

Quantity in Central Standard Swedish and Fenno-Swedish

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Abstract

Main findings and conclusions are summarised from a comparison of the durational realisation of quantity in Central Standard Swedish (CSS) and Fenno-Swedish (F-S) based on exactly the same word materials. Both varieties have the same basic quantity pattern, with a complementary durational relationship between the stressed-syllable vowel and the following consonant. But F-S has, in addition, quantity patterns that do not exist in CSS. These patterns are reviewed and the conclusion is drawn that they are similar to some Finnish quantity patterns. Altogether, the results and the review strongly suggest that the F-S quantity patterns have been influenced by Finnish.

Introduction

Swedish is a quantity language in which quantity is contrastive only in syllables with primary stress. In most varieties, a phonetically short vowel in the stressed syllable must be followed by a consonant that is phonetically long (or by two different consonants). In addition, if a phonetically long vowel in the stressed syllable is followed by a consonant, the consonant is always phonetically short. This entails that there is a complementary durational relationship between the stressed-syllable vowel and the following consonant (Elert 1964). For example, in *väg* [ve:g] 'road', the vowel is long and the following consonant is short (V:C), whereas in *vägg* [veg:] 'wall' the vowel is short and the following consonant is long (VC:). These restrictions obtain for CSS. This is also the dominant pattern in F-S, but there are also deviations in F-S that will be discussed below.

F-S has been spoken in Finland for centuries. Since the 19th century a phonetically Finnish-based standard F-S has been attaining a prestige status. Consequently, there are many differences in pronunciation between F-S and Sweden-Swedish. Kuronen & Leinonen (1999) note that "even though the segmental differences between Finland-Swedish and Sweden-Swedish are clearly audible the main and for the listener most obvious difference is in the prosodic character of these dialects". One reason for this

circumstance, among many others concerning e.g. the rules of accentuation and its phonetic realisation, is that certain F-S durational patterns are very much like Finnish durational patterns.

In Finnish, quantity is contrastive for both vowels and consonants, independently of each other and of stress (which is fixed to the initial syllable). Contrastively long segments are best analysed as sequences of two identical phonemes, and there are words like *ta.ka* [ˈtɑkɑː] /ˈtɑkɑ/, *taa.ka* [ˈtɑ:kɑ̃] /ˈtɑɑkɑ/, *tak.ka* [ˈtɑkːɑ̃] /ˈtɑkka/, *taak.ka* [ˈtɑ:kːɑ̃] /ˈtɑɑkka/, *ta.kaa* [ˈtɑkɑː] /ˈtɑkɑɑ/, *taa.kaa* [ˈtɑ:kɑː] /ˈtɑɑkɑɑ/, *taak.kaa* [ˈtɑ:kːɑː] /ˈtɑɑkkaɑ/ (with syllable boundaries indicated in the orthographic forms). Consequently, e.g. *takka* and *taakka* can be given as CVCCV and CVVCCV, respectively; for more information on the phonological interpretation of Finnish quantity see Suomi, Toivanen & Ylitalo (2008: 39-42) and the references therein.

The CSS materials of this comparison come from Helgason & Ringen (2008) and the F-S materials come from Ringen & Suomi (in preparation). The primary objective in these studies was to investigate the phonetic realisation of the fortis ~ lenis distinction in the respective varieties. The recording procedures and segmentation criteria were highly similar across the two experiments (cf. Helgason & Ringen 2008). The CSS native speakers were three female and three male native speakers who have lived in Stock-

holm most or all of their lives. For the 12 F-S speakers, six female and six male, F-S was the first language and the language of education, as it was for both of their parents. The F-S speakers, who are all fluent in Finnish, come from all three areas in mainland Finland in which F-S is spoken: Uusimaa/Nyland, Turunmaa/Åboland and Pohjanmaa/Österbotten. The ages of the speakers in both varieties ranged from early twenties to late forties.

The speakers read a word list twice. The list contained both fortis and lenis stops in initial, medial and final positions. A word list was chosen instead of words embedded in carrier sentences in order to get utterance-initial stops. The initial stops were followed and the medial and final stops were preceded by short and long vowels in the stressed syllable; all target words had stress on the initial syllable. The present comparison includes only the 34 test words that were shared between the F-S and CSS data sets and excludes other test words.

A clear difference between CSS and F-S is that, unlike F-S speakers, speakers of CSS frequently preaspirate postvocalic fortis stops. Of the six CSS speakers, two female speakers had a mean preaspiration duration exceeding 55 ms, two male speakers had a mean preaspiration duration less than 35 ms, and the remaining two speakers (a female and a male) had intermediate preaspiration durations. Here we have included the preaspiration in the vowel duration. Post-aspiration of initial stops, however, was not included in the duration of the following vowel.

Main findings and conclusions

Eight word types (monosyllabic vs. disyllabic, short vs. long vowel, fortis vs. lenis postvocalic stop) were examined. In each word type, in CSS, the stressed-syllable vowel was either short or long, and the following fortis or lenis stop was then either long or short. The word types were monosyllabic with a short vowel, e.g. *däck*, *dagg*; monosyllabic with a long vowel, e.g. *tak*, *lag*; disyllabic with a short vowel, e.g. *bytte*, *ledde*, and disyllabic with a long vowel, e.g. *baka*, *väga*. In the *baka* words, the F-S speakers differed in behaviour. Eight speakers systematically pronounced [baakɑ] (with a short medial consonant) and four systematically pronounced [baakka] (with a long medial consonant). We discuss the *baka* words separately below.

Several consistent differences between CSS and F-S were observed. In both monosyllabic and disyllabic words, short consonants had shorter and long consonants had longer durations in F-S than in CSS. The only exception to this generalisation is that in the [baakka] rendition the long consonant did not have a longer duration than the corresponding consonant in CSS. Another consistent finding was that in both monosyllabic and disyllabic words, short vowels always had shorter durations in F-S than in CSS. All these observations can be summarised by stating: in comparison to the CSS speakers, the F-S speakers exaggerate the syntagmatic quantity difference between the stressed-syllable vowel and the following consonant, the structure within which the Swedish quantity contrast is realised.

Direct comparison of monosyllabic words between Finnish and Swedish is difficult as monosyllabic words are not common in Finnish and have hardly been investigated. Nevertheless, the overall differences between the quantity systems of Finnish and Swedish seem to account for the syntagmatic quantity exaggeration observed in F-S. Bilingual F-S speakers also hear and speak Finnish in which a phonetically short vowel in the stressed syllable can be followed by a short consonant or a long consonant, and similarly a phonetically long vowel in the stressed syllable can be followed by a short consonant or a long consonant, and all these possibilities are mutually contrastive. In Finnish, then, speakers of F-S are used to a system in which duration matters more than in Swedish, in both the stressed-syllable vowel and in the following consonant (as well as later in the word). They have learned that in Finnish, segments that are intended to have short duration must be clearly short, and that segments that are intended to have long duration must be clearly long, because there is less predictability in Finnish than in Swedish in this respect.

Direct comparison of disyllabic words in F-S, CSS and Finnish is not possible in all cases because historically Finnish lacks lenis stops, and studies involving recent loanwords in which lenis stops occur for some speakers have not been undertaken. This also means that, as far as lenis stops are concerned, speakers of Fenno-Swedish can be little influenced by Finnish. But disyllabic words with fortis medial stops can be directly compared.

There are two disyllabic word types in the present material that have, in segmental and gross durational terms, lexically numerous equivalents in Finnish. One of these types is represented by the word *backa* (short vowel + long consonant). Spoken in either CSS or F-S, this type sounds durationally very much like Finnish CVCCV words, e.g. *pakko*. The other type is represented by the word *baka* (in CSS: long vowel + short consonant). If spoken in CSS, the medial consonant sounds “half-long” to Finnish ears.

Recall from above that our F-S speakers pronounced the words of this type, exemplified by *baka*, either with the durational pattern [baaka] or with the pattern [baakka]. To Finnish ears, these pronunciations sound durationally very much like Finnish CVVCCV (e.g. *raaka*) and CVVCCV (e.g. *taakka*) words, respectively. Table 1 shows the mean V/C durational ratios for the *baka* word type computed from our CSS speakers’ productions as well as from the [baaka] and [baakka] renditions by the F-S speakers. For comparison, Table 1 also gives ranges of corresponding mean ratios for Finnish reported in Lehtonen (1970), Suomi, Toivanen & Ylitalo (2003), Suomi & Ylitalo (2004) and Ylitalo (2009), excluding the contrastively accented words in the last reference.

Table 1. Vowel/consonant duration ratio in *baka* type words in CSS and two groups of F-S speakers compared with the range of ratios observed for Finnish CVVCCV and CVVCCV words.

| | Sw | Fi |
|--------------|------|--------------------|
| CSS [ba:kɑ] | 1.22 | |
| F-S [baaka] | 2.39 | 1.95-2.74 (CVVCCV) |
| F-S [baakka] | 1.00 | 0.80-0.94 (CVVCCV) |

Table 1 shows that the V/C durational ratio is larger in CSS than it is in F-S [baakka], and very much smaller than it is in F-S [baaka]. It can also be seen that these ratios in F-S are more similar to Finnish ratios in CVVCCV and CVVCCV words, respectively, than they are to the CSS ratio. However, the major difference here between CSS and F-S is that while CSS has only one durational pattern for the *baka* words, F-S has two patterns.

The variation between the pronunciations [baaka] and [baakka] is determined by both regional and sociolinguistic factors. The usage of [baaka] is considered to be “provincial”, and often a speaker switches to [baakka] after moving to the capital area. According to Reuter (2008), the longer the medial consonant in such words, the higher the socioeconomic status of the speaker. The Swedish spoken in and around Helsinki is usually considered Standard Fenno-Swedish. Our speakers who produced [baakka] come from Helsinki and Turku and the region between these cities, but other speakers from roughly the same areas produced [baaka] instead. A generalisation without exceptions is that the five speakers who are *not* from the broad Helsinki/Turku area always produced [baaka] (four of them from Österbotten).

A further consistent finding was that, in both monosyllabic and disyllabic words, long vowels always had shorter durations in F-S than in CSS; the only exception was the [baaka] rendition in which the long vowel did not have a shorter duration than the corresponding vowel in CSS. Even so, the shorter C durations in F-S compensated for this and consequently the V:/C durational ratios were larger in F-S than in CSS for these words as well.

A final consistent inter-variety difference was that, in monosyllabic words, the fortis ~ lenis differences were greater, for both vowel and stop durations, in CSS than in F-S; in disyllabic words the comparison could not be made as the fortis stops exhibited two distinct patterns in F-S. Even here the explanation may be Finnish: Since Finnish practically lacks the fortis ~ lenis distinction, its salience may therefore have been reduced in F-S.

In CSS the observed fortis/lenis closure duration ratios were 1.68 in long final stops in monosyllabic words, 1.94 in short final stops in monosyllabic words, 1.44 in medial long stops in disyllabic words, and 2.31 in medial short stops in disyllabic words. These are very large ratios. It is as if CSS strives for an extremely clear perceptual contrast between its fortis and lenis stops: utterance-initially (where occlusion duration cannot be estimated) the former are aspirated and the latter are prevoiced (Helgason & Ringen, 2008), a rare combination in the languages of the world, in other positions the contrast is supported, in addition to voicing parameters, by a large durational difference.

Discussion

Our major finding was that there are several systematic durational differences between CSS and F-S. These are just an addition to the long list of segmental and prosodic differences between the two varieties given and exemplified by Kuronen & Leinonen (1999, 2008). We wish to argue that the prosodic differences are not the result of a *sua sponte* development of F-S. It cannot be an accident that to the extent F-S differs from CSS, the differences are almost always in the direction of Finnish.

It was observed that in those word types in which the CSS and F-S quantity systems are phonologically identical (i.e. all word types except the *baka* words), there were nevertheless consistent phonetic differences in that F-S speakers exaggerated the syntagmatic quantity difference between the stressed-syllable vowel and the following consonant. In addition to these phonetic differences, the repertoire of phonological quantity patterns is larger in F-S than in CSS. CSS only has the two patterns VC: and V:C as in *backa* and *baka*. Even recent loanwords must have one of these two quantity patterns; a given word may have alternative pronunciations with respect to quantity, but the alternation is between the two native patterns, e.g. *foto* may be pronounced as either [fu:tu] or [fut:u]. F-S in contrast has four quantity patterns.

Where CSS has *baka* [ba:ka], F-S has the two alternative patterns [baakka] and [baaka]. The *backa* [bak:a] type is very similar in both varieties. The fourth quantity pattern in F-S is VC, i.e. a short stressed-syllable vowel followed by a short consonant. This pattern is called *kortstavighet*, ‘shortsyllabicity’ in Swedish. In some rural F-S dialects, at least for older speakers, the VC pattern has survived from Proto-Nordic, and e.g. *baka* is pronounced [baka]. In non-rural standard varieties of F-S, the VC pattern occurs in a large number of both fully native and borrowed words including *foto* [foto]; Kuronen & Leinonen (2010: 14-15) list seven groups of such words, and in some words there is vacillation between pronunciations with a short and a long vowel. An additional dimension in this variation is that the long-vowel pronunciation of these words usually only occurs in a formal register.

Thus while CSS has two possible quantity patterns in initially stressed disyllabic words

Finnish has eight, and F-S uses four patterns. Although there may be no minimal pairs yet involving the *foto* and *baka* types of words (CVCV against CV:CV ~ CV:C:V), and although the [baaka] ~ [baakka] variation is so far only sociolinguistic, the door is open for four distinct quantity patterns.

References

- Elert, C (1964) *Phonologic Studies of Quantity in Swedish*. Sweden: Almqvist & Wiksell.
- Helgason, P & Ringen, C (2008). Voicing and aspiration in Swedish stops. *Journal of Phonetics*, 36, 607-628.
- Kuronen, M & Leinonen, K (1999). Fonetiska skillnader mellan finlandssvenska och rikssvenska. *Svenskans beskrivning 24*. Linköping Electronic Conference Proceedings. URL: <http://www.ep.liu.se/ecp/006/011/>.
- Kuronen, M & Leinonen, K (2008). Prosodiska särdrag i finlandssvenska. In: M Nordman, S Björklund, Ch Laurén, K Mård-Miettinen & N Pilke, eds, *Svenskans beskrivning 29*. Finland: Skrifter utgivna av Svensk-Österbottniska samfundet 70, 161-169.
- Kuronen, M & Leinonen, K (2010). *Svenskt uttal för finskspråkiga*. Finland: Juvenes Print – Tampereen yliopistopaino Oy.
- Lehtonen, J (1970). *Aspects of quantity in standard Finnish*. *Studia philologica Jyväskyläensia* VI. Finland: Jyväskylä University Press.
- Reuter, M (2008). Mikael Reuter vägrar vara språkpolis. Newspaper article in *Vasabladet*, June 6th 2008. URL: <http://www.vasabladet.fi/story.aspx?storyID=21513>.
- Ringen, C & Suomi, K (in preparation). The voicing contrast in Fenno-Swedish.
- Suomi, K, Toivanen J & Ylitalo, R (2003). Durational and tonal correlates of accent in Finnish. *Journal of Phonetics*, 31, 113-138.
- Suomi, K, Toivanen J & Ylitalo, R (2008). *Finnish sound structure*. *Studia Humaniora Ouluensia* 9. URL: <http://herkules oulu.fi/isbn9789514289842>.
- Suomi, K & Ylitalo, R (2004). On durational correlates of word stress in Finnish. *Journal of Phonetics*, 32, 35-63.
- Ylitalo, R. (2009). *The realisation of prominence in three varieties of Standard Spoken Finnish*. Ph.D. dissertation. Acta Universitatis Ouluensis B Humaniora 88. URL: <http://herkules oulu.fi/isbn9789514291142>.
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