

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/317604546>

Saterland Frisian

Article in *Journal of the International Phonetic Association* · June 2017

DOI: 10.1017/S0025100317000226

CITATIONS

3

READS

489

1 author:



Jörg Peters

Carl von Ossietzky Universität Oldenburg

90 PUBLICATIONS 825 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



ExLing 2018: 9th Tutorial and Research Workshop on Experimental Linguistics [View project](#)



Acoustic properties of vowels in Saterland Frisian [View project](#)

Saterland Frisian

Jörg Peters

Carl von Ossietzky University Oldenburg

joerg.peters@uni-oldenburg.de

Saterland Frisian (sfrs. *Seeltersk*) is the only living remnant of Old East Frisian. It is an endangered language, with an estimated number of 2250 speakers (Stellmacher 1998: 27) and is spoken in the municipality of the Saterland (sfrs. *Seelterlound*), which is located in the federal state of Lower Saxony in northwestern Germany.

The municipality of the Saterland consists of the four communities Ramsloh (sfrs. *Romelse*), Strücklingen (sfrs. *Strukelje*), Scharrel (sfrs. *Skäddel*), and Sedelsberg (sfrs. *Sedelsbierich*). Saterland Frisian comprises three local dialects spoken in Ramsloh, in Strücklingen, and in Scharrel and Sedelsberg (Sjölin 1969, Fort 2015); there is no standard variety. The dialect of Ramsloh is the most conservative of the three dialects and has maintained several features of Old East Frisian which are lacking in the dialects of Strücklingen and Scharrel. Most, if not all, native speakers of Saterland Frisian born before the 1970s are trilingual, with a hybrid mixture of Münsterland and Emsland Low German as their second and Northern Standard German as their third language (Fort 2004). Most younger speakers of Saterland Frisian are bilingual with Northern Standard German as their second language. General descriptions of Saterland Frisian are available from Siebs (1889, 1901), Sjölin (1969), Kramer (1982), and Fort (2015) (for an overview of older contributions see Fort 1980: 16ff.). Comprehensive dictionaries are Kramer (1961) and Fort (2015).

The present description is based on the speech of three middle-class trilingual speakers in their 70s and 80s, two female speakers from Ramsloh and Scharrel, and one male speaker from Strücklingen. The description of the vowels is enhanced by acoustical analyses of 13 male middle-class trilingual speakers from Ramsloh aged between 52 and 70 (cf. Schoormann, Heeringa & Peters 2015). The recording of the narrative as well as the recordings of the examples in the tables and in the running text are taken from the female speaker from Ramsloh. The orthographic conventions used throughout the text are adopted from Fort (2015).

Consonants

	Bilabial	Labiodental	Alveolar	Postalveolar	Palatal	Velar	Glottal
Plosive	p b		t d			k g	(ʔ)
Nasal	m		n			(ŋ)	
Trill			r				
Fricative		f v	s z	(ʃ)		x (ç)	h
Approximant	(β)				j		
Lateral Approximant			l				

Symbols in brackets indicate allophonic variants.

p	'pukjə	'to knock'	b	'bukjə	'to bow'
t	'taʊjə	'to rush'	d	'daʊjə	'to dew'
k	'kɑ:ɣtə	'card'	g	'gɑ:ɣtə	'groats'
m	'mɛɪdə	'meadows'	n	'nɛɪdə	'grace'
			r	'rɑ:gə	'rye'
f	'filə	'rasp'	v	'vilə	'while'
s	'sɑ:gə	'saw'	z	'zɑ:gə	'myth'
x	'ʔɑ:xtə	'eight'	h	'hɑ:gə	'dunghill'
j	'jokjə	'to itch'	l	'lukjə	'to succeed'

Younger speakers tend to devoice voiced (lenis) obstruents in syllable-final position and before voiceless obstruents. Some older speakers realize /g/ as a velar fricative, which is voiced in all positions except before voiceless consonants and in word-final position. [ʔ] is restricted to the beginning of stressed syllables without an onset consonant and often is missing from connected speech.

Postvocalic /n/ is velarized before tautomorphic /g/ and /k/ (compare monomorphemic ['sɪŋl] *Singel* 'fencing', ['slɛŋkə] *Slänke* 'rut', and [slɔ:ŋk] *sloank* 'slim' with bimorphemic ['mɛnkən] *Mänken* 'man DIM').

In onset position /r/ is an alveolar trill. Younger speakers tend to replace the alveolar trill with the voiced uvular fricative [ʁ]. Prevocalic /r/ may be preceded by /p/, /b/, /t/, /d/, /k/, /g/, /f/, and /v/. After a vowel in word-final position and before a consonant it is [ʁ] ([bɔ:ʁ] *boar* ‘cash ADJ’, [bɔ:ʁst] *Boarst* ‘fissure’).

The labiodental fricative /v/ tends to become devoiced in word-final position and before voiceless consonants. It may be preceded by /d/, /t/, /k/, and /s/ in the onset ([dvo:] ‘to do’, [tvo:] ‘two’, [kvot] ‘bad’, [ʰsvo:də] ‘crust’). The voiced bilabial approximant [β] is an allophonic variant of /v/, which occurs in intervocalic position after [u] (see sec. *Diphthongs*).

The alveolar fricative /s/ becomes voiced word-medially before /j/, after /l/ and /r/, and in intervocalic position if the preceding vowel is long. Before /p/, /m/, /n/, /l/, /t/, and /v/, /s/ tends to become palatalized in younger speakers, resulting in [sʲ] or [ʃ] (e.g. [ʰsʲpitə] ‘spades’, [ʰʃmi:də] ‘smithy’, [ʰʃnidə] ‘to cut’, [ʰʃlitə] ‘to wear out’, [ʰʃte:tə] ‘to push’, [ʰʃvitə] ‘to sweat’). The phoneme sequence /sj/ likewise tends to become reduced to [sʲ] or [ʃ] (e.g., /sjo:də/ [ʰsʲo:də] ‘to boil’, /sjungə/ [ʰʃʊŋə] ‘to sing’). Word-initially, /sk/ is realized as [sk], [sx], [ʃk], [ʃx], or [ʃ] (cf. Tröster 1997: 17). Word-finally, [sk] is in free variation with [ʃk].

The voiced alveolar fricative /z/ is rare and tends to become devoiced in word-final position. Some speakers do not use the voiced alveolar fricative in any position. The fricative /x/ is restricted to word-medial and word-final position. It is usually a velar fricative but in some speakers palatal variants can be observed after front vowels and uvular variants after low back vowels, as in Northern Standard German (cf. Kohler 1990). The glottal fricative /h/ is restricted to morpheme-initial prevocalic position.

The palatal approximant /j/ is restricted to prevocalic position, where it may be preceded intra-morphemically by /b/, /t/, /d/, /k/, /g/, /f/, /s/, /m/, /n/, and /l/ (e.g., [ʰbjɔ:də] ‘to offer’, [tjo:] ‘to pull’, [ʰdju:vəl] ‘devil’, [ʰkjo:zə] ‘to choose’, [ʰgjuxtə] ‘direction’, [ʰfju:ʁ] ‘fire’, [mjʊks] ‘dung’, [ʰnju:gən] ‘nine’, [ʰlju:də] ‘people’; for /sj/ see the

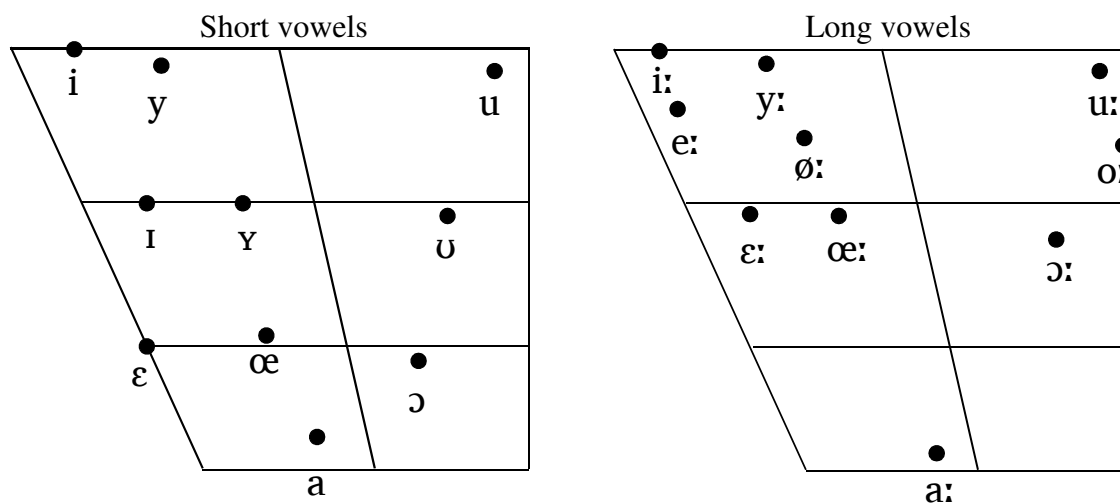
previous comments on /s/). Prevocalic /l/ may be preceded by /p/, /b/, /k/, /g/, /f/, and /s/ (e.g., [ˈplɔ:tə] ‘disk’, [bloʊt] ‘blood’, [klo:t] ‘dress’, [glik] ‘equal’, [flʊks] ‘instantly’, [slɔt] ‘lock’).

Saterland Frisian allows complex onsets with up to three consonants /klj/, /flj/, /spr/, /spl/, /str/, /stj/, /skr/, /skj/, /skl/, /slj/, e.g. [kljɔun] ‘clew’, [ˈfljo:tə] ‘to flow’, [ˈʃprɔ:kə] ‘language’, [ˈʃpli:tə] ‘to split’, [ˈʃtrɔ:ljə] ‘to shine’, [ˈstjɔŋkə] ‘to stink’, [ˈskriuβə] ‘to write’, [ˈskjo:tə] ‘to shoot’, [ˈsklɔ:və] ‘slave’, and [ˈljɔxt] ‘bad’. The consonant clusters /trj/ and /krj/ are often realized as [tj] and [kj], respectively (e.g., [ˈtjɔ:xtə] ‘funnel’, [ˈkjo:pə] ‘to creep’). Inflected verb forms may contain codas with up to four consonants after a short vowel and after /ɔ:/ (/mpst/, /ndst/, /nkst/, /lpst/, /ldst/, /lkst/, e.g. [vrɪmpst] ‘writhe 2SG.PRS’, [bɪndst] ‘bind 2SG.PRS’, [stjɔ:ŋkst] ‘stink 2SG.PST’, [hɛlpst] ‘help 2SG.PRS’, [jɛldst] ‘hold for 2SG.PRS’, [mɛlkst] ‘milk 2SG.PRS’).

Vowels

Monophthongs

Saterland Frisian has 10 short and 10 long monophthongs. In addition, the vowel system of Saterland Frisian includes [ə], which is restricted to unstressed syllables, such as the weak form *ze* ‘they’ included in the examples below.



The close vowels can be divided into three classes: short lax vowels (/ɪ ʏ ʊ/), short tense vowels (/i y u/), and long tense vowels (/i: y: u:/). The mid vowels comprise short lax vowels (/ɛ œ ɔ/), long lax vowels (/ɛ: œ: ɔ:/), and long tense vowels (/e: ø: o:/). The open vowels /a/ and /a:/ differ mainly in duration. Scharrel speakers replace /a:/ with /a/ before tautosyllabic alveolar plosives.

ɪ	'lɪnən	'linen ADJ'	i	'linə	'string'	i:	'li:nə	'backrest'
ʏ	'jʏptə	'depth'	y	'pytə	'bags'	y:	'dy:vəl	'devil'
ʊ	ful	'full'	u	ful	'foul ADJ'	u:	fu:l	'many'
ɛ	'dɛkə	'to cover'	ɛ:	'dɛ:kə	'cover'	e:	'brɛ:kə	'breaks'
œ	'mœlkə	'to milk'	œ:	'mœ:gə	'taste'	ø:	'sø:gjə	'to lactate'
ɔ	'lɔdɛjə	'to laze'	ɔ:	'lɔ:də	'drawer'	o:	'klo:də	'dresses'
a	'takə	'branch'	a:	'ta:gjə	'to annoy'	ə	zə	'they'

The close front rounded vowel /y:/ is largely restricted to loans from Low German. The close tense vowels /i y u/ are shorter than /i: y: u:/ but usually a bit longer and more peripheral than the lax vowels /ɪ ʏ ʊ/ (cf. Heeringa, Peters & Schoormann 2014). There is some disagreement about the distribution of long and short tense vowels (cf. Fort 1971) and the distinction is on retreat. Whereas there are still a few older speakers who have preserved the opposition between short and long tense vowels, most younger and middle-aged speakers replace the short tense with long tense vowels, which results in binary oppositions between short lax /ɪ ʏ ʊ/ and long tense /i: y: u:/, as in Northern Standard German (see Tröster 1996, 1997, Schoormann et al. 2015).

Figure 1 shows mean values of monophthongs produced in nonce words of the form /hVt/ recorded from 13 male speakers of Ramsloh Saterland Frisian aged between 50 and 75 with three repetitions. To obtain a target vowel the speakers were instructed to read a /hVt/ word with the intended vowel immediately after a rhyming Saterland Frisian word (e.g. *Hoot* after *sfr. Poot* 'paw' to elicit /o:/; for further details see Schoormann et al. 2015). As the

productions of /i y u/ and /i: y: u:/ do not differ either by duration or by F1 or F2, we conclude that the speakers have merged the short and long close tense vowels.

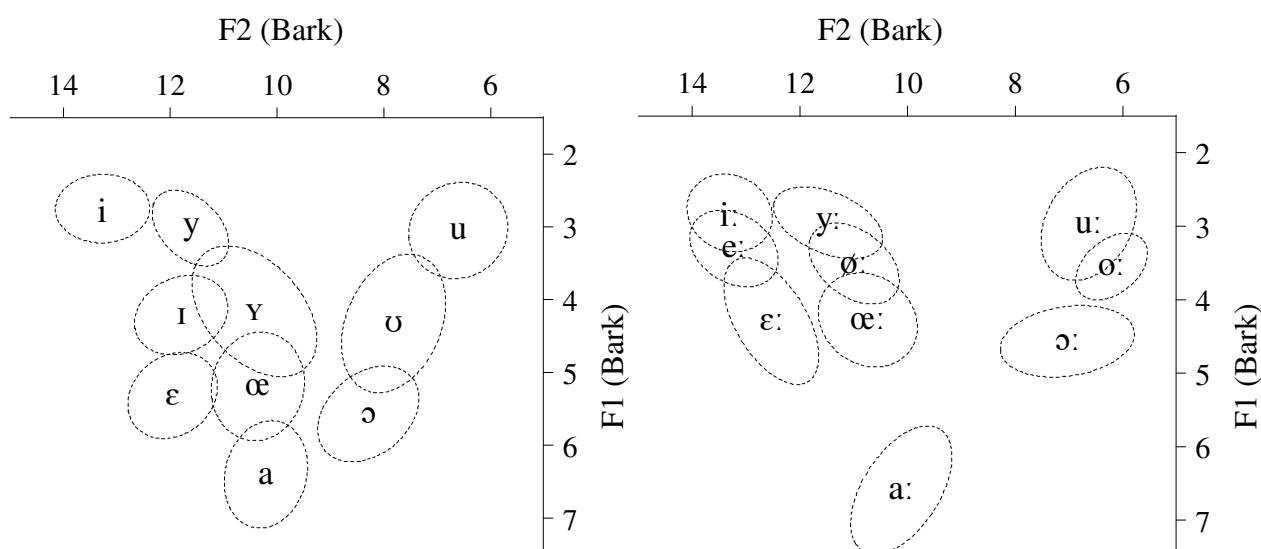


Figure 1. Mean formant frequencies at 50% of vowel duration of short (left panel) and long monophthongs (right panel) in /hVt/ words of Ramsloh Saterland Frisian (after Schoormann et al. 2015). Ellipses indicate one standard deviation. Formant extraction was carried out using the acoustical analysis software PRAAT (Boersma & Weenink 2015).

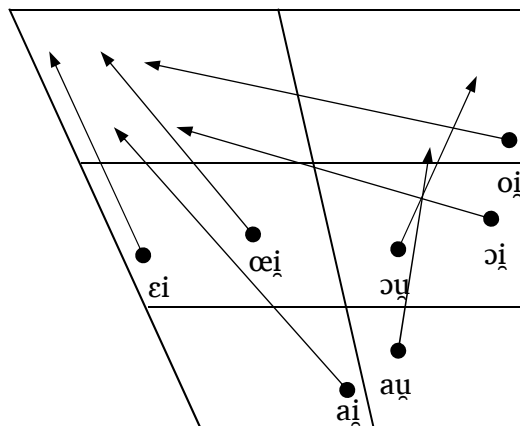
Diphthongs

Saterland Frisian has seven phonemic diphthongs, all of which are falling and closing: /oi̯/, /e̯i̯/, /œ̯i̯/, /ɔ̯i̯/, /ai̯/, /ɔ̯u̯/, and /au̯/ (cf. Bussmann (2004: 82) who, however, omits /oi̯/).

The first part of the diphthongs may be lengthened but there are no durational contrasts between the phonemic diphthongs. The diphthong /ɔ̯i̯/ is realised as [ɔ̯:i̯] except before tautomorphemic voiceless plosive (e.g. [brɔ̯:it] ‘scald 3SG.PST’ with heteromorphemic /t/ vs. [ˈflɔ̯i̯tjə] ‘to pipe’ with tautomorphemic /t/; cf. Bussmann 2004: 76f., 80f.). The diphthongs may end with a more centralized vowel. This is especially true for /ai̯/, /au̯/, and /ɔ̯i̯/, which may be realised as [a̯i̯], [a̯u̯], and [ɔ̯i̯], respectively (see formant values in Figure 2 below). As the location of the final part of these diphthongs in the F1-F2 space is variable we assume that they are diphthongs which end with a tense vowel but may be realized with

different degrees of undershoot (cf. Fort 2015 and Bussmann 2004). The second part of /œj̥/, /oj̥/, and /ɔj̥/ may be both centralized and rounded, resulting in [oɣ̥], [œɣ̥], and [ɔɣ̥].

oi̥	no:it	‘never’
ei̥	neɪ	‘new’
œi̥	mœi:ɔsk	‘vain’
ɔi̥	ko:ɪ	‘key’
ai̥	na:ɪ	‘near’
ɔu̥	nɔ:ɔst	‘knag’
au̥	na:ɔ	‘accurate’



The diphthong /y̥i̥/, which Fort (2015) finds in a single word, *Skiüüi* ‘meat juice’, was unknown to our speakers. Fort’s (2015) [u:ɪ], which is attested for [tru:ɪjə] ‘to threaten’, is an allophonic variant of /u:/ before /j/.

Saterland Frisian has five additional diphthongs, [ɪɣ̥], [iɣ̥], [i:ɣ̥], [e:ɣ̥], and [ɛɣ̥], which are allophones of the phoneme sequences /ɪv/, /iv/, /i:v/, /e:v/, and /ɛv/, respectively. When /v/ occurs in intervocalic position, the diphthong is followed by a voiced bilabial approximant [β].

	Phonemic		Allophonic	
/i:v/	'bli:vən	[i:ɣ̥]	'bli:ɣ̥βən	‘stayed’
/iv/	griuv	[iɣ̥]	griɣ̥	‘advantage’
	'gliuvə		'gliɣ̥βə	‘cleft’
/ɪv/	'kɪvə	[ɪɣ̥]	'kɪɣ̥βə	‘chin’
/e:v/	'le:və	[e:ɣ̥]	'le:ɣ̥βə	‘to believe’
/ɛv/	hɛv	[ɛɣ̥]	hɛɣ̥	‘hit 3SG.PST’

'hevən

'heɥβən

'hit PP'

Just as the distinction between /i:/, /i/, and /ɪ/ is under pressure, there is a tendency to merge /i:v/, /iv/, and /ɪv/. Table 2 lists the vowel+*/v/* sequences that were found to be merged in at least one of the three local dialects by Schoormann et al. (2015).

Table 2. Mergers of vowel+*/v/* sequences.

/ɪv/-/iv/	Ramsloh, Strücklingen, Scharrel
/iv/-/i:v/	Ramsloh
/ɪv/-/i:v/	Ramsloh, Strücklingen

According to Fort (2015: XV) there is an additional diphthong [ɛ:ɥ] in the pronoun *säüuwen* ‘self’, which is a variant of the *säärm*, and which our speakers did no longer use.

Figure 2 shows mean values for the phonemic diphthongs (left panel) and allophonic realizations of vowel+*/v/* sequences (right panel) in /hVt/ words, which were elicited by using rhyming dialect words and recorded two times from the 13 Ramsloh speakers (see section of monophthongs).

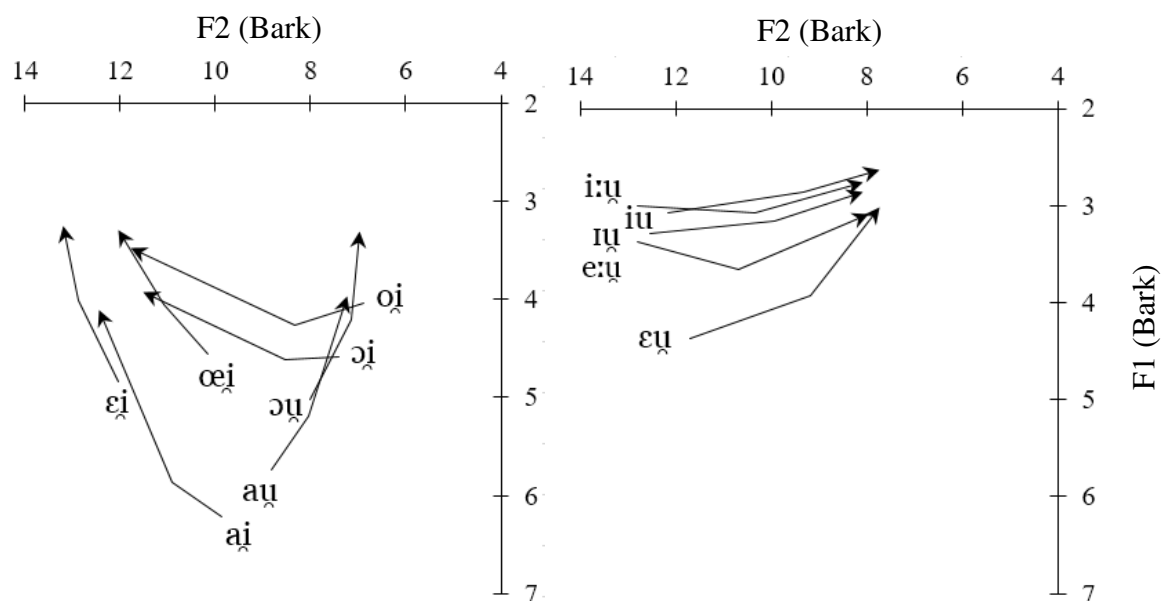


Figure 2. Mean formant frequencies (in Hz) of Ramsloh diphthongs in /hVt/ words measured at 20%, 50%, and 80% of diphthong duration (beginning, center and end of arrow). Left panel: phonemic diphthongs. Right panel: allophonic variants of /i:v/, /iv/, /iv/, /e:v/, and /ev/.

Word stress and intonation

The distribution of primary word stress in Saterland Frisian can be characterized with reference to the phonological word as defined by Wiese (2000) for Standard German. Specifically, a phonological word in Saterland Frisian can consist of one of the following: (i) a lexical stem, which may be extended by (a) prefixes with a reduced vowel, (b) the prefix /bi/, or (c) suffixes that begin with a vowel; (ii) a prefix with a full vowel (except /bi/); (iii) a suffix that has a full vowel and begins with a consonant. Morphological words comprise one or more phonological words. In morphological words comprising a single phonological word the primary word stress falls on the last stressed syllable. If they comprise more than one phonological word, the primary word stress falls on the last stressed syllable of the first phonological word. An illustration of how stress works in Saterland Frisian complex words is given below. Phonological words are in parentheses. Stressed syllables are underlined. Note that the rules do also apply to loans like /zə'lɔ:t/ and /,elə'fant/.

Words	Morphemes	Phonological words	Meaning
/ˈtʊmə/	tʊmə	(<u>tʊmə</u>)	‘thumb’
/zə'lɔ:t/	zə'lɔ:t	(zə <u>lɔ:t</u>)	‘salad’
/bi'prɔ:ljə/	bi + prɔ:l + jə	(bi <u>prɔ:ljə</u>)	‘to praise’
/ˈut,drɪŋkə/	ut + drɪŋk + ə	(<u>ut</u>)(<u>drɪŋkə</u>)	‘to drink up’
/ˈdɪskdɔːk/	dɪsk + dɔːk	(<u>dɪsk</u>)(<u>dɔːk</u>)	‘tablecloth’
/,e:lə'fant/	e:ləfant	(<u>e:ləfant</u>)	‘elephant’

Fort (2015) lists a number of compounds which apparently are loans from Northern Standard German (nsg.) but have a different stress pattern than their German cognates, such as sfrs.

,äärm 'zoalig vs. nsg. 'arm, selig ‘miserable’, sfrs. ,licht 'fäidig vs. nsg. 'leicht ,fertig

‘careless’, and *sfr.* , *stjúur* ‘fräi’ vs. *nsg.* ‘*steuer frei*’ ‘tax-free’. The deviating stress patterns of the Saterland Frisian words may result from treating the German loans as non-compounds consisting of a single phonological word whose last stressed syllable attracts the primary word stress.

Saterland Frisian shares most if not all intonation contours with Northern Standard German (see Fort 1995: 527, Peters 2008; for Northern Standard German see Grice, Baumann & Benz Müller 2005 and Peters 2014). In today’s language, there is no clear indication of a word accent distinction between *gestossener Ton* (‘push tone’) and *geschliffener Ton* (‘dragging tone’), as assumed by Siebs (1889) for the Saterland Frisian of his time.

Transcription of recorded passage

The passage was recorded from the female speaker from Ramsloh who distinguishes between short and long tense close vowels (cf. Heeringa et al. 2014). The symbols [] and [] are used to mark minor and major intonational phrases.

Phonemic transcription

di 'nɔɥdə,vi:nd ʊn ju 'sʊnə || 'ɪnsən 'stre:dən sɪk di 'nɔɥdə,vi:nd | ʊn ju 'sʊnə | vəl fɔn do be: |
 vɛɪl di 'stɛ:rkərə vɑ:s || as a:n 'vɔndərs,mɔn | di ɪn a:n 'vɔ:rmən 'mɔ:ntəl 'pakəd vɑ:s | dən vaɪ
 lɔ:ŋs kɔ:m || jo 'vudən 'e:niç | dət di fɔr dən 'stɛ:rkərə 'jɛɪldə sku:l | di dən 'vɔndərs,mɔn tvɪŋt |
 sɪn 'mɔ:ntəl 'uttɔ,lukən || di 'nɔɥdə,vi:nd 'blɔ:zədə mɛt 'alə 'krɔ:zjə | 'ɔ:vər 'umso mɔ:r hi
 'blɔ:zədə | 'umso 'fɛ:stər 'pakədə sɪk di 'vɔndərs,mɔn | ɪn sɪn 'mɔ:ntəl ɪn || 'ɛntəl k 'rɔ:tə di
 'nɔɥdə,vi:nd dən kamp ap || nu 'mɔ:kədə ju 'sʊnə mɛd 'hirə 'fryntəl kə 'strɔ:lən | ju lɔft vɔ:rm
 || ʊn al 'ɛtər mɪn 'ɔ:gəŋ,blikə | lɔ:k di 'vɔndərs,mɔn | sɪn 'mɔ:ntəl ut || do 'mɔ:stə di
 'nɔɥdə,vi:nd 'tɔɥ,ɾe:kə | dət ju 'sʊnə fɔn hɪm be: | di 'stɛ:rkərə vɑ:s ||

Allophonic transcription

di 'nɔɥdə,vi:nd^h ʔʊn ju 'sʊnə^h || 'ɪmsn̩ 'ʃtre:d̩n̩ sɪk^ɪ di 'nɔɥdə,vi:nd^h | ʔʊn ju 'sʊnə^h | vəl fɔn do
 be: | vəl di 'ʃtɛ:krə vɑ:s || ʔas ʔa:n 'vɔndəs,mɔn | di ɪm̩ ɔ:n 'vɔ:ɣm̩ 'mɔ:nɪl̩ pakət^ɪ vɑ:s | dən
 va:ɪ lɔ:ŋs kɔ:m || ju 'vud̩n̩ 'ʔe:niç | dət^ɪ d̩i: fɔ dən 'ʃtɛ:krə 'jɛɪldə sku:l | d̩i dən 'vɔndəs,mɔn

t^hvɪŋt | sin 'mɔ:nɾl̩ 'ʔut^hɾɔ,luʔɪŋ || di 'nɔɥdɛvi:n 'blɔ:zɛdɛ mɛ 'ʔɛlɛ 'krɔ:zɛ | 'ʔa:vɔ 'ʔumso mɔ:ɐ
 hi 'blɔ:zɛdɛ | 'ʔumso 'fɛ:stɛ 'pakɛdɛ sik^ɾ di 'vɛndɛs,mɔn | ʔɪn sin 'mɔ:nʔl̩ ʔɪn || 'ɛntɛlk^ɾɾɔ:tɛ di
 'nɔɥdɛvi:ndɾ^ɾ dɛn kamp ʔap^ɕ || nu 'mɔ:kɛdɛ ju 'sɔnɛ mɛ:ɥiɛrɛ 'fry'ntɛlkɛ 'ʃtrɔ:lɛn | ju lɔft vɔ:
 ɛm || ʔun ɔl 'ʔɛtɛ min 'ʔɔ:ɡɪ,blɪkɛ | lo:k^ɾ di 'vɛndɛs,mɔn | sin 'mɔ:nɾl̩ ʔut^h || do 'mɔɣstɛ di
 'nɔɥdɛvi:ndɾ^ɾ 't^hɔɥrɛ:kɛ | dɛt ju 'sɔnɛ fɔn him be: | di 'ʃtɛɣkɛrɛ vɑ:s ||

Orthographic version

Die Noudewiend un ju Sunne

Insen streden sik die Noudewiend un ju Sunne, wäl fon do bee wäil die Stäärkere waas, as 'n Wondersmon, die in 'n woormen Moantel pakked waas, dän Wai loangs koom. Jo wuden enig, dät die foar dän Stäärkere jälde skuul, die dän Wondersmon twingt, sin Moantel uuttouluuken. Die Noudewiend bloazede määd alle Kroazje, oaver jee moor hie bloazede, uumso fääster pakkede sik die Wondersmon in sin Moantel ien. Äntelk roate die Noudewiend dän Kamp ap. Nu moakede ju Sunne määd hie früüntelke Stroale ju Luft woorm, un al ätter min Oogenblikke look die Wondersmon sin Moantel uut. Do moaste die Noudewiend toureke, dät ju Sunne fon him bee die Stäärkere waas.

Acknowledgements

The research reported in this paper has been funded by the *German Research Foundation* (DFG), grant number PE 793/2-1. I thank Marron C. Fort, Wilbert J. Heeringa, and Heike E. Schoorman for their support and I am grateful to all consultants, in particular to Gretchen Grosser, Conrad Niemeyer, and the late Adelheid Pörschke, for giving me their time and best efforts.

References

- Boersma, Paul & David Weenink. 2015. Praat: doing phonetics by computer [Computer program]. Version 5.4.06, retrieved from <http://www.praat.org/>
- Bussmann, Kathrin S. 2004. *Diphthongs in Frisian. A comparative analysis of phonemic inventories past and present*. Heidelberg: Winter.
- Fort, Marron C. 1971. Zur Phonologie des Saterfriesischen. *Us Wurk*, 20, 37-41.
- Fort, Marron C. 1980. *Saterfriesisches Wörterbuch*. Hamburg: Buske.

- Fort, Marron C. 1995. Niederdeutsch und Friesisch zwischen Lauwerzee und Weser. In Hans-Joachim Wätjen (ed.), *Zwischen Schreiben und Lesen: Perspektiven für Bibliotheken, Wissenschaft und Kultur. Festschrift zum 60. Geburtstag von Hermann Havekost*, 497-529. Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg.
- Fort, Marron C. 2004. Sprachkontakt im dreisprachigen Saterland. In Horst H. Munske (ed.), *Deutsch im Kontakt mit germanischen Sprachen*, 77–98. Tübingen: Niemeyer.
- Fort, Marron C. 2015. *Saterfriesisches Wörterbuch. Mit einer phonologischen und grammatischen Übersicht*. Hamburg: Buske. (2nd rev. ed.)
- Grice, Martine, Stefan Baumann & Ralf Benz Müller 2005. German intonation in Autosegmental-Metrical Phonology. In Sun-Ah Jun (ed.), *Prosodic typology: The phonology of intonation and phrasing*, 55-83. Oxford: Oxford University Press.
- Heeringa, Wilbert, Jörg Peters & Heike Schoormann. 2014. Segmental and prosodic cues to vowel identification: The case of /ɪ i i:/ and /ʊ u u:/ in Saterland Frisian. In Nick Campbell, Dafydd Gibbon & Daniel Hirst (eds.), *Proceedings of Speech Prosody 7*, 643-647.
- Kohler, Klaus J. 1990. Comment on German. *Journal of the International Phonetic Association* 20(2), 44-46.
- Kramer, Pyt. 1961. *Seelter Woudebouk*. Ljouwert: Fryske Akademy.
- Kramer, Pyt. 1982. *Kute Seelter Sproakleere Kurze Grammatik des Saterfriesischen*. Rhaderfeen: Ostendorp.
- Peters, Jörg. 2008. Saterfrisian intonation. An analysis of historical recordings. *Us Wurk* 57, 141-169.
- Peters, Jörg. 2014. *Intonation*. Heidelberg: Winter.
- Schoormann, Heike, Heeringa, Wilbert & Peters, Jörg. 2015. Regional variation of Saterland Frisian Vowels. In *Proceedings of the 18th International Congress of Phonetic Sciences*, The University of Glasgow, Glasgow, UK, No. 0407.
- Siebs, Theodor. 1889. *Zur Geschichte der englisch-friesischen Sprache*. Wiesbaden: Sändig.
- Siebs, Theodor. 1901. Geschichte der friesischen Sprache. In Hermann Pauls (ed.), *Grundriß der germanischen Philologie*, Bd. 1. 1152-1464. Straßburg: Trübner (2nd ed.).
- Sjölin, Bo. 1969. *Einführung in das Friesische*. Stuttgart: Metzler.
- Stellmacher, Dieter. 1998. *Das Saterland und das Saterländische*. Oldenburg: Isensee.
- Tröster, Stefan. 1996. Phonologischer Wandel im Saterländischen durch Sprachkontakt. *Niederdeutsches Jahrbuch* 119, 179-191.

Tröster, Stefan. 1997. *Phonologie des Saterfriesischen*. Master Thesis, University of Osnabrück 1995 (rev. ed.).

Wiese, Richard. 2000. *The phonology of German*. Oxford: Oxford University Press.