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The history of quantity in the Scandinavian languages

We know that in the Old Scandinavian languages all possible VC combinations existed: short vowel + short consonant as in Old Icelandic *haf, tala*; short vowel + long consonant or consonant cluster as in *fall, falla*; long vowel + short consonant as in *bít, bíta* and long vowel + long consonant as in *nátt, nátta*. In the course of time, i.e. roughly since the thirteenth century, there have been several changes in quantity in the Scandinavian languages. We not only find vowel and consonant lengthening (as, for example, in Swedish *tala>ta:la, vika>vek:a*), but also vowel and consonant shortening, as for example in Danish *falla>falə*. Moreover, we observe successive quantitative changes in one and the same variety, as for example *fal:ə > falə > fal:* in Danish dialects or *vita>vi:ta>vɪta* in Swedish dialects. It is the aim of my contribution to structure this apparent chaos and to show the role that these quantitative changes have played in the history of Scandinavian prosodic structure. If we view the quantitative changes in relation to the development of syllable structure, it will become obvious that similar-looking processes as, for example, lengthening or shortening have had very different effects on the development of the syllable structures. In earlier publications I have proposed a hypothesis that assumes a development of quantity in the Germanic languages (cf. Kuzmenko 1987; Kuz'menko 1991). In my opinion,

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this hypothesis is correct in its main features; however, a few changes are necessary regarding terminology and content, which I am going to give below.

I use the term *syllable structure* according to the conventional practice of referring to the components as *onset*, *nucleus* and *coda*. Nucleus and coda form a rime. Thus, the first syllable in Swedish *tala* is regarded as *t-*(onset) *a:* (nucleus + coda). The *l* already marks the onset of the second syllable and does not belong to the rime. In monosyllabic forms like *tal* /*ta:l*/, *l* is potentially extra-metrical, as it becomes onset if followed by a vowel. Regarding syllable quantity, we distinguish between light (short) and heavy (long) syllables. In order to describe the quantitative situation the term *mora* has been established, which describes quantitative equivalence. If, for example, a long vowel is prosodically equivalent to the combination vowel + consonant, which can be seen in syllabification, as e.g. in Swedish *fina* /*fi:-na*/ vs. *finna* /*fin-na*/, it becomes clear that the long vowel consists of two quantitative units (V:=VC). The smallest quantitative unit is called *mora* (as e.g. *i* or *n* in *finna*). Accordingly, *i:* in *fina* is interpreted as having two moras, i.e. *i+i*. There are languages that lack monomoraic (short) syllables and in which the metric equivalence concerns only V:=VC, but others do have monomoraic syllables (e.g. Latin, Greek, the Old Germanic languages). In these, we find a metrical equivalence of two short syllables and a long one: CV-CV = V:, VC. In Old Icelandic, *tala* is the quantitative equivalent of *bi:-* (in *bíta*) and *fal-* (in *falla*). I will call the former 'syntagmatic' and the latter 'paradigmatic' mora counting.

1. The Middle-Germanic quantity shift. Lengthening (CV-CV> CVC:V, CV:CV).

The first step in the development of the Scandinavian prosodic structure is the so-called Middle-Germanic quantity shift, which was realised both in form of vowel lengthening in open syllables

(c.f. Old Swedish *vita /vita/* Modern Swedish *veta /ve:ta/*) as well as in the lengthening of consonants, c.f. Swedish *vecka, skott* – Old Swedish *vika, skot*. As a result of this development the combination short vowel + short consonant disappears. Phonologically speaking, this quantity shift constitutes a syntagmatic change in which there was no emergence of a new type, but an increase in the number of the already existing ones at the expense of the ones that disappeared. Short-syllabic words became long-syllabic (CVCV> CV:CV or CVC:V) and thus identical in their prosodic structure to the originally long-syllabic ones (cf. Swedish *vika>vecka /vɛk:a/,* prosodically like *väcka /vɛk:a/; vita>veta /ve:ta/,* prosodically like *beta /be:ta/*). This development may be depicted as follows:

		r o o t		
onset	nucleus mora	coda mora	onset (extra-metrical)	vowel of the second syllabe mora
C	V	-	C	V
Swedish				
v	i̇	**-**	**k**	**a**
v	i̇	**-**	**t**	**a**
become				
v	**e**	**k**	**k**	**a**
v	**e**	**e**	**t**	**a**

This syntagmatic change, however, has triggered a paradigmatic change and the emergence of a new correlation – the mutual dependence of the vocalic and consonantal quantity that I will call *isochrony* (following Martinet 1955). Originally short root syllables now consist of two moras, either one bimoraic vowel or monomoraic vowel + monomoraic consonant in coda position. The metrical equivalence V:=VC becomes visible, for instance, in syllabification, cf. Swedish */fi:-na/* vs. */fin-na/*. There is now, however, no

paradigmatic mora counting, i.e. no opposition monomoraic – bimoraic in identical prosodic position as was the case in the Old Scandinavian languages (cf. CV:-CV vs CV-CV), but only syntagmatic mora counting (CV:- =CVC-). The shift of quantity has led to a coincidence of stress and bimoraicity (long = stressed, short = unstressed) and to a prosodic emphasis on the root morpheme. In this process, all roots have turned bimoraic, while the inflections stayed monomoraic (Kusmenko 1995).

The root-closing consonant, which had been a syllable onset (*vi-ka*), has in the process of consonant lengthening become syllable- and morpheme-closing (*vek-ka*). This shift of the morpheme-closing consonant to the root syllable constitutes a change which the prosodic structure of the root underwent in all Germanic languages, as we shall see later.

It is an important characteristic of Scandinavian isochrony that the root syllables are not only identical in their moraic structure but also end in an extrametrical unit, i.e. the morpheme-closing consonant becomes a syllable onset if followed by a vowel (as in Swedish */fin-na, fii-na, vek-ka, vee-ka/*).

In monosyllabic words like *fin* */fi:n/* or *finn* */fin:/* which look trimoraic, the last consonant is potentially extrametrical:

onset	nucleus	coda	potential onset
f	**i**	**n**	**n** – potentially extrametrical (cf. *fin-na*)
f	**i**	**i**	**n** – potentially extrametrical (cf. *fi:-na*)

In the course of this process, vowels have been lengthened in words of the structure CVCV in most Germanic languages, i.e. the coda came to contain an additional vocalic mora (in the West Germanic languages and varieties as well as in Danish, Icelandic, Faeroese, West Norwegian and several Swedish varieties). The lengthening of formerly short-syllabic words in other Indo-European languages proves the naturalness of vowel lengthening (cf. e.g.

the development CVCV>CV:CV in Italian, e.g. *grave, fede, lupo, nuovo* < Lat. *gravis, fides, lupos, novus*). Consonant lengthening, on the other hand, is exceptional even in the Germanic languages (in West-Germanic languages it is only found in a few exceptional cases, most notably when the consonant, especially /t/ or /m/, preceded a syllable with a sonorant, as in Middle High German *himmel, wetter*). While consonant lengthening is the exception in most Germanic languages, there is an area in Scandinavia where it is either the only possible shift of quantity (as in Trøndelag in Norway: *vækka* < *vika* 'week', *vætta* < *vita* 'to know', *tållå* < *tala* 'to speak', *bårrå* < *bora* 'to drill'), or where vowel lengthening is extremely rare and occurs only in words with /a/, as in the Svea varieties in Sweden.

This 'unnatural' development (consonant lengthening in open syllables) can hardly be regarded as the realisation of one of the two possible directions of development (vowel lengthening – consonant lengthening) but requires a separate explanation. I have tried to explain the exceptional consonant lengthening as an influence of the Sámi language (Kusmenko 2000). In the Sámi language, any short-syllabic noun, adjective or verb has, according to the so-called consonant gradation, an alternating form with a lengthened consonant (as, for example, nom. sg. *namma* – gen./acc. *nama* – nom. pl. *namat* 'name'; *borrat* 'to eat' – *boran* – 'I eat'; *dahppat* 'to lock' – *dahpan* 'I lock' etc.). This means that in the Scandinavian language of the Sámi short-syllabic words always had long-syllabic variants with long consonants. The possibility of such a development is proved by Scandinavian loanwords in the Sámi language, which either include a sole long consonant (*i.e.* they do not involve any consonant gradation), as in *vahkko* (Old Icelandic v*ika* 'week'), *vihtta* (Old Icelandic *viti* 'mark, sign'), or which have both long and short syllabic forms according to consonant gradation (e.g. *konno/kono* - Old Icelandic *kona* 'woman'; *smedda/smeda* - Old Icelandic *smiðr* 'smith'). The geographical distribution of consonant lengthening heightens the possibility of a Sámi influence. In Sweden, con-

sonant lengthening is characteristic of the Svea varieties (especially the varieties of north-western Uppland)[1], while south-western varieties show vowel lengthening (e.g. Göta varieties) (cf. Svea variety *posse, vecka, borra, vätta* but Göta variety *po:se, ve:ka, bo:ra, ve:ta*). Consonant lengthening is characteristic of the varieties of eastern Norway, especially of Trøndelag, while south-western Norwegian and Danish varieties show vowel lengthening.

2. The southern Scandinavian quantity shift.

2.1. Consonant shortening (CVC:V>CVCV)

The second step in the development of Scandinavian quantity is consonant shortening, which is characteristic of Danish (as, e.g. in Danish *falde, finde, drikke, fatte, lappe, bygge*). This development is absent in Icelandic, Norwegian, Faeroese, Swedish and in several High German varieties which still adhere to the isochronic principle and in which the opposition CV:C vs. CVC: is still relevant. Consonant shortening is, however, characteristic of the West Germanic languages, both of the standard varieties and most of the dialects.

As the Danish consonant shortening has not become manifest in spelling, there is a great divergence among diachronists in the dating of this process. Skautrup assumes that the development *vilde* /*vil:ə*/ > /*vilə*/ took place in the early fourteenth century (Skautrup 1944: 254); Rasmussen places it within the sixteenth century (Ras-

[1] The latest historical and archeological studies have shown, that in the Viking Age the Saami population reached as far south as the Mälardal region in Sweden and districts north of Oslo in Norway (Larsson 1991, Zachrisson 1997). The sociolinguistic situation was characterized not only by a lack of stigmatisation of the Sami people, but by a "certain cultural symbiosis" (Zachrisson, 1997, 131) of the Scandinavians and the Sami, which did not prevent the spread of the Sami interference features into the Scandinavian languages (Kuzmenko 2005, 24-28).

mussen 1972).

At first glance, it may seem that the shortening of long consonants has led to a re-establishment of the prosodic type short vowel + short consonant, that was characteristic of the Old Germanic languages (cf. Danish *malle /male/*, *vilde /vile/* - Old Icelandic *tala /tala/, vika /vika/*), i.e. to a restoration of the phonological relevance of vowel quantity, since it is possible again to have short and long vowels in one and the same position (e.g. preceding a short consonant; cf. Arnason 1980: 79). If, however, we take into consideration the syllable structure, we see that the Old Scandinavian (and Old Germanic) CVCV-structures differ considerably from the modern Danish (and modern West Germanic) ones:

	r	o	o	t	
		mora	mora		Mora
	onset	nucleus	coda	onset	vowel
Mod. Danish	**f**	**a**	**l**	**-**	**ə** (*falde*)
Old Icelandic	**v**	**a**	**-**	**l**	**a** (gen. pl. of *valr*)

The most important consequence of consonant shortening was that the Old Germanic syllable structure without coda, which used to be characteristic of short syllabic words (CV-CV), was not re-established in the course of this development; instead, the root syllable remained bimoraic. The consonant shortening has led to the disappearance of the extrametrical element. If we consider the geminate shortening CVC-CV>CVC-V (as in German *Falle /fal:ə / > Falle /falə/*) with regard to the relation between syllable and morpheme boundaries, we see that consonant shortening leads to the disappearance of the morpheme-closing and syllable initial unit. A new type of syllable has emerged which violates the naturalness of the open syllable in the sequence CVCV, but which is very productive in the Germanic languages. Schematically, this development can be demonstrated in the following way:

	r o o t				
	mora	mora		mora	
onset	nucleus	coda	onset	vowel	
f	**a**	**l**	**l**	**ə**	(*falde*)
f	**e**	**n**	**n**	**ə**	(*finde*)

become

	r o o t				
	mora	mora		mora	
onset	nucleus	coda	onset	vowel	
f	**a**	**l**	**-**	**ə**	(*falde*)
f	**e**	**n**	**-**	**ə**	(*finde*)

The syllable boundary is here the same as after a short vowel in isochrony, i.e. the syllable boundary does not precede the postvocalic consonant. In contrast to isochrony, however, there is no extrametrical unit, i.e. there is no consonant in the syllable onset. Martinet regarded both Swedish *falla* and German *Falle* as isochrony (Martinet 1955). But although the foot structure is identical in both cases (VC), there is an important difference, namely an extrametrical (syllable-initial) unit in Swedish *falla* which is absent in Danish and the West Germanic languages.

These developments in Danish and in the West Germanic languages do not constitute a syntagmatic change, but a paradigmatic one which has led to the emergence of a previously unknown syllable structure.

In modern publications, the consonant in Danish *falde, finde* or German *Falle, bitte* is usually referred to as ambisyllabic (Wiese 1996: 36), which is supposed to mean that it simultaneously closes the root syllable and constitutes the onset of the following syllable. If, however, we compare the languages with consonant shortening

to those which lack this development, but which contain *real* ambisyllabic consonants (as, for example, Swedish or Middle Bavarian CVC-CV), or with the ambisyllabic consonants which in the West Germanic languages and in Danish mark morpheme boundaries (as in English *unnatural*, German *Schifffahrt*, Danish *bundne*), this assumption hardly seems to be helpful. If the postvocalic consonants in the structure CVCV are interpreted as ambisyllabic in the West Germanic languages, their syllable structure is equated with the syllable structure of the Scandinavian languages (cf. Lorentz 1996: 113), an interpretation that does not take into account the difference between the postvocalic consonants in Swedish *falla* /*fal:a*/ and those in Danish *falde* /*falə*/.

In the Danish and West Germanic contact (syllable-cut) correlation, the vowel is not separated from the following consonant if it is short (i.e., in words of CVCV structure), while this is the case in words of the same structure in Old High German and the (in this respect) more conservative modern Scandinavian and High German varieties. Therefore, the postvocalic consonant clearly belongs to the coda in Danish and the West Germanic languages. Thus, the root syllable remains bimoraic as in Swedish, Norwegian, Icelandic and Faeroese, but in contrast to these the syllable initial consonant is absent (Swedish /*fal-la*/ vs. German /*falə*/). All bisyllabic words are trimoraic in contact correlation; bisyllabic words of the structure CVCV in the Old Germanic languages and in the more conservative modern Germanic varieties are bimoraic. The trimoraic structure of CVCV-words with contact correlation also becomes manifest in apocope. In the West Germanic languages and in Danish (i.e. in the languages with contact correlation), there is no distinction in the treatment of words of the structures CVCV and CV:CV, as both types are trimoraic. The third mora disappears simultaneously in apocope. In contrast, the second syllable in the originally short syllabic (i.e. bimoraic) words remains unchanged in archaic Scandinavian dialects and in the old West Germanic lan-

guages (cf. Scandinavian dialect trimoraic */`falla/* becomes */^fall/*, bimoraic *tala* retains the final vowel, cf. also Old English *feall* but *sunu*).

2.2 Vowel shortening

Consonant shortening is part of a process whose complimentary component is vowel shortening. In both cases, we encounter in the result a structure with coinciding syllable and morpheme boundaries in which the consonant is placed in coda position. Vowel shortening is characteristic of several southern Swedish and Danish varieties as well as for the Danish standard norm, cf. the development */vi:ta/* > */vɪta/* in south-eastern Skåne in contrast to Swedish *veta* (Areskoug 1957: 250):

Southern Swedish

	r o	o t		
	mora	mora		
onset	nucleus	coda	onset	vowel
v	**I**	I	**t**	**a**
becomes				
v	I	**t**	**Ø**	**a**

This vowel shortening, which leads to a coincidence of syllable and morpheme boundaries, is a very productive process which is carried out very consistently, especially before certain consonants. In Danish, these are *j, w, ð, ɣ* more rarely *l, n* and *s*. This shortening affects genuinely long vowels (cf. Old Danish *skogh /sko:gh/* Standard Danish (StD) *skov /skou'/*, Samsø (Sms) */skow/ – /skow'i/ skoven;* Old Danish *thiuf /þiu:f/* Sms */tyw'/,* StD *tyv /ty'v/~/tyw'/,* Old Danish *hvit /hwi:t/, ut /u:t/, klut /klu:t/,* Zealand variety */við'/, /uð'/, /kluð'/*; Sms */uj'/, /hwij'/, /kluj'/* ; StD */vi'ð/~/við'/; /u'ð/~/uð';*

/klu'ð/~/kluð'/; Sms */kniw'/* Old Danish *knif* /kni:f/, StD */kni'v/~/kniu'/*) as well as those vowels that had been lengthened in the course of the Middle Germanic quantity shift (cf. especially the vowel shortening in Danish varieties: Sms */gaɬ'/ (et),* StD */ga'l/*; Sms */gran(')/,* StD */gran/;* Sms. */graw/-/graw'en/,* StD */gra'v/ ;* StD */lou/ (lo'ven),* Sms */low/ – /low'en/ (<*loghu* pl. of *lagh*); StD *vej /vai'/ /vai'en/* Sms */wej, wej'i/* (Old Icelandic *vegr*).

Traditionally, it has been assumed that the originally short syllabic monosyllabic words in Danish maintain their original quantity (as e.g. *glad /glað/* oder *tal /tal/*) and that only few words of CVC structure have received a secondary lengthening in analogy to the bisyllabic words (as e.g. *skib, gul, sag*) (Skautrup 1944: 236). However, the recent tendency towards the development CV:C>CVC in the Danish standard variety, and an even stronger one in the dialects, the vowel lengthening in the East Danish varieties, as well as the spelling of such words with two vowel letters in Danish manuscripts show that the hypothesis of general vowel lengthening in words like *tal, glad* (cf. Jakobsen 1910: 42-44; Hansen 1962: 333-388), now almost forgotten, was correct. In those Danish dialects that were to become the basis of the standard variety, the vowel in words like *tal* and *glad* was first lengthened (as in the other Scandinavian languages). In the next step, they underwent the same development as the above-mentioned long-syllabic words. The vowel was shortened; the consonant, however, did not become extrametrical, but was shifted into coda position. The vowel shortening in the South-Western Swedish varieties (like *vi:ta* > *vita*, see above) and in the Danish varieties (cf. Old Danish spellings *taal* and *øøl*, as well as StD */tal/*, */øl/*) show that this development was indeed possible. But if the vowel was lengthened in these words, why do they not have *stød*? (All genuine CV:C words have *stød* in Danish.) The development in Danish dialects shows that the *stød* can disappear in these words. It is extremely instable in monosyllabic words (cf. Samsö */gran' ~ gran/*). We can assume that the monosyllabic

forms, like *tal* and *øl*, used to have *stød* even in Copenhagen, but later lost it. In bisyllabic forms, however, the *stød* plays an important role for syllabification (Kuz'menko 1991: 124) and is therefore retained in forms like *tal-et* and *øl-et*. The fact that vowel shortening and *stossumsprung* (a shift of the *stød*, as in *brev* /*bre'v*/ > /*breu'*/ and *stød* /*stø'ð*/ > /*støð'*/) were realised in words with originally short vowels (as in *tal* (*tal>ta:l>tal; öl>ö:l>öl*) has been explained by Areskoug as being due to the specific quality of these vowels (cf. Areskoug 1957: 217, 698). But the development in Danish dialects shows that even originally long vowels undergo the same development (s. a.).

Vowel shortening in combination with a change of the syllabic structure, including *stossumsprung*, is a very productive process in the Danish standard variety (Brink, Lund 1975: 221; Kusmenko 1992, see also the bibliography there). Both the consonant shortening in the structure CVC: and the vowel shortening in the structure CV:C result in the consonant no longer being in the onset. This kind of vowel shortening is also characteristic of the West Germanic languages, especially of English (Hackmann 1908).

In all of these cases we find developments that have resulted in the same syllable structure, which has emerged as a consequence of consonant shortening with close contact (or, in other words, with a consonantal coda but without an extrametrical element). Close contact seems to be very productive in the Germanic languages. The shortening of consonants and vowels bears witness to the tendency towards a coincidence of syllable and morpheme boundaries, which is characteristic of the development of the Germanic languages.

The next step in the development of the Germanic consonants – consonant lengthening in apocope – is part of the further development of this tendency.

3. Consonant lengthening by apocope (Compensatory lengthening)

In several Danish varieties with apocope we encounter a new change of quantity: a new lengthening of consonants and vowels which results not only in long, but in over-long vowels. This development was also characteristic of low German and Franconian varieties.

Ringgaard likens the long consonants in Danish varieties to those in Swedish and Norwegian and assumes a bisyllabic form as the origin of the type with long syllables as in Norwegian *finne* (i.e. /`*fin:ə*/ > /`*fin:*/) – (Ringgaard 1959: 48). This assumption can hardly be correct, as bisyllabic forms *always* have short consonants in Danish dialects with free apocope and correspond to standard Danish CVCV (e.g. /*fenə*/). Where the form /*fen:*/ has a prosodic variant in Danish, this will always be /*fenə*/ and never /*fen:ə*/ with consonant in the onset. This shows that the change /*fenə*/ > /*fen:*/ constitutes a compensatory lengthening in which the number of moras remains the same (three moras), but in which the distribution of moras has changed (one vocalic and two consonantal moras). In both cases, the postvocalic consonant does not become syllable onset.

Within the new consonant lengthening, it is characteristic of the long consonants that they cannot be placed in an intervocalic position. They can only exist in coda position. In this, the long consonants in Danish, low German and Franconian varieties differ from those in Swedish, Norwegian, Icelandic and Middle Bavarian where they become onset in pre-consonantal position (as in Norwegian *falle* /*fal-lə*/ or *finne* /*fin-nə*/, cf. Danish dial. /*fal:*/, /*fen:*/).

In the Danish dialects, lengthening is possible of all consonant classes; c.f. *træg:* (*trække* 'to pull'), *vεy:* (*vägge* 'walls'), *skaf:* (*skaffe* 'to acquire'); *gow:* (*gode* 'good'); *vil:* (*ville* 'wanted'); *kniw:* (*knive* 'knives'), *väj:* (*veje* 'ways') (DDT II: 48-51). In many varieties with consonant

lengthening we again find an opposition C vs. C: – cf. South Jutlandic *low* 'law'– *low:* 'to promise', *sken* 'shine' – *sken:* 'to shine' – (Jensen & Nyberg 1977: 35, 47).

The long consonants cannot be taken as a realisation of C + schwa as there is here a clear opposition between long consonants and C + schwa; cf. Danish dial. /*snag:*/(*snakke* 'to speak') but /*snagə* / (*snakkede* 'spoke' or *snakker* 'speaks'). If CVC words (as Danish dial. /*väj, snag, dreg*/) are bimoraic, owing to close contact, the long consonants in words like /*väj:, snag:, skaf:*/ have to be seen as trimoraic. Jutlandic words such as *kald* /*kalj:*/ differ from Swedish and Norwegian monosyllabic words like *kall* /*kal:*/ as those are potentially bimoraic and their long consonants always become onset if followed by a vowel (cf. (/*kal:*/ but /*kal-la*/). Danish, Low German and Franconian dialectal forms with long consonants never change into forms with a consonant in the onset. The prosodic structure of words with long consonants in these varieties with apocope can therefore be represented as follows:

onset	nucleus		coda	
	mora	mora	mora	
	V	C	C	(potentially not extra-metrical)
f	**a**	**l**	**l**	(*falde* 'to fall')

If we consider the relation between the moraic structure and the tone and the *stød* in the Jutlandic varieties, the following can be observed: In bimoraic structures there is no opposition of tone or *stød*, trimoraic structures differ according to the distribution of vocalic and consonantal quantity as well as according to the distribution of the stød, the dynamic element of which is much weaker in varieties with apocope than in the Danish standard. The *stød* is here realised phonetically as a special movement of tone (cf. Molbæk Hansen 1978: 16-17). Not all combinations are possible on all pho-

nematic bases, only the base V + sonorant can have all five possible combinations:

Compare	1. CVC (bimoraic) *tal* (*tal* 'speech')		
2. CV:C *ta:l* (*tale* ' speak')	3. CV'C *sa'l* (*sal* 'hall')	4. CVC' *fal'* (*fald* 'fall')	5. CVC: *fal:* (*falde* 'fall')
(all trimoraic)			

The best interpretation of this situation was already developed in the 19th century in the Danish dialectological tradition. K. Lyngby, following Høysgaard, regarded quantity and *stød* in the Danish dialects as a manifestation of tone (Danish *tonehold*). He distinguished between five different tones in Jutlandic varieties: 1. *løbende* ('running'; CVC as in *tal* /*tal*/); 2. *skridende* ('flowing'; CV:C – long vowel withou *stød* as in *ta:l* < *tale*); 3. *standsende* ('stumbling'; CV'C – *stød* on the vowel as in sal /*sa'l*/); 4. *stødende* ('pushing', CVC' – *stød* on the consonant); 5. *rullende* ('rolling'– CVC: with long consonant as in *falde* /*fal:*/) – (Lyngby 1958). Different combinations of *stød* and quantity here generate five different tones which characterise the root morphemes just as in the languages of South-Eastern Asia. This similarity of the Danish varieties with their five 'tones' with the tonal languages of South-Eastern Asia in which syllable and morpheme boundaries coincide and every syllable constitutes a morpheme can also be seen in the fact that in the Jutlandic varieties morpheme-final consonants never become syllable onset. B. Nielsen, in describing bisyllabic words in a Jutlandic variety, explains that the syllable boundary occurs after a consonant or a consonant cluster so that there is no consonant in an onset position in unstressed syllables (Nielsen 1968: 18). The new consonant lengthen-

ing in the Danish varieties has led to a complete incorporation of consonant length into the root morpheme. Quantity thereby becomes a mark of the undividable morphosyllable.

4. Summary

We see that, although the development of quantity may look like a back and forth movement (lengthening >< shortening), these outwardly identical developments have different functions if the prosodic form of the root morpheme is taken into consideration.

The Middle Germanic quantity shift has led to a prosodic emphasis on the root morpheme and to a shift of the post-vocalic consonant into coda position while simultaneously retaining the extrametrical element during the consonant lengthening. In the ensuing consonant shortening in the contact correlation only the onset segment is affected, which disappears and thereby ensures a complete coincidence of the boundaries of syllable and morpheme in words with close contact. The vowel shortening in contact correlation leads to the same result. Consonant and vowel lengthening in apocope, which was carried out after the contact correlation had been established, results in the root becoming trimoraic. In these varieties, quantity, in combination with the *stød*, is to be interpreted as part of the morphosyllabic tone.

Yet, despite the different functions of the above-mentioned changes in quantity, there is one thing that they all have in common: They can be interpreted as successive steps in the prosodic development of the Germanic root morpheme, bearing witness to the development of the Germanic languages in the direction of morphosyllabism, thereby increasing the similarity of the Germanic languages to the morphosyllabic languages of South-Eastern Asia (cf. Kuz'menko 1991).

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