ON THE PHENOMENON OF SCHLEIFTON IN THE DIALECT OF HEIKENDORF

by

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ABSTRACT

The occurrence of Schleifton, i.e. overlong vowels or long nasals accompanied by a high falling pitch pattern, has been noted to be a peculiarity of the North Saxon dialects of Low German. The phenomenon involves two central issues: (i) the question of vowel quantity and (ii) the problem of tone.

This thesis investigates the phenomenon of Schleifton on the basis of primary data and attempts to provide an explanatory analysis of it.

There are two main parts to this thesis. The first part is data-oriented and introduces Schleifton as it is exemplified in the North Saxon dialect of Heikendorf. An outline of the sound inventory of Heikendorf Low German is presented in Chapter Two. Chapter Three contains a detailed discussion of the two component parts of Schleifton: (over)long sonorants and contour tone. They are claimed to be inextricably linked.

The second part of this thesis deals with the analysis of Schleifton. In Chapter Four, existing solutions are reviewed and problems inherent in them pointed out. Special attention is given to the most widely accepted analysis, a historically based one which proposes that Schleifton arose in compensation for the loss of final schwas. In Chapter Five, an alternative analysis of Schleifton is attempted without reference to final schwas.

The analysis is placed within the general framework of metrical phonology. The theory of metrical phonology is supplemented by the incorporation of the concepts of syllable

structure and parallel levels of phonological representation from the theories of McCarthy's metrical syllabification and Goldsmith's autosegmental phonology, respectively, both of which are viewed to be of crucial importance for an explanatory solution of the problem of Schleifton.

Within the suggested metrical framework, Schleifton is reflected by hierarchical constituent structure as the configuration of two adjacent moras in two successive syllables within the domain of a foot, thus accounting for the exceptional length of the units involved. From this representation, the tonal feature follows as an automatic consequence, since the overlong structures extend over two syllables.

ACKNOWLEDGMENTS

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TABLE OF CONTENTS

LIST OF FIGURES

I. Introduction

Statement of Purpose

In this thesis, we propose to analyze on the basis of primary data a phonological phenomenon that is considered to be characteristic of the North Saxon dialects of Low German, namely Schleifton, as it is exemplified in the North Saxon variety of Heikendorf. Schleifton refers to the occurrence of (over)long sonorants which are accompanied by a high-falling pitch contour.

What is meant in this thesis by the terms North Saxon and Low German is briefly discussed below.

The Low German Language

Genetically a West Germanic language such as High German, English, Dutch and Frisian, Low German is today a collective name for the dialects spoken north of the Benrath line which runs west-east between Aachen and Frankfurt an der Oder and marks the boundary separating the Low German from the High German speech area.

Low German is set off from High German, i.e. Middle and Upper German, primarily on the basis of its sound system. In contradistinction to High German, it did not undergo the second or High German sound shift which began approximately in the 5th

century and is believed to have moved northward from the Alps.[1] Thus, Low German generally preserves the West Germanic consonant system (cf. Gernentz, 1964:14).[2]

The German terms Niederdeutsch and the more colloquial Platt(deutsch), both meaning 'Low German', have their origin in the topographical description of the area: nieder and platt 'low' refer to the northern flat or lowlands of Germany (König, 1978:103; Leopold, 1961:123).

Low German may be divided into two large dialect groups, West Low German and East Low German,[3] of which the former can be further subdivided into Westphalian, Eastphalian and North Saxon,[4] on the basis of linguistic differences dating back to Middle Low German times (Foerste, 1966:1830).[5] Each of these subgroups, in turn, is made up of several regional varieties (cf. Foerste, 1966:1834-1874).

The North Saxon dialect area lies to the north of West- and Eastphalia, bordering in the West on Dutch as well as East- and West Frisian dialects, in the North on Danish and North Frisian,

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[1]But cf. King (1969:92) who suggests "the opposite direction of transmission:" from north to south with increasing generality.

[2]The chief morphological criterion distinguishing Low German from High German consists of common verbal plural endings in the present and past tenses in Low German.

[3]This division is based on the form of the verbal plural ending in the present indicative which is -(e)t for West Low German and -(e)n for East Low German dialects.

[4]Schirmunski (1961:31) also includes Low Franconian.

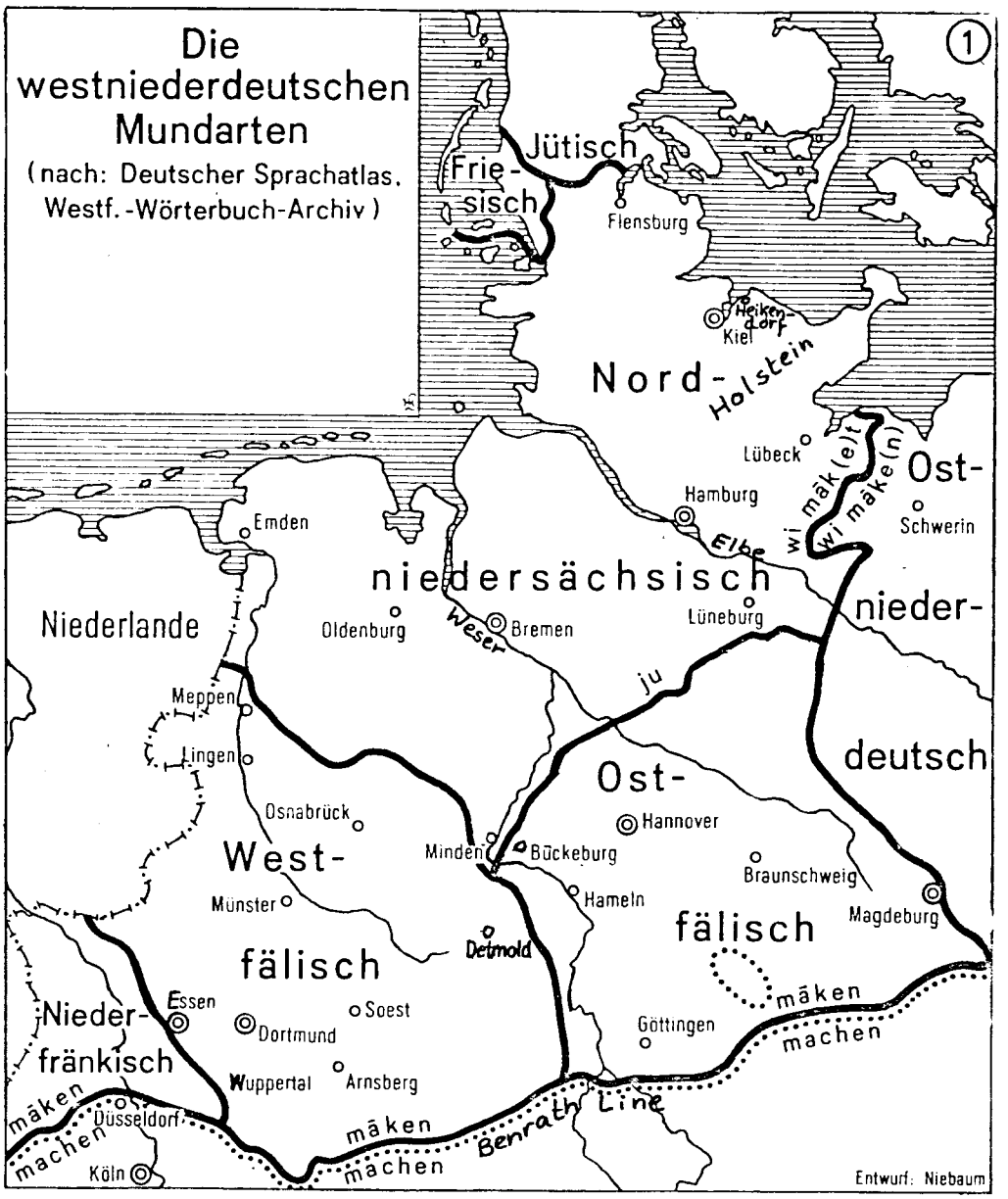
[5]The subdivision of East Low German will not concern us here.

and in the East on Mecklenburg dialect territory, with the borders not always clearly definable (Goossens, 1973:23, 26). The varieties spoken between the Weser and Elbe rivers (North Hanover) and those in Holstein constitute the core of North Saxon. We are interested here in a Holstein variety, the one spoken in the village of Heikendorf, a few kilometers northeast of the city of Kiel.

Today, Low German in most of its varieties is threatened with extinction. High German has taken over virtually in all facets of life and whatever limited use of Low German remains is restricted almost entirely to rather remote rural areas. A few strongholds are still found along the North Sea coastline near Denmark where Low German appears to be dominant over Frisian (Leopold, 1961:133).

While High German has been the subject of numerous phonological studies (cf. especially Bibliographie zur Phonetik und Phonologie des Deutschen, 1971), comparatively little research has been done on the phonology of Low German.

Figure 1 The West Low German Dialects
(adapted from Niebaum, 1980:460, map 1)



Methodology

Source of the Data

The corpus of data investigated in this thesis has been obtained from a bilingual native informant who grew up in the village of Heikendorf as a speaker of Standard High German (cf. Siebs, 1969) as well as the North Saxon variety of that area.

The present writer, although from the same general area as the informant, is not fluent in the dialect under consideration, but has a passive knowledge of it, i.e. understands and reads it.

Although it is customary to base the analysis of the language (or an aspect of the language) of a particular linguistic community on speech samples obtained from a group of informants, no absolute number being prescribed (Kelz, 1971:17), restriction to one idiolect is not an uncommon practice (Moulton, 1947; Stellmacher, 1972:124; Levine/Arndt, 1969:36). In support of this latter approach, we may quote Heike (1967:231):

> ... ein Sprecher, der in einer Sprachgemeinschaft aufgewachsen ist und von ihr akzeptiert wird, [kann] als kompetent für die betreffende Sprache angesehen werden und [stellt] damit ein hinreichendes Untersuchungsobjekt für die Beschreibung der Sprache dar.

Furthermore, with regard to the German language area, Keller (1961:11) observes a lack of linguistic conformity even in small isolated villages. Thus, basing our investigations on the

representation form of a single idiolect has the advantage of guaranteeing a high level of homogeneity. Moreover, it is important to emphasize that the data we collected are consistent with the published reports on the North Saxon dialect area (cf. for example Bremer, 1928; Keller, 1961:339-381; v. Essen, 1958). As a starting point, therefore, the investigation of Schleifton on the basis of one idiolect is certainly justifiable.

Unless otherwise specified, all the data appearing in this thesis are taken from our informant. Representative examples were recorded on tape.

General Description of the Data

The present study concerns itself exclusively with the spoken language and does not consider the written form in any way.

The data in this thesis consist primarily of citation forms, i.e. words spoken in isolation, as at the beginning of a dictionary entry, and to a lesser degree of connected speech. The reason for directing our attention essentially to the utterance of words in isolation lies in the fact that the Schleifton phenomenon is fully manifested only in stressed positions in the sentence, but tends to disappear in unstressed positions (cf. Bremer, 1928:3; Niekerken, 1953:69-70).[6] Hence,

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[6]Note that the same set of circumstances also applies for example to the occurrence of the feature stød in Danish (cf. Fischer-Jørgensen, 1950:119; Jensen, 1922:16-17).

considering primarily citation forms will ensure the occurrence of the tonal feature, the investigation and analysis of which is our main concern. That is to say, it is not our intention to attempt to prove or disprove the existence of Schleifton, but rather to study the phenomenon as it is illustrated in a particular North Saxon dialect. Incidentally, Goldsmith (1976:117) points out when examining word tones in English, that citation forms are the forms that standard phonological studies of natural languages commonly deal with.

Objectives

We are dividing the present thesis into two main parts, the first of which will be essentially data-oriented rather than theory-oriented. Here, we will present and describe primary data from the Low German dialect of Heikendorf.

Our object will be two-fold, viz. to provide (i) a general description of the sound system of this dialect and (ii) an accurate description of the Schleifton phenomenon. The former is a necessity for a proper understanding of the role that Schleifton plays in the phonology of Heikendorf Low German. Both (i) and (ii) are prerequisites for an adequate analysis of Schleifton which will be the subject matter of the second part of this thesis.

As a first step in the direction of an explanatory solution to Schleifton, we will discuss and evaluate existing solutions. We will then propose an alternative analysis of Schleifton that

accounts for all the factors involved in the phenomenon.

Our analysis will be placed within the general framework of metrical phonology as developed by Liberman and Prince (1977). Concepts from two further sources will also be incorporated into our framework, viz. multi-linear phonological representation from autosegmental phonology (Goldsmith, 1976) and syllable structure from the theory of metrical syllabification (McCarthy, 1979; 1982).

A. Identification of Schleifton

II. The Sound System of Heikendorf Platt

In this chapter, we briefly present the phonemes of Heikendorf Platt (HP) in order to provide a general overview of the sound inventory of the dialect and call attention to its peculiarities in contrast to Standard High German.

General Remarks on Low German Articulation

Low German articulation as compared to Standard High German articulation has been characterized as involving less articulatory energy, primarily in non-emphatic speech. As a consequence, medial and final consonants, as well as unstressed syllables, are only weakly articulated and occasionally dropped altogether (Grimme, 1922:17; Niekerken, 1953:71-73; 1957:79; v. Essen, 1958:106). Moreover, v. Essen observes for his North Saxon dialect of Kirchwerder that the tempo, i.e. the rate at which the individual words are pronounced and connected into phrases, is generally slower than that of Standard High German. We have made analogous observations about HP articulation.

An Initial Phonemic Analysis of Heikendorf Platt

In our tentative phonemic analysis of HP, we essentially follow (in technique) the descriptions of three other North Saxon varieties of Low German,

1. v. Essen's (1958) description of the vowel system of Kirchwerder (a village about 20 km southeast of Hamburg);

2. Keller's (1961:339-381) description of Harburg (a variety of the Lower Elbe district near Hamburg);
3. Mörcke's (1971) general description of North Saxon with special reference to the Holstein variety of Kiel.

Unless otherwise specified, the transcription of the HP data is based on Moulton (1962) whose contrastive analysis of the English and German sound systems is still of central linguistic importance today (Werner, 1972:8). Moulton's transcription system may be characterized as modified North American.

The Vowel Sounds

The following vowel diagram indicates the relative tongue position in the articulation of the various vowel types in HP:

[height]	backness / tenseness / rounding	[-back]		[+back]	
		[-round]	[+round]	[-round]	[+round]
[+high]	[+tense]	i̤	ʉ̤		ṳ
	[-tense]	ɨ	ʊ̞		ʊ
[-high -low]	[+tense]	e̤	ø̤		o̤
	[-tense]	ɛ	ʊ̞	ə	ɔ
[+low]	[-tense]	ɐ		ɜ	
	[+tense]				a̤

Tense and Lax Vowels

For the present phonemic analysis, we assume as Moulton (1962) does for Standard High German and Mörcke (1971) for North Saxon, that tenseness and laxness, represented as Ṿ and V̨, respectively, are the primary distinctive features of HP vowels, as opposed to length which is treated as a secondary, non-phonemic feature. Length is derived in tense vowels under primary stress.[1] The following list illustrates the vowel phonemes that occur in stressed position in HP:

/Ṿ/		/V̨/
/ị/	/vịt/ 'far'	/į/ /vįt/ 'white'
/ụ/	/lụd/ 'people'	/ų̣/ /lų̣t/ 'little'
/ụ/	/lụs/ 'louse'	/ų/ /lųs/ 'pleasure'
/ẹ/	/hẹt/ 'is called'	/ę/ /hęt/ 'has'
/ọ̈/	/dọ̈z/ '(I) doze'	/ǫ̈/ /dǫ̈s/ 'thirst'
/ọ/	/rọp/ '(I) call'	/ǫ/ /rǫp/ 'up'
/ạ/	/dạg/ 'days'	/ą/ /dąh/ 'day'

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[1] Tense vowels under primary stress will be represented in HP as a sequence of two vowels [VV̯], contrary to Moulton (1962) who indicates length (for Standard High German) by a colon. The second vowel component is non-syllabic, which in a strict phonetic transcription would be symbolized as [VV]. For justification of the sequential representation of vowel length, cf. Chapter Five. The concepts of vowel length and quality will be discussed in greater detail in Chapter Three.

To summarize, HP has seven sets of tense/lax vowel phonemes: /i̤, i̱, ṳ̈, ü̱, ṳ, u̱, e̤, e̱, ö̤, ö̱, o̤, o̱, a̤, a̱/.

/a̤/ and /a̱/ constitute the tense/lax pair of the low vowels, even though they differ with regard to rounding and the front/back dimension, in that /a̱/ is an unrounded front vowel and /a̤/ a rounded back vowel which is here phonetically represented as [ɒ].[2] The phonemicization as /a̤/ is done for reasons of pattern symmetry.

Parallel to Standard High German, HP has the lax mid central vowel /ə/[3] which is restricted entirely to unstressed position. Finally, /ə/ also contrasts with the unstressed lax low central vowel [ɜ],[4] that represents syllabic r, e.g. ['leivə][5] leve[6] 'dear(inflected adjective)' vs. ['leivɜ] lever 'dearer'. [ɜ] is also the vocalic realization of postvocalic r (cf. p. 23).

Under primary stress, the tense mid vowels /e̤, ö̤, o̤/ of HP are phonetically realized as the diphthongs [ei, öü, ou],

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[2]following Mörcke (1971:23-24)

[3]here represented as [+back], for reasons of pattern symmetry

[4]cf. previous fn.

[5]Primary and secondary stresses are indicated by the raised and lowered ticks ' ˌ, respectively, preceding the syllable that receives the stress. Stress in HP will be accounted for in Chapter Five.

[6]In contrast to High German, there is presently no standard form of Low German, neither for spelling nor for pronunciation. The spelling used here is based on Sass (1981) who follows the rules of Low German orthography as set up in 1956 under the supervision of the Fehrs-Gilde (a society for Low German) (cf. Sass, 1981:5-6). Cf. also Keller (1961:24-25); Mörcke (1971:22).

respectively. Diphthongization of these vowels is characteristic of the Holstein (and Hamburg) varieties; in other dialects of North Saxon, for example in the neighboring Geest area, they appear as the long monophthongs [ee, ȣȣ, oo], repectively, (Keller, 1961:343, 347; Schirmunski, 1962:256).

Diphthongs

HP parallels Standard High German in having the three phonemic diphthongs /ai, au, oi/ which contrast as follows in HP:

/D/	
/ai/	/klai/ klei 'dig!'
/au/	/klau/ klau 'steal!'
/oi/	/hoi/ Heu 'hay'

Overlong Vowels

In addition to long and short vowels, the HP data contains occurrences of overlong vowels. Overlength has also been claimed to exist in Standard High German (cf. Mueller, 1956, 1958; Dinnsen/Garcia-Zamor, 1971, among others). However, in contradistinction to Standard High German, the overlong vowels

of HP are characterized by a pitch contour roughly describable as level and then falling over the last third of the vowel, a phenomenon commonly referred to as Schleifton. (It is symbolized by the diacritic [‿], as in the words [stūuuɣ] 'room', [ʔōuuð̊] 'eye'. Note that the final obstruent following an overlong vowel is voiceless lenis.) Furthermore, Schleifton in HP has a differentiating function, as is apparent in word pairs such as [leiç] 'bad' vs. [lēii̯̊] '(I) tell a lie' and [muus] 'mouse' vs. [mūuuz] 'mice'. In the latter case, it has the grammatical function of signalling plurality. Schleifton does not occur in all dialects of Low German, but is considered to be a peculiarity of the North Saxon varieties (cf. Bremer, 1928; Keller, 1961:343). The appearance of Schleifton and the status of overlength in the phonology of HP --it functions as a third degree of quantity-- will be dealt with in depth in the following chapter.

General Vocalic Phenomena

There are a number of phonological processes, including assimilation, strengthening and weakening, that affect the HP vowel system. A few notable ones are mentioned below.[7]

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[7]Low German parallels Standard High German in exhibiting umlaut, e.g. in HP [kǫp] 'head', [kǿp] 'heads'; [muus] 'mouse', [mūuuz] 'mice'. Umlaut, which may be regarded as a case of assimilation, will not be dealt with in this thesis, as it is outside the present scope of interest. For serious discussion, cf. Foerste (1966); Schirmunski (1962); Wurzel (1970), among others.

As early as the Middle Low German period (ca. 1150-1600), the Low German front vowels i and e, especially when short, show a strong tendency to round in the environment of lip-based and round consonants (m, b, p, f, v, š, ž) as well as s([z],[s]), l, r (Foerste, 1966:1803; Grimme, 1922:22; v. Essen, 1958:115; Keller, 1961:346, 350; Feyer, 1938:28-29; Niekerken, 1957:83). The results of this development are clearly visible in HP:

i-->{ʉ, ʊ}[8]

['žʉmɜ(s)]	'always'	vs. SHG	['ʔɨmɜ]	
[bʉs]	'are(sg.)'	vs. SHG	[bɨst]	
['tvʉšn̩]	'between'	vs. SHG	['tsvɨšn̩]	
['fʊftain]	'fifteen'	vs.	[fiif]	'five'

e-->{ʊ, ʉ}

[zʊs]	'six'	vs. SHG	[zęks]	
[frʊm(t)]	'foreign'	vs. SHG	[fręmt]	
['ʔʊlɜn]	'parents'	vs. SHG	['ʔęltɜn]	
[vʉps]	'wasp'	vs. SHG	['vęspə]	

For a discussion of this problem and an analysis within a generative framework, using the cover feature labiality, cf. Vennemann and Ladefoged (1973).

According to Keller (1961:340) and Schirmunski (1962:262), there is a general tendency in North Saxon to diphthongize long vowels, except the high vowels /i̤, ʉ̤, ṳ/ (cf. also Foerste, 1966:1767-1770, 1801-1803; Teepe, 1973; Lasch, 1914, cited in Teepe, 1973:141). This is exemplified in HP where the tense mid vowels /e̤, ʊ̤, o̤/ diphthongize under primary stress, e.g. [kleit] 'dress', [kʊʉm] 'grain alcohol', [boum] 'tree' (cf. also pp. 13-14 above), but not the tense high vowels, e.g. [tiit] 'time',

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[8]Note also the North German colloquial pronunciation of Standard High German ['bɨsçən] 'a little' as ['bʉšn̩].

[mʉ̄ʉ̄ʉ̄z̥] 'mice', [huus] 'house'.

Processes of weakening, as for instance apocope and syncope, were rather wide-spread in North Saxon. In the dialect of HP for example, virtually all unstressed e's of final syllables were deleted, as compared to Standard High German or the West- and Eastphalian dialects, where they are preserved as schwas (cf. Teepe, 1973:156). This feature has been closely linked to Schleifton. Schleifton words are largely viewed as equivalent in length and tone pattern to words terminating in schwa of Standard High German and non-North Saxon dialects of Low German, e.g. HP [kēiiz̥] 'cheese' vs. Standard High German ['kẹ:zə][9] and Westphalian (dialect of Münster) ['kaízə] (the Westphalian example is taken from Schirmunski, 1962:257); hence, the origin of Schleifton is widely believed to lie in the loss of final schwa (cf. e.g. Bremer, 1928; Keller, 1961:339-381). We will return to this issue in the analysis of Schleifton presented in Chapters Four and Five.

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[9]Following Moulton (1962), length in Standard High German has been represented by [:].

The Consonant Sounds

The consonant phones occurring in HP are diagrammed in the following chart:

			labial	alveolar	palatal	velar	glottal
stops	vl.	fort.	p	t		k	ʔ
		lenis	b̥	d̥		g̊	
	vd.	lenis	b	d		g	
fricatives	vl.	fort.	f	s š	ç	x	h
		lenis	v̥	z̥	ʝ	ɣ̊	
	vd.	lenis	v	z ž			
nasals	non-syll.		m	n		ŋ	
	syll.		m̩	n̩		ŋ̍	
liquids	lateral			l		ɬ ɬ̬	
	trill			r			
	flap			ɾ			

HP has the following seventeen consonant phonemes /p, b, t, d, k, g, f, v, s, z, š, ž, h, m, n, l, r/ which are determined on the basis of (near-)minimal pairs contrasting in initial, medial and final position.

/C/	initial		medial		final	
/p/	/pląt/	'flat'	/ʔạpn/	'open'	/kąp/	'cap'
/b/	/błąt/	'leaf'	/bạbn/	'above'	---	---
/t/	/to̜/	'to'	/rịtn/	'to rip'	/kąt/	'cat'
/d/	/do̜/	'do'	/rịdn/	'to ride'	---	---
/k/	/kram̜/	'stuff'	/ʔẹkn/	'oaks'	/kịk/	'look!'
/g/	/gram̜/	'sorrow'	/ʔẹgn/	'own'	---	---
/f/	/fąt/	'barrel'	/grạfn/	'earls'	/kąf/	'small town'
/v/	/vąt/	'what'	/grạvn/	'to dig'	---	---
/s/	---	---	/rụsln/	'to rustle'	/kąs/	'cashier'
/z/	/ząt/	'full'	/rụzn/	'to rush'	---	---
/š/	/šẹdn/	'to leave'	/vąšn/	'to wash'	/vąš/	'wash!'
/ž/	/žẹdn/	'each'	---	---	---	---
/h/	/hąt/	'has'	/vąhn/	'guards'	/łąh/	'laugh!'
/m/	/mąt/	'mat'	/plụmn/	'plums'	/kąm/	'comb'
/n/	/nąt/	'wet'	/plụnn/	'rags'	/kąn/	'(I) can'
/l/	/łąt/	'board/	/šẹln/	'to squint'	/šẹl/	'squint!'
/r/	/rąt/	'wheel'	/šẹrn/	'scissors (pl)'	/šẹr/	'scissors (sg)'

Consonantal Distribution

In the following, the distribution of the HP consonant sounds as well as some of the phonological processes affecting them are outlined.

1. One of the most striking characteristics of the HP consonant system, as compared to the Standard High German one, concerns obstruents in final position. HP makes a three-way distinction between voiceless fortis, voiced lenis and voiceless lenis, as opposed to a two-way distinction in Standard High German between voiceless fortis and voiced lenis. The terms 'lenis' and 'fortis' refer to the "amount of energy expended in ... articulation" (Moulton, 1962:12). Voiceless obstruents are said to be fortis, "articulated with relatively great muscular energy", while voiced obstruents are said to be lenis, "articulated with relatively little muscular energy" (ibid.). A voiceless lenis may therefore be characterized as a voiceless obstruent, produced with less muscular energy than an ordinary voiceless one (Keller, 1961:343).

   In final position, after long and short vowels, the opposition between voiced lenis and voiceless fortis obstruents is neutralized, in both HP and Standard High German, in favor of the voiceless fortis member, e.g. in HP [veis] 'was' (vs. ['veizn̥] 'been'); [tiit] 'time' (vs. ['tiidn̥] 'times'); [breif] 'letter' (vs. ['breivn̥]

'letters'); [hɥpt] 'have(pl)' (vs. ['hɥbɱ] 'to have'). After overlong vowels, the final voiced lenis obstruents /d, g, v, z/ appear in HP as voiceless lenis [ʤ, ʝ/ð̥, ɣ, ʒ] respectively,[10] e.g. [stûuuɣ] 'room'; [vîiiʒ] 'manner'; [lûûuʤ] 'people'; [dɒɒɒð̥] 'days', [vêiiʝ] 'ways'. This particular set of final obstruents, obviously closely linked to the quantity of the preceding vowel, will be dealt with in the analysis of the Schleifton phencmenon (Chapters Four and Five).

2. In medial voiced surroundings, the voiceless fortis stops /p, t, k/ are weakened to voiceless lenis [ʱ, ʤ, ʛ], repectively, e.g. ['lɥʤə] 'little(inflected)' (vs. [lɥt] 'little(uninflected)'), ['ʔɐʱɨ] 'apple', ['trɥʛɜ] 'tractor', ['groudə] 'big(inflected)' (vs. [grout] 'big(uninflected)').
3. The voiced alveolar stop /d/ is reduced to the flap [ɽ] between lax vowels, e.g. ['vɥɽɜ] 'again'.
4. In final position, the voiced bilabial and velar stops /b/ and /g/ frequently have spirantized alternants, e.g. ['hɥbɱ] 'to have' vs. [hɥf] '(I)have', ['plöügɲ] 'to plow' vs. [ploux] 'plow'. These alternants may be regarded as having resulted from a rule of final spirantization which, however, is no longer productive, as can be seen from the existence

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[10] /g/ is spirantized and appears either as [ʝ] or [ð̥], as [ð̥] after low and back vowels, as [ʝ] elsewhere (cf. point 7. below). In the use of the symbol [ð̥], we follow Keller (1961:352), since Moulton (1962) does not describe this sound.

of such examples as ['ʔɐbɐ̯] 'to decrease' vs. [ʔɐp] 'low tide'.

5. In initial position, the voiced/voiceless opposition of the alveolar fricatives /s/ and /z/ is neutralized. Before vowels, only [z] occurs, before consonants (more specifically before /l, m, n, p, t, v/), only [s], e.g. [zei] 'lake', [ziit] 'since' vs. [sleif] 'wooden spoon', [stein] 'stone', ['snɑ̃ɡɐ̯] 'to talk'.

6. Corresponding to Standard High German /j/, HP has the voiced alveo-palatal fricative /ž/ which occurs only initially before vowels, e.g. [žii] 'you(pl)', ['žeidɐ] 'each, every'. In some dialects, especially those near Hamburg, it is affricated to [ǰ] (Keller, 1961:351).

7. In our analysis of the glottal, velar and palatal fricatives [h, x, ç] in HP, we are following Keller (1961:351) who suggests for North Saxon that they be considered allophones of one phoneme, /h/. [h] occurs only initially, e.g. in HP [hei] 'he', [hʊʊt] 'today' and [x, ç] only finally and medially, [x] after back and low vowels, e.g. in HP [houx] 'high', ['lɑ̃xɐ̯] 'to laugh' and [ç] elsewhere, e.g. in HP [rʊ̃ç] 'back', ['lɪ̃çtɜ] 'lights'.[11]

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[11]In Standard High German, the analysis of [h, x, ç] is controversial because of limited initial occurrence of [ç], for example in the words ['çi:ˌna] 'China', [ˌçe'mi:] 'chemistry', and always in the diminutive suffix -chen [çən], even after low and back vowels. HP, on the other hand, does not have initial [ç], as demonstrated by the pronunciation of the above examples as ['šiiˌnɒ], [ˌše'mii] and [kən]. For further information, cf. Moulton (1962); Würzel (1970); Werner (1972), among others.

8. Parallel to Standard High German, the velar nasal [ŋ] of HP may be regarded as the result of regressive assimilation of the underlying phoneme sequences /ng/ or /nk/.[12] The occurrence of [ŋ] is restricted to medial and final positions. While [k] remains after [ŋ], e.g. [bąŋk] 'bank, bench', ['bąŋɡŋ] (lenicized to [ɣ]) 'banks, benches', [ɡ] deletes between [ŋ] and a vowel, e.g. [žųŋk] 'young', ['žųŋɜ] 'younger'; [dįŋks] 'thing', ['dįŋɜs] 'things'.

9. Initially and intervocalically, the liquid /l/ is an alveolar lateral [l], while in final position, it appears velarized [ɫ], e.g. [pouɫ] 'post'.

10. A final nasal or lateral following a non-syllabic segment is syllabic, e.g. ['veizn̩] 'been'; ['slʊ̈dɫ̩] 'key'.

11. A syllabic dental nasal [n̩] assimilates to an immediately preceding labial or velar resulting in the corresponding homorganic nasal, [m̩] or [ŋ̩], respectively, e.g. ['zuuƀm̩] 'to drink', ['snąɣŋ̩] 'to talk'.

12. HP has long final nasals with Schleifton that contrast with 'regular', i.e. non-long, nasals, e.g. [krɒɒm͡m] 'to rummage' vs. [krɒɒm] 'rummage!; stuff(noun)'; [spį̈n͡n̩] 'to spin; spiders' vs. [spį̈n̩] 'spin!; spider'; [zį̈ŋ͡ŋ̩] 'to sing' vs. [zį̈ŋ] 'sing!'. These cases will be dealt with in the analysis of Schleifton (Chapters Four and Five).

13. Prevocalically, /r/ is realized as the apico-alveolar trill [r]. In all other positions, it vocalizes to [ɜ], an

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[12]For Standard High German, cf. Wurzel (1970:209-210).

unstressed lax low vowel (cf. also p. 13 above), e.g. ['beiɑ̯ɜ] 'better', [fɜ'leɜn] 'to lose'.

Brief Comparison of the Heikendorf Platt and Standard High German Sounds

Although the distribution of HP phonemes parallels that of Standard High German phonemes in many ways, there are some prominent differences which may be summarized as follows:

Vowels

1. Characteristic of HP are overlong vowels with concomitant pitch variation (Schleifton).
2. In labial surroundings, HP front vowels are frequently rounded.
3. HP has three phonetic diphthongs that are unknown to Standard High German, namely [ei, ʊ̈ʊ̈, ou].
4. Where HP (and Low German in general) retains the long high vowels /i̤, ṳ̈, ṳ/, Standard High German has /ai, oi, au/, resulting from New High German diphthongization (in the 12th century).

Consonants

1. HP has a tripartite division cf final obstruents into voiceless fortis, voiced lenis and voiceless lenis.
2. HP has long final nasals with concomitant pitch variation (Schleifton).
3. As can be expected, HP lacks the affricates [pf; ts, t̬s̬]

that resulted from the High German sound shift and instead preserves the West Germanic stops.

4. In medial voiced surroundings, HP stops are characterized by general lenition.

In this chapter, we outlined the sound system of HP and contrasted it with that of Standard High German. In the subsequent chapter, we will focus on a striking difference between the two systems, viz. the occurrence of Schleifton as an idiosyncracy of HP.

III. Demarcation of the Problem: Identifying Schleifton

As stated previously, Schleifton is a peculiarity of the North Saxon dialects of Low German. In the preceding chapter, we saw that Schleifton is also clearly reflected in the HP variety.

It will be recalled that Schleifton designates a particular pitch movement accompanying overlong vowels or long nasals. Concepts such as quantity and tone, its chief components, must be discussed first, in order to analyze this phonological feature appropriately.

Vowel Quantity and Quality in German

Both quantity and quality are significant factors in the production and perception of German vowels. However, it is still a controversial issue among phoneticians and phonologists whether quantity, quality or both together serve as the distinguishing feature (cf. Weiss, 1976; Bennet, 1968; Delattre/Hohenberg, 1968).

In quantitative terms, stressed vowels are customarily classified as long vs. short, for example the first vowel in ['bi̯:tən] 'to offer' is considered long, whereas the corresponding vowel in ['bi̯tən] 'to beg' is considered short. Among the accounts that favor quantity as the distinctive feature are v. Essen's (1966:173); Reed's (1965:47) and Siebs'

(1969:21).[1]

A qualitative distinction is made in terms of the oppositons close vs. open or tense vs. lax, the former set referring to the degree of opening of the oral passage, the latter to the degree of muscular energy involved in the articulation of the vowel (Moulton, 1962:62).

Tense and lax correspond to close and open, respectively, close vowels generally being more tense and open vowels more lax. Ungeheuer (1969:34) points out the connection between the two sets, namely that close and open characterize a qualitative difference which manifests itself acoustically in the dimensions of the first and second formants as 'decentralized' and 'centralized' positions of the vowels, as determined by spectrographic analysis, and that tense and lax are merely the corresponding auditory terms (cf. also Jørgensen, 1969:218-219, 224-225). Proponents of this view include Dieth (1950:205); Wängler (1960:92); Moulton (1962:64); and Droescher (1964:25).

In Standard High German, there is a systematic relationship between vowel quantity and quality: length is generally correlated with tenseness and shortness with laxness (cf. for

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[1]Trubetzkoy (1958:196) regards the long/short opposition merely as a phonetic side phenomenon of the relevant feature 'contact', i.e. the type of connection between a vowel and the following consonant. Long vowels are said to have 'open' or 'loose' contact, short vowels 'close' contact. However, on the basis of extensive experimental investigations, Fliflet (1962) and Fischer-Jørgensen (1969, cited in Wodarz, 1979:8) conclude that the perception of contact is a consequence of vowel quantity.

example Siebs, 1969:21; Moulton, 1962:63; Wängler, 1960:94).[2] According to Moulton (1962:63), this relationship is fully in effect only for stressed vowels. With regard to unstressed vowels, it is the tense/lax opposition that holds, while the length distinction is no longer applicable as "both sets are of equal duration".[3] In Moulton's terms, which we will accept in this thesis, it is the feature quality, i.e. the tense/lax opposition, rather than quantity, that is a more consistent indicator in the vowel system of Standard High German.

The quantity factor also appears to be somewhat problematic in determining the number of relevant durational differences in a language. For Standard High German vowels, for instance, between two and five durational steps are suggested. Thus, Bithell (1952:83-84) distinguishes between overshort, short,

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[2]Two exceptions, concerning the a and e-sounds, are encountered with regard to these rules. 1) The long and short low vowels [a:] and [a] are both relatively open. Weiss (1976:12) therefore sees the terms tense and lax as more suited to characterize the pair. But Moulton (1962:63-64) claims that the tense/lax opposition is suspended in the case of /a/. This suggests that the difference between [a:] and [a] rests solely on duration (cf. Philipp, 1970:33). However, according to Martens (1961:36) for example, there is also a difference in place of articulation in that [a:] is velar and 'dark' and therefore better transcribed as [ɑ:], while [a] is palatal and 'light'. 2) Short open [ɛ] may have two long oppositions, long close [e:] and long open [ɛ:]. Many speakers of German do not have [ɛ:], but consistently substitute [e:], according to Weiss (1976:12), because "the closeness (or tenseness) and length of the vowel in articulation are so tightly linked together that many Germans find it difficult to lengthen an open or lax vowel". He notes that this has been proven experimentally by v. Essen (1966:177).

[3]But cf. Delattre/Hohenberg (1968) who claim that both vowel duration and quality are important features in stressed and unstressed syllables.

halflong, long, overlong and Menzerath (1928/9, cited in Wodarz, 1979:30) between short, zwischenlang (literally 'medium long'), long. Most commonly, however, only two degrees are suggested, namely short and long (cf. for example Moulton, 1962:57). V. Essen (1957:239) feels that these divergent statements are due primarily to an undifferentiated use or false equation of the terms quantity and duration in the phonetic literature (cf. for example Dieth, 1950:432), when referring to measurable duration of sounds as opposed to phonologically relevant durational sound differences. Naturally, each sound is of a certain duration, measurable in terms of time units, but this can vary substantially, depending on a number of factors, such as rate of speech, length of the word, degree of expressivity, emotional state of the speaker, etc. Thus, there may be several systematically perceptible durational vowel differences in a language, but it is not a necessary consequence that all of them be phonologically relevant.

Based on v. Essen (1957:237) and Wodarz (1979:5), the following distinction is made in this thesis between quantity and duration: the latter term is used as meaning physically measured length of segments, while the term quantity is used to refer to phonologically relevant duration. Additionally, the term length is used to designate one of the possible quantity oppositions, for example in Standard High German, length stands in opposition to shortness.

Distribution of Vowel Quantity in Standard High German and Heikendorf Platt

The Controversial Status of Overlength in Standard High German

A basic phonetic dichotomy of long/short is customarily assumed for Standard High German vowels (cf. Moulton, 1962:62-64; Siebs, 1969:20; Philipp, 1970:28-33; Werner, 1972:24-28; Niekerken, 1957:83).

While the above-mentioned degrees of overshortness and halflength constitute possible perceptible durational steps in Standard High German vowels but are clearly not distinctive (cf. for example v. Essen, 1966:170-171), a number of phonologists have repeatedly argued for the existence of overlength (Überlänge) as a third degree of quantity in the vowels of this language, for example Mueller (1956, 1958); v. Essen (1957); Pilch (1966); Dinnsen/Garcia-Zamor (1971); Martens (1961:29-30).

Examples of the hypothetical three-way opposition short/long/overlong include the following (based on Wodarz, 1979:29):

short		long		overlong
[lɪ̯st] 'trick'	≠	[li̯:st] 'reads'	≠	[li̯::st] '(you sg) lent'
		[šp̯e:t] 'late'	≠	[šp̯e::t] 'looks out'
[lǫt] 'f. name'	≠	[lǫ̯:tə] 'leads'	≠	[lǫ̯::tə] 'it burnt'
[zą̯t] 'full'	≠	[zą̯:t] 'seed'	≠	[zą̯::t] '(you pl) saw'

While languages with two distinctive degrees of quantity are quite common, those with three are relatively rare. Trubetzkoy (1938:156, cited in Malmberg, 1944:51), even denies

the existence of the latter. He claims that no language has more than two distinctive degrees of quantity:

> Betrachten wir jene Sprachen, wo die Quantität phonologisch verwertet wird, so bemerken wir, dass überall nur zwei Quantitätsstufen einander gegenübergestellt werden. Da, wo die Beobachter mehr als zwei Quantitätsstufen angeben, erweisen sich ihre Angaben bei näherem Betrachten vom phonologischen Standpunkt aus als Missverständnisse.

It has been objected, however, on the basis of extensive investigations, that languages such as Lappish and especially Estonian clearly make use of a threefold quantity distinction (cf. e.g. Collinder, 1951, for Lappish and Estonian; Liiv, 1962, and Prince, 1980, for Estonian).

With regard to the situation in Standard High German, the objection to Trubetzkoy's claim of only two quantities is by no means unanimous. On the one hand, the opposition long/overlong is often considered to be a characteristic feature of Standard High German vowels; on the other hand, many serious accounts of the language do not mention the issue of overlength at all, for example Moulton (1962), Siebs (1969) and Philipp (1970).

When considering all the studies dealing with this question, we may divide them into two basic categories. Members of the first proclaim the existence of a distinctive long/overlong opposition without adducing the necessary convincing evidence, i.e. enough supporting data and/or experimental proof, for example Martens (1961:29-30); Mueller (1956, 1958); Pilch (1966). Their accounts seem to be based on subjective impressions rather than objective measurements.

Members of the second category try to either prove or disprove the existence of a long/overlong opposition on the basis of phonetic experiments which vary greatly in extent and degree of validity. Among these, Dinnsen/Garcia-Zamor (1971) are proponents for overlong vowels in Standard High German. Experimentally based arguments against a relevant long/overlong opposition come from Hanhardt et al. (1965) and most importantly from Wodarz (1979). Wodarz' extensive study of the problem of overlength in Standard High German is based on the assumption that quantity oppositions, as for example between short and long vowels in Standard High German, do not solely rest on differences in relative segment duration. The time factor is an important, though not the only, feature of quantity, others being quality and tone. Thus, his large-scale phonetic investigations of the hypothetical long/overlong opposition include not only measurements of segment duration but also analyses of formant structures and fundamental frequencies. The results in all three areas show clearly that no such opposition exists and Wodarz (1979:viii) concludes:

> Meine Untersuchungen ergaben, dass der hypothetische Gegensatz 'lang - Überlang' nicht nur kein Unterschied in der Dauer ist, sondern dass er sich phonetisch überhaupt nicht dokumentieren lässt.

Overlength and Other Durational Variants in Low German and Heikendorf Platt Vowels

Although a three vowel quantity distinction of short vs. long vs. overlong cannot be justified for Standard High German, as has just been established, we will see that the dialect of HP (as well as other North Saxon dialects) does, in fact, make such a ternary distinction. This lack in parallelism in the number of vowel quantities between Standard High German and HP is not surprising, for "the durational steps in vowels depend somewhat upon the dialect" (Weiss, 1976:13). Thus, some German dialects of the Rhineland distinguish between the three vowel quantities short, halflong, long, where halflong vowels are shortened long vowels and are accompanied by a much greater pitch drop than long vowels, a phenomenon known as 'Rheinische Schärfung' (Kohler, 1977:125-126). In a similar fashion, it may be expected that the quantity distinctions made in HP and other Low German dialects look different from those made in Standard High German.

In the following, we will see which durational differences are described for North Saxon dialects of Low German and we will discuss which ones were found to be relevant in HP. As was the case for Standard High German, for Low German, too, up to five durational steps in vowels are suggested. For example Rabeler (1911:165-166), in describing the sound system of the North Saxon varieties of the district of Bleckede (near the city of Lüneburg), distinguishes between shortness, halflength, basic or

simple length (einfache Länge), increased length (gesteigerte Länge) and overlength. Grimme (1922:18-19), in his description of four Low German dialects, among them a North Saxon one, differentiates between overshortness, shortness, halflength, length and overlength.

1) the overshort/short opposition

Grimme (1922:18-19) observes an overshort/short opposition in vowels and diphthongs for two of the four dialects (among them not the North Saxon one) he describes. V. Essen (1958:110) mentions the same opposition in his description of the vowel system of the North Saxon dialect of Kirchwerder; for example, the i in double checked syllables like du smɪts 'you(sg)throw' and kɪpt 'turns, falls' is slightly shorter than that in single checked syllables like vɪt 'white' and ʃɪp 'ship' (v. Essen's notation). He points out, however, that this opposition is hardly noticeable in Kirchwerder. Moreover, it is clearly a phonetic phenomenon and has no phonological significance. In 1966:170, v. Essen rejects Grimme's overshort durational step on the grounds that it cannot be proven experimentally since the measurements fluctuate and overlap.

An overshort/short opposition was not observed for HP. Our dialect may therefore be assumed to have only one category of short vowels, without a further subdivision into overshort.

2) the halflong/long opposition

Rabeler (1911:165), Grimme (1922:18-19) and v. Essen (1958:110; 1966:170-171) observe a halflong/long opposition in

vowels, v. Essen also in diphthongs; however, all three of them are referring to different phenomena. Rabeler's halflength is restricted to certain segment combinations, e.g. the first component of final diphthongs as in rao 'rest', k'øʊ 'cows' (his notation). Grimme's halflong vowels arise through reduction of long vowels before originally syllable-forming consonant clusters, e.g. grĭ$^{\rho}$m < grīpp 'to seize'; wă^{tr} < wătr 'water' (his notation). V. Essen considers the following as examples of the opposition halflong/long (v. Essen's examples and observations also apply to our dialect of HP): ri·t'n 'to rip' vs. ri:dn 'to ride'; ɛik'n 'oaks' vs. ɛi·gn 'own' (his notation). Vowels are longer when followed by voiced obstruents than when followed by voiceless ones. This phonetically based difference in the duration of vowels has been observed for a number of languages, among them English (cf. Catford, 1977:197; Malécot, 1955) and German, both Standard High German and Low German (cf. v. Essen, 1966:170-171). In these languages, voiced obstruents are intrinsically shorter than voiceless ones, requiring less time as they are produced with less articulatory energy, so that the vowel preceding voiced obstruents is given more time for its manifestation. The vowel thus appears to adjust its duration according to the duration of the following obstruent. This adjustment, a kind of compensatory lengthening, may be seen to have resulted in an attempt for the entire articulatory sequence to meet a predetermined time pattern or duration quantum, which has been suggested by Lehiste (1970:8-9) to exist for the

syllable.

In Trubetzkoy's (1958:47) terms, the halflong/long opposition as described by v. Essen has an ancillary-associative function which is phonologically relevant in that it helps to identify the following obstruent (coarticulation effect), but does not constitute a phonologically relevant quantity opposition.

On the basis of these observations, it may be concluded that halflong and long vowels in HP are both members of one quantitative degree, namely length, standing in opposition to short vowels, e.g.

[vi̯t] 'white' ≠ [viit] 'far'
[lu̯s] 'pleasure' ≠ [luus] 'louse'
[vi̯s] 'certain' ≠ [viis] 'aware'
[zo̯t] 'soot' ≠ [zout] 'well'
[nɑ̯t] 'wet' ≠ [nɒɒt] 'seam'

3) the long/overlong opposition

Overlong vowels and diphthongs are proposed for the North Saxon dialects of Low German by a great number of scholars, for example Leskien (1882:11), Niekerken (1953:69-70; 1957:83), Grimme (1922:19-20), Bremer (1928; 1895:185), Martens/Wängler (1955:267-268), v. Essen (1957; 1958; 1966:172), Keller (1961:343, 348-349), Feyer (1938), Hildebrandt (1963:110-112), Bellamy (1968:97, 101-103), Rabeler (1911:166).

In contrast to the situation in Standard High German, the existence of overlong vowels in North Saxon dialects appears to be an accepted reality. We present the following word pairs of the North Saxon variety of HP as examples of this opposition:

[ziit] 'since' ≠ [zi͡iiɖ] 'silk'
[viis] 'aware' ≠ [vi͡iiz̧] 'manner'
[struuf] 'rough' ≠ [st͡ɯuuɣ] 'room'
[zɵ̈ʊt] 'sweet' ≠ [zɵ̈͡ʊʊɖ] 'wells'
[leiç] 'bad' ≠ [lei̯͡i̯ˀ] '(I)tell a lie'
[bruut] 'bride' ≠ [brʊ́͡ʊʊ̀t] 'brews'

The vowels on the right-hand side of the above paradigm are considered to be overlong --in the case of diphthongs, they may be referred to as long diphthongs (Langdiphthonge, cf. Grimme, 1922:19-20 and v. Essen, 1958:112)-- compared to the vowels and diphthongs on the left-hand side, which are regular-long.

So far, the HP situation is not convincingly different from the Standard High German one. Moreover, the HP long/overlong opposition appears to run parallel to the above halflong/long opposition and could be interpreted as serving merely an ancillary-associative function. Note, however, that in HP additionally morphophonemic alternation is involved between long and overlong vowels, as well as between short and overlong vowels, e.g.

[zi͡iiɖ]	'silk'	['ziidn̩]	'silken'
[vi͡iiz̧]	'manner'	['viizn̩]	'manners'
[st͡ɯuuɣ]	'room'	['stuuvn̩]	'rooms'
[zɵ̈͡ʊʊɖ]	'wells'	[zʊt]	'well'
[lei̯͡i̯ˀ]	'(I)tell a lie'	['leiɣn̩]	'to tell a lie'
[nei̯͡i̯ˀ]	'near'	['neiɣn̩]	'near(infl.)'
[dɒ͡ɒɒð]	'days'	[dɑx]	'day'

It is important to emphasize that morphophonemic alternation of this kind is not found in Standard High German.

In addition, lexical items containing overlong vowels have special intonational properties. The greater duration of the HP overlong vowels is always accompanied by a contour tone, i.e. a tone where "the pitch of the voice changes in the course of

pronunciation of a syllable" (Kenstowicz and Kisseberth, 1979:266).[4] Furthermore, these overlong vowels differ qualitatively from their long counterparts in being tenser and more closed.[5] The widely-accepted German term for this phenomenon is Schleifton, which literally means 'trailing or slurring voice': the tenser overlong vowel is perceived as being accompanied by a characteristically falling pitch contour, rather different from the one accompanying regular-long vowels (see next sub-section, pp. 40 ff.).[6]

Other labels in use for the phenomenon are Überlänge, Überdehnung and Überlängung, all three corresponding to 'overlength(ening)', and Ersatzdehnung, corresponding to 'compensatory lengthening'.[7] In the sources on North Saxon cited above, these terms are often employed interchangeably. For example Keller (1961:343) treats the labels Überlänge and

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[4] In our use of the terms pitch and tone, we will follow Kenstowicz and Kisseberth (1979:264-265) and Lehiste (1970:54). Pitch refers to "our subjective perception of voiced sounds and is correlated with the frequency of vibration of the vocal chords...The higher the frequency of vibration, the higher the pitch of the voice" (Kenstowicz and Kisseberth, 1979:264-265), while tone is used "to refer to the feature when it functions distinctively at word level" (Lehiste, 1970:54).

[5] Overlength of the vowel, which is achieved by greater articulatory energy, thus gives rise to a quality opposition tense/tenser. The parameter 'tenser', however, is not represented in the phonetic transcription.

[6] Several authors, for example Bremer (1928), Martens (1961:29-30) and Martens/Wängler (1955:268), propose this contour tone also for the alleged Standard High German overlong vowels; but cf. Wodarz (1979) for evidence against this claim.

[7] The latter appears in conjunction with a proposed analysis of Schleifton (cf. Chapter Four).

Schleifton as synonyms. Theoretically, however, there is a clear difference between the two. While Überlänge, parallel to Länge 'length' and Kürze 'shortness', designates a possible quantitative step, referring essentially to measurable duration, the term Schleifton refers to a tonal feature, i.e. the contour tone carried by (over)long segments, specifically overlong vowels and long nasals in HP. Überlänge does not necessarily include a tonal feature, such as Schleifton, as there are North Saxon dialects with overlong vowels that lack Schleifton or any other kind of tonal feature (cf. for example the dialect of Baden (near Bremen) described by Feyer, 1938). Moreover, it is pointed out by Lehiste (1970:82) that increased length of a segment does not automatically result in either higher or lower fundamental frequency.

In the following, we will continue to use the well-established term Schleifton to refer to both quantity and tonal features that constitute the phenomenon.

The tonal feature of Schleifton (as well as other tonal contours) is presumably restricted to a specific type of segment, viz. sonorants, that constitute syllabic nuclei (cf. Anderson, 1976:336n). It might appear, at first glance, that the presence of the tonal feature of Schleifton presupposes overlong duration of the segments with which it is associated. However, such a restriction is proven invalid on the basis of clear evidence of tonal contours occurring also on short vowels (Anderson, 1976:335). Furthermore, Lehiste (1970:82) notes that

the occurrence of higher or lower tones on a syllable does not automatically entail lengthening or shortening of the tone-bearing segment. Finally, it should be emphasized that the tonal feature of Schleifton is never distinctive by itself the way tones are in a tone language and that it is always coincident with the position of stress.

The Phonetic Character of Schleifton

While the physical correlates formant structure, duration and fundamental frequency have been investigated experimentally for the hypothetical long/overlong opposition in Standard High German (cf. Wodarz, 1979), no comparable study seems to exist for the opposition in the North Saxon dialects of Low German.

None of the above sources has dealt with the question of a qualitative difference between long and overlong vowels. They differentiate qualitatively between short and long vowels, generally on the basis of the features close and open, for example Keller (1961:343), but not between long and overlong ones. When a language (or dialect) has a rather pronounced qualitative difference between the first and second degrees of quantity, i.e. short and long vowels, it may be expected that it further differentiates qualitatively between the second and third degrees of quantity, i.e. long and overlong vowels.

Limited durational measurements are available, for example from Rabeler (1911:165-166), Stammerjohann (1914, cited in Feyer, 1938:128), Feyer (1938) and Hildebrandt (1963).

The pitch aspect seems to have been given the most extensive treatment. The discussion is based, however, not on instrumental measurements, as are available for the hypothetical overlong vowels of Standard High German (cf. especially Wodarz, 1979), but rather on descriptions of the tonal aspect of Schleifton in musical terms. Thus, Rabeler (1911:168) characterizes the pitch movement accompanying overlong vowels in Bleckede as follows:[8]

> Während der ersten drei zehntel sekunden ist der ton eben oder sehr wenig steigend, in der letzten zehntel sekunde fällt er - mit der plötzlichen verringerung der intensität ... - schnell um eine quinte bis oktave: k'ɛ̃ɪd (kette), mʏ̃s (mäuse), sɔ̃ːə (sage).

Seelmann (1908:4) describes the tonal component of Schleifton in the dialect of Prenden (near Berlin), where it occurs only with diphthongs:

> ... die Tonhöhe der Stimme sinkt bei dem zweiten Komponenten so erheblich ..., dass das Intervall etwa eine grosse Terz, wenn nicht mehr, ausmacht, ...

The pitch contour of a long vowel as opposed to a Schleifton vowel is represented by Bremer (1928:2-3) in musical notation as follows:[9]

> In Notenschrift: eine Viertelnote mit Punkt gegenüber schleiftoniger Folge einer höheren und einer tieferen Viertelnote, durch Bogen verbunden, mit Decrescendo-Zeichen;

With regard to Hamburg Low German, Bellamy (1968:119-120) notices a "regular overall lowering of pitch" in a number of

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[8]where ~ represents the tonal feature

[9]Cf. also Bremer (1893:188-189).

male, but not in female, informants when they speak Low German. This is particularly striking as they switch from Standard High German to Low German. He furthermore mentions a "sing-song-like pitch contour ⁀ " in certain words such as [(t)šý:s] 'good-bye' (his notation) which also obtains in words with overlong vowels.[10]

Within the scope of this thesis, it is not our intent to prove or disprove the existence of Schleifton via instrumental investigations of duration, fundamental frequency and formant structure of Schleifton segments, although such experiments would be of considerable interest. Instead, Schleifton is treated here as an accepted reality of many North Saxon dialects in general (based on the descriptions in the above sources) and HP in particular (based on our data). The phonetic reality of the phenomenon is illustrated by the following exemplary data from spectrograms of the HP word pair [ziit] 'since' ≠ [zi͡iiɡ] 'silk', which contrasts an ordinary long vowel with a Schleifton vowel.[11]

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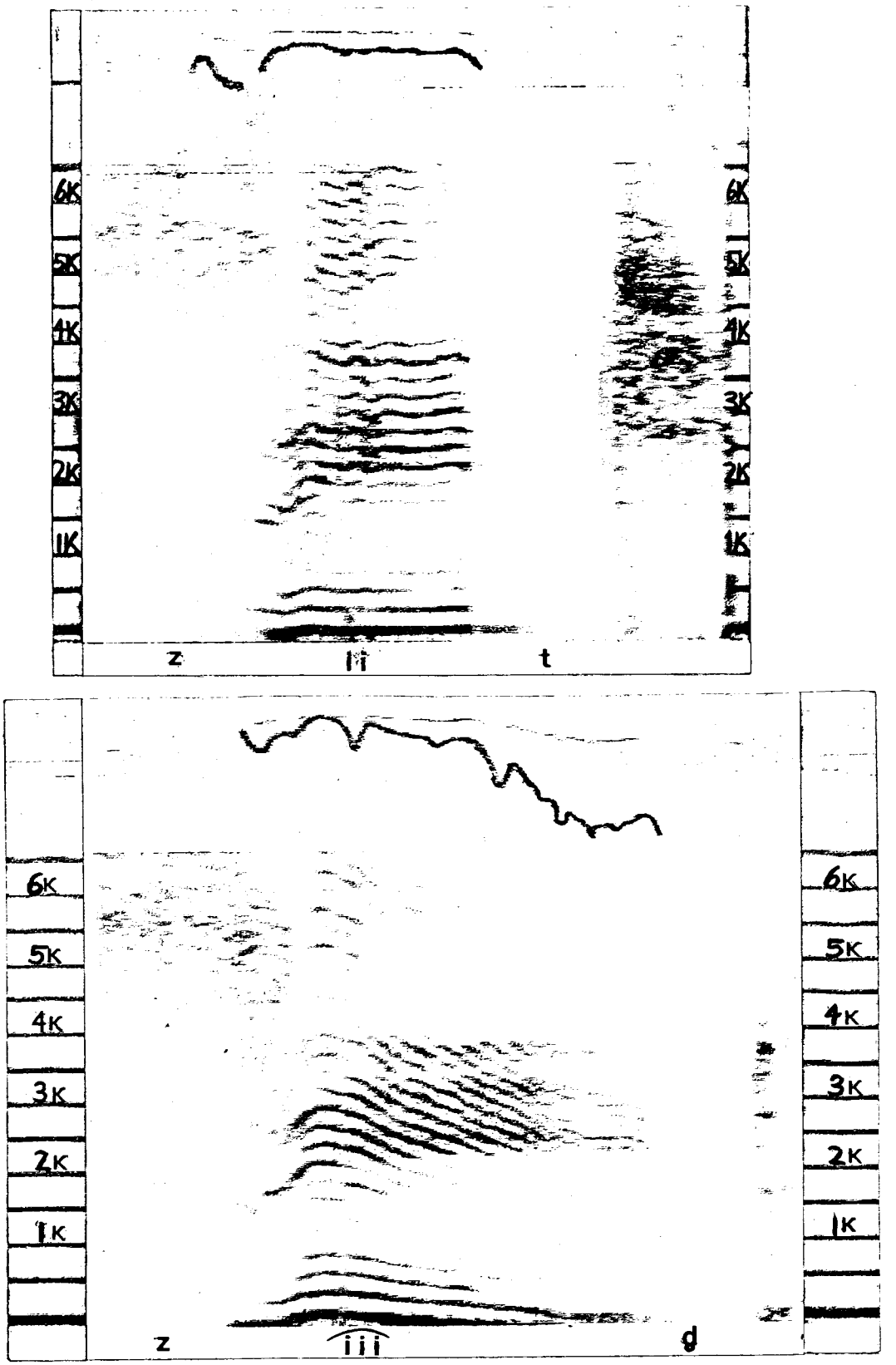
[10]It is interesting to note that a correlation of length and pitch has also been pointed out for Estonian (cf. Malmberg, 1944:42), where length differences are generally accompanied by differences in pitch, for example the first vowel in the word saaqi with overlong a has falling pitch, while the corresponding vowel in saagi with long a is produced with level tone.

[11]The spectrograms are obtained from the Sona-Graph 6061B of the Kay Electric Co.

Figure 2 Illustrative narrow-band spectrograms of the long/overlong word pair [ziit] 'since' ≠ [ziiid̚] 'silk'



From the spectrograms it can be seen that the vowel of [ziit] is of substantially shorter duration than the corresponding vowel in [zíiiḑ]. Furthermore, the difference between the voiceless fortis and the voiceless lenis final obstruents is clearly reflected in the spectral segments corresponding to [t] and [ḑ], respectively: there is extensive explosive friction in connection with the former as opposed to very brief and weak explosive friction in connection with the latter segment. Finally, the contours of the amplitude displays correspond to the striking pitch patterns that are associated with these words; i.e. the relatively level pitch (with a slight drop at the end) in the case of words containing a long vowel as opposed to a significant pitch drop (over the final third of the vowel) in the case of words containing an overlong vowel.

Schleifton and Related Tonal Phenomena

According to Bremer (1928:1), it was A. Leskien of Kiel who first called attention to the occurrence of Schleifton along Germany's coastline. In a publication of Lithuanian folk songs and fairy tales, collected and edited by Leskien and Brugman, Leskien (1882:11n) mentions that the difference in Lithuanian tone pattern between "geschliffen", i.e. rising tone, and "gestossen", i.e. falling tone, is familiar to him from his own native North Saxon dialect of the Holstein area, where the words brūt 'bride' and brūt 'he brews', for example, are differentiated by tone as brúːt and brũːt, respectively: the

latter having Schleifton, i.e. rising tone[12] and two accentual peaks, the former Stosston, i.e. falling tone and one accentual peak. Similarly the words gó̜s 'goose' and gõ̜s 'geese' (his notation). He concludes this observation with the remark that Schleifton in the Holstein varieties of Low German follows certain laws. These, however, he does not discuss.[13]

The occurrence of Schleifton in North Saxon and the above reference by Leskien to Stosston in Holstein become particularly interesting in view of the fact that in Danish a type of Stosston, referred to as stød, is encountered, a situation which might suggest that these features are somehow related. In support of this view, there are some interesting points to consider.

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[12]Note that we characterize Schleifton as level (to be exact, high level) and then falling over the last third of the vowel.

[13]The terms Schleifton and Stosston are important concepts in Indo-European linguistics. According to Schmitt (1950:90), they were coined in 1849 by Kurschat to designate the two different ways of pronouncing a syllable which he observed for modern Lithuanian, "geschleift", i.e. with rising tone, and "gestossen", i.e. with falling tone, a phenomenon that the conservative Lithuanian language supposedly preserves from Indo-European. Indo-European is said to have had two different tonal patterns, rising and falling, depending on the vocalic syllable nucleus: long vowels with one accentual top had falling tone; long vowels with two accentual tops (=overlong) had rising tone. According to Bithell (1952:234), the latter arose through coalescence of two vowels, an original long or short vowel and a following short vowel, e.g. Indo-European ŏ+es>õ̜s. Such differences in tone were soon found to be not just characteristic of Lithuanian alone, but also reflected in other Indo-European languages, for example ancient Greek, in the form of the circumflex and acute accents, as well as in some Germanic languages, e.g. Gothic (cf. Hannssen, 1885:612).

First of all, there is the factor of geographical proximity. The occurrence of stød is restricted to some southern Danish dialects of Jutland which borders directly on the Schleifton area Schleswig-Holstein (cf. Ringgard, 1963). Moreover, there have been long-term historical (and cultural) relations between these two areas.

Secondly, Stosston and Schleifton, as pointed out above, refer to tonal features. And so, apparently, does the Danish stød. The stød is believed to have originated from a particular pitch movement, on the basis of the observation "that words with stød correspond to words with 'accent 1' in Norwegian, Swedish and some southern Danish dialects: and, in accordance with this origin, some observers have found that there is still a musical difference between words with stød and words without stød" (Fischer-Jørgensen, 1950:117).[14] Árnason's (1980:79) remark points in the same direction:

> The phonetic character of the stød, based on glottal movement, forming a sort of creak or half-closure of the vocal cords, could well be interpreted as evidence that it is a reflex of the pitch peak of the old Accent 1.

At this point, a comment is in order on Leskien's Stosston. It appears, on the basis of phonetic information, that the phenomenon Leskien calls Stosston is not synonymous with the phenomenon called stød, although the terminology suggests that they do refer to the same thing, since the German equivalent of

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[14] 'Accent 1' and 'accent 2' are word tones, i.e. different prosodic contours of words, based mainly on pitch variation (cf. Árnason, 1980:69).

the Danish lexical item stød is Stosston. According to Ladefoged (1971:14-15), the Danish stød is characterized by "a harsh sound with comparatively low pitch", resulting from a particular state of the glottis during its production, which is referred to as creaky voice or laryngealization. The pitch drop is so radical that "the final pitch level of the falling tone becomes low enough to cause laryngealization" (Grundt, 1975:165). With regard to Leskien's Stosston, on the other hand, the pitch drop is much less intense and never even approaches the level necessary for the creaky sound characteristic of the Danish stød. Leskien apparently uses the term Stosston merely to designate lack of Schleifton. In order to avoid terminological confusion with stød, the label Stcsston will be discarded from further discussion. Thus, the crucial opposition in North Saxon and HP is considered to exist between words with and without Schleifton (paralleling the opposition in Danish between words with and without stød).[15]

Thirdly, the similarities in the distributional restrictions placed on the occurrence of Schleifton and stød are striking enough to suggest a link between them.

1. Both occur primarily in monosyllabics.
2. Both can fall on long (HP: overlong) vowels and on voiced (but not voiceless) consonants (in HP, these voiced

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[15]Rabeler (1911:165-166), incidentally, notes "knarrende vokale", literally 'creaky vowels', in Bleckede, which derive from V+r and V+rr. Cf. also Bremer (1893:84-85). However, it is not clear whether they relate to Stosston and/or creaky voice.

consonants must be final long nasals). Note, however, that Schleifton is restricted to final position in a morpheme, e.g. ['leiiz̚.bouk] 'reader', while stød can appear medially and finally, e.g. [pʰɛ'n] 'nice', [pʰɛn'] 'pen'[16] (Árnason, 1980:77).

3. Both may occur in disyllabics, although the rules governing their distributions differ. While it is reported for the stød that its appearance in disyllabics is extremely limited,[17] Keller (1961:343) claims for Schleifton that it is entirely restricted to monosyllabics. With regard to our data from HP, however, Keller's claim is only partially correct. Although the majority of words containing Schleifton are indeed monosyllabic, we have discovered in HP a number of examples of Schleifton in polysyllabics, e.g. [ˌkọ'mouu̯(d̚)] 'chest of drawers', [ˌšụkə'lɒɒ̯] 'chocolate'. In all these cases, the Schleifton syllables are in <u>final</u> position.

4. The pitch feature is blocked, when lexical items containing Schleifton or stød are lengthened by one syllable through inflection (e.g. conjugation, plurality). Additionally in HP, overlength of the vowel is reduced by one degree to length.

5. Both depend crucially on stress position in the sentence.

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[16]where the raised tick after a segment represents stød

[17]Cf. Jensen (1922:16-17) for a brief summary of rules governing its distribution in disyllabics.

The tonal component of Schleifton disappears in unstressed sentence position, and overlong vowels or long nasals are reduced in duration, while both features are very pronounced in sentence-final position (cf. Niekerken, 1953:69-70).[18] Similarly for the stød. The stød word must contain a minimum level of stress (Fischer-Jørgensen, 1950:119). Words with stød lose the feature when they appear in unstressed sentence position (Jensen, 1922:16-17).

6. Both appear to be interrelated with certain segments in their immediate environment. The consonant immediately following the Schleifton vowel is realized as a voiceless lenis, unless it belongs to a different morpheme. The presence of stød tends to shorten somewhat the long vowel or voiced consonant (Jensen, 1922:16-17).

In the following sections of this thesis, we will restrict our attention entirely to the phenomenon of Schleifton. An attempt to account for the Danish feature stød will not be made here, due to the necessarily limited scope of this thesis. For a discussion of the interrelationship of Schleifton in North Saxon and Danish stød as well as tonal accents in the Scandinavian languages, cf. Grundt (1975).

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[18]Bremer (1928:2-3) claims that only the tonal feature of Schleifton disappears while length is not affected.

Distribution of Schleifton in Heikendorf Platt

To recapitulate, Schleifton in HP manifests itself in three ways: (i) by overlength of the root vowel (or the final nasal), (ii) customarily by lenis form of the final obstruent, and (iii) by a pitch contour that is roughly describable as level and then falling over the last third of the vowel (or nasal). Schleifton occurs primarily in monosyllabic morphemes, but, as we have presented in our data, also in a small group of polysyllabics. The morphemes containing Schleifton end either in a vowel, e.g. [mó͡ùù] 'fashion', [ˌkǫ̣'mó͡ùù] 'chest of drawers', a nasal, e.g. [spį̇n̄n̄] 'spiders', or, most frequently, in the voiceless lenis obstruents [d̥, ʒ̊/ð̥, ɣ̊, ʒ̊], e.g. [lʊ̄ʊ̄ʊ̄d̥] 'people', [vé͡ii̯ʒ̊] 'ways', [ʔó͡uuð̥] 'eye', [stúuuɣ̊] 'room', [vi͡iiiʒ̊] 'manner'.

Note that Schleifton is always associated with lenis character of the following obstruent and inversely, final lenis obstruents appear only after Schleifton. Before fortis obstruents, Schleifton is found only if these obstruents are part of a different morpheme, e.g. [brú͡uut] 'brews', where -t is the 3rd person singular present tense marker. In lexical items with regular-long (or short) vowels, final obstruents are always fortis (Keller, 1961:343-344), e.g. in HP [breif] 'letter' (vs. ['breivn̥] 'letters'), [tiit] 'time' (vs. ['tiidn̥] 'times'), [ploux] 'plow' (vs. ['plʊ̄ʊ̄gn̥] 'to plow'), [veis] 'was' (vs. ['veizn̥] 'been'), [hępt] 'has' (vs. ['hębm̥] 'to have').

A selected set of data (from our entire data collection) illustrating the distribution of Schleifton in HP is given in the final section of this chapter (pp. 52-54).

Summary

In this chapter, we have tried to identify the phenomenon of Schleifton. Our discussion focussed on the issues of vowel quantity and tone, both of which are centrally involved in the composition of the phenomenon.

Based on its differentiating function in the linguistic system of HP, it was decided that the infrequently attested and often controversial third degree of vowel length, viz. overlength, does in fact exist as a relevant quantitative degree in the dialect under consideration, in contrast to Standard High German for which it is often claimed. The tonal feature accompanying the overlong segments was identified as a contour tone.

In our initial phonemic analysis of HP, we set out from the premise that HP vowels (parallel to Standard High German vowels) are underlyingly either tense or lax. While lax vowels are short, tense vowels are long when they receive primary stress. Thus, length is derived from tenseness under stress as a secondary, non-phonemic feature. However, we also saw that overlong vowels occur under stress. The question now arises of how to analyze these overlong vowel segments. It is to this question that we will turn in the second part of this thesis.

A Selected Set of Data

The following paradigms illustrate the distribution of Schleifton in the dialect of HP.

I Schleifton Vowels

A. one stem form for the alternants
1. Nouns
a. non-compounds
i) monosyllabic

singular		plural	
[néiiɣ]	'nose'	['neizɳ]	'noses'
[stɯ̂ɯɯɣ]	'room'	['stuuvɳ]	'rooms'
[zíiiɖ]	'silk'	['ziidɳ]	'silk (pl.)'
[ʔóɯɯ̊ð]	'eye'	['ʔougɣ]	'eyes'
[fíiiʲ]	'fig'	['fiigɳ]	'figs'
[drɯ̂ɯɯɣ]	'grape'	['druuvɳ]	'grapes'
[móɯɯ(ɖ)]	'fashion'	['moudɳ]	'fashions'
[stéiiɖ]	'place'	['steidɳ]	'places'
[víiiɣ]	'manner'	['viizɳ]	'manners'

ii) disyllabic

singular		plural	
[ˌkǫ'móɯɯ(ɖ)]	'chest of drawers'	[ˌkǫ'moudɳ]	'chests of drawers'
[ˌkǫm'bɯ̂ɯɯɣ]	'galley'	[ˌkǫm'bɯɯzɳ]	'galleys'
[ˌmɒ̰'tróɯɯɣ]	'sailor'	[ˌmɒ̰'trouzɳ]	'sailors'

iii) trisyllabic

singular		plural	
[ˌšṵkə'lɒ̂ɒɒ]	'chocolate'	[ˌšṵkə'lɒɒdɳ]	'chocolates'

b) compounds

singular		plural	
['touˌlɒ̂ɒɒð̊]	'increase'	['touˌlɒɒgɣ]	'increases'
['boukˌstɒ̂ɒɒɣ]	'letter'	['boukˌstɒɒvɳ]	'letters'

2. Verbs(strong and weak)

finite		non-finite
[geiiɣ]	'I give/gave; he gave'	
[geiiɣs]	'you(sg)gave'	['geivn̩] 'to give;gave(pl)'
[geiiɣ(t)]	'give(pl);given'	
[leiiɣ]	'I live(d)'	
[leiiɣs]	'you(sg)live(d)'	['leivn̩] 'to live;lived(pl)'
[leiiɣ(t)]	'he lives/lived; lived(pp);live(pl)'	
[bruuu]	'I brew'	
[bruuus]	'you(sg)brew'	[bruun] 'to brew'
[bruuut]	'he brews;brew(pl); brewed(pp)'	

3. Adjectives

uninflected		inflected
[mɵɵɵ(d̥)]	'tired'	['mɵɵdn̩]/['mɵɵdə]
[luuud̥]	'loud'	['luudn̩]/['luudə]
[tɒɒɒð̥]	'tough'	['tɒɒgn̩]/['tɒɒgə]
[grɒɒɒ]	'straight'	['grɒɒdn̩]/['grɒɒdə]
[sprɵɵɵ(d̥)]	'rough'	['sprɵɵdn̩]/['sprɵɵdə]
[drɵɵɵʃ̥]	'dry'	['drɵɵgn̩]/['drɵɵgə]
[neiiʃ̥]	'near'	['neigɣ]/['neigə]
[šɒɒɒ]	'what a pity'	['šɒɒdn̩] 'damage'

B. different stem forms for the alternants

1. Nouns

a. non-compounds

i) monosyllabic

singular		plural	
[dąx]	'day'	[dɒɒɒð̥]	'days'
[sląx]	'blow'	[sleiiʃ̥]	'blows'
[vęç]	'way'	[veiiʃ̥]	'ways'
[hǫf]	'yard'	[hɵɵɵɣ]	'yards'
[šrɨt]	'step'	[šreiiɡ̥]	'steps'

[muus] 'mouse'	[mʉ̈ʉ̈ʉ̈z̥] 'mice'
[ploux] 'plow'	[plʊ̈ʉ̈ʉ̈j̥] 'plows'
[nɒɒt] 'seam'	[nʊ̈ʉ̈ʉ̈d̥] 'seams'
[gous] 'goose'	[gʊ̈ʉ̈ʉ̈z̥] 'geese'
-- --	[lʉ̈ʉ̈ʉ̈d̥] 'people'

ii) disyllabic

singular	plural
[fɜ'drąx] 'contract'	[fɜ'dréiij̊] 'contracts'

b. compounds

singular	plural
['ʔąn,tǫx] 'suit'	['ʔąn,tʊ̈ʉ̈ʉ̈j̥] 'suits'

2. Verbs(strong)

[gɨfs] 'you(sg)give'	[géiiɣ̊] 'I give'
[gɨf(t)] 'he gives'	

II Schleifton Nasals

A. one stem form for the alternants
1. Nouns

singular	plural
[dɒɒm] 'lady'	[dɒɒm̆ms] 'ladies'
[žʊŋ] 'boy'	[žʊŋ̆ŋs] 'boys'
[spɨn] 'spider'	[spɨn̆n] 'spiders'

2. Verbs

finite	non-finite
[spɨn] 'I spin'	[spɨn̆n] 'to spin'
[kɒɒm] 'I come'	[kɒɒm̆m] 'to come'
[klęm] 'I pinch'	[klę̆m̆m] 'to pinch'
[ʔɒɒn] 'I suspect'	[ʔɒɒn̆n] 'to suspect'
[zɨŋ] 'I sing'	[zɨŋ̆ŋ] 'to sing'

B. Analysis of Schleifton

IV. Existing Analyses of Schleifton

In the previous chapter, we established the distributional patterns of Schleifton in our dialect of HP.

When we take a look at our data set (pp. 52-54), we observe certain regularities in the appearance of Schleifton, such as the following:

1. When Schleifton occurs in the singular of nouns, it does not appear in their plural forms (I A 1.); conversely, when it occurs in the plural of nouns, it does not show up in their singular forms (I B 1.). In other words, in the first case, suffixation of the plural morpheme -n onto the singular form seems to cancel Schleifton (unless the noun stem ends in a nasal, in which case the plural morpheme -n triggers Schleifton (II A 1.)), while in the second case, plurality appears to be signalled exactly by means of Schleifton (in addition to a quality shift in the root vowel which will not concern us here). This situation clearly shows that the occurrence of Schleifton cannot be related to plurality as is the case with umlaut.
2. Similarly with adjectives. Schleifton occurs freely with the base forms, but is blocked by the presence of inflectional endings, either -n or schwa (I A 1.).
3. With regard to verbs, the situation is somewhat more complex: many verb forms take Schleifton, e.g. the 1st person singular present and past (I A 2.), infinitives with

stems terminating in a nasal (II A 2.), while others are immune to it, e.g. the 2nd and 3rd persons singular present of strong verbs (I B 2.).

4. Furthermore, Schleifton is found above all in syllables with primary stress, although secondary stress can also draw it (I A 1.b. and I B 1.b.). Thus, the presence of stress (primary or secondary) vs. absence of stress plays an important role in the occurrence or non-occurrence of Schleifton.

Brief Description of Existing Analyses

Two basic types of analyses of Schleifton in Low German are proposed in the literature, a structural one and a "historically-oriented" one, both of which we will briefly describe.

The solutions proposed within the former frame of description all add to the size of the phonemic inventory. We encountered three versions in the literature:

1. In his study of current Hamburg Low German phonology, Bellamy (1968:102) acccunts for the Schleifton vowels he observes for this dialect by establishing a separate set of overlong vowels, thus bringing the total number of vowel phonemes (including diphthcngs) from 17 to 27. Recall that the obstruents that follow overlong vowels are voiceless lenis [ʒ̊, ʃ̊/ð̊, ɣ, ʒ], unless they belong to a different morpheme. Within the analysis proposed by Bellamy, these

voiceless lenis segments could be regarded as allophones of the voiced obstruent phonemes /d, g, v, z/, respectively, occurring after overlong vowel segments.

2. Alternatively, Bellamy suggests, a set of distinctively voiceless lenis obstruents /d̥, g̊, ɣ, z̥/ could be posited, causing overlength in the root vowel. The advantage of this solution over the first one presumably lies in the fact that it would add only four elements to the sound inventory, as opposed to ten. The overlong vowels would probably function as allophonic variants of the respective long vowels, occurring only before voiceless lenes. An immediate problem we see with this solution would be its inability to account for those lexical items that end in an overlong vowel.

3. Keller (1961:343-344) suggests the possibility of regarding overlength in North Saxon as a separate phoneme. (Thus, a possible phonemicization of [lʊ͡ʊʊ͡ʊg̊] 'people', for example, would be /lʊ~d/, where ~ would represent Schleifton.) He does not follow this suggestion, though, but prefers a different solution (see below).

Although the three proposals sketched above do take care of Schleifton in some way, they are undesirable for several reasons: (i) they increase the phonemic inventory of the linguistic system concerned without explaining the appearance of Schleifton, (ii) none of them provides an explanation of the Schleifton nasals and (iii) none of them even attempts to account for the tonal feature of Schleifton.

At this point it is important to emphasize again that the phenomenon of Schleifton consists of <u>two</u> chief components, viz. a(n over) long sonorant segment and a tonal contour. In other words, Schleifton is used as a cover term in the literature and actually represents two co-occurring but distinct processes. Hence, <u>both</u> features must be accounted for in an adequate manner.

The type of analysis of Schleifton that is most widely subscribed to is "historically-oriented". Solutions of this kind are presented in terms of the notion of compensation for the loss of a vowel segment through apocope or syncope. The mechanism involved is generally expressed as follows: Overlength and the tonal feature of Schleifton result from transferring, within a lexical item, duration (<u>Ersatzdehnung</u> = compensatory lengthening) as well as pitch of an apocopated or syncopated schwa onto the immediately preceding sonorant (most frequently a vowel), with the voiced consonants <u>d</u>, <u>g</u>, <u>v</u>, <u>z</u> optionally intervening, such that duration and pitch contour of the lexical item in its original shape are preserved.

This proposal is based on historical evidence of the following kind: the items synchronically exhibiting Schleifton were at one historical stage, namely in Middle Low German times, longer by exactly one syllable which consisted of a final unstressed <u>e</u>, e.g. <u>LŪŪd'</u>[1] [lʉ̄ʉ̄ʊ̯g] 'people' < Middle Low German

[1]Orthographically, Schleifton is customarily indicated by an apostrophe at the end of the lexical item concerned (Keller 1961:344; Sass 1981:5-6).

lüde, nääs' [neiiz̥] 'nose' < Middle Low German nese (Keller 1961:349), but then lost this final syllable. Their Standard High German (as well as East- and Westphalian) equivalents, on the other hand, did not undergo such a change, since they appear at the present stage untouched with regard to number of syllables and final e, e.g. Standard High German Leute ['loitə] 'people'; Nase ['na:zə] 'nose'.

According to Foerste (1966:1806-1809), the beginnings of Low German apocope date back to late Middle Low German times, those of syncope to early Middle Low German. It was the Mecklenburg dialect area that was affected earliest (second half of the 16th century) and most drastically. From the 17th century on, apocope spread to the North Saxon area in general.

For the most part, the Low German dialects of East- and Westphalia were not touched by this sound change but preserve final e's as unstressed schwas (Teepe, 1973:56). This situation clearly shows that a phonological process does not necessarily affect an entire linguistic community but within this community can be either totally absent from a particular group of dialects or have different effects on different dialects.

The first to advocate the apocope-solution appears to have been Otto Bremer in 1893 and 1895, although it is not until his 1928 article "Der Schleifton im Nordniedersächsischen" that he lays out in detail the rules for this analysis.

In Bremer's (1928:1-2) view, Schleifton is an 18th century

phenomenon[2], pertaining to the Low German dialects of northern Germany (which at that time also encompassed the geographical regions of Mecklenburg and Hither Pommerania), as well as the variety of High German spoken there, and was thus encountered also in the speech of the educated. It resulted when during that time final unstressed vowels were deleted in certain lexical items. For instance, disyllabic verb forms such as High German (ihr)nahet '(you pl)are nearing', (er)brauet '(he)brews', (es)gellet '(it)makes my ears ring' underwent syncope and became 'monosyllabic' naht, braut, gellt, respectively, produced with the closest preceding sonorant lengthened and a decrescendo in pitch, so that the resulting duration and pitch contour of the new items were equivalent to those of the original disyllabic forms.

In order to get a clearer picture of Bremer's proposal, let us take a closer look at the first example (ihr)nahet. Bremer states the following: The first syllable na- which contains the stressed long stem vowel is produced with higher tone than the final unstressed syllable -het. This he indicates by means of a raised and lowered dot, respectively, after the vowels: na·he.t. After the syncope of e, its duration and pitch are absorbed by the already long stem vowel, thus resulting in an overlong vowel with gradual pitch drop: nā·a.t or nã̃·.t, where ~ represents overlength (Bremer's notation). The two dots, incidentally, only

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[2]Note that Foerste dates North Saxon apocope considerably earlier.

give a rough impression of the tonal contour since phonetically the pitch drop is not sudden but gradual. (Ihr)nahet contrasts with the lexical item (die)Naht '(the)seam' which has a regular-long vowel and level pitch and is represented by Bremer as nā·t. While the latter is clearly monosyllabic, he suggests that the former may well be regarded as disyllabic (on account of its overlong vowel and decrescendo in pitch, corresponding to former genuinely disyllabic nahet).

In part II of his article, Bremer (1928:3-7) describes in more detail the occurrence and non-occurrence of Schleifton in the form of four general rules. Part III is devoted to a discussion of various special cases of Schleifton, based on a rich array of examples which, however, are drawn primarily from High German rather than North Saxon.

It is evident that Bremer views Schleifton not as a peculiarity of certain Low German dialects but rather as a general characteristic of German as spoken in the northern parts of the country. (The example schwimmen 'to swim', produced with Schleifton, as opposed to schwimm 'swim!', produced without Schleifton, he even considers to be "gemeindeutsch", i.e. characteristic of High German pronunciation throughout Germany.)[3]

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[3]Bremer(1928:3) also claims the existence of Schleifton in English before voiced consonants, as in plaque, indeed, good, send, but lack of Schleifton before voiceless consonants, as in take, sweet, put, sent. Here, however, we are dealing with a purely phonetic phenomenon that has no phonological relevance. It is a well-known fact that in English vowels are longer before voiced consonants than before voiceless ones, due to the difference in degree of force of articulation required to

Many other scholars have since followed more or less closely Bremer's line of reasoning in their explanations of Schleifton, for example Rabeler (1911:160-161); Grimme (1922:18-20); Foerste (1952:1809); Niekerken (1953:69-70; 1957:83); v. Essen (1957:243; 1958:111-112; 1966:172); Keller (1961:348-349); Hildebrandt (1963:110-112; based on v. Essen); Mörcke (1971:26; based on Keller).

With repect to Keller's and v. Essen's accounts, a few comments are in order, since both go somewhat beyond Bremer.

Keller analyzes Schleifton as an allophone of the unstressed schwa phoneme. His motivation for this solution is two-fold: There are (i) historical reasons, because Schleifton has developed from the deletion of a medieval unstressed e, and (ii) cross-linguistic reasons, i.e. "reasons inherent in the linguistic situation of North Saxon speakers. The Schleifton occurs in dialect[sic] where N[ew] H[igh] G[erman], with which all speakers are conversant, has /ə/" (p. 344).

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[3](cont'd) produce these sounds (voiced consonants require less energy, voiceless ones more) (cf. Malécot, 1955).

Furthermore, in contrast to most German dialects, English has both voiceless and voiced obstruents in final position. Bremer appears to have been led to the impression of Schleifton in the English items plague, good, etc. on the basis of this co-occurrence of a final voiced lenis consonant and a prolongued vowel.

Moreover, if we recall Bremer's explanation of Schleifton in terms of transfer of duration and pitch of a deleted schwa, we realize that in the English examples he adduces, sometimes both the alleged Schleifton and non-Schleifton items have undergone apocope, e.g. plague < Middle English plage, take < Middle English taken, and sometimes the alleged Schleifton items did not apocopate at all, e.g. (in)deed < Middle English deed (Skeat, 1980).

V. Essen (1958:111-112; 1966:172) also assumes apocope to be the underlying cause of Schleifton, but he tries to make his conception more precise. He feels that deletion of a final unstressed vowel is not a valid explanation for overlengthening the accented vowel. He does not accept the argument of a speaker's subconscious attempt to keep the original duration of a word constant, because of the existence of such factors as continual fluctuation in the rate of speech with consequent modification of segment duration as well as the strong tendency to shorten and expand words. For him, it is rather the original pitch contour that remains stable in that the root vowel absorbs the pitch of the apocopated vowel. As a certain time span is required for the manifestation of the additional pitch element, the emergence of an overlong vowel is a necessary consequence.

While Bremer's analysis emphasizes compensatory lengthening in the formation of Schleifton ("Das wesentliche sind die QuantitÄts-, nicht die TonverhÄltnisse", p. 3), v. Essen underscores the importance of the tonal element and sees in overlength merely a secondary development.

Despite some differences among the proponents of the apocope-analysis concerning an emphasis on compensatory lengthening as opposed to tone stability, they basically agree that in North Saxon, overlength and the tonal feature of Schleifton arose in compensation for the final unstressed vowel lost in apocope or syncope. North Saxon is thus in contrast with East- and Westphalian, which generally preserve final e's and

are not characterized by Schleifton.

The preceding considerations concerning final schwas are undeniably historically correct; however, the question arises whether these segments have a place in the synchronic analysis of HP.

Arguments Against Underlying Schwas

From the above discussion it appears that the apocope analysis, i.e. the analysis based on underlying schwas, is well-motivated on historical grounds.

Assuming underlying final schwas, one way of interpreting the appearance of Schleifton within a traditional generative phonological framework would be in terms of the mechanism of compensatory lengthening, which refers to the loss of a segment and the simultaneous lengthening of a preceding segment (cf. for example De Chene and Anderson, 1979).* In HP, compensatory lengthening would take the general form CVCV --> $C\bar{V}C\emptyset$ and we would need an apocope rule concurrent with a lengthening rule.

An alternative solution also presupposing underlying final schwas would involve a rule of metathesis transposing schwa and the preceding voiced obstruent followed by assimilation of schwa to the adjacent vowel: $CV_i\ CV_j$ --> $CV_i\ V_j\ C$ --> $CV_i\ V_i\ C$.

We will not discuss here which one of these solutions would be preferable, because problems arise for either one of them

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*For an analysis of the phenomenon of compensatory lengthening within the framework of metrical phonology, cf. Ingria, 1980.

(and would for any other solution assuming underlying schwas) in trying to account for the alternation of uninflected adjectives which show Schleifton and inflected adjectives which end in schwa at surface level, e.g. [mɔ̈ʊ̈(d̥)] vs. ['mɔ̈ʊ̈də] 'tired', where in the first case schwa deletes (or metathesizes and assimilates), as expected, causing Schleifton, but in the second case it shows up in the surface form, functioning as an inflectional suffix. This situation would require us to put some kind of morphological restriction on the apocope (or metathesis/assimilation) rule(s).

A restriction of this kind is furthermore necessary in order to derive lexical items such as ['bouž̌ə] 'buoy' and ['kouž̌ə] 'cabin; bunk' in which final schwa <u>always</u> surfaces and Schleifton never obtains. In these cases the above rules are blocked even though their structural descriptions are met.

Incidentally, neither solution as sketched above would account for the tonal feature of Schleifton. This is a critical deficiency in view of the fact that the tonal component is an integral part of the phenomenon under consideration.

The crucial argument, however, against an analysis based on underlying schwas lies in the fact that schwa hardly ever surfaces in this North Saxon dialect.[5] In fact, there seem to be

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[5]This is quite in contrast to Standard High German and other Low German dialects where schwa is a frequently encountered word-final segment, for example it is (predictably) the second vowel in most Standard High German disyllabic native morphemes and furthermore the only vowel that can appear in inflectional suffixes (cf. Wurzel, 1970:23; 170-172).

so few cases of a surface appearance of final schwa that these can be easily enumerated.

On the basis of our entire data collection of which only a fraction is presently under consideration, these occurrences appear to fall into the following three categories:

1. Inflected adjectives, e.g. ['žɣŋə] 'young', ['rouɖə] 'red', ['mʊ̈ʊ̈də] 'tired', ['tɒɒgə] 'tough', as opposed to their uninflected correlates [žɣŋk], [rout], [mʊ̈ʊ̈(ɖ)], [tɒɒð̊]. In an apocope (metathesis/assimilation) solution, the two examples with Schleifton would have underlying forms with final schwa: /mʊ̣̈də/, /tą̣gə/, while their inflected counterparts without Schleifton overlength would additionally have the inflectional suffix schwa, as can be seen from the bracketing of the following strings: $m\ddot{\underset{\cdot}{u}}d\ə]_{A\,st}+\ə]_{A(infl)}$ and $t\underset{\cdot}{a}g\ə]_{A\,st}+\ə]_{A(infl)}$. This extra schwa, however, would block the application of the rules leading to Schleifton.
2. The determiners [də] 'the' and ['dʊ̈sə] 'this;these'. The realization of the former is [də] only when unstressed; under stress, it is diphthongized to [dei].
3. A rather limited set of non-native formatives ending in [šə/žə]. We encountered only four examples: ['zuutšə] 'slowly'; ['dʊ̈ʊ̈ntšə] 'little story, anecdote';[6] ['boužə] 'buoy'; ['koužə] 'cabin; bunk'.

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[6][-šə] appears to be the originally Dutch diminutive, corresponding to HP [-kən] and Standard High German [-çən].

The fact that underlying schwas cause a number of problems and are furthermore unmotivated suggests that a different solution must be sought.

A viable alternative to a solution of Schleifton based exclusivly on underlying schwas is one that makes no reference at all to these segments for the simple reason that in our dialect of HP schwa has such a negligible ratio of actual surface appearance. This is in fact the basis for the analysis of Schleifton in HP that we will propose here.

V. A Metrical Analysis of Schleifton in Heikendorf Platt

The Framework

The general basis for the interpretation of the phenomenon of Schleifton in HP to be proposed here is the theory of metrical phonology as first introduced by Liberman and Prince (1977).

In this analysis, the theory is modified by adopting and adapting concepts and proposals from McCarthy's (1979; 1982) model of metrical syllabification and Goldsmith's (1976) autosegmental framework.

Liberman and Prince's metrical phonological theory was originally developed to provide a replacement for the generative phonological account of the English stress patterns as proposed by Chomsky and Halle (1968) and was thus primarily concerned with accentuation.

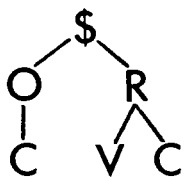
According to Liberman and Prince's framework, the distinctions of relative prominence (i.e. stressing) reflect a relational structure that organizes the phonological string hierarchically into phonological constituents such as syllables, groups of syllables and higher-order structures (Prince, 1980:512, 518; Liberman and Prince, 1977:249). In this view, syllables, for example, are represented in terms of binary branching trees rather than by placing syllable boundaries into

segmental strings.

One of the major concerns within metrical phonological theory centers around the part that deals with syllable structure[1] (cf. e.g. McCarthy, 1982; Kiparsky, 1979).

The fact that syllables have internal structure (larger than the segment) has long been recognized by phonologists (cf. McCarthy, 1982:4). One of the basic ways in which the syllable can be divided is to consider two substrings, viz. the onset(O) and the rime(R), the latter comprising the syllabic peak and coda, where the coda consists of any following segments within the syllable (cf. e.g. Prince, 1980:526; McCarthy, 1982:6). A metrical tree for a CVC syllable is shown in (1):

(1)



In terms of this notation, onset and rime are structurally defined as the left and right branch, respectively, of the syllabic node $.

This analysis of the syllable reflects the close relationship between nucleus and coda --they are sister nodes under R-- as oppposed to nucleus and onset. (The onset is apparently of minor importance for prosodic phenomena; for

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[1] Although an adequate phonetic definition of the syllable is still lacking, most linguists today (for example Lehiste, 1970; Ladefoged, 1971; McCarthy, 1982; Kahn, 1976) agree that sounds are organized phonetically into larger units called syllables and that syllables are "abstract programming units in terms of which speech is articulated" (Kenstowicz and Kisseberth, 1979:242, 256).

instance, it never figures in stress assignment (Prince, 1980:526).)

Furthermore, sub-syllabic structure captures an important distinction regarding syllable weight. In some languages, such as German and English, syllables are viewed as either heavy or light. On the basis of the above division of a syllable into two constituents, a clear distinction between light and heavy syllables emerges: a light syllable, of the form CV, has a simple rime, which consists of one unit, $[_0 C_o][_R V]$, whereas a heavy syllable, of the form CVC or CVV, has a complex or two-unit rime, $[_0 C_o][_R VC]$ or $[_0 C_o][_R VV]$.

In the basic syllable inventory of HP, we also find syllables with even fuller, more complex rimes, namely of the form CV̆CC or CV̆(=VV)C.[2]

The binary character of metrical structure requires that these "super"-complex rimes be further divided, for example V̆C-C and VV-C. We must therefore consider a unit even smaller than the rime. This constituent is the mora(M), whose function is to measure syllable weight (cf. McCarthy, 1979:445; Prince, 1980:525-526). The following tree diagram illustrates the hierarchical structure of the complex syllables CVVC or CV̆CC for HP (based on Prince, 1980:526):

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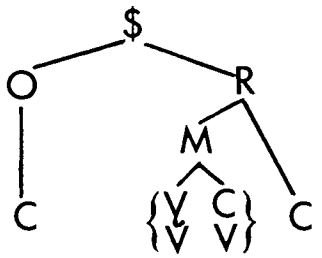
[2]In this analysis, HP vowels are regarded as underlyingly tense or lax. The sequence of two vowels corresponds to a tense vowel that has been lengthened under primary stress. The motivation for this type of representation of length will be discussed below.

(2) 

We see that M dominates either VV or VC.

Having established the syllable constituents onset, rime and mora, we can now formulate the set of rules assigning syllable structure in HP and then characterize some of the possible syllabic trees for this dialect.

The syllabification rules of a language are assumed to encompass a specification of the permissible syllable trees, based on universal syllabification conventions such as those formulated by Kahn (1976:21), as well as a set of language-specific rules governing the association of strings of segments with these trees (McCarthy, 1979:453). The latter set of rules is necessary because syllabification does not proceed similarly in all languages. Furthermore, according to Kiparsky (1979:434), the language-specific rules can take precedence over the universal ones.

For our dialect of HP, we are proposing the following syllabification rules, defined in structural terms.

(3) Basic Syllable Structure Rules for HP:

1. Stressed syllables must branch into the two daughter nodes onset plus rime. Elsewhere, i.e. in unstressed syllables, either branching into onset plus rime occurs or sub-syllabic constituents such as mora and consonant are immediately

dominated by the syllabic node $.

2. An onset consists of at least one and no more than three consonants. Since vowels under stress never occur initially in HP words, the glottal stop functions as a consonant if there is no other consonant segment preceding such vowels. This condition is a consequence of 1. above, which requires stressed syllables to branch. The upper limit is determined by the constraints on syllable-initial consonant clusters that are operative in HP. A syllabic onset is a prerequisite for the presence of a rime node.[3] Thus, a syllable dominating a constituent labelled R implies that it also dominates a constituent labelled O.
3. A rime is composed of either the lax vowel schwa or a mora that is optionally followed by a consonant.
4. A mora comprises either the sequence of a lax vowel plus consonant or a tense vowel. The former may be equivalent to a syllabic nasal or lateral.

Among the possible structures that actually occur as syllable trees in HP are the ones represented schematically in (4). They are illustrated with examples from our data collection. Segments are the terminal nodes of these binary-branching trees:

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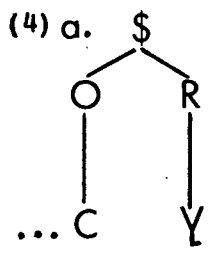
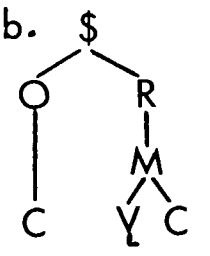
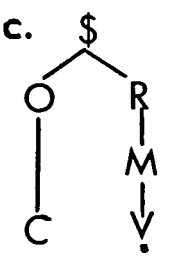
[3]We are implicitly rejecting the assumption that there may be zero onsets. For a treatment of zero or null onsets, cf. Kaye and Lowenstamm (1979) among others.

(4) a. 

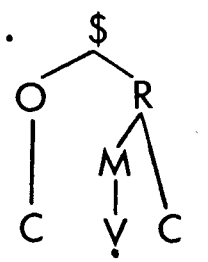
|mə̤d ə|
'tired'

b. 

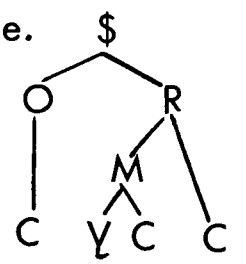
|b ʊ̩ t|
'flounder'

c. 

|z e̤ |
'Lake'

d. 

|m ʊ̤ s|
'mouse'

e. 

|g i̩ f s|
'you(sg) give'

Notice that the CV̩ syllable (4a) which is traditionally designated as light (cf. for example Hyman, 1975:206), i.e. as containing one mora (cf. McCarthy, 1979:445), has no mora status in HP and therefore carries no weight. The reason is that the only lax vowel that can occur in final position in HP is schwa, as in [ˌšʊ̤kə'lɔ͡ɔɔ] 'chocolate', ['mʊ̤ʊ̤də] 'tired'. (Since stress rules refer to syllable weight and stress is attracted by syllables carrying weight, it follows that CV̩ syllables in HP are always unstressed.)

The trees clearly show the equivalence of V̩C and V̤ in terms of weight and structure: both have mora status and both render the rime complex; thus b. and c. are structurally equivalent, as are d. and e.* They therefore behave analogously with respect to rules (for example stress).

We will assume with Kiparsky (1979:436) that syllabification is the first stage in metrical stucture assignment and that metrical structure is assigned cyclically. Thus, phonological strings are syllabified in underlying

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*Cf. also Moulton (1956) who analyzes long vowels (/V:/) and diphthongs (/Vv/) in Standard High German as the distributional equivalents of short vowel plus consonant (/VC/).

representation, i.e. prior to the application of the phonological rules proper, and resyllabified after each stage in the derivation, whenever the syllabification conventions become applicable. Metrical syllabification is followed by stress assignment and the assignment of higher-order phonological constituents (for instance, feet).

First, let us consider stress assignment in HP (restricted to our data) in terms of metrical constituents. The principal word stress rule we are proposing for this dialect on the basis of our corpus of data is listed in (5).[5]

(5) Principal Word Stress Rule for HP:

1. Assign [+stress] to the first mora from the right that dominates a tense vowel, e.g. ['deivn̥] 'burglars', [ˌšu̥kə'lo͡ɔɔ] 'chocolate'.[6]
2. Otherwise, i.e. if there is no mora dominating a tense vowel, stress the second mora from the right, e.g. ['frʏ̥ndɪ̥n] 'female friend', ['snɑ̨ŋ̊ŋ̊] 'to talk'.
3. Also assign [+stress] to any mora to the left of a stressed mora, e.g. [ˌšu̥kə'lo͡ɔɔ] 'chocolate', [ˌko̥'mo͡uu(d̥)] 'chest of drawers'.

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[5]The stress rules described here are parallel to the ones in Standard High German, accounting for ultimate and penultimate stress. However, in our data there is no evidence for a third category, corresponding to Standard High German Lexikon ['lɛ̨ksiˌkɔn] 'dictionary', etc., with antepenultimate stress. For a discussion of stress in Standard High German, cf. Kiparsky (1971) and Wurzel (1980).

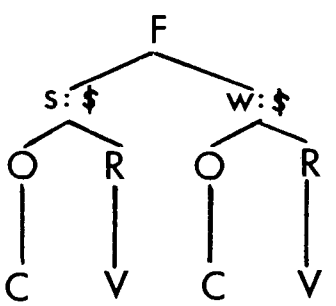
[6]Cf. also McCarthy (1979:446) on Arabic (Cairene Colloquial) where a word-final CVC syllable but not a CVV syllable is skipped in stress assignment, and Hayes (1981:20-21) on Aklan.

In a metrical framework, relative prominence is reflected in the labelling of metrical trees (McCarthy, 1979:449). Thus, in our notation, a syllable is designated as strong(s) if it is stressed, i.e. if it contains the mora figuring in stress assignment, and it is labelled weak(w), if it is unstressed (cf. figure (6) below for an illustration).[7]

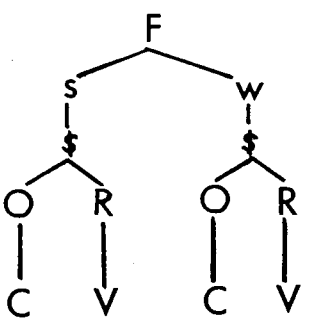
On the next higher level in the metrical hierarchy, groups of syllables are organized into feet. Any occurrence of the metrical constituent foot(F) must contain one strong, i.e. stressed, syllable. In the case where a foot dominates only a single syllable, this syllable will be "faute-de-mieux" the strongest and therefore stressed (Prince, 1980:522).

In addition, we will adopt from Prince (1980:527) the convention that complex nodes, for example F:s:$ (a foot containing a strong syllable), are equivalent to exhaustive domination. Thus, the two arrangements in (6) are equivalent:

(6) a.



b.



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[7]Secondary stresses are determined by further principles. Secondary as well as other levels of stress are interpreted from the occurrence of s's and w's in metrical structure. The segments themselves are not differentiated as to stress levels (cf. Liberman and Prince, 1977:264-266).

And finally, the phonological category word(W) dominates foot structure.

Thus, phonological strings are exhaustively parsed or segmented by metrical structure into syllables, feet and words. Each word must be decomposed into a continuous string of feet, each foot into a continuous string of syllables and each syllable into a continuous string of segments. These requirements are well-formedness conventions on metrical structure and may be regarded as a universal of prosodic theory (Prince, 1980:533).

The metrical framework, then, is a prosodically-based framework which can furthermore be integrated with an autosegmental representation (along the lines proposed by Goldsmith, 1976). A metrical representation of a word thus consists of the three levels mentioned so far: a segmental tier, a syllabic tier and foot structure. In addition, we will refer to a fourth tier, namely the one representing tone where each syllable is associated with at least one tone (cf. Goldsmith, 1976:2).

The neutral tone pattern in HP words may be descibed as high(H) plus low(L), where the high tone is associated with the accented syllable and the low tone with the unaccented one.

The tone pattern of a disyllabic word such as ['kʊ̋ʊ̀nɨ̀ç] 'king' may be represented roughly as follows (based on Goldsmith, 1976:26-7; 117-8):

(7) [kö͡ʊnɨç] segmental tier

tonal tier

where the asterisk marks the peak of the accented syllable. A more formal representation is illustrated in (8):

(8) [kö͡ʊnɨç]
H L

It is derived by a rule that creates an association line between the starred syllable and the high tone (also designated by an asterisk), thus linking the segmental and the tonal levels.

The association line between the low tone and the second, unstressed, syllable is created in accord with Goldsmith's Well-formedness Condition (Goldsmith, 1976:27(24)) which states that

a) all vowels are associated with at least one tone;

b) all tones are associated with at least one vowel;

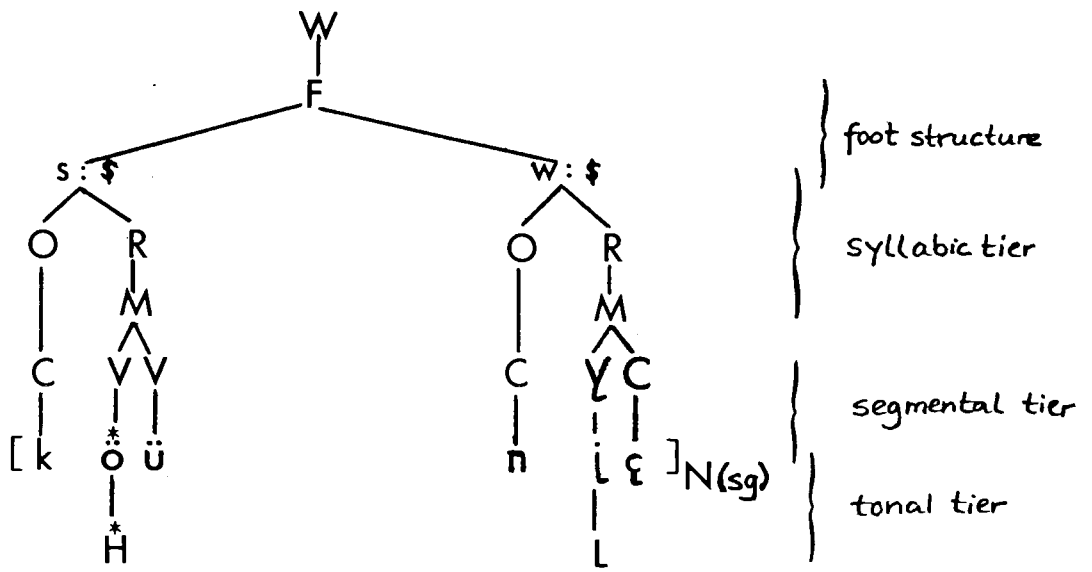
c) association lines do not cross.

Thus, the full tone derivation would proceed as in (9):

(9) [kö͡ʊnɨç]-->[kö͡ʊnɨç]-->[kö͡ʊnɨç] segmental tier
H L H L H L tonal tier

Figure (10) depicts the full hierarchic metrical structure of the word ['kö͡ʊnɨç], including tone, segment, syllable and foot levels:

(10)



The same tonal pattern that we find on a disyllabic such as ['kʊ̈nɨç], where each tone is mapped onto one syllable, also occurs in our Schleifton items. But there, the high/low pattern is mapped onto what appears on the surface as one "super"-heavy syllable:

(11) [viiiɣ] 'manner'; [kǫmo̊uu(g̊)] 'chest of drawers'[8]

H L H L

Thus, the tonal feature of Schleifton is a high falling contour tone symbolized as [◌̂]; it comprises the two level tones high and low which are realized on one complex vowel. The vowel containing Schleifton seems to be equivalent to the two ordinary syllables of ['kʊ̈nɨç].

---

[8]The first syllable [kǫ-] is associated with the high tone in accord with conditions a) and c) of Goldsmith's Well-formedness Condition.

The Analysis

In Chapter Two, we pointed out that within the HP consonant system the set of obstruents is based on the double opposition voiceless/voiced and fortis/lenis.

Furthermore, we recognized a sequence structure constraint for HP (which also holds for Standard High German) that words cannot end in a voiced lenis obstruent.

In our framework, this constraint may be formulated as a syllabification rule:

(12) The terminal node of the right-most branch of a rime may not be a lenis obstruent.

Thus, the output configuration (13) is excluded:[9]

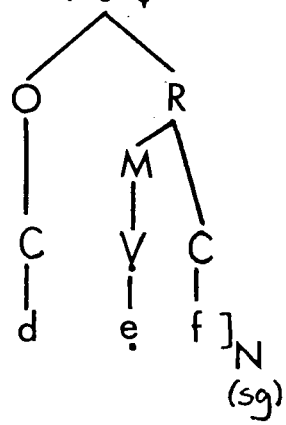
(13) *R
|
[-son,-tns]

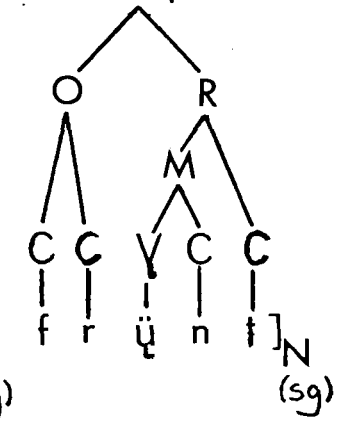
Notice that this constraint is not part of the phonology of every natural language (cf. for example English, which does allow final voiced lenis obstruents: [bijt] 'beat' vs. [bijd] 'bead') but instead is particular to HP (and also Standard High German).

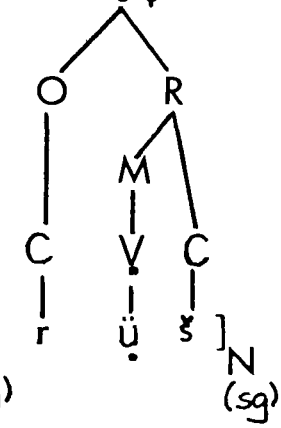
---

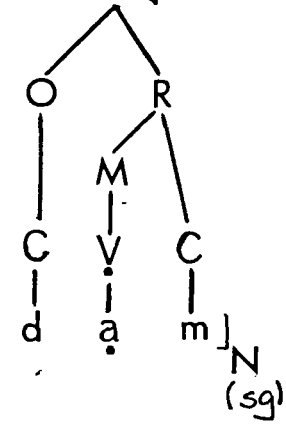
[9]The feature [+,-tense] is taken to apply to vowels as well as consonants: [+tense] = {tense V, fortis C}; [-tense] = {lax V, lenis C}.

Voiceless obstruents or nasals,[10] on the other hand, occur freely in this position in HP, as illustrated in words such as [deif] 'burglar', [frʉnt] 'male friend', [rʉʉš] 'frill' and [dɒɒm] 'lady'. The metrical structures assigned to items such as these are (14a-d):

(14) a. 

b. 

c. 

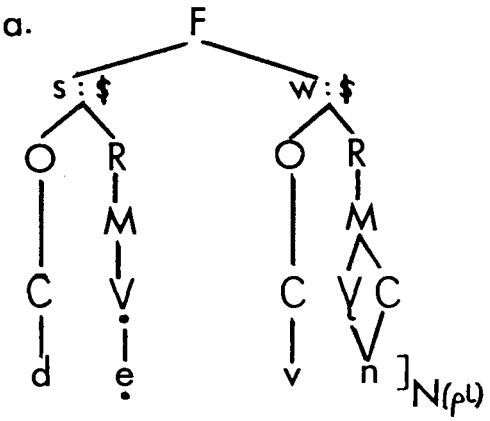
d. 

Furthermore, nasals and both voiced and voiceless obstruents are found medially, as can be seen in the plural forms ['deivɳ] 'burglars', ['rʉʉšɳ] 'frills' and [dɒɒm͡ms] 'ladies' and the feminine form ['frʉndɨn] 'female friend'. They have the metrical structures as illustrated in (15) below.

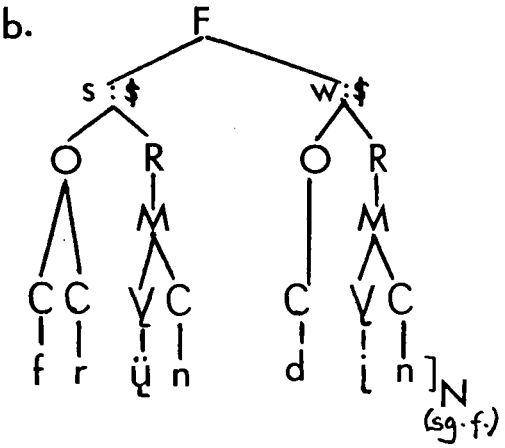
---

[10] We are excluding from our investigation liquids and glides as they involve different sets of phenomena (for example in connection with liquids, overlength but not the tonal feature of Schleifton arises), an account of which would be outside the scope of this work.

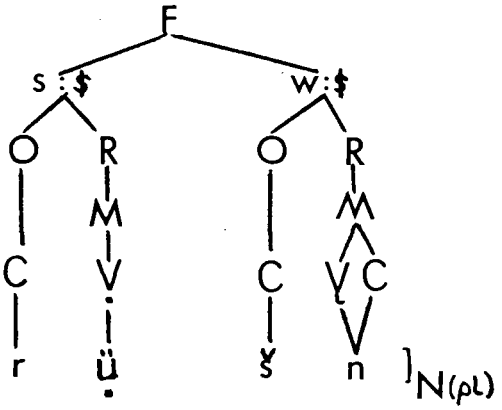
(15) a.



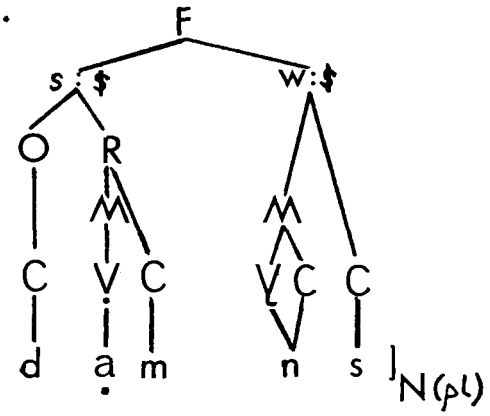
b.



c.



d.



For the items in (14a-b) and (15a-b), we are assuming morpheme alternants where the singular and the masculine stems, respectively, terminate in a voiceless fortis obstruent: /deᵩf/, /frʏnt/, and the plural stem and the stem of the feminine form, respectively, terminate in the voiced lenis correlate: /deᵩv/, /frʏnd/.[11]

---

[11]The choice of alternates is morphologically controlled, and often accompanies other stem alternation factors such as umlaut and ablaut.

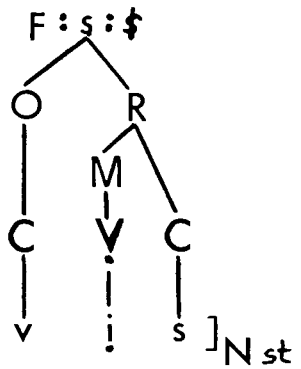
At first glance, an alternative account of this voicing alternation might be seen in taking the voiceless obstruents as basic and deriving the voiced ones by means of a voicing rule that applies in the environment of sonorants. However, this option must be rejected because voicing does not always operate between sonorants: there are numerous cases of medial voiceless obstruents, e.g. ['rʊʊšn̥] 'frills', ['tąsn̥] 'cups'.

Because of the rime structure constraint established above (cf. (12) and (13)), the converse of this proposal is also

Consider now a group of formatives in HP that present an apparent violation of the constraint on final obstruents (cf. (12) and (13)), namely the set of Schleifton items exhibiting overlong vowels with concomitant pitch variation such as [v͡iiiʒ] 'manner', [ʔo͡uuð̊] 'eye', [spr͡öööɻ(d̥)] 'rough' and [ge͡iiɣ] 'I give', all ending in a voiceless lenis rather than a voiceless fortis obstruent.

The metrical structure of [v͡iiiʒ], to take a representative example of this group, cannot be (16)

(16) * F:s:$

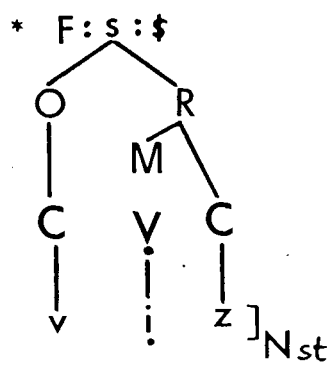


because (16) is the structure assigned to the adjective [viis] 'aware', i.e. the cther term of comparison in the minimal pair comprising [viis] and [v͡iiiʒ]. (The two items are differentiated by the absence vs. presence of (i) a Schleifton vowel and (ii) lenis articulation of the final obstruent.)

Nor can we consider the metrical structure in (17) for [v͡iiiʒ] because it contains a rime-final lenis which violates the constraint on rime structure (cf. rule (13)):

11(cont'd) excluded, namely considering the voiced obstruents as underlying and devoicing and strengthening them in final position, an approach largely taken in the standard generative analysis of this phenomenon.

(17)



We are assuming here that the difference in underlying representation between items with regular-long vowels and items with Schleifton vowels cannot lie with the vowel segment, since we are basing the HP vowel system on an underlying binary distinction between tense and lax. Rather, the difference in underlying representation must involve the final obstruent, the set of obstruents being characterized by the double opposition voiceless/voiced and fortis/lenis.

As an association line between a lenis obstruent and the rime is prohibited, the segment must be accommodated elsewhere in the metrical structure. We propose that as a consequence of this rime structure constraint the only possibility is to assign the lenis segment to a different syllable, as illustrated in (18):[12]

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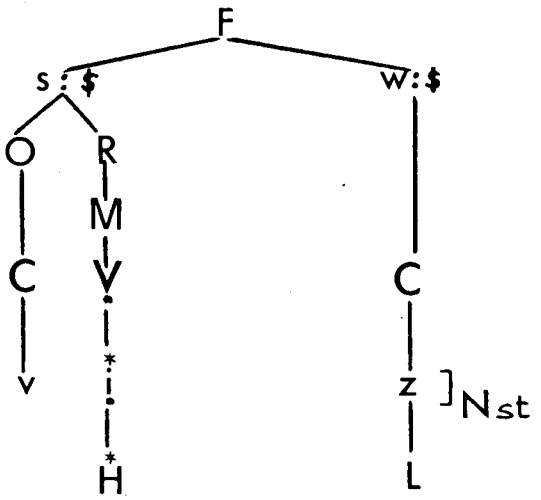
[12]A disyllabic structure such as (18) would also be assigned to the above morpheme alternants /dęv/ and /frɥnd/ (cf. p. 82).

(18)



Granted, the resulting syllable has a sufficiently peculiar status, because it neither branches into onset and rime, nor does it dominate even one of these constituents. These conventions, i.e. that syllables in HP do not obligatorily arborize into onset and rime and are not required to dominate at least one such constituent, may be thought of as language-specific, overriding such universal well-formedness conventions as the binary-branching of trees, for example (cf. Ingria, 1979:471). What seems to be most striking about the weak syllable w:$ is its lack of a rime, i.e. that sub-syllabic component that is the locus of the syllabic peak and customarily consists of at least one syllabic segment, most frequently a vowel, or a nasal or liquid. However, according to Bell (1970, cited in Houlihan, 1973:56), not all natural languages adhere to this type of syllable structure; that is to say, it is possible for any consonant, even an obstruent, to represent a syllable.

It is suggested in Houlihan (1973:56) that whenever a segment is of relatively greater sonority than the units

(segments or boundaries) surrounding it, it may function as the syllabic nucleus, where relative sonority is determined on the basis of a sonority hierarchy (cf. Jespersen's, 1933, cited in Houlihan, 1973:56, and also Kiparsky's, 1979:432).[13]

Since in our example the final voiced obstruent z cannot be associated with the first syllable and there are no other segments to its left or right that are not already associated with a syllable, it is the only candidate for syllabicity, i.e. it must carry the syllable by itself. Moreover, it alone bears the low tone. This follows as a logical consequence from the proposal made earlier (cf. p. 77) that each syllable corresponds to a tone.

A representation, then, of items with Schleifton vowels in terms of a metrical structure such as (18) reflects a number of important factors:

1. A final voiceless lenis obstruent is structurally extra-rime material. It follows that it must occur in a second syllable.
2. An apparently monosyllabic surface form such as [v͡iiiz̥]

---

[13]Note that English has syllabic s in fast colloquial speech, e.g. in [s̥tʰʌf] < 'it is tough' via contraction ('it's tough') and loss of initial vowel plus stop, resulting in the syllabification stʰʌf$. The phonetic form [s̥tʰʌf] is not equivalent to [stʰʌf] 'stuff' which syllabifies as $stʰʌf$. According to Professor R. C. DeArmond, to whom this example is due, resyllabification of the former form, stʰʌf$, cannot occur because of an intervening strong boundary: $s#$_s$ tʰʌf$; the boundary between 'it is' of original 'it is tough', on the other hand, is weak: it#$_w$is#$_s$ tough. #$_w$ disappears in the process of restructuring, but #$_s$ blocks resyllabification, i.e. it prevents the attachment of the fricative onto the second syllable.

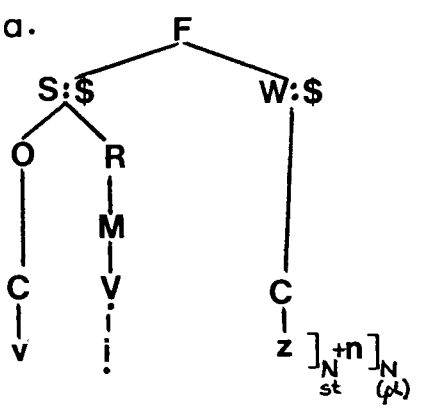
functions structurally as a disyllabic form which, from a historical point of view, is the correct analysis.

3. The underlying disyllabic structure entails that the word is associated with two tones, i.e. a high and a low tone; a monosyllabic underlying representation such as (16) or (17) would encounter problems regarding the explanation of the tonal feature.

Let us now first derive the inflected (plural) form ['viizn̩] 'manners' and then the more complicated singular form [v͡iiiz̩].

The derivation of the plural form ['viizn̩] will proceed as follows:[14]

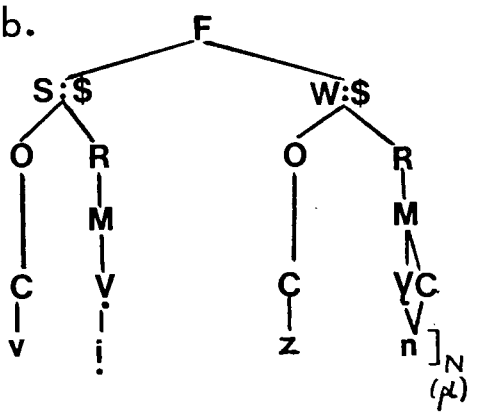
(19) a.



output of 1st cycle

rule (3)

b.



output of 2nd cycle

Recall that metrical structure is reassigned cyclically, as proposed by Kiparsky (1979). It follows that restructuring can take place in the different cycles, because each cycle considers

---

[14] Tree structures analogous to (19a-b) would also be assigned to the plural form ['deivn̩]: dęv]$_{N\,st\,(pl)}$+n]$_{N\,(pl)}$ and the singular feminine form fr̥nd]$_{N\,st\,(sg.f.)}$+ i̯n]$_{N\,(sg.f.)}$.
Note that this analysis can also derive the plural form [d͡eiiiy] rather than ['deivn̩] which Keller describes for his dialect of North Saxon.

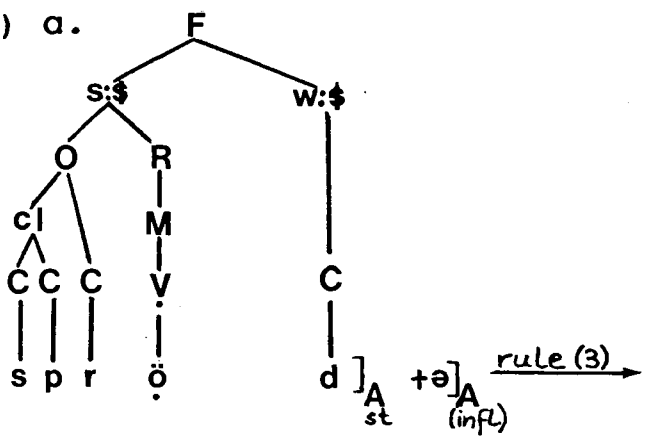
a wider domain than the previous one.

The principle of cyclic application dictates that we first assign metrical structure to the string delimited by the innermost bracket which in the present example defines the noun stem, e.g. $\$vi\dot{}\$z\$]_{N\,st}$ $+n]_{N\,(pl)}$. Proceeding to the next higher cyclic level, we arrive at the lexical category noun, e.g. $\$vi\dot{}\$z\$n\$]_{N\,(pl)}$. Here, on the second cycle, the larger domain provides the second syllable, w:$, with a full-fledged rime in the form of a syllabic nasal, so that z can now take over the onset position and the plural form ['viizn̩] receives perfectly regular disyllabic status, e.g. $\$vi\dot{}\$z\$n\$] \dashrightarrow \$vi\dot{}\$zn\$]_{N\,(pl)}$. That is, z must be permitted when zn is not possible.

Notice furthermore how easily and straightforwardly inflected adjective forms in [-ə], such as ['sprʊ̈də] 'rough' can now be accounted for, as figure (20) below shows, forms that present a considerable problem for solutions referring to underlying schwas. It will be recalled that in solutions of this kind (cf. Chapter Four) underlying schwas were posited whose deletion was said to trigger Schleifton. Furthermore, it will be recalled that in the case of inflectional adjective forms ending in schwa at surface level, the inflectional schwa does not cause Schleifton in contrast to the stem-final schwa, so that [$\widehat{\text{sprʊ̈ʊ̈}}$(d̥)] consists of the morphological constituents $\text{spr}\dot{\text{ʊ}}\text{də}]_{A\,st}$ $]_{A\,(uninfl.)}$ where schwa deletes and ['sprʊ̈də] of $\text{spr}\dot{\text{ʊ}}\text{də}]_{A\,st}$ $+ə]_{A\,(infl.)}$ where neither schwa deletes, but instead where they seem to coalesce. In our metrical analysis, on the

other hand, which does not take recourse to underlying schwas, we need not distinguish between schwas that trigger Schleifton and those that prevent Schleifton formation.[15]

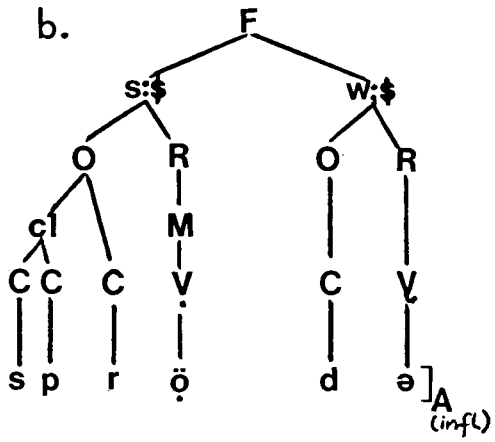
(20) a.



output of 1st cycle

rule (3) →

b.



output of 2nd cycle

The extension of the cyclic domain to include schwa results in the creation of a (non-moraic) rime which renders the word fully disyllabic.

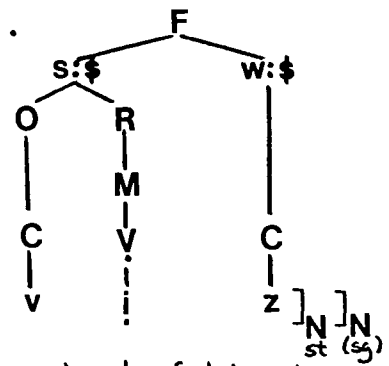
We now turn to the singular form [víiiz]. A partial derivation is illustrated in (21):

---

[15]A CCC sequence in onset position must be decomposed into a two-segment cluster(cl) and a single consonant (not necessarily in that order) in accord with the binary nature of metrical theory. The decision whether spr- is divided as sp-r or as s-pr can be made on the basis of two factors: (i) the aspiration of p and (ii) the voicing of r. In ['sprööɖə], p is non-aspirated as a consequence of the preceding s; hence, sp- must form a cluster. This is supported by the fact that r is clearly voiced. If instead r formed a cluster with p, it would devoice, as it does in [pɹɒɒt] 'ready', for example.

Another argument for the division as sp-r rather than s-pr can be adduced on the basis of the observation that the sequence -sp- appears also morpheme-finally, whereas the sequence -pr- does not. In connection with a liquid, we find the sequences BRV and VRB, where B=obstruent cluster and R=liquid, but not RBV and VBR. This observation is due to Professor R. C. DeArmond.

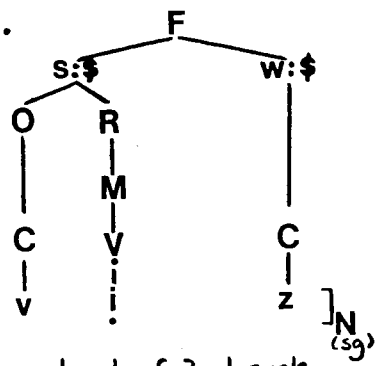
(21) a.



output of 1st cycle

rule (3)

b.



output of 2nd cycle

Again, our starting point is the noun stem form $\underset{\bullet}{\text{vi}}\text{z}]_{N\,st}$ syllabified as $\$\underset{\bullet}{\text{vi}}\$\text{z}\$$. On the second cycle, the domain is extended from stem to word-level; however, no restructuring occurs since the larger domain does not include any additional segments. But $[[[C_o \underset{\bullet}{V}]_{s:\$} [CY]_{w:\$}]_F]_W$, where Y=a following voiceless obstruent, for example the person marker -s as in [gə͡iiɪs] 'you (sg) gave', is the canonical environment in which overlengthening takes place.

Before considering how the analysis of Schleifton to be proposed here can explain the existence of such a form as [vi͡iiiz], let us look at some general proposals that have been made about the timing of articulatory sequences.

Lehiste (1970:9) hypothesizes

> that articulatory movements are programmed as sequences [with a predetermined time pattern and] that the time patterns of these articulatory sequences are correlated with linguistic units...within which the time patterns are realized.

In HP, words are divided into stress groups, in terms of which the timing of utterances is organized. These stress groups we have labelled feet in our analysis and feet in our HP data are limited to two syllables.

In a metrical theory, according to McCarthy (1979:462),

> stress timing...can be understood as just timing of the duration of feet. If the feet are limited to two or three syllables,...they can be easily... stress-timed. ...Potentially infinite feet are presumably unmanageable for a stress timing rule.

Assuming with Lehiste, then, that the foot has a fixed time pattern and its syllables are internally related by means of duration ratios, the foot in (21) reaches its durational goal by triggering a "corrective movement": in compensation for the 'degenerate' syllable w:$, the vowel within the domain of the foot is lengthened.

In our analysis, we will treat the rule of overlengthening that promotes an already long vowel to overlong status as a vowel copy rule. Vowel lengthening and diphthongization must however apply beforehand since it is the second component segment of a long vowel or a diphthong that is lengthened via the copying process. In HP, tense vowels lengthen under primary stress and the tense mid vowels appear as diphthongs in which the second component is raised.[16] We may combine both processes in one rule and formulate it as in (22):

(22) Vowel Lengthening and Diphthongization:

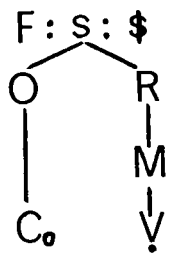
$\overset{V}{\bullet} \rightarrow V_i\ V_j / [\_\_]_{s:\$}$ where $V_j = [-\alpha high, \alpha low]$

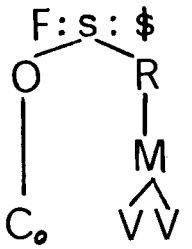
This rule states that a tense vowel under primary stress is represented as a sequence of two vowels, the second of which is [+low,-high] for low vowels and [+high,-low] for non-low vowels.

---

[16]It also undergoes desyllabification, a process that will not concern us here.

Each of the two vowel segments occupies a separate position in the metrical tree. Thus, rule (22) has the effect of introducing another terminal node under M, as illustrated in (23):

(23) a. 

rule(22) →
b. 

Let us now formulate the vowel copy rule that inserts a copy of the second component of the lengthened vowel or diphthong[17] into the second syllable, w:$, which is also assigned the low tone. Insertion into w:$ rather than into s:$ is required in order to account for the tonal feature of Schleifton. Recall that pitch in a Schleifton word is perceived as falling over the final third of the vowel or diphthong; hence the copied vowel must associate with the low tone of the second syllable.

(24) Vowel Copy Rule (Overlengthening)

$$\emptyset \text{ --> } V_{\alpha} / [\ [\ C_o\ VV_{\alpha}]_{s:\$}\ [\ \_\ C_o]_{w:\$}\ ]_F\ ]_W$$

The vowel copy rule creates a mora in the second syllable, generating the structure (25):

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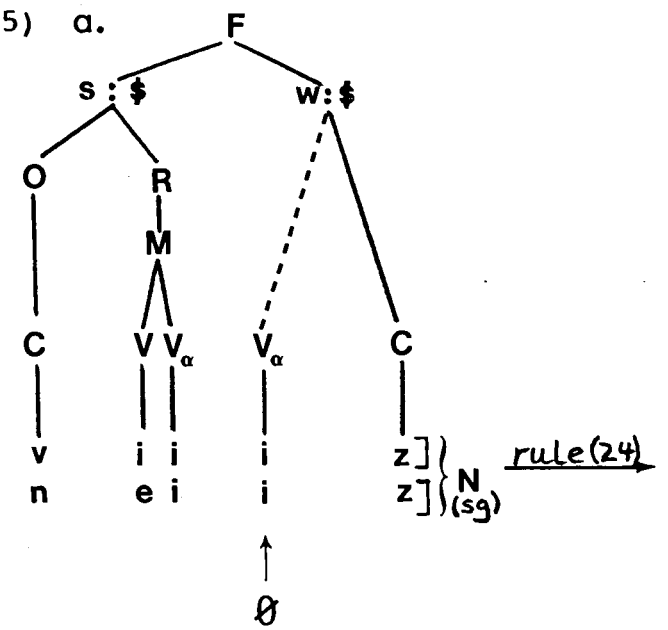
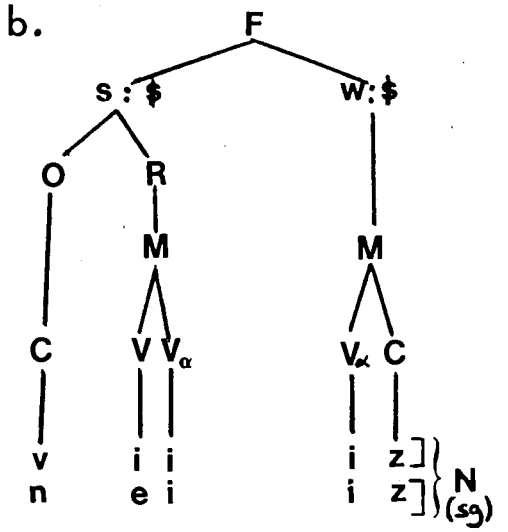
[17]The fact that the vowel copy rule must refer to a component segment of the long vowel or the diphthong motivates our sequential representation of length.

(25) a.



rule (24)

b.



Note that in the case of diphthongs, as in [n$\widehat{\text{eiiz}}$] 'nose', for example, it is the second, [+high], component segment that is copied into w:$.

However, this newly established mora cannot constitute a rime because of the above syllabification constraints in HP that a syllable must have an onset in order to have a rime (cf. rule (3)) and that lenis obstruents are not allowed in rime-final position (cf. rule (13)).

The issue now is to account for the status of the final obstruent in Schleifton words: it is voiceless lenis.

Immediately after an overlong vowel, i.e. after the sequence $VV_\alpha V_\alpha$ within the domain of a foot, a voiced lenis obstruent surfaces as voiceless lenis instead of voiceless

fortis,[18] which we assume is due to a rule of final obstruent devoicing. Recall that on the surface in HP, we observe a three-way distinction between voiceless fortis, voiced lenis and voiceless lenis obstruents. We have relegated to the morphological level the voiceless fortis/voiced lenis alternation in such items as [deif] ['deivn̥] 'burglar(s)' and [gɨfs] 'you(sg)give' ['geivn̥] 'to give', by means of listing in the lexicon the noun and verb stem alternants (/dẹf/ for the singular noun form and /gɨf/ for the 2nd and 3rd persons singular present verb forms; /dẹv/ for the plural noun form and /gẹv/ for all other forms of this verb).[19] With regard to the voiceless lenis obstruents after overlength, however, we have a process of final devoicing. This process constitutes a true case

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[18]Observe that the final voiceless lenis stop frequently deletes, e.g. [ˌšu̥kə'lɒ͡ɒɒ] vs. [ˌšu̥kə'lɒɒdn̥] 'chocolate(s)', [mó͡uu̥(g̊)] vs. ['moudn̥] 'fashion(s)'.

It appears that the complete loss of [-g̊] occurs only after non-high vowels (unless Schleifton marks plurality). Compare [mɵ̆͡ɯɯ(g̊)] 'tired', [ˌkọ'mó͡uu(g̊)] 'chest of drawers', [steii(g̊)] 'place', [šɒ͡ɒɒ] 'what a pity' (vs. ['šɒɒdn̥] 'damage(noun)'), with [lɯ̆͡ɯɯg̊] 'people', [zi͡iiig̊] 'silk', [lu͡uug̊] 'loud(ly)' ([šri͡iig̊] 'steps'; [nɵ̆͡ɯɯg̊] 'seams').

It is possible that a clue to the solution is provided by the different degrees of sonority of these segments. According to Jespersen's (1933, cited in Houlihan, 1973:56) and Kiparsky's (1979) sonority scales, high vowels are the least sonorous of all vowels, low vowels the most sonorous. Of our voiceless lenis obstruents, [g̊] is the least sonorous since stops are at the bottom of the sonority scale (note that the other lenis ones are fricatives: [z̥, ɣ̊, ʒ̊/ð̊]). Thus, if a segment of lowest sonority is preceded by a segment of highest sonority, the former may delete (unless Schleifton signals plurality).

[19]Cf. also the morpheme alternant approach to a restricted set of items in English such as [najf] 'knife' [najvz] 'knives', [lijf] 'leaf' [lijvz] 'leaves' regarding the choice of the plural suffix. The /-z/ alternant of the plural suffix is chosen on the basis of the stem alternants /najv/ etc., with final /v/.

of final devoicing, in contrast to Auslautsverhärtung in Standard High German (e.g. /hʊnd/-->[hʊnt], /hʊndə/-->[hʊndə] 'dog(s)'), which, strictly speaking, represents two processes, namely devoicing and fortition of underlying voiced lenis obstruents. Thus, the voiceless lenis segments in HP are contextual variants of the corresponding voiced lenis ones. The devoicing rule for HP may be formulated as follows:

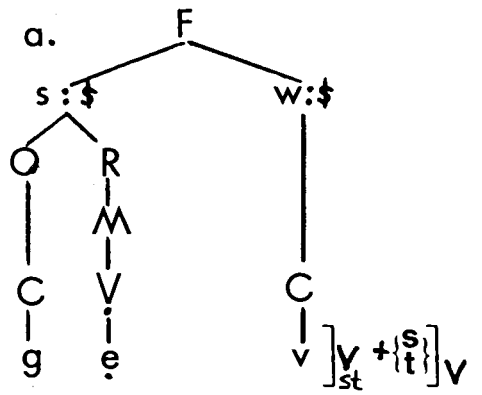
(26) Final Obstruent Devoicing (initial formulation):

[-son,+vce,-tns] --> [-vce] / _]$_{W}$

(26) is a word-level rule, hence does not apply to strings contained within the domain of a stem on the first cycle, as in (19a-21a). Moreover, it stands in contrast to the rime structure constraint expressed in rule (13) whose locus of application is the syllable level.

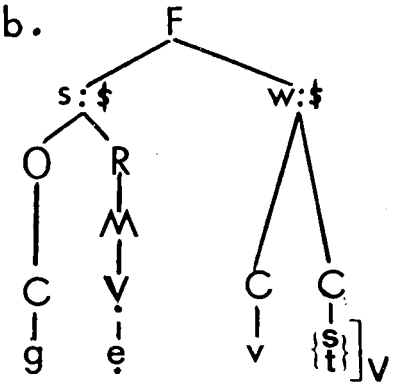
Given the rules of vowel copying and final obstruent devoicing, all of the forms in I A may be easily derived, including such verb forms as [gə͡iiɣs] 'you(sg) gave' and [gə͡iiɣ(t)] 'given', which differ from the other Schleifton forms merely in that they terminate in the voiceless fortis obstruents -s or -t, which are person or participle markers. These verb forms have analogous metrical structure:

(27) a.



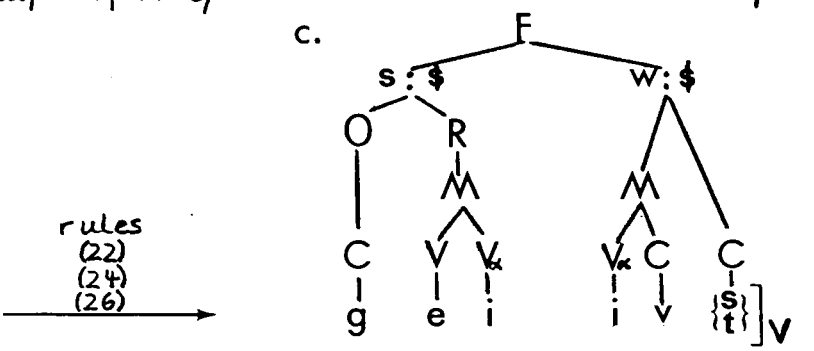
output of 1st cycle

b.



output of 2nd cycle

c.



We see that on the second cycle the person or tense marker, -s or -t, is added onto the verb stem. Note that the voiceless fortis obstruent is attached to w:$ in the same way as the stem-final voiced lenis obstruent is attached on the first cycle, i.e. both are immediately dominated by the syllabic node $ rather than by the sub-syllabic nodes O or R.

Neither of the two rules deriving Schleifton (i.e. vowel copy (24) and final devoicing (26)) is hampered in its application by the presence of this voiceless fortis obstruent as the segment appears in word-final position and thus does not disrupt the sequence $[\ [\ \ldots VV\ ]_{s:\$}\ [\ C\ ]_{w:\$}\ ]_F\ ]_W$ which triggers Schleifton.

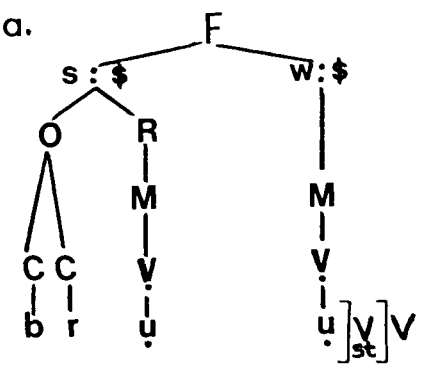
Rule (26) must now be amended so as to consider in its environment a final voiceless fortis obstruent:

(28) Final Obstruent Devoicing (final formulation):

[-son,+vce,-tns] --> [-vce] / _ C_0] W

Special reference must be made to Schleifton verb forms that lack a final voiceless lenis obstruent at surface level, such as [brúuù] 'I brew' and [brúuùt] 'he brews; brew(pl); brewed(pp)', items that end either in the overlong vowel proper or --counter to what we have established-- in a voiceless fortis obstruent which immediately follows the overlong vowel. The metrical structures assigned to them and the derivations involved are shown in (29) and (30):

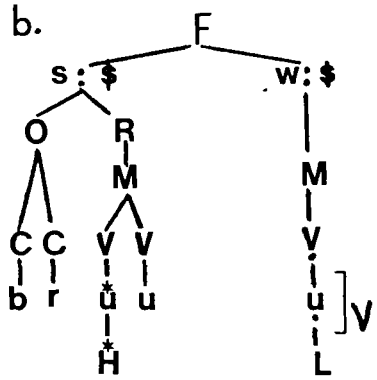
(29) a.



output of 1st cycle

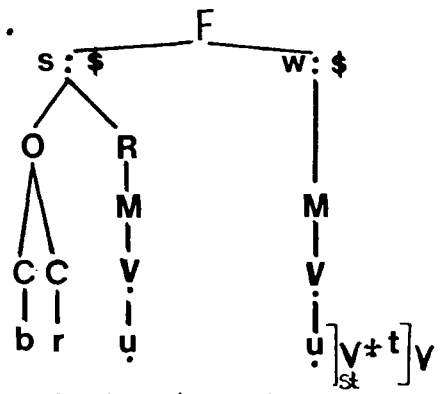
rules (3) (22)

b.



output of 2nd cycle

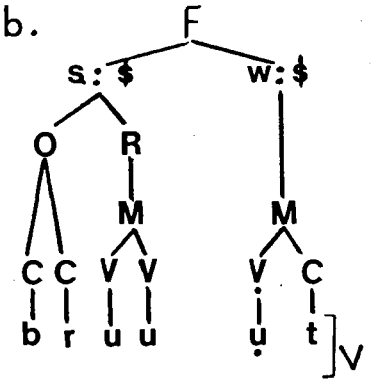
(30) a.



output of 1st cycle

rules (3) (22)

b.



output of 2nd cycle

On the first cycle in both (29) and (30), metrical structure is assigned to the verb stem /bruu/. We posit an underlying

sequence of two tense vowels, the second of which appears in w:$. On the second cycle in (29), the stem brackets are erased and the domain extended to word-level, but no additional segments are incorporated. The rule of vowel lengthening (22) can now apply to the tense vowel in the stressed syllable s:$ but not in the unstressed syllable w:$. Note that in order to account for the Schleifton vowel, we need not make use of the vowel copy rule; instead, metrical structure assignment alone takes care of the configuration <u>that is interpreted</u> as Schleifton. This configuration can be broadly defined as two adjacent heterosyllabic moras within the domain of a foot:

(31) $[\ [_{M}\ ]_{\$_i}\ [\ _{M}\ ]_{\$_j}\ ]_{F}$

condition: The right-most constituent of the first mora must be identical with the left-most constituent of the second mora.

While in the other Schleifton items of I A the copied vowel combined with the vciced lenis obstruent to build a mora in w:$, in our present examples this mora is already erected in the underlying structure.

In the case of (30), Schleifton is found before a fortis consonant. However, the -<u>t</u> marker that is included on the second cyclic level belongs to a different morpheme. The final voiceless fortis obstruent occupies the same position in the metrical tree (30b) as it does in the verb forms [gə͡iiɣ(t)] and [gə͡iiɣs] (cf. the trees in (27) above).

The analysis proposed so far furthermore accounts for the items in I B where we are assuming different stem forms for the alternants.[20]

Let us now turn to the data in group II where Schleifton nasals are at issue. Parallel to Schleifton vowels alternating with ordinary long vowels, e.g. [vi͡iiʒ] ['viizn̩] 'manner(s)', Schleifton nasals alternate with forms containing ordinary nasals, e.g. [spi͡nn̩] 'spiders; to spin' [spɪn̩] 'spider; spin!', [dɒɒm̩̀s] 'ladies' [dɒɒm] 'lady', etc. However, the nasal cases differ in a number of ways from the vowel cases. First of all, we observe that with the nasals the length of the preceding vowel is immaterial because we find both short and long vowels in pre-Schleifton nasal position, e.g. [spɪ̀nn̩] 'to spin; spiders', [dɒɒm̩̀s] 'ladies', etc. Secondly, the stems of these items (verbs and nouns) terminate in a nasal. And finally, Schleifton arises with nasals when the ending -n(s)[21] is added onto the stems. Recall that this is the very ending that blocks Schleifton in the vowel cases (the only other suffix blocking Schleifton being the inflectional adjective ending schwa, cf. I

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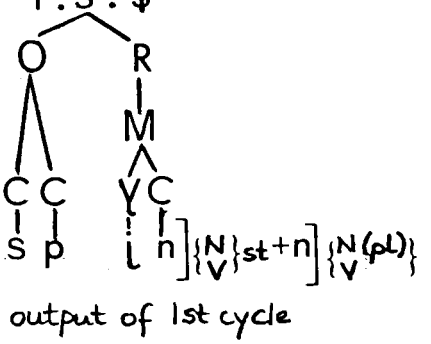
[20]The singular and plural noun forms are clearly morphologically related; however, an attempt to account for the vowel alternations which involves the complex and controversial issue of umlaut, is clearly outside the scope of this thesis.

Similarly, we are treating the verb forms in I B as suppletive. Strong verbs as opposed to weak verbs in HP (as well as in Standard High German) are characterized by vowel alternation affecting the 2nd and 3rd persons singular present which have a mutated short root vowel.

[21]-n is either a noun plural ending or, regarding verbs, the past plural ending, the past participle ending of strong verbs or the infinitive marker.

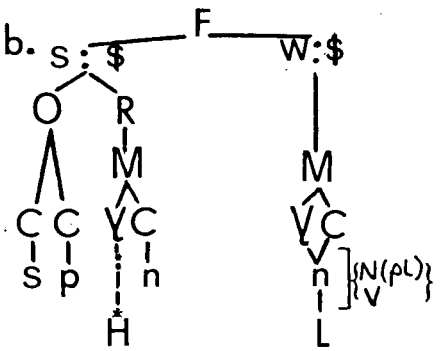
A 3), but now it triggers Schleifton in the nasal cases.

The derivation of the nasal Schleifton forms proceeds as in (32) and (33):

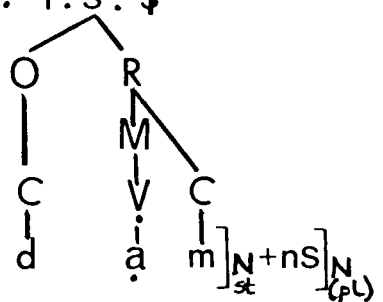
(32) a. 

output of 1st cycle

rules (3) (5)

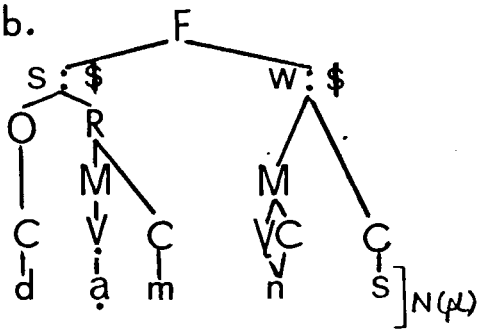
b. 

output of 2nd cycle

(33) a. 

output of 1st cycle

rules (3) (5)

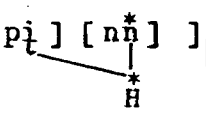
b. 

output of 2nd cycle

Note that restructuring on the second cycle does not occur, as it did in the case of [v͡iiiz̩] ['viizn̩], for example, cf. (19a-b): viz$ vs. vizn$. The reason is that we assume for HP a structural constraint that prohibits a syllable to dominate a nasal onset and a nasal rime. Note that there are no independent instances of such syllables, for example a word 'mn̩'. Since the stem-final nasal, then, is not restructered to function as the onset of the new syllable w:$, the constraint that no syllable can have a rime without also having an onset (cf. rule (3)) comes into play again, and this in turn prevents the mora from being dominated by a rime node.

In example (32), restructuring of stem-final n is prohibited for yet another reason: it would rob the rime in the strong syllable of the mora, leaving a lax vowel in syllable-final position. The only lax vowel, however, that can occur in final position is schwa as in ['mɵ̈ʊ̈də] 'tired' or [ˌšu̯kə'lɒ͡ɒɒ] 'chocolate'. Furthermore, stress and tone would also (and thus wrongly) be assigned to the syllabic nasal in the second syllable:

(34) *[[spi̯] [n̩]]F



In order to derive the surface form [dɒɒm͡ms], a rule of nasal assimilation must apply tc the structure (33b):

(35) Nasal Assimilation

N --> [αcor,βant]/N[αcor,βant] _[22]

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[22] There is a very restricted set of verbs with Schleifton nasals that appear to be members of the same group as [klę͡mm] 'to pinch' and [zi̯ŋ͡ŋ] 'to sing', etc. in II A. This set comprises the following items:

(36) [li̯ŋ͡ŋ] 'to lie' vs. [li̯ç] '(I) lie'
[zęŋ͡ŋ] 'to say' vs. [zęç] '(I) say'
[lęŋ͡ŋ] 'to lay' vs. [lęç] '(I) lay'

Note, however, that while the former ([klę͡mm], etc.) alternate morphophonemically with items containing regular nasals ([klęm] '(I) pinch', etc.), the alternants of our present items are quite different: they end in a fricative; hence they cannot be derived from verbs with stem-final nasals. Observe also that the only vowels involved here are the lax non-low front vowels ę and i̯. What we will propose is that these verbs have stems terminating in the spirant /h/ (recall that in our phonemic analysis of HP /h/ has the allophones [h, x, ç]; cf. Chapter Two), and that this spirant assimilates to a nasal when the nasal verb ending is added (which first velarizes to [ŋ] after /h/): zęh]V st]V ; zęh]V st + n]V . This analysis is possible because in medial position /h/ is never realized phonetically as a spirant after ę and i̯ (although it is after the lax low front vowel ą: /ąhn/ --> ['ąxŋ] 'to laugh'), unless it is followed by a non-nasal syllabic segment, e.g. ['hęçi̯n] 'to pant'.

When we compare these latter two structures, i.e. (32) and (33), with those in (29) and (30), we realize that the two sets are entirely parallel, i.e. the long Schleifton nasal items pattern precisely like the verb forms last discussed, i.e. the ones that lack voiceless lenis obstruents after the overlong vowel, such as [brûûût] 'he brews' (cf. pp. 97-98). The nasal cases and these verb forms have the simplest derivations of all Schleifton items under consideration: no rules are needed to derive overlength and contour tone in the surface forms. Instead, these two features are fully encoded in the metrical structure. The configuration $[\ [M]_{\$i}\ [M]_{\$j}\ ]_F$ signalling Schleifton must be modified, though, in order to cover cases like (33) where the stem-final nasal is not part of the mora but is associated with the mora as a sister:

(37) $[\ [\ M\ C_o\ ]_{\$i}\ [\ M\ ]_{\$j}\ ]_F$

condition: The right-most terminal node of the first syllable must be identical with the left-most terminal node of the second syllable.

This condition is necessary because of cases such as ['snąɣŋ] 'to talk' with the metrical structure $[[[\text{sn}[\text{ą}\,\text{k}]_{M\ \$:\$}\ ]\ [\text{n}]_{M\ w:\$}\ ]_F$ where the right-most terminal node is not identical with the left-most terminal node.

Thus, we realize that the two different sets of Schleifton cases, i.e. the one with long nasals and the one with overlong vowels, now have something more in common than merely the tonal

feature: they reveal a striking parallel of structural patterning. The close relationship between them is made transparent by the metrical structure assigned to them. Both contain the marked syllable w:$, i.e. a syllable that lacks the prosodic nodes O and R and instead immediately dominates a mora constituent plus an optionally following voiceless fortis consonant.

Moreover, in our metrical representation of items with Schleifton vowels and Schleifton nasals, the surface appearance of the tonal feature follows as an automatic consequence.

VI. Conclusion

The main objective of this thesis was to provide an explanatory analysis of the phonological phenomenon of Schleifton in the North Saxon dialect of Heikendorf.

Schleifton was identified as representing several co-occurring but distinct processes within the domain of a "super"-heavy surface syllable, viz.

1. overlengthening of a vowel or lengthening of a final nasal;
2. the development of a concomitant high falling contour tone;
3. the devoicing of a final voiced lenis obstruent to voiceless lenis after an overlong vowel.

In view of the fact that the characteristic constituents of Schleifton are the prosodic features quantity and pitch (cf. Lehiste, 1970: 1-2), we chose to place our analysis within the general framework of metrical phonology where phonological strings are hierarchically arranged into syllables and higher-order constituents, such as feet, on autosegmental tiers, including a tonal tier, and where syllables are viewed as having internal structure.

On the basis of this approach, Schleifton items emerged as being <u>structurally</u> different from corresponding non-Schleifton items, that is, as structurally disyllabic in contrast to monosyllabic. Furthermore, Schleifton as such, both vowel and nasal Schleifton, was seen to be reflected by metrical structure as the configuration of two adjacent heterosyllabic moras within

the domain of a single foot, i.e. without intervening syllabic onset. This configuration accounted not only for the exceptional length factor involved in Schleifton items, but also for the tonal feature they exhibit.

The advantage of our approach, when compared with traditional ones, lies in its ability to integrate the above-mentioned three factors, i.e. the length factor, the tonal feature and the voiceless lenis status of a final obstruent, an accomplishment existing solutions do not have to offer. Moreover, our metrical solution shows the similar behavior of vocalic and nasal elements in the Schleifton pheromenon, which is not captured in a purely segmental analysis. Finally, our solution surpasses traditional ones in discarding any reference to apocopated underlying schwas. Underlying schwa segments and a subsequent apocope rule are the basis for the most widely accepted type of solutions. While both factors are undoubtedly historically correct, they are hardly justifiable from a synchronic point of view, on the grounds that these segments are nearly non-existent at surface level in present-day Heikendorf Low German.

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