0	-0.1	0.9	0.9

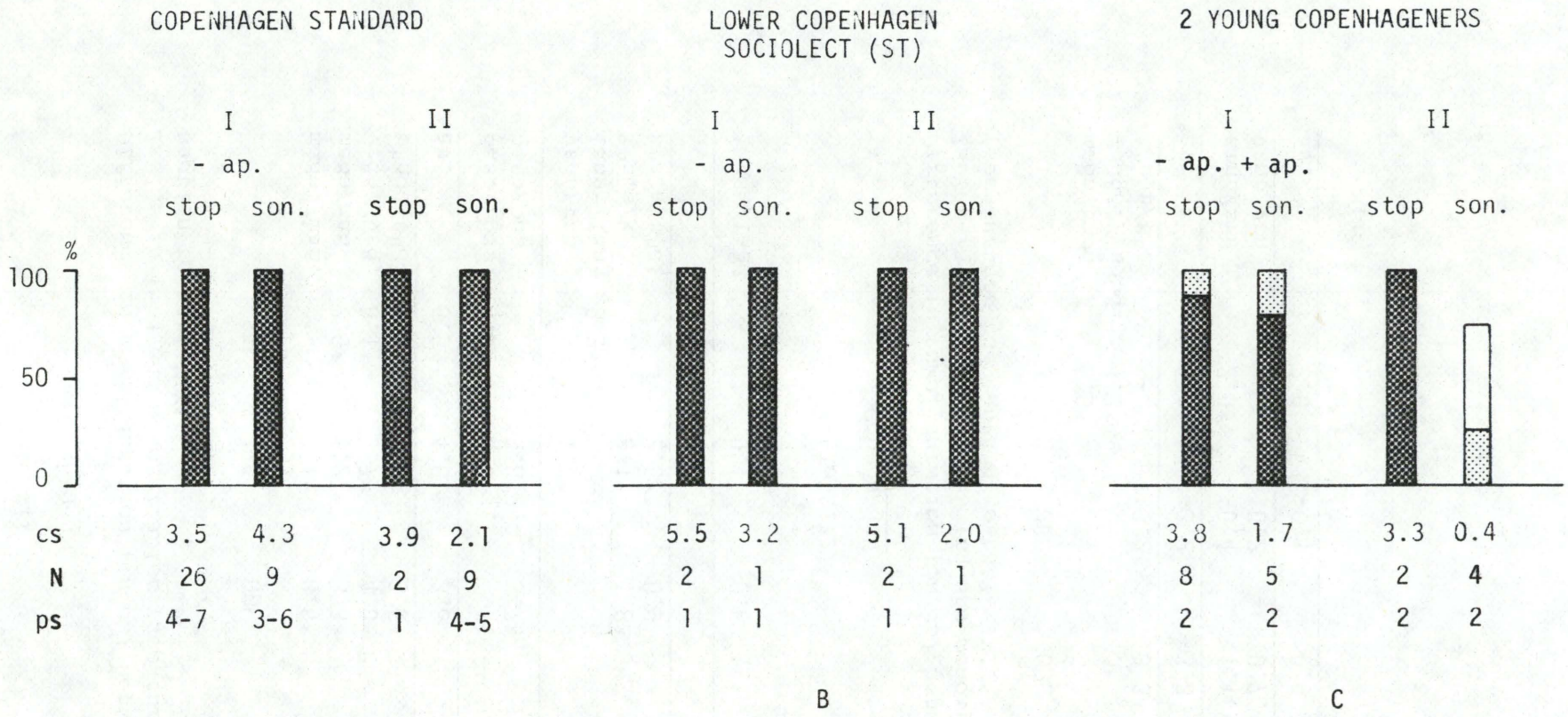

Figure 5

Vowel lengthening in CV́CVC words in Standard Copenhagen (A), the lower Copenhagen sociolect (B), and in the speech of two young Copenhageners (C). See further text to figure 2.

Percentage of significant differences at the 1% level.

Percentage of significant differences at the 5% level.

A feature which seems to be common to the present three speakers compared to the somewhat older speakers of Standard Copenhagen is a stronger tendency to final lengthening. For the Standard speakers the difference in vowel duration between examples with the test word in medial and final position was small - for short vowels on the average 1.5 cs for monosyllables, and 1.6 cs for disyllables (see my 1982 report), whereas JBC and ODL had clearly larger differences (3.0 cs for monosyllables and 3.8 cs for disyllables). For ST the difference is still larger: 5.0 cs and 6.8 cs, respectively. This latter difference is, however, combined with a difference in the following consonant [d̥ -g̊], which can, however, hardly be responsible for more than about 1 cs of the difference.

V. CONCLUSIONS

It has turned out that there is considerably more vowel lengthening in the Jutlandish dialects than it appeared from my first report, but the lengthening is restricted to actual disyllables and is not found in apocopated words except in some cases before sonorants in West-Jutlandish. It is thus not unlikely that the dialect speakers when speaking the standard language generalize this lengthening to all disyllables in the standard language, also to those which correspond to apocopated words without lengthening in their dialect. But this generalization is probably supported by the lengthenings in Standard Copenhagen. This assumption is supported by the fact that the speaker from Vendsyssel, who in his dialect had phonologically long vowels in apocopated words, also before consonant clusters, did not transfer these lengthenings to his RSD, where the lengthening before single consonant did not exceed the standard magnitude, and where there was no lengthening before clusters.

Old informants from Dragør, Skovshoved and Gilleleje at the coast of North Zealand had very conspicuous lengthenings. It is a possibility that lengthening in the old coastal dialect has influenced the Copenhagen sociolect (but the pitch contours of these speakers differed from the Copenhagen norm). The two new younger Copenhagen speakers did not have as much lengthening as expected, particularly not before sonorants, but one of them had more lengthening before [g̊] and both more before [s] than the speakers of Standard Copenhagen. It would be desirable to record more Copenhagen speakers of different generations to find out in which direction the development goes.

As for the possible explanation of the vowel lengthening, there were some relevant findings. In my 1982 report I rejected the hypothesis that the lengthening should have anything to do with the apocope. This rejection was corroborated by the new recordings, in particular the finding that neither the Jutlandish nor the North Zealandish dialects with apocope have any lengthening in apocopated words with obstruents. There is thus no functional reason for the lengthening (e.g. a tendency to preserve the difference between old mono- and disyllables).

One might use this fact in an attempt to date the development, assuming that the vowel lengthening must be later than the apocope, which is old in Jutlandish, but a much more recent phenomenon in Zealandish, probably starting in the last century. However, Molbæk Hansen has found a certain lengthening of the vowel in apocopated words with sonorant in the speech of the older generation in his East Jutlandish dialect, a lengthening which has disappeared in the speech of the younger generation, whereas they have kept the lengthening in actual disyllables. A similar development before obstruents cannot be excluded, and it is thus dubious to date the development on this basis.

The later recordings also supported the rejection of the hypothesis that the lengthening has something to do with the specific Copenhagen pitch contour, which is characterized by a quick rise or jump up from the stressed syllable to the first posttonic syllable, a jump which might be expected to require some preparation and thus a longer vowel in the stressed syllable (although the truncations found by Thorsen (1982) do not make this very probable). It is true that in PM's East Jutlandish dialect and in the Århus RSD (and also in some North Zealandish dialects) the first posttonic syllable is high after single consonant, i.e. just in the case where there is vowel lengthening, but low after clusters. But this apparently striking parallelism cannot be used to support the assumption of an influence from the pitch contour. For in reality the pitch contour is exactly the same in both cases. The higher posttonic in the first case is simply due to the fact that the pitch contour has not come so far down after a short consonant as after a cluster. This appears very clearly from a superposition of the curves with the vowel start as line-up point (see my paper on the manifestation of Danish stress in the next volume of this series). Moreover, there is also lengthening in the dialects which have a lower posttonic syllable both after single consonant and after clusters, e.g. in West- and North Jutland; finally, those speakers who had a particular lengthening did not have particularly high posttonics; one, EM, did not have any rise at all.

What remains is thus the connection with a relatively short and weak following consonant. As an example of the difference between Danish and some other languages in this respect, table XIV gives some measures of comparable Danish, German, and Swedish words. The Danish measurements are averages of 5-7 speakers of Standard Copenhagen, each reading the word 8 times. The Swedish examples are taken from Elert (1964) and represent the average of 8-9 speakers. The German examples (from Fischer-Jørgensen 1969) were read by a typical North German speaker (three times each) in a natural tempo (two other speakers had longer medial consonants). The Swedish examples, of course, contain geminates, and thus are not directly comparable to the Danish words, but the German examples with Vt also show very obvious differences from the Danish examples with Vd. According to Kohler (1979) the relation of duration between vowel and following closure constitutes the most important cue for German fortis vs. lenis stop. He indicates

Table XIV

Examples of duration of vowels and following consonants (in cs) in Danish compared to Swedish and German.

		V	C	C/V		V	C	C/V
Dan.	*nat*	11.9	6.2	0.57	*natte*	13.2	4.2	0.32
Germ.	*Bett*	9.5	12.0	1.26	*Betten*	8.3	13.5	1.63
Swed.	*tätt*	11.2	17.8	1.59	*sätta*	8.2	10.4	1.27
Dan.	*danne*	13.5	5.9	0.44	*basse*	15.1	8.1	0.54
Germ.	*Kanne*	12.0	10.8	0.90	*Basse*	10.3	19.0	1.84
Germ.	*Kladde*	8.0	10.2	1.16				

the relations by the ratio V/V+C (whereas I have used C/V), and states that for long vowels a ratio higher than 0.70 is a cue for lenis stop, whereas a ratio lower than 0.60 is a cue for fortis stop. The ratios of our subject KV after long [a·] are in accordance with these indications. Kohler does not mention short vowels, which are very rare before lenis stops in German. Here the ratios must, of course, be lower. KV also read the word *Kladde*, and it is conspicuous that his C/V ratio here is also much higher than in Danish *natte*. His V/V+C ratio in this word is 0.46, whereas it is 0.76 in Danish *natte*, which thus has a ratio corresponding to German lenis stops after long vowels, and must be characterized as extremely lenis. - The examples with [n] and [s] show that there are corresponding differences between North German and Danish for other types of consonants as well.

In the Danish dialects the C/V ratio for disyllables is somewhat higher for stops than in the standard language (50% vs. 35%). Before nasals it is the same (around 50%), whereas before [s] it is somewhat higher (around 80%) but still considerably lower than in German. The young Copenhagen speakers have approximately the same C/V ratio as the Copenhagen Standard speakers, but they tend to have somewhat more voicing in the consonants. ODL has in most cases fully voiced medial [g] and [d], and even voiced *f* and *p* in the phrases *tákker for gáven* and *sønner på gáden*.

Danish consonants are also heard as having a looser "contact" (German "Anschluss" or "Silbenschnitt") than e.g. German, but this is a rather dubious concept, and since it has been shown (Fischer-Jørgensen 1969) that Danish phoneticians' judgements about "contact" depend mainly on the duration of the vowel, it would be a vicious circle to explain the duration by the loose contact.

Anyhow, it is probable that there is a connection between the weak and short consonants and the lengthening of the vowels, but exactly how and when this development has taken place remains uncertain.

VI. NOTES

1. I have transcribed *b d g* as [b̥ d̥ g̊] to remind the reader of the fact that they are voiceless initially and finally and may be voiceless or weakly voiced medially. Since the only difference between initial *p t k* and *b d g* is the aspiration of *p t k*, it would have been consistent to transcribe *p t k* as [b̥h, d̥h, g̊h]. However, I have preferred to use the more familiar notation [pʰ tʰ kʰ].

2. OJ has a significant difference in *mis/misse*, but in most tokens of this word he had preserved the [-ə]. However, the words without [-ə] do not have a shorter vowel. On the whole, OJ has a much more variable pronunciation than the other informants.

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(For further references, see my report in ARIPUC 16, 1982.)