

# Word accents in the Orsa dialect and in Orsa Swedish

Eva Olander

Dept. of Linguistics, Stockholm University  
 olander@ling.su.se

## Abstract

*A preliminary experiment was carried out to test the hypothesis that fundamental frequency (F<sub>0</sub>) patterns marking the contrast between the grave and acute tonal word accents are common to the Orsa dialect and Orsa Swedish as used by bilingual speakers. One single speaker produced minimal word pairs with three different degrees of sentence stress (prefocal, focal and postfocal). The results indicated that the accent contrast was preserved at low degrees of sentence stress and demonstrated a basic similarity of F<sub>0</sub> peak timing and overall contour shapes between the two varieties.*

## 1 Introduction

With respect to phonology, grammar and vocabulary, the Orsa dialect (Dalarna) differs from Standard Swedish to the extent that the dialect is hardly intelligible to non-dialect speakers. Speakers of the Orsa dialect are thus essentially bilingual. The dialect is used only in communication with other dialect speakers. Otherwise a variety of Standard Swedish is used (see Helgander, 1996, for an overview of the sociolinguistic situation in the area).

In spite of previous claims to the contrary (Rydquist, 1868, p. 218; cf. also Noreen, 1907, p. 472), there is no doubt today about the existence of the acute vs. grave tonal word accent contrast in the Orsa dialect (Boethius, 1918; Meyer, 1937; Olander, 2000). In Meyer's pioneering survey of the Scandinavian word accents, the acute and grave accents were described as displaying differently timed fundamental frequency (F<sub>0</sub>) peaks in the vowel pertaining to the primary stress syllable. Specifically, the acute F<sub>0</sub> peak was shown to appear earlier than the grave F<sub>0</sub> peak. As shown in a previous study (Olander, 2000), this timing pattern, which is common to many Scandinavian dialects, appears to have remained unchanged during the several decades that have passed since Meyer's data were collected. In addition, Olander's study suggested a difference in the height and shape of the F<sub>0</sub> contours in focal position; whereas a sharp peak was evident in the acute contours, the corresponding grave F<sub>0</sub> curves tended to be lower and flatter.

While there is a fair amount of knowledge of the phonetics of the word accent contrast in the Orsa dialect, the corresponding Standard Swedish variety (henceforth 'Orsa Swedish') has not been experimentally studied to date. It is obvious, however, that the rules governing the lexical distribution of the accents differ between the two varieties. One of the test words analysed in this study exemplifies this difference. Whereas the present tense of the verb meaning 'to lead', *leder*, has the acute accent in Orsa Swedish (as well as in Central Standard Swedish), it has the grave accent in the dialect. As a general consequence of the differences in the accent assignment rules, the grave accent occurs more frequently in the Orsa dialect than in Orsa Swedish, a situation that probably reflects an older developmental stage in the history of the Scandinavian languages.

Bilingual Orsa speakers, thus, use two different accent systems. In view of this phonological difference, it might be assumed that the phonetic realisation of the accent contrast is also different in the two varieties. There is, however, the commonly held notion that tonal and intonational characteristics tend to be relatively resistant to change. Phonetic-typological analyses of the Scandinavian word accents (Meyer, 1937, 1954; Gårding, 1977) seem to lend credence to this idea in suggesting a basic similarity of F<sub>0</sub> contours across large dialect regions. Thus, the phonetic manifestations of the accent contrast appear to have changed very slowly during the last several hundred years. It is reasonable to assume that this alleged stability of prosodic patterns would also act to preserve tonal and intonational characteristics in situations of incipient bilingualism. Specifically, the first Orsa speakers to learn the national standard language may have preserved the dialect's tonal accent properties.

In sum, it was the purpose of the present study to collect some experimental data relevant to the question to what extent F<sub>0</sub> patterns used to distinguish between the grave and acute accents are common to the two Orsa language varieties. It should be noted, however, that the data to be reported are based on one single speaker and are, thus, quite preliminary.

## 2 Method

The speech material used in this study was produced by a male informant, 68 years of age, who is a bilingual speaker of the Orsa dialect and Orsa Swedish. The recording was made in the informant's home in Orsa using a digital tape recorder (Sony TCD-D8) and a lapel microphone. As noted above, the speech material consisted of words with the segmental composition /lé:der/ ('leather' with the acute accent in the dialect; 'lead', present tense of 'to lead' in Orsa Swedish and with the grave accent in the dialect; and 'tracks' with the grave accent in Orsa Swedish; see Table 1). These words, which are minimally contrastive with respect to word accent, were embedded in carrier phrases suitable for eliciting the desired word accent contrast and for putting the test words into different focus positions. For each language variety, the test words were produced in three different focus positions (prefocal, focal and postfocal) as indicated in Table 1. The words were produced at least 9 times in a quasi-random order.

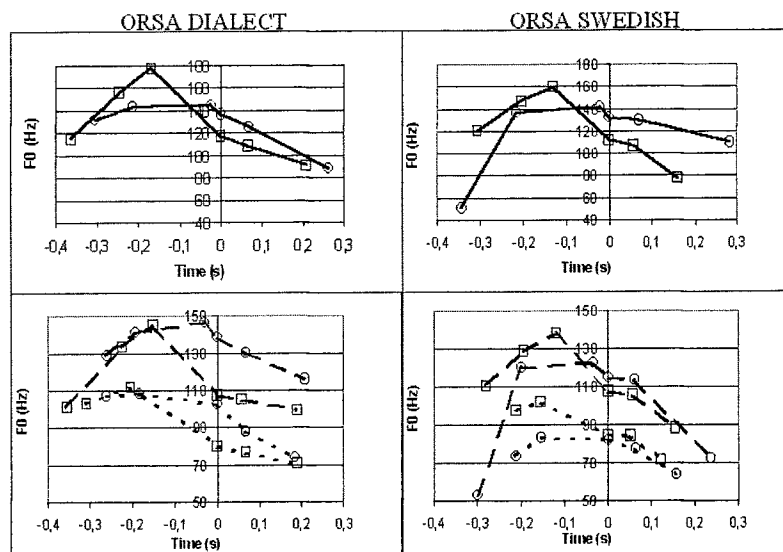
**Table 1.** Test words and carrier phrases used in the present experiment. Words in focal position are given in boldface.

Lg		ACUTE ACCENT	GRAVE ACCENT
D	Focal	<i>ä lédör itta</i> 'this is <b>leather</b> ' (n=20)	<i>i lédör nå</i> 'I <b>lead</b> her' (n=10)
A	Prefocal	<i>ä lédör itta ö</i> 'this is <b>leather too</b> ' (n=11)	<i>i lédör nå emat</i> 'I <b>lead her home</b> ' (n=13)
E	Postfocal	<i>ä itta sö i lédör menör i</i> ' <b>this</b> is leather I mean' (n=15)	<i>ä i sö lédör nå</i> 'I <b>lead her</b> ' (n=16)
S	Focal	<i>jag <b>leder</b> henne</i> 'I <b>lead</b> her' (n=13)	<i>det finns <b>leder</b> här</i> 'there are <b>tracks</b> here' (n=12)
E	Prefocal	<i>jag <b>leder</b> henne <b>hem</b></i> 'I <b>lead her home</b> ' (n=12)	<i>det finns <b>leder</b> här <b>också</b></i> 'there are <b>tracks</b> here <b>too</b> ' (n=9)
I	Postfocal	<i>det är <b>jag</b> som <b>leder</b> henne</i> 'I <b>lead</b> her' (n=20)	<i>jag <b>vet</b> att det finns <b>leder</b> här</i> 'I <b>know</b> that there are <b>tracks</b> here' (n=9)

The recordings were computer sampled at 16 kHz.  $F_0$  contours were generated and synchronized with the corresponding spectrograms using the *esps/waves* signal analysis program package. Measurements of  $F_0$  were made at segment boundaries pertaining to the test words and at turning points in the  $F_0$  contour as explained below.

### 3 Results

The results are summarized in Figure 1. The upper two panels represent words in focus, and the lower two panels show results for the prefocal and postfocal positions. Data for the Orsa dialect and Orsa Swedish are shown to the left and right, respectively. Each data point represents a mean of all repetitions and is marked as explained in the figure legend. The contours are time-aligned to the offset of the primary stress vowel /e/.



**Figure 1.** Stylized  $F_0$  contours pertaining to acute and grave /e:der/. The data points represent, from left to right, a) the onset of initial /l/, b) the onset of primary stress /e/, c) the  $F_0$  turning point (if any) in /e/, d) the offset of /e/, e) the onset of the second, unstressed /e/, and f) the offset of the /r/. These data points are indicated by squares on the acute contours and circles on the grave contours. Further explanation in text.

The top two panels show that the acute and grave  $F_0$  contours differ both with respect to timing and shape. The acute contour has an early  $F_0$  peak in the stressed vowel, whereas maximum  $F_0$  in the grave word occurs towards the end of the stressed vowel. In addition, the acute contour is markedly higher and sharper than the grave contour. These characteristics are common to both language varieties.

The prefocal contours (bottom two panels) display similar characteristics that, again, are essentially common to both language varieties. However, the peaks are somewhat lower in the prefocal than in the focal position. In the dialect (bottom left panel), the acute and grave peaks reach essentially the same  $F_0$  values.

The postfocal contours are markedly lower, and the acute and grave accents are less distinct than in the focal and prefocal positions. Nevertheless there is a clear difference between the accents such that the acute accent shows a relatively prominent early peak which is lacking in the flatter grave contours. Again, the contours pertaining to the respective language varieties are essentially similar. Whether differences in detail represent random variations rather than genuine language effects cannot be determined pending statistical analysis as well as an extended data base.

### 4 Summary and conclusions

On the basis of the above results, it can be tentatively concluded that, in spite of differences in morphophonological rules for word accent assignment, bilingual Orsa speakers maintain essentially similar  $F_0$  contours to mark the acute vs. grave accent contrast in both the Orsa dialect and Orsa Swedish. Thus, the first Orsa dialect speakers to learn Standard Swedish may have transferred the tonal properties of the dialect to the new variety. As noted above, this would seem to lend credence to the idea that tonal and intonational characteristics of languages may be relatively stable.

In addition, the present results have confirmed previous phonetic descriptions of the word accents in the Orsa dialect in showing that the acute vs. grave  $F_0$  contrast involves both timing and overall contour shape (Olander, 2000). The data have also showed that the accent contrast is preserved in prefocal position, and that prefocal contours are basically similar to focal contours. Finally, the study has reported the novel finding that the Orsa accent contrast (as that of Stockholm Swedish; Bruce, 1977) seems to be preserved even at a lower degree of sentence stress, i.e., on words appearing in postfocal position.

### Acknowledgment

Work supported by the Bank of Sweden Tercentenary Foundation (Riksbankens Jubileumsfond), grant 1997-5066:03, 04 to the project *De svenska dialekternas fonetik och fonologi år 2000 (SWEDIA 2000)* [Phonetics and phonology of the Swedish dialects around the year 2000.]

### References

- Boethius, J. 1918-26. 'Orsamålet i Dalarna. Ljudlära.' *Svenska landsmål* 4:4.
- Bruce, G. 1977. 'Swedish word accents in sentence perspective.' *Travaux de l'Institut de linguistique de Lund* 12. Lund: CWK Gleerup.
- Gårding, E. 1977. 'The Scandinavian word accents.' *Travaux de l'Institut de linguistique de Lund* 11. Lund: CWK Gleerup.
- Helgander, J. 1996. 'Mobilitet och språkförändring. Exemplet Övre Dalarna och det vidare perspektivet.' Höskolan Dalarna, *Rapport* 1996:3. Falun.
- Meyer, E. A. 1937. 'Die Intonation im Schwedischen. I: Die Sveamundarten.' *Studies Scand. Philol.* 10, Univ. Stockholm.
- Meyer, E. A. 1954. 'Die Intonation im Schwedischen II: Die norrländischen Mundarten.' *Studies Scand. Philol.* 11, Univ. Stockholm.
- Noreen, A. 1907. *Vårt språk* II. Lund.
- Olander, E. 2000. 'Word accents in today's Orsa dialect: preliminary  $F_0$  measurements.' *Proceedings of the XIIIth Swedish Phonetics Conference (Fonetik 2000)*, Skövde.
- Rydquist, J. 1868. *Det svenska språkets lagar* IV. Stockholm.