

## CROSS-LINGUISTIC COMPARISON OF DURATIONAL PATTERNS IN FINNISH AND FINLAND-SWEDISH

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### ABSTRACT

The paper describes durational patterns in Swedish and Finnish trochaic verse produced by speakers of Swedish and Finnish in Turku. Both groups of speakers exhibit a combined prosodic system that contains more contrasts than either of their two languages.

### INTRODUCTION

The paper is one of a continuing series of reports about my study of the phonetic manifestation of metrical structure in orally produced poetry. The rationale for the study, as well as the methodology, have been described in a number of previous publications [1]. In the study, I investigate the ways in which the same metric structures are realized in languages that have different supra-segmental structures.

At the same time, the paper deals with another continuing research interest - the topic of language contact, especially in the region of the Sprachbund around the Baltic Sea [2]. The special focus of the current report is the relationship between tonal and durational patterns found in the speech of Turku Finns and Swedes, and the Swedish spoken in Stockholm.

### MATERIALS AND METHODOLOGY

The texts analyzed in this context include the poems "Vastavirtaan" by Juhani Siljo and "Bonden Paavo" by J.L. Runeberg. The recordings were made in September 1988 in Turku and in June 1989 in Stockholm. The tapes were analyzed at the Ohio State University's phonetics laboratory in Columbus. Measurements include the duration of lines, pauses between lines, metric feet, and various subparts of the metric foot. Three fundamental frequency measurements were made for every metric foot that consisted of a disyllabic word: Fo value at the beginning, peak, and end of the Fo curve of every syllable, as well as the position of the Fo peak within the syllable. The present paper describes patterns found in medial (i.e. non-initial, non-final) metric feet. Results are averaged from productions by four speakers in each group.

### FUNDAMENTAL FREQUENCY

The basic fundamental frequency patterns found in the speech of the Stockholm speakers have been reported before [1]. Table 1 (below) presents average Fo values for a subset of Stockholm speakers in words with Accents 1 and 2, and in the same words produced by

speakers of Turku Swedish (for whom Swedish is first language) and Turku Finns (for whom Swedish is second language). The difference in absolute values depends on characteristics of the speakers and is irrelevant with regard to the shape of the fundamental frequency contour.

As can be seen from the table, the Stockholm speakers maintain a distinction between the two accents, the characteristic feature of which is the low Fo value at the end of the first syllable in disyllabic words with Accent 2 (printed in boldface). The Turku Swedes and Finns have essentially the same pattern in words expected to carry the two accents.

Both groups of Turku speakers used the same patterns in their production of Finnish metric feet.

### DURATION

Figure 1 (below) shows the average durations of short and long syllable nuclei in metric feet consisting of Finnish disyllabic words. Finnish has four possible quantity patterns in disyllabic words, determined by syllable length: Short-short, Short-long, Long-short, and Long-long. For the sake of comparison, syllables of the same contrastive duration occurring in the same position were averaged together: CV- stands for the initial short syllable in Short-short and Short-long words, CVV- stands for the initial long syllable in Long-short and Long-long words etc.

As may be seen from the figure, both groups of Turku speakers maintain a clear distinction between

contrastive short and long syllable nuclei in their Finnish productions.

Figure 2 (below) shows the average durations of first vowels in Swedish metric feet with (intended) Accent 1 and 2 produced by Swedish speakers in Stockholm and Turku, and by Finnish speakers in Turku reading the same material. As may be seen from the figure, all three groups of speakers employ comparable durations. The same is the case for vowels in second syllables, whose duration is similar to that of the Finnish short syllable nuclei.

### DISCUSSION

The study shows that both groups of Turku speakers keep the durational systems of their two languages clearly apart. The Turku Swedish speakers share the Stockholm speakers' long vowel durations, and have acquired the durational system of Turku Finnish. On the other hand, the Turku Finnish speakers have acquired the Swedish long vowel duration - intermediate between the Finnish contrastive short and long durations - and use it in their Swedish.

The intimate contact situation has led to additional similarities. For example, both groups of speakers use the half-long vowel in the second syllable of words like *ylli*. Finns reading Swedish distinguish two intervocalic consonant durations in words like *diken* vs. *döden* (119 msec vs. 50 msec for the Finns, 110 vs. 52 msec for Turku Swedes, and 147 vs. 59 for Stockholm Swedes), and both groups use a third duration in the word *miekka* (210 msec for Finns, 233 msec for

Finland-Swedes). Both groups also pronounce the cluster /lv/ in the words *tulva* and *tulvaa* with a short epenthetic shwa inserted within the cluster. (The Swedish text did not contain any /lv/ clusters; it would have been very interesting to see whether the speakers carried this phenomenon over into their production of Swedish.) There were also occasional realizations of Swedish words like *lade*, *sade*, and *hagel* with a short first syllable vowel, again by both groups of Turku readers.

Both groups of speakers exhibit a combined prosodic system that contains more contrasts than either of their two languages. The short vowels of the two systems can be considered identical, but the speakers distinguish two contrastive durations in Finnish and have a long vowel duration in Swedish that is intermediate between the short duration and the Finnish long duration. The short intervocalic consonants of the two systems can be likewise considered the same, but both groups of speakers have two additional long intervocalic consonants - one for Swedish words like *maka*, the other for Finnish words like *miekka*. The Finnish of Turku Swedish speakers is clearly dialectal and thus orally acquired, as shown by the occurrence of short shwa in the intervocalic /lv/ cluster that speakers of the local Finnish dialect produce, but do not hear [3]. The uniformity of the patterns within the two groups shows that the systems are quite stable.

## REFERENCES

- [1] Lehiste, I. (1992), "The phonetics of metrics", *Empirical Studies of the Arts*, vol 10(2), pp. 95-120.  
 [2] Lehiste, I. (1978), "Polytonicity in the area surrounding the Baltic Sea", *Nordic Prosody*. Papers from a Symposium. Travaux de l'Institut de linguistique de Lund 13, Lund University. Pp. 237-247.  
 [3] Kalevi Wiik, personal communication.

Table 1. Average Fo values in medial metric feet in the Swedish-language poem "Bonden Paavo" read by Swedish subjects in Stockholm (St.Sw.) and Turku (T.Sw.), and Finnish subjects in Turku (T.F.). A 1 = Accent 1, A 2 = Accent 2.

	First syllable	Second syllable
St.Sw., A 1	160 - 172 - 161	157 - 158 - 151
St.Sw., A 2	167 - 168 - 134	160 - 165 - 156
T.Sw., A 1	184 - 192 - 175	168 - 171 - 155
T.Sw., A 2	176 - 184 - 166	168 - 170 - 154
T.F., A 1	116 - 120 - 108	94 - 102 - 91
T.F., A 2	114 - 118 - 106	102 - 103 - 93

Figure 1. Average duration of short and long syllable nuclei occurring in Finnish disyllabic metric feet produced by speakers of Swedish and Finnish in Turku. CV- = short initial syllable, CVV- = long initial syllable, -CV = short second syllable, -CVV = long second syllable.

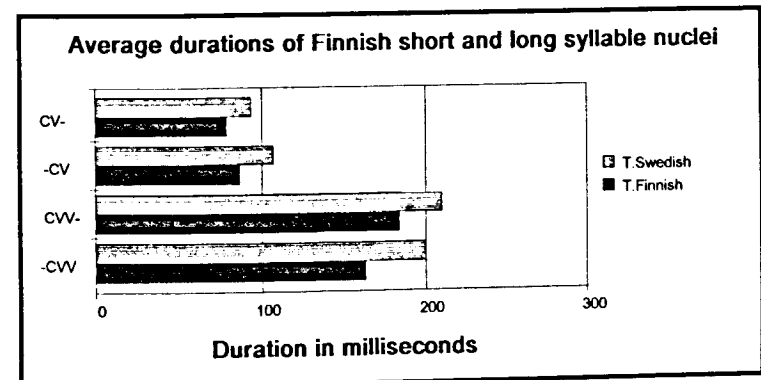


Figure 2. Average durations of first-syllable vowels in Swedish disyllabic metric feet, produced by speakers of Swedish in Stockholm and Turku, and by speakers of Finnish in Turku.

