# [0852] Saterfrisian intonation An analysis of historical recordings

Jörg Peters

## *1 Introduction*[1]

Saterfrisian is spoken in the joint community of Saterland (sfr. Seelterlound) in the north-western corner of the district of Cloppenburg in Lower Saxony. The community of Saterland consists of the four villages Ramsloh, Strücklingen, Scharrel, and Sedelsberg. According to a survey by Stellmacher (1998: 27), an estimated 2250 long-time residents of Saterland aged 14 years and above assessed themselves as speaking Saterfrisian in 1995/96.

Saterfrisian is the only East Frisian language that has survived the expansion of Dutch and German Low Saxon in the coastal regions of the Netherlands and Northern Germany since the Late Middle Ages. Saterfrisian therefore offers a unique opportunity to study an East Frisian language based on sound recordings in acoustic detail. One research area which particularly benefits from the acoustic analysis of recorded speech is the study of intonation.

The present paper gives an overview of the phonology of Saterfrisian sentence intonation. Using the intonation of Northern Standard German as a frame of reference, we seek to identify the inventory of tones and tunes of Saterfrisian. We use autosegmental-metrical phonology as our theoretical framework. That is, we assume a tonal structure that is represented separately from the segmental string and consists of a linear sequence of local events. These events are lexical or postlexical tones, which associate to prosodic units or align with the edges of those units.

The results of our analysis are somewhat tentative for two reasons. First, to our knowledge this is the first attempt at formally characterizing the intonation of Saterfrisian. The only hint in the literature is Marron Fort's observation that many children who still speak Saterfrisian use High German intonation (1995: 527).[2] Second, our analysis is exclusively based

---

1. I am grateful to Pyt Kramer for allowing me to use his extensive collection of Saterfrisian tape recordings for intonational analysis. I also thank Carlos Gussenhoven, Marron Fort, and an anonymous reviewer for helpful comments.

2. For West Frisian, Tiersma (1999, 108, 128-131) gives a short overview of the distribution of stresses and various pitch patterns. In declarative sentences, Tiersma

on natural speech. While natural speech is a valuable source for identifying tonal inventories and conversational functions of pitch patterns, the lack of controlled speech data restricts our analysis from testing specific hypotheses on the interaction between tonal and segmental structure.

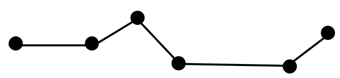
The paper is organized as follows. Section 2 gives an outline of an autosegmental analysis of intonation and its application to the intonation of Northern Standard German. Section 3 provides background information on the speech materials used. Sections 4-6 report the results of our analysis. A conclusion is given in section 7.

We hope that out study will be of interest not only to experts in Frisian linguistics but also to a wider audience interested in prosodic typology.

## *2 Autosegmental-metrical analysis of intonation*

### *2.1 Basic principles*

Autosegmental-metrical phonology decomposes individual pitch contours into sequences of pitch targets and (linear) transitions between these targets. The pitch targets are specified by tones, which may either be high (H) or low (L). An intonation contour, or tune, can be defined as a sequence of such tones within a single intonational phrase. Figure 1 illustrates the representation of the Fall-Rise as the tone sequence %L H*L H%, with H*L being a nuclear falling pitch accent and %L and H% being initial and final boundary tones, respectively (the black dots mark pitch targets).



(1) %L H* L H%

---

observes what is known as the nuclear fall. The fall may be preceded by one or more prenuclear falling accents within the same intonational phrase. The same pattern is found in *wh*-questions ("specification questions"). Declarative questions ("intonation questions") may be formed by using a nuclear rise. *Yes-no* questions may be formed by using a nuclear fall-rise. Finally, alternative questions may either combine a rise and a fall or two single falls. Hoekstra (1991: 100f) mentions an additional nuclear pitch pattern in calls and questions. Whereas the stylized pitch patterns given resemble incomplete falling movements on the final word, the description of the pitch pattern on "Soks fôlt nêt taa-a" on p. 101 suggests the use of a calling contour similar to that found on final words in British English, Standard Dutch, and German.

Note that two adjacent high or low pitch targets are usually specified by a single tone spreading rightwards rather than by a sequence of two like tones. In (1), each L tone specifies two low targets.

Autosegmental phonology distinguishes two tonal categories, pitch accents and boundary tones (or edge tones). Pitch accents consist of a starred tone (H* or L*), which may be preceded by a leading tone or followed by a trailing tone. Starred tones associate to stressed syllables, while leading and trailing tones remain unassociated. As a consequence, the timing of starred tones is more directly affected by the timing of stressed syllables than the timing of leading and trailing tones. Boundary tones derive from a phrase boundary and usually occur in the vicinity of such boundaries.[3]

Intonation contours are organised in intonational phrases (IPs) (Pierrehumbert 1980, Nespor & Vogel 2007, Ladd 2008). There are two types of IPs: non-clitic and clitic (Gussenhoven 2004). Non-clitic IPs are self-contained and may occur in isolation. They comprise one obligatory accent, which is the nuclear accent. The nuclear accent may be preceded by one or more prenuclear accents. Clitic IPs occur only after another IP and do not contain any pitch accent.

For a comprehensive introduction to the autosegmental-metrical analysis of intonation the reader is referred to Ladd (2008) and Gussenhoven (2004).

### *2.2 Intonation of Northern Standard German*

The intonational grammar presented here is adopted from Peters (2005, 2006, chap. 5). The phonological component is based on the notation system ToDI (Transcription of Dutch Intonation), which was developed for Standard Dutch and later applied to British English (s. Gussenhoven 2004, 2005).

---

3. Our analysis conforms to the principles of ToDI (Transcription of Dutch Intonation) developed by Gussenhoven and colleagues (Gussenhoven 2005). In the classical framework (Pierrehumbert 1980, Beckman & Pierrehumbert 1986, Pierrehumbert and Beckman 1988), the Fall-Rise in (1) would be represented as H* L-H%, with L being a phrase accent rather than a trailing tone of H*. Note that in our analysis a trailing tone does not necessarily occur close to the preceding starred tone.

### *2.2.1 Basic grammar*

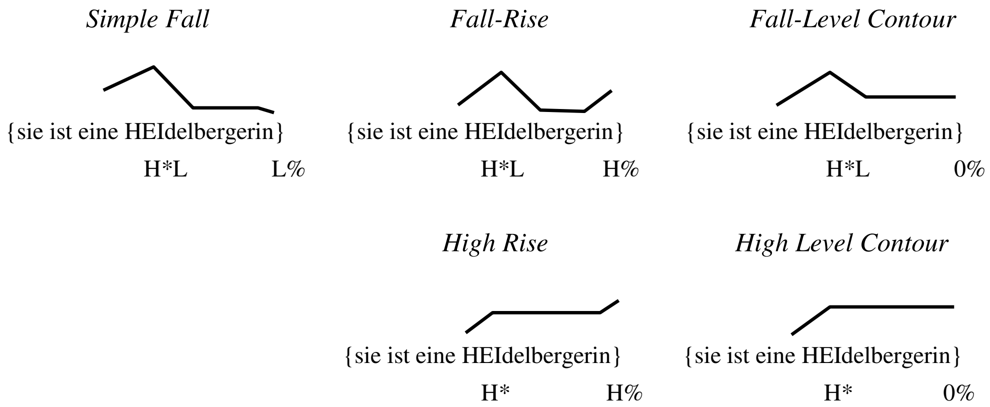
Northern Standard German (NSG) has four pitch accents, two initial boundary tones, and two final boundary tones given in (2).

| | | | |
|---|---|---|---|
| (2) | a. | Pitch accents | H*L, H*, L*H, L* |
| | b. | Initial boundary tones | %L, %H |
| | | Final boundary tones | L%, H% |

NSG, as other Westgermanic languages, applies a phonetic implementation rule which upsteps H% when preceded by another H tone. Accordingly, in tone sequences likes H* H% and L*HH% the final high tone is realized extra-high.

Unlike in the classical approach of Pierrehumbert (1980), plateau contours are represented by a toneless final IP boundary marked by 0%. In plateau contours the tonal target at the final IP boundary is specified by the preceding tone spreading rightwards.

The combination of the four pitch accents H*L, H*, L*H and L* in nuclear position with L%, H%, and 0% at the final IP boundary generates 12 nuclear tunes. Figure 1 shows the eight tunes that are common in NSG.



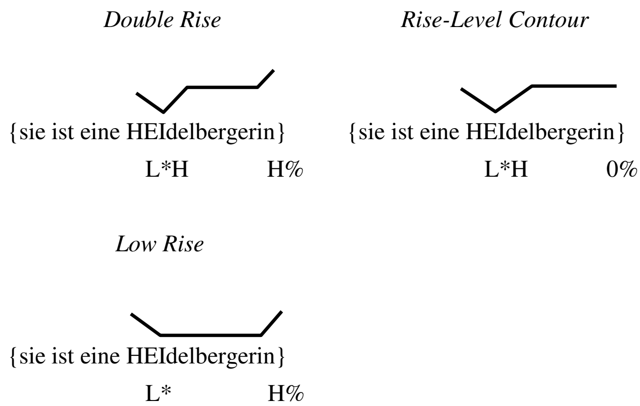



Figure 1: Nuclear tunes of NSG for *Sie ist eine Heidelbergerin* („She is a Heidelberger“)

The nuclear tunes in Figure 1 may freely be combined with one or more instances of the prenuclear pitch accents H*L, H*, L*H, L*, and with the initial boundary tones %H and %L. The possible tunes can be generated by the finite state grammar given in (3)[4].

(3)
$$\begin{Bmatrix}\%\mathrm{H}\\ \%\mathrm{L}\end{Bmatrix}\begin{Bmatrix}\mathrm{H*(L)}\\ \mathrm{L*(H)}\end{Bmatrix}_0^n\begin{Bmatrix}\mathrm{H*(L)}\\ \mathrm{L*(H)}\end{Bmatrix}\begin{Bmatrix}\mathrm{H\%}\\ \mathrm{L\%}\\ 0\%\end{Bmatrix}$$

The tunes H* L%, L*HL%, L* L%, and L* 0% are extremely rare or absent in NSG. Usually such tunes are marked as ungrammatical by introducing additional rules, such as the no-slump rule of Gussenhoven (2005), excluding them from the set of possible tunes. In our approach, their absence is a consequence of an incompatibility of semantic features involved. For a semantic interpretation of the tonal units see Peters (2006, chap. 5).

From (3) we can derive two tonal contrasts occurring in several positions of the IP, as shown in Table 1.

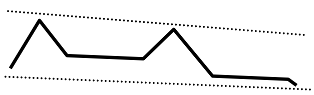
4. Parenthesized tones are optional. H*(L), for example, stands for H*L and H*.

Table 1. Basic tonal contrasts of NSG. Contrasting tones or tone positions are given in bold type.

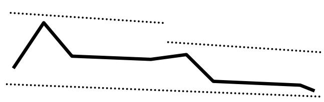
| Tonal contrast | Position in IP | Cases |
|---|---|---|
| H vs. L | nuclear and prenuclear accented tone<br><br><br>initial IP boundary<br><br>final IP boundary | **H*** vs. **L***<br>**H***L vs. **L***H[5]<br><br>%**H** vs. %**L**<br><br>**H**% vs. **L**% |
| T vs. Ø | trailing tone<br><br><br>final IP boundary | H***L** vs. H*<br>L***H** vs. L*<br><br>**H**% vs. **Ø**%<br>**L**% vs. **Ø**% |

### *2.2.2 Extended grammar*

H tones can be downstepped, which we indicate by adding "!". Accentual downstep lowers the pitch accent containing the H tone and reduces the overall pitch range. (4) illustrates accentual downstep for H*L in nuclear position (the dotted lines mark the upper and lower boundaries of the tonal space used for intonational purposes).



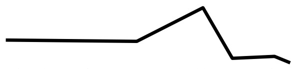
(4) a. {sIE ist eine HEIdelbergerin}
%L H*L H*L L%



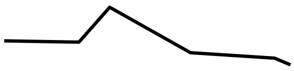
b. {sIE ist eine HEIdelbergerin}
%L H*L !H*L L%

5. Note that L does not contrast with H in the position of the trailing tone. The tone quality of the trailing tone is predictable from the choice of the starred tone. After H* the trailing tone is low and after L* it is high.

NSG uses two more accentual modifications of the H*L accent known as late and early peak (Kohler 1995). In late peak condition the nuclear pitch peak occurs on the first postnuclear syllable, as illustrated in (5a). In early peak condition, the nuclear pitch peak occurs in the syllable preceding the nuclear syllable, as illustrated in (5b). The late peak is represented here as <H*L and the early peak as a combination of downstep and a high leading tone, that is H+!H*L.



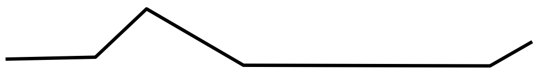
(5) a. {sie ist eine HEIdelbergerin}
%L <H*L L%



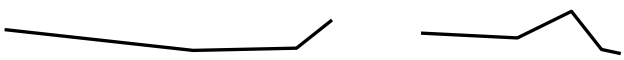
b. {sie ist eine HEIdelbergerin}
%L H+!H*L L%

*2.2.3 Compound Fall-Rise*

NSG uses a falling-rising contour which in the British School of intonation analysis is widely known as the compound Fall-Rise (e.g., O'Connor and Arnold 1973). IPs bearing the compound Fall-Rise can be transformed into two IPs bearing a rise and a fall, respectively, as illustrated in (6)



(6) a. {du wirst STAUnen wenn du die ergebnisse siehst}
%L H* L (L*) H%
*you will be aMAZED when you see the results*



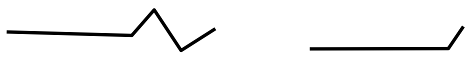
b. {wenn du die erGEBnisse siehst} {wirst du STAUnen}
%L L* H% %L H*L L%
*when you see the reSULTS* *you will be aMAZED*

As compound fall-rises can be analysed as incorporating two IPs into a single IP, we never find the compound fall-rise on a single word (O'Connor & Arnold 1973: 29).

*2.2.4 Clitic IPs*

As in Standard Dutch, NSG generates clitic IPs by copying the last two tones of the preceding IP (Gussenhoven 2004). (7) lists some common clitic phrases marking non-clitic IPs by {...} and clitic IPs by ... }.

(7) a. {Du bist entLASsen} sagte Jonathan}
%L H*L L% L L%
*You are fired* *Jonathan said*



b. {Du bist entLASsen} sagte Jonathan} und deine Frau auch
%L H*L H% L H%
*You are fired* *Jonathan said* *and your wife too*

Polarity tags, on the other hand, often form independent IPs. In this position they are accented and can bear a tune different from the tune of the preceding IP, as illustrated in (8).

(8) {Du bist entLASsen} {NICHT}
%L H*L L% %L L* H%
*You are fired* *aren't you?*

For a more detailed account and a semantic interpretation of the tonal units introduced in this section see Peters (2005, 2006).

*3 Speech materials*

Our analysis of Saterfrisian intonation is based on nine tape recordings made by Pyt Kramer in 1968-1984. These recordings were selected from a larger collection containing more than 200 recordings, which were digitized and made available as MP3 files.

Each of the selected recordings contains conversations between Pyt Kramer and one informant. Our informants were born between 1895 and 1930 and they were residents of Ramsloh (B11, B135, B148), Strücklingen (B04, B86, B158), Scharrel (B82, B91), and Sedelsberg (B29a). The conversations were initiated by Pyt Kramer to gather information about the vocabulary of Saterfrisian but they also contain extensive narrative passages of each informant. For intonational analysis, we selected the first 300 IPs of each conversation getting a total of 2700 IPs. Passages containing code-switching were excluded from analysis.

## *4 Stress and phrasing*

The assignment of word and sentence stress in Saterfrisian (SFR) is very similar to that of High and Low German. Unusual word stress is found in some compounds and other morphologically complex forms, mostly loans from High German. Examples from Fort (1980) are SFR ˌ*äärm*ˈ*zelich* ' NSG ˈ*arm*ˌ*selig* 'miserable' and SFR ˌ*licht*ˈ*sinnich* NSG ˈ*leicht*ˌ*sinnig* 'careless'. (9) gives some more examples produced by our informants.[6]

(9) a. ˌBäidensˈtied (R, B135-678), NSG ˈKinderˌzeit 'childhood'
b. ˌKööakenˈdoor(e) (R, B148-91), NSG ˈKüchenˌtür 'kitchen door'
c. ˌGrooˈdoore (R, B148-48), NSG ˈGroßˌ tür 'large door' (of a farmhouse) (Kramer 1961)
d. ˌhandˈbreet (R, B148-530), NSG ˈhandˌbreit 'hand' (measure)
e. ˌfürchterˈlich (SED, B29a-177), NSG ˌ ˈfürchterˌlich 'horrible'
f. ˌvolksˈtümlich (SCH, B82-52, 64) NSG ˈvolksˌtümlich 'popular'
g. ˌwiederˈspenstich (SCH, B91-1475), NSG ˈwiderˌspenstig 'recalcitrant'

The domain of intonational phrasing is the intonational phrase (IP). Like other Westgermanic languages, SFR has both non-clitic and clitic IPs. We return to clitic IPs in sec. 5.5.

## *5 Saterfrisian intonation*

SFR uses all the nuclear tunes assumed in sec. 2.2.1 for NSG, that is the Simple Fall (H*LL%), the Fall-Rise (H*LH%), the Fall-Level Contour (H*L0%), the High Rise (H* H%), the High Level Contour (H* 0%), the Double Rise (L*HH%), the Rise-Level Contour (L*H0%), and the Low Rise (L* H%). SFR also makes use of the accentual modifications

---

6. In the following, we use the orthography of Fort (1980). Abbreviations used are S for Strücklingen, R for Ramsloh, SCH for Scharrel, and SED for Sedelsberg.

mentioned in sec. 2.2.2, that is accentual downstep, late peak, and early peak. Finally, SFR has a compound Fall-Rise.

Even if the intonational system of SFR looks very much like that of NSG, we observe unexpected phonetic features of Saterfrisian intonation, some of which may suggest differences in the phonological representation. In the remainder of this chapter, we give an overview of these "anomalies" of SFR intonation.

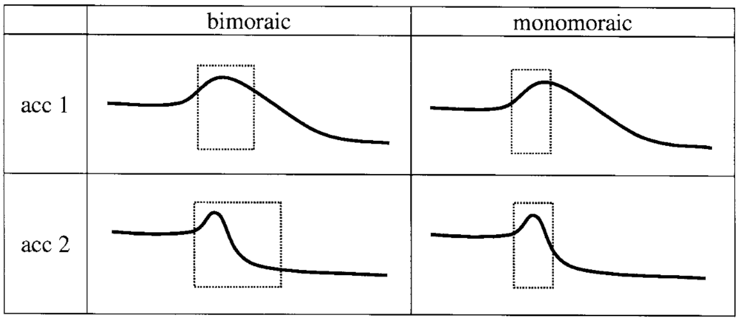
### *5.1 Simple Fall*

SFR, like NSG, uses the Simple Fall in neutral statements and questions. In both languages, the Simple Fall is by far the most frequent contour. Our SFR speakers used the Simple Fall in 52.7% of all statements ($N$ = 2589) and 25.2% of all questions ($N$ = 103).

In a number of utterances, the Simple Fall of SFR differs from that of NSG by the timing of the falling pitch movement. While NSG speakers are reported to reach the baseline typically near the first postnuclear stress (Grice et al. 2000), SFR speakers use two types of falling movements, which we refer to as accent 1 and accent 2, respectively.

In accent 1 the pitch falls gradually starting on the accented syllable and reaching low level near the next postnuclear stress, as Grice et al. observed for NSG. In bimoraic syllables, that is syllables containing a long vowel, a diphthong, or a short vowel and a sonorant consonant (/m, n, ŋ, l, r/), the falling pitch movement starts mostly in the second part of the accented syllable. In monomoraic syllables, that is in syllables containing a short vowel and no other sonorant element, the falling pitch movement starts only at the end of the accented syllable, as illustrated in the upper row of Figure 2.

In accent 2 SFR has a steep fall, as illustrated in the lower row of Figure 2. In bimoraic syllables, the F0 contour reaches low level at the end or even before the end of the accented syllable. SFR speakers often increase the distance between the pitch curves on accent 1 and accent 2 syllables by lengthening the accent 2 syllable. In monomoraic syllables, the falling pitch movement reaches low level only after the accented syllable. In contrast to accent 1, the falling movement starts early in the accented syllable. This is the case both in syllables containing a short tense vowel (smooth syllable cut) and syllables containing a short lax vowel (abrupt syllable cut). Figures 3-6 give $F_0$ tracks of utterance with bimoraic accent 1, bimoraic accent 2, monomoraic accent 1, and monomoraic accent 2, respectively.



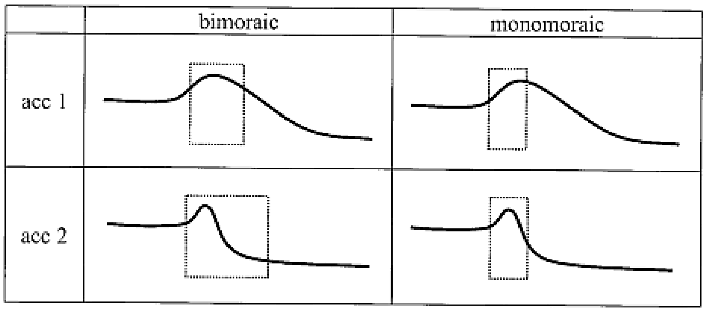




Figure 2. Simple Fall with H*L in nuclear non-final position. The boxes indicate the position and length of the accented syllables.

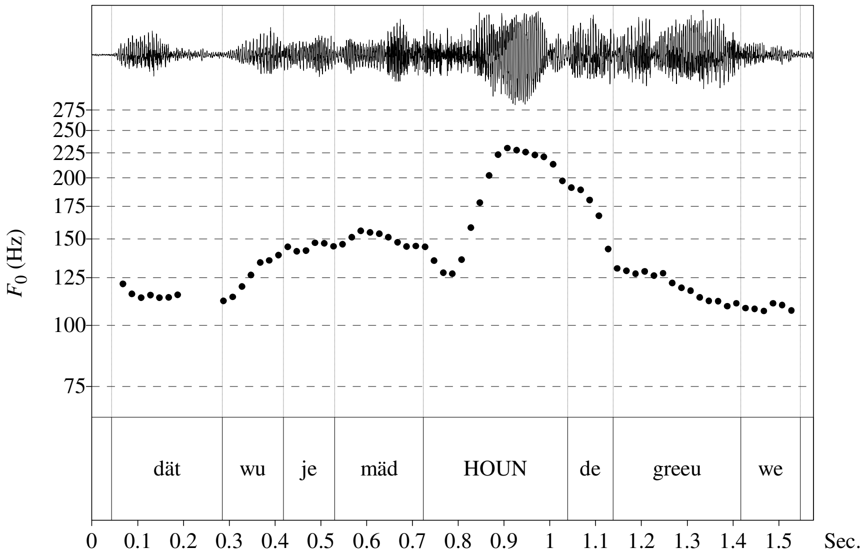



Figure 3. Accent 1 in non-final bimoraic syllable *houn* (B11-609) (‘That was dug by hand’).

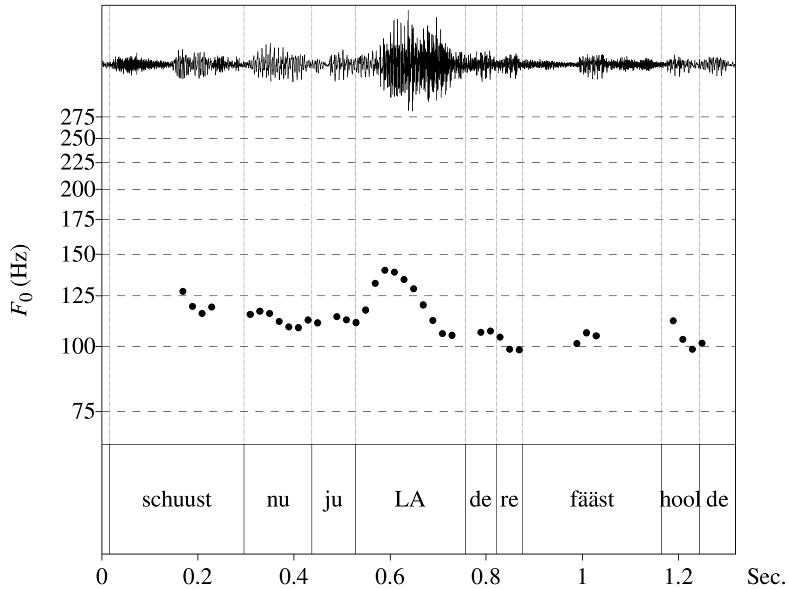



Figure 4. Accent 2 in non-final bimoraic syllable *la* (/la:/) (B148-550) (‘now (you) should hold on to the ladder’).

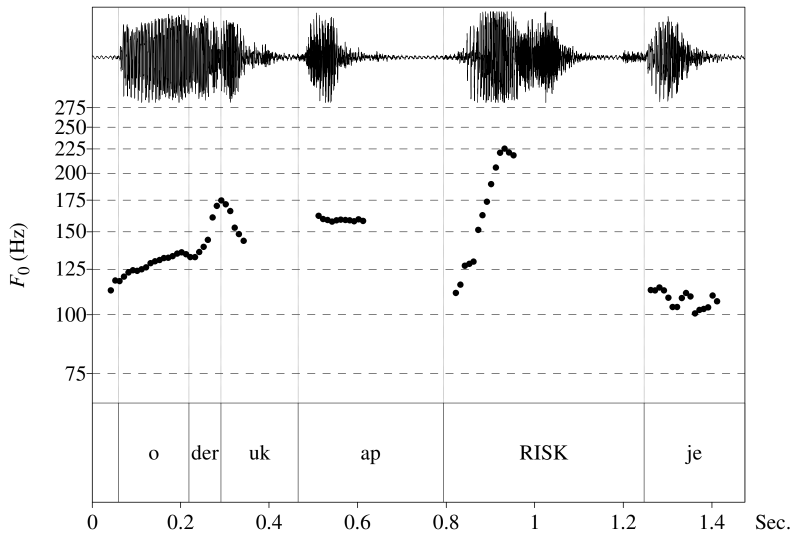



Figure 5. Accent 1 in non-final monomoraic syllable *risk* (B82-173) (‘or else to sit up’).

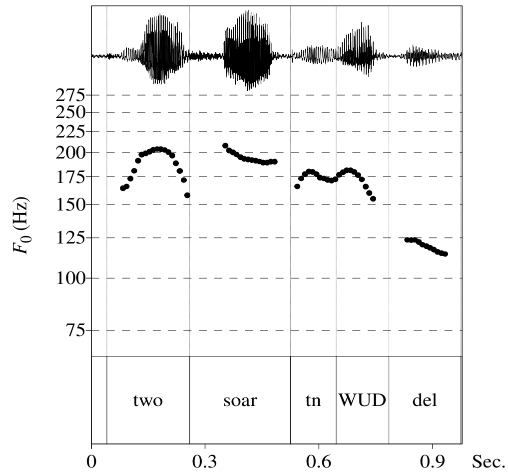



Figure 6. Accent 2 in non-final monomoraic syllable *wud* (B29a-631) ('two sorts of carrots').

Accent 1 and 2 are attested for nuclear syllables in both non-final and final position in the IP. The distinction is also found in other nuclear tunes containing a falling accent, that is the Fall-Rise (H*LH%), the Fall-Level Contour (H*L0%), and the Simple Fall with Downstep (!H*LL%). We also note that the accentual distinction is found in loans from High German. Figure 7 shows the monomoraic syllable *fäs* of *profässor* bearing accent 2.

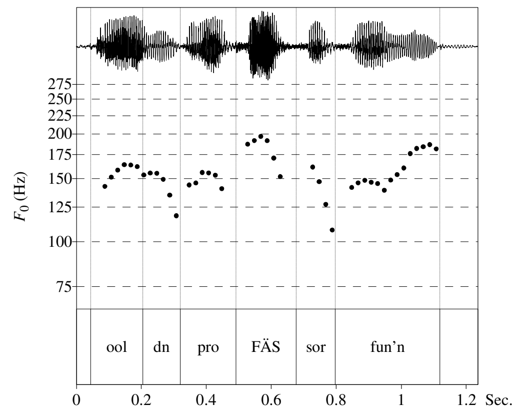



Figure 7. Fall-Rise with accent 2 in non-final monomoraic syllable *fäs* (B29a-51) ('found an old professor').

The question arises whether accent 1 and accent 2 are variants of the falling accent restricted to different prosodic contexts or derive from a word accent distinction used to distinguish lexemes or morphemes, as known from Central and South Franconian (e.g., Grootaers 1910, Grootaers & Grauls 1930, Schmidt 1986, Gussenhoven & van der Vliet 1999, Gussenhoven & Peters 2004, 2008, Peters 2008). As the answer to this question requires additional data analyses, we will postpone it to sec. 6.

*5.2 Final pitch drop*

The nuclear tunes that in NSG end with high level pitch often show a pitch drop on the final syllable. Figure 8 illustrates a pitch drop for the H* 0% contour.

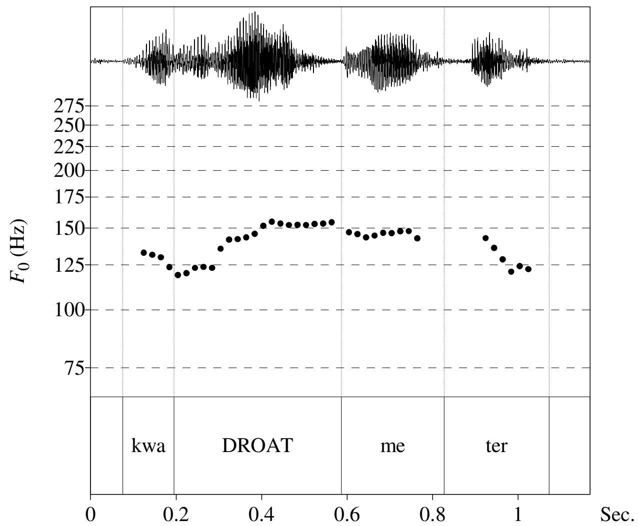



Figure 8. H* 0% with final pitch drop (B11-158) ('square meter').[7]

In the nuclear tunes that in NSG end with high rising pitch the $F_0$ maximum is often reached in the middle of the last syllable rather than at the end of the IP. In some cases, we found a final rise followed by a final fall, as Figure 9 illustrates for the H* H% contour.

7. In the following, we freely choose from native words and loans.

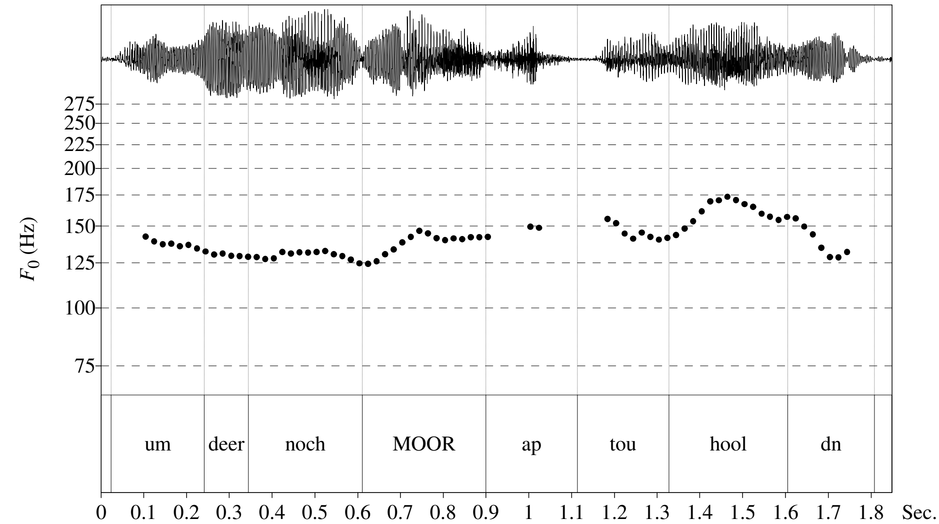



Figure 9. H* H% with final fall (B11-1169) (‘to collect there even more’).

As the final pitch drop is neither distinctive nor persistently produced in our data, we interpret it as an optional way of implementing contours ending with high level pitch or a final rise.

### *5.3 Accentual modifications*

Accentual downstep was found in the Simple fall (!H*LL%), the Fall-Rise (!H*LH%), the Incomplete Fall (!H*L0%), and the High-Level Contour (!H* 0%). The late peak was found in the Simple Fall (<H*LL%), the Fall-Rise (<H*LH%), and the Incomplete Fall (<H*L0%). We even found accentual downstep combined with late peak (<!H*LL%), which in both NSG and SFR is very rare. We also found instances of the Simple Fall with an early peak, that is accentual downstep combined with a high leading tone (H+!H*LL%). Early peaks were also found in Fall-Rises (H+!H*LH%), as illustrated in Figure 10.

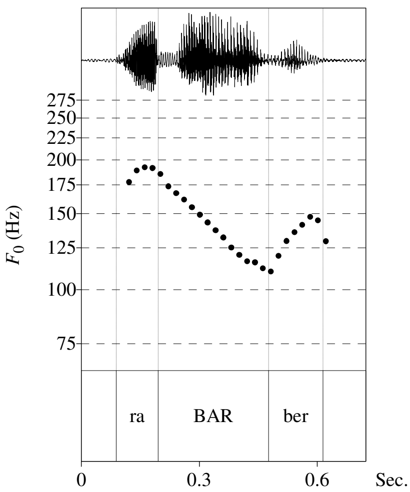



Figure 10. H+!H*LH% (B29a-391) ('rhubarb').

## *5.4 Compound contours*

Our corpus contains quite a few instances of compound Fall-Rises, which can be transformed in two IPs with a rising and a falling tune, as noted in sec. 2.2.3. Figure 11 gives an example.

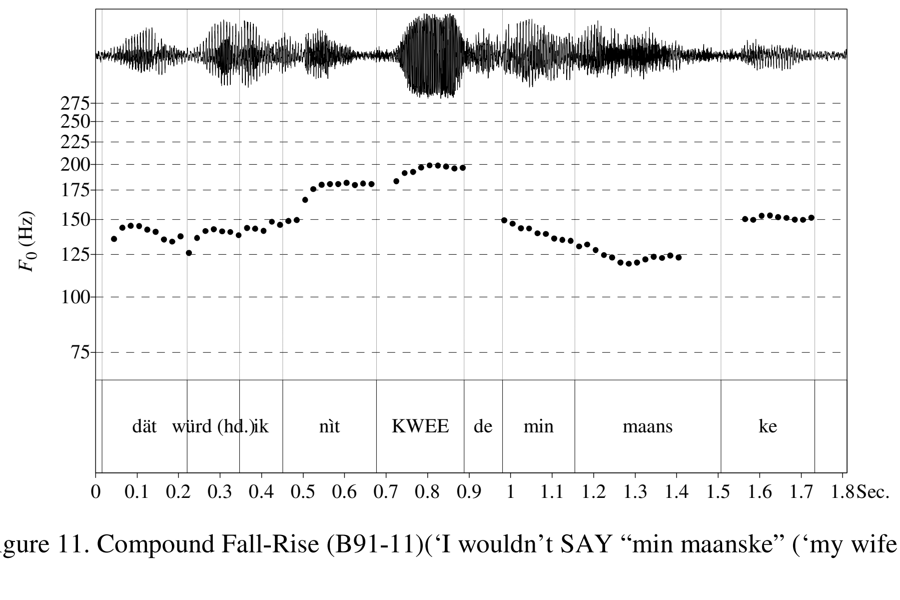



Figure 11. Compound Fall-Rise (B91-11)('I wouldn't SAY "min maanske" ('my wife')).

Speaker B91 from Scharrel was found to use another compound contour not reported in the literature so far, which is shown in Figure 12.

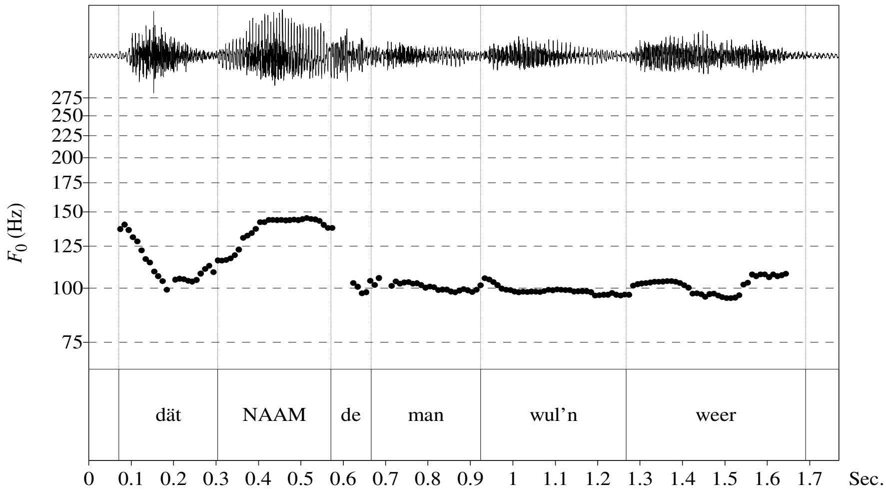



Figure 12. Compound Fall plus Fall-Rise (B91-1999) ('that was arguably CALLED a dam').

We analyse this contour as the combination of a Simple Fall on *naam* and a narrow-scaled but clearly perceivable Fall-Rise on *weer*. The IP can be transformed into a two IPs bearing H*LH% and H*LL%, respectively, as shown in (10b).

(10) a. {dät NAAMde man wul 'n weer}

%LH H* L HLH%

*that was arguably CALLED a dam*

b. {'n WEER} {NAAMde man dät wul}

%L H*LH% %L H* L L%

*a DAM* *that was arguably CALLED*

Speaker B148 (Ramsloh) was also found to combine the Simple Fall (H*LL%) with the Rise-Plateau contour (L*H0%).

Even if compound contours are rare in our corpus, the variety of such contours attested shows that compounding of single tunes may be productive in SFR.

*5.5 Clitic IPs*

Our SFR speakers produced both clitic IPs listed in (7) for NSG, that is L L% after H*LL% and L H% after H*LH%. Our corpus also contains examples of {L* H%} L H%}, {H* H%} H H%}, and {L*HH%} H H%}. All clitic IPs attested can be derived from the preceding IP by copying the last two tones.

*5.6 Prenuclear tunes*

SFR uses the same set of pitch accents in nuclear and prenuclear position, that is H*L, H*, L*H, and L*. Prenuclear H*L, like nuclear H*L, bears either accent 1 or accent 2.

At the initial IP boundary, SFR distinguishes between %H and %L. In particular, %H is attested as part of the %H L* H*LL% contour, which is common in Northern German (Auer 2001, Gilles 2005, Peters 2006). An example is given in Figure 13.

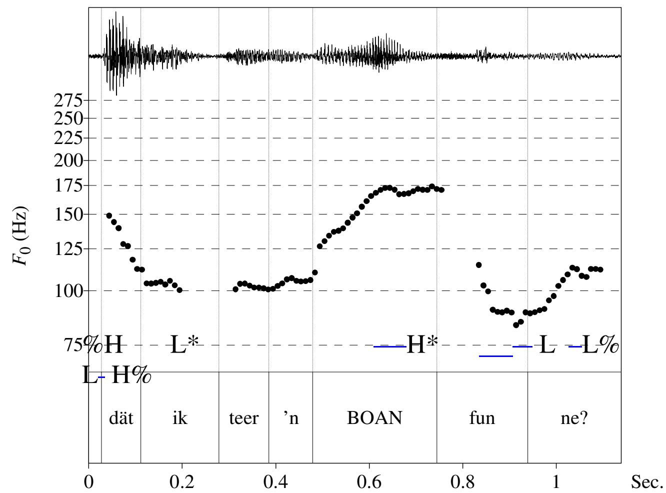



Figure 13. Nuclear tune with initial high boundary tone (B148-723) ('that I found there a job, you know?')

The utterance shown in Figure 12 suggests that SFR also uses a complex boundary tone %HL at the initial IP boundary as assumed for Standard Dutch (Gussenhoven 2005).

*5.7 Intonational meaning*

Our speech data attest nearly all tonal configurations assumed for NSG in sec. 2.2. In particular, there are no gaps in the system which may change the phonological content of single tonal categories. We did not find differences in the tonal inventories of speaker coming from different places in Saterland either. Saterfrisian H* 0%, L* 0%, H* H%, and L*H H% often end with a pitch drop on the final syllable but there is no need to change the tonal grammar. A similar implementation of tunes can be found in regional variants of High German (Peters 2006, chap. 9, 11). Except for the additional tonal configurations reported, the variation of pitch patterns in falling accents is the only finding which may require adjustments of the tonal grammar.

Even if 'systemic' differences between NSG and SFR intonation are small or absent, there may still be 'semantic' differences, that is a given tune may be used for different purposes (Ladd 2008, chap. 3.2.3). A detailed semantic analysis of SFR tunes would go beyond the scope of this study. But even without going into details, we do not expect major differences between NSG and SFR, for two reasons. First, informal inspection of the recordings suggests that most SFR tunes are used in similar conversational contexts as the NSG tunes. In particular, H*LL% is used as a "default" contour in neutral statements, as in NSG. Also, the contours ending with level pitch are frequently used in listing activities, as in NSG.

Second, relative frequencies of tunes in uncontrolled speech can give valuable information on the extent of semantic differences to be expected, as the relative frequency of tunes depends on the semantic features involved. <H*LL%, for example, is to be expected as being less frequent than H*LL% in NSG, as the feature "<" (late peak') restricts the number of possible conversational situations in which the tune can be used.

Table two shows the relative frequencies of the most frequent nuclear tunes with a non-final nuclear accent in all 9 speakers of SFR, compared to 8 speakers of Hamburg German,[8] whose intonation is very similar to NSG.

8. The Hamburg data are taken from the corpus used in Peters 2006.

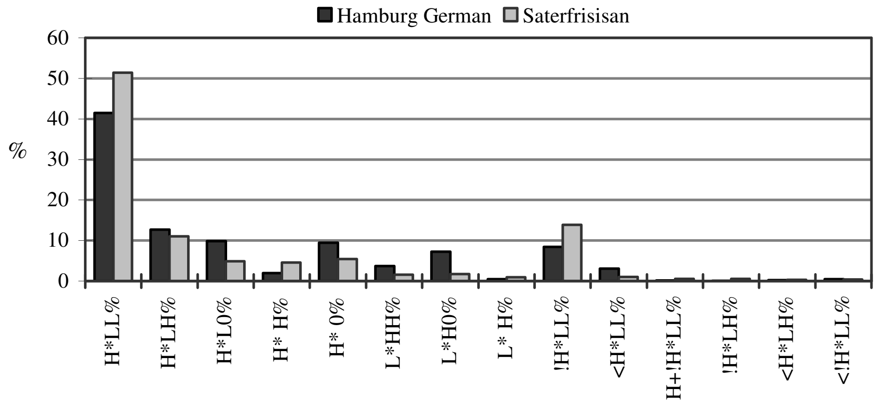



Figure 14. Relative frequencies of nuclear tunes with nuclear accent in non-final position in natural speech. Hamburg German: 8 speakers, *N* = 1597; Saterfrisian: 9 speakers, *N* = 1866.

Figure 14 shows that the overall distribution of relative frequencies is very similar in both languages. The larger proportions of H*LL% and !H*LL% in SFR may originate from the fact that many utterances of SFR speakers were answers to questions about Saterfrisian vocabulary.

Figure 15 shows that, among the SFR speakers, no clear dialectal variation is found either. In all groups of speakers, H*LL% is by far the most frequent contour. The most remarkable deviation is found in the Scharrel speakers who seem to use H*LH% more often than all other speakers. Closer inspection revealed that the high proportion of Fall-Rises originates from a single speaker suggesting individual rather than dialectal variation.

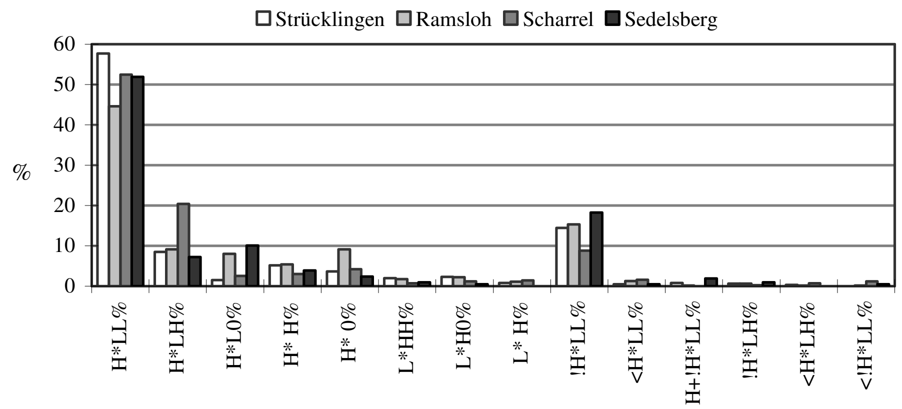



Figure 15. Relative frequencies of nuclear tunes with nuclear accent in non-final position in SFR speakers. Strücklingen: 3 speakers, *N* = 601; Ramsloh: 3 speakers, *N* = 626; Scharrel: 2 speakers, *N* = 431; Sedelsberg: 1 speaker, *N* = 208.

## *6* Stoßton *and* Schleifton

In Sec. 5.1 we raised the question whether the distinction between accent 1 and accent 2 derives from differences in syllable structure or is a word accent distinction such as the lexical tone distinction found in Central and South Franconian. To answer this question we first examined whether accent choice is biased in any way or can be predicted from syllable structure. We restricted our analysis to nuclear syllables in non-final position of IPs bearing a Simple Fall. The results may be summarized as follows.

1. There is an overall preference for using accent 2. Figure 16 shows that the majority of our speakers use accent 2 in more than 50% of all cases. The analysis also shows that there is substantial inter-speaker variation in the use of accent 2. While fife speakers use accent 2 in about 80% of IPs, the two speakers B82 and B91 from Scharrel were found to use accent 2 in 43% and 52% of IPs, respectively. The question arises whether this variation reflects a general tendency of Scharrel speakers to use accent 2 less frequently than other SFR speakers. Informal inspection of a larger data set suggests that there are other speakers from Scharrel who show a preference for accent 2 comparable to the preference found in Strücklingen, Ramsloh and Sedelsberg. This finding suggests that other factors than dialectal backround may be responsible for the inter-speaker variation attested.

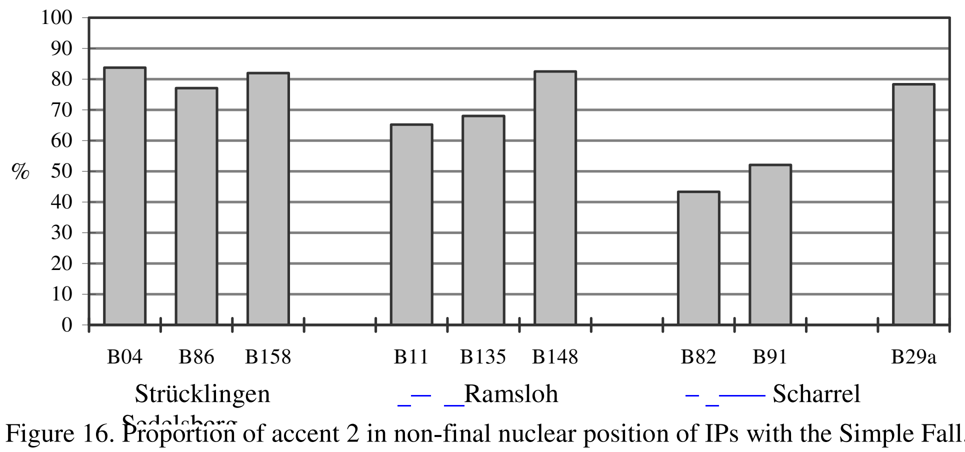



Figure 16. Proportion of accent 2 in non-final nuclear position of IPs with the Simple Fall. Speakers: B04 ($N = 99$), B86 ($N = 144$), B158 ($N = 100$), B11 ($N = 89$), B135 ($N = 78$), B148 ($N = 103$), B82 ($N = 134$), B91 ($N = 73$), B29a ($N = 106$).

2. In Strücklingen, Ramsloh, and Scharrel, accent 2 is more likely to occur in bimoraic syllables than in monomoraic syllables, as shown in Figure 17.[9] The speaker from Sedelsberg used accent 2 both in monomoraic and in bimoraic syllables with a probability of about 80%. The most important result, however, is that accent 2 is generally not restricted to bimoraic syllables. The proportion of accent 2 in monomoraic syllables ranges from 10% in Scharrel to 80% in Sedelsberg.

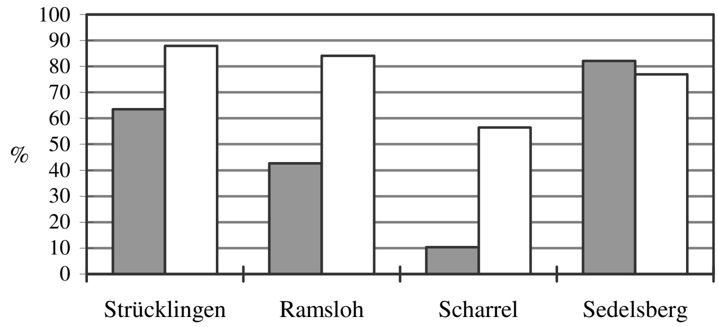



Figure 17. Proportion of accent 2 in monomoraic (grey bars) and bimoraic (white bars) nuclear syllables in non-final position. Same data set as in Figure 16, pooled over the speakers of each dialect.

We conclude that accent choice cannot be predicted from syllable structure, which leaves open the possibility that the distinction between accent 1 and accent 2 is a word accent distinction.

Our corpus does not contain a tonal minimal pair, that is a pair of segmentally identical words differing by the type of falling pitch movement only, which would provide direct evidence for an accentual contrast. The idea that SFR may have a word accent distinction, however, is not new. Already Siebs (1889) distinguished between Saterfrisian words having *Stoßton* ('push tone') and those having *Schleifton* ('dragging tone'). For Northern Low Saxon, Bremer (1927) likewise assumed a word accent distinction between the presence and absence of *Schleifton* (combined with *Überlänge* 'overlength').

We have no acoustic data of the Low German spoken in Saterland, but recordings from the nearby Oldenburger Land show a striking similarity in the phonetics of SFR accent 2 and Low German Schleifton. Both SFR

9. Note that similar proportions of accent 2 were found when classifying syllables according to vowel length rather than the number of sonorant moras.

accent 2 and Low German *Schleifton* combine a steep fall with lengthening of the accented syllable (if bimoraic). In contrast to SFR, however, the distribution of Low German *Schleifton* is restricted to bimoraic syllables and to words having lost a syllable by either apocope or syncope of schwa. It is therefore unlikely that SFR accent 2 derives from Low German *Schleifton*.

Siebs' *Schleifton* and *Stoßton* are neither restricted to certain syllable types nor schwa loss. Unfortunately, Siebs did not give a detailed phonetic description of *Schleifton* and *Stoßton*, but his *Stoßton* and *Schleifton* seem to correspond to accent 1 and accent 2, respectively, for two reasons. First, according to Siebs (1889: 196, 342f, et pass.) *Stoßton* involves shortening of vowels. We likewise found a durational difference between accent 1 and accent 2 in bimoraic syllables. This difference, however, originates from lengthening of accent 2 rather than from shortening of accent 1.[10] Second, Siebs classifies most monomoraic words as having *Stoßton* and most bimoraic words as having *Schleifton*. This distribution is largely consistent with the results of our analysis, even if the proportion of accent 2 in monomoraic words in our data is higher than the proportion of *Schleifton* in monomoraic words according to Siebs.

The variable falling pitch movements observed in accent 1 and accent 2 therefore may well be linked to the word accent distinction made by Siebs. Accordingly, we assume that *Stoßton* (= accent 1) has a gradual fall and *Schleifton* (= accent 2) a steep fall, which in bimoraic syllables is frequently accompanied by syllable lengthening. The situation, however, is getting more complicated when we look for correspondences between Siebs' classification of SFR words according to accent class and the pitch patterns found in our data. Focusing on words which both are marked for accent class by Siebs (1889) and attested in our data in nuclear non-final position of IPs bearing a Simple Fall, we found that Siebs' classification predicts the pitch patterns observed in accent 1 and accent 2 not very well. We found both accent 1 in words which according to Siebs have *Schleifton* and accent 2 in words which according to Siebs have *Stoßton*. In some cases, our speakers use accents which Siebs allocates to speakers of neighbouring SFR dialects.

---

10. We did not find any correlation between accent class and the so-called "half-long vowels" /i/ and /u/, which synchronically we interpret as short tense vowels besides the short lax vowels /I/ and /U/ (Fort 1971, Tröster 1997). According to our data, both tense and lax short vowels can bear either accent 1 or accent 2.

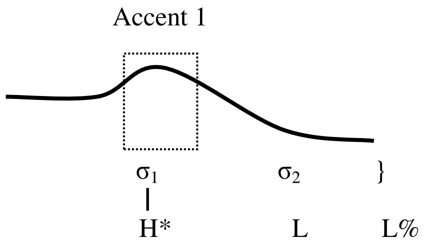
There are two possible explanations for this apparent mismatch. First, Siebs' account is based on observations in Saterland beginning in 1884 (1889: 1). Siebs, therefore, may have described a language which has changed in the meantime. On the other hand, our speakers were born between 1895 and 1930. It is unlikely that the language has changed a large number of word accents in one or two generations without reorganizing the whole prosodic system.

Second, we may doubt whether Siebs' classification is reliable. Fort (1980: 32) notes mismatches between observations reported by Siebs and the present-day language. According to Fort, these mismatches may originate from Siebs' confusion of SFR dialects. The comparison of Siebs' (1889) notation with our speech data supports Fort's view. We found many mismatches not only with respect to word accent class, but also with respect to vowel quality and vowel quantity. We conclude that accent 1 and accent 2 might be the correlates of what Siebs (1889) called *Stoßton* and *Schleifton* even if Siebs' classification does not predict our findings very well.

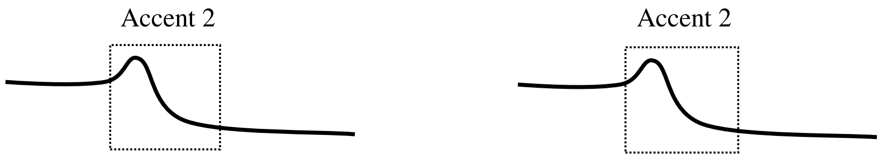
The terms *Stoßton* and *Schleifton* were traditionally used to refer to differences in intensity and duration. Like Tröster (1997: 53), we did not find any evidence for a difference in intensity. Rather, our data suggest that the distinction is primarily based on pitch.

The Simple Fall on accent 1 words can be represented as H*LL%, with the first L tone aligning with the first postnuclear stress, as shown in (11) ($\sigma_1$ marks the nuclear syllable and $\sigma_2$ the first postnuclear stress).

(11)




The representation of the Simple Fall on accent 2 words is more complicated. We will discuss two alternative representations. In (12a), accent 2, like accent 1, is represented as H*L, but with the trailing L immediately following after H*. According to (12b), accent 2 derives from a lexical L tone which is prelinked to the stressed syllable of the accent 2 word. When using the Simple fall, H* displaces the lexical tone to the right. As the lexical tone prevents the trailing L from aligning with the following postnuclear stress, the trailing tone follows immediately after H*.




(12) a. $\sigma_1$ $\sigma_2$ } b. $\sigma_1$ $\sigma_2$ }

| | |
H*L L% H* L**L** L%

(12a) is the easiest way to account for the steep fall. The question arises, however, how the different behaviour of the postlexical trailing tone in accent 1 and accent 2 can be determined by the lexical entries of accent 1 and accent 2 words. One possibility is to assume that syllables bearing accent 1 allow only a single tone to associate, while syllables bearing accent 2 allow two tones to associate.

Another problem is that the representation in (12a) does not account for the observation that accent 2 words sometimes preserve a low target even if no postlexical L tone is available. Evidence comes from accent 2 words occurring in postnuclear position of IPs bearing a Simple Fall. According to (12b), the low pitch targets on those words can be reduced to the presence of the lexical L tone.

Low targets, however can also be observed in nuclear position of the High Rise (H* H%) and the High-Level contour (H* 0%), the latter being illustrated in Figure 18.

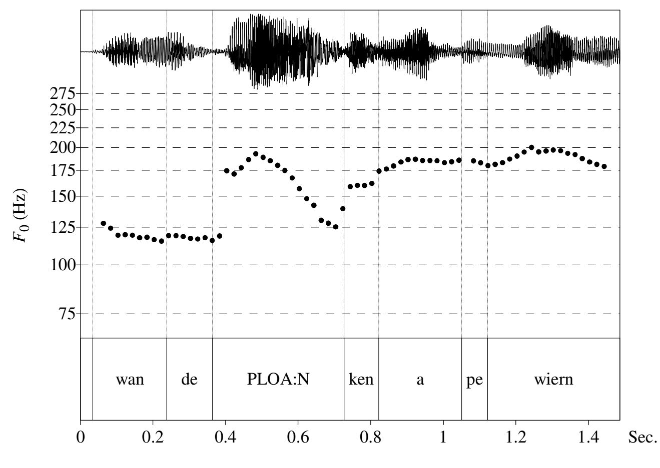
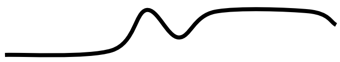



Figure 18. H* 0% contour with a falling movement on *ploan* (B11-1084) ('when the planks were on the top')

Assuming a lexical L tone for accent 2, we can account for the falling movement on the nuclear syllable, as shown in (13).

Accent 2



(13) {wan de PLOA:Nken ape wern}
|
H***L** H 0%

The representation in (13), however, shows that we need an additional H tone to account for the postnuclear high plateau. While in the ordinary H* 0% contour H* spreads rightwards and specifies the final pitch, in (13) the lexical L tone prevents H from spreading rightwards. This case shows that neither the analysis in (12a) nor the analysis in (12b) can fully account for our data. We hope that the use of controlled speech data will help us to get a better understanding of these issues in the future.

### *7 Conclusion*

The analysis of historical tape recordings suggests that Saterfrisian has an intonational system which matches the intonation system of Northern Standard German both in complexity and in the single tunes used. Minor differences in the phonetic implementation of the tunes were observed, but no missing contours. In a few cases, we found evidence for tonal configurations not attested for NSG, such as the complex initial boundary tone %HL. Informal inspection of conversational speech data and a comparison of relative frequencies of the nuclear tunes suggest that Saterfrisian and Northern Standard German tunes are likely to serve similar communicative purposes as well.

The only major difference we found is the variation of the falling movements of H*L accents. Our analysis suggests that this variation does not derive from syllable structure even if there is a tendency to prefer accent 1 (the gradual fall) in monomoraic syllables and accent 2 (the steep fall) in bimoraic syllables. Rather, we assume that accent 1 and accent 2 derive from an older word accent distinction, which is linked to Siebs' (1889) distinction between *Stoßton* and *Schleifton*. The apparent absence of tonal minimal pairs, however, suggests that the functional load of this distinction in the speech of our informants is low.

Both the complexity of Saterfrisian intonation and its similarity to High German intonation may be surprising at first sight. We may ask whether Saterfrisian has adopted the intonation from High German, which reminds us of the observation by Fort (1995: 527) that children tend to speak Saterfrisian with High German intonation. Note, however, that all our informants were born before World War II, that is before the contact of Saterfrisian with High German strongly increased as a consequence of the immigration of High German speaking refugees and resettlers to Saterland. If Saterfrisian has adopted its sentence intonation from High German, this cannot be a recent process.

On the other hand, Saterfrisian sentence intonation is not only similar to Northern High German intonation, but to the intonation of other Westgermanic languages as well, including British English, Dutch, and Low Saxon in Germany and the Netherlands. In this perspective, there is no need to explain the complexity of Saterfrisian sentence intonation by recent contact with some other dominating language. Saterfrisian just has an intonation system which is shared by many other West Germanic languages. What makes Saterfrisian sound different from Northern High German (and less so from Low German using *Schleifton,* or *Overlength*) is the steep fall of accent 2, which is omnipresent in the utterances of our speakers. It might well be that the absence of accent 2, rather than the lack of particular Frisian tunes, gave Fort the impression that nowadays children combine Saterfrisian with High German intonation.

*Institut für Germanistik*
*Universität Oldenburg*

REFERENCES

Auer, Peter (2001). „‚Hoch ansetzende‘ Intonationskonturen in der Hamburger Regionalvarietät“. In: J.E. Schmidt (Hg.), *Neue Wege der Intonationsforschung.* Hildesheim: Olms, 125-165. [Sonderheft *Germanistische Linguistik* Bd. 157-158]

Beckman, Mary E. & Pierrehumbert, Janet B. (1986). “Intonational structure in Japanese and English”. *Phonology Yearbook,* 3, 15-70.

Bremer, Otto (1927). „Der Schleifton im Nordniedersächsischen“. *Niederdeutsches Jahrbuch*, 53, 1-32.

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.* Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg, 497-529.

Gilles, Peter (2005). *Regionale Prosodie in Deutschen. Variabilität in der Intonation von Abschluss und Weiterweisung.* Berlin & New York: de Gruyter.

Grice, Martine; Ladd, D. Robert & Arvaniti, Amalia (2000). “On the place of phrase accents in intonational phonology”. *Phonology,* 17, 143-185.

Grootaers, L. (1910). *Het dialect van Tongeren. Eene phonetisch-historische studie.* Leipzig: Harrassowitz.

Grootaers, L. & Grauls, J. (1930). *Klankleer van het Hasseltsch dialect.* Leuven: de Vlaamsche Drukkerij.

Gussenhoven, Carlos (2004). *The phonology of tone and intonation*. Cambridge: Cambridge University Press.

Gussenhoven, Carlos (2005). “Transcription of Dutch intonation”. In: S.-A. Jun (ed.), *Prosodic typology: The phonology of intonation and phrasing.* Oxford: Oxford University Press, 118-145.

Gussenhoven, Carlos & Peters, Jörg (2004). “A tonal analysis of Cologne *Schärfung”. Phonology,* 21, 251-285.

Gussenhoven, Carlos & Peters, Jörg (2008). “De tonen van het Limburgs“. *Tijdschrift voor Nederlandse Taalkunde,* 13, 87-114.

Gussenhoven, Carlos & Vliet, Peter van der (1999). “The phonology of tone and intonation in the Dutch dialect of Venlo”. *Journal of Linguistics* 35, 99-135.

Hoekstra, Jarich (1991). “Oer it it beklamjen fan ferhâldingswurden yn it Frysk, it Hollânsk en it Ingelsk”. *Us Wurk,* 40, 67-103.

Kohler, Klaus J. (1995). *Einführung in die Phonetik des Deutschen.* Berlin: E. Schmidt Verlag. [2. neubearb. Aufl.]

Kramer, Pyt (1961). *Seelter Woudebouk*. Ljouwert/Leeuwarden: Fryske Akademy.

Ladd, D. Robert (2008). *Intonational Phonology*. Cambridge: Cambridge University Press. (2nd ed.)

Nespor, Marina & Vogel, Irene (2007). *Prosodic phonology.* Dordrecht: Foris. (2nd ed.)

O’Connor, J. D. & Arnold, F. D. (1973). *Intonation of colloquial English*. London: Longman [2nd rev. ed.]

Peters, Jörg (2005). „Intonation“. In: *Duden – Die Grammatik*, Kap. 2 (DUDEN-Reihe Bd. 4). Mannheim: Bibliographisches Institut Mannheim, 95-128. [7th. rev. ed.]

Peters, Jörg (2006). *Intonation deutscher Regionalsprachen.* Walter de Gruyter: Berlin & New York.

Peters, Jörg (2008). “Tone and intonation in the dialect of Hasselt”. *Linguistics,* 46, 983-1018.

Pierrehumbert, Janet B. (1980). *The phonology and phonetics of English intonation*. PhD thesis, MIT, published 1980 by Indiana University Linguistics Club, Bloomington, Indiana.

Pierrehumbert, Janet B. & Beckman, Mary E. (1988). *Japanese tone structure*. Cambridge, Mass.: MIT Press.

Schmidt, Jürgen E. (1986). *Die mittelfränkischen Tonakzente (Rheinische Akzentuierung).* Stuttgart: Steiner.

Siebs, Theodor (1889). *Zur Geschichte der englisch-friesischen Sprache*. Wiesbaden: Sändig.

Stellmacher, Dieter (1998). *Das Saterland und das Saterländische*. Oldenburg: Isensee.

Tiersma, Pieter M. (1999). *Frisian reference grammar*. Ljouwert: Fryske Akademy. (2nd ed.)

Tröster, Stefan (1997). *Phonologie des Saterfriesischen*. M.A. Thesis University of Osnabrück. [1995, rev. 1997]