Finnish has a well-studied palatal harmony system whereby front and back vowels cannot co-occur in non-compound words. Suffixes alternate according to the stem’s harmonic class. This paper examines the phonetics of stem and suffix harmony, showing it is not synchronically productive for all speakers.

To determine whether harmony is synchronically productive, a phonetic experiment examining the stem and suffix harmony of harmonic and disharmonic loanwords was performed. The experiment included a language game involving the transposition of initial CV sequences of adjacent words, providing a nonce test for both types of harmony. While 29% of disharmonic loans were harmonized in the normal reading, re-harmonization varied in the game from 10-43%, depending on the original word type and the harmonic class of the switched vowel and the remaining word portion. Though some harmonization did occur, these results run counter to claims by Campbell (1980) and Harrikari (2000) that re-harmonization is automatic and fully productive in such games. The lack of productive harmonization of stems in the nonce setting of the game indicates that stem harmony is no longer fully productive, at least for some speakers.

Many studies addressing suffixal harmony utilize orthographic data, assuming it is representative of the spoken realizations. However, phonetic studies indicate that this is not necessarily the case. Välimaa-Blum (1999) found that 5-19% of her loan tokens were affixed with a central vowel rather than the expected harmonic vowel; this vowel is not distinctly realized orthographically. My experiments on loans found that some speakers, especially females, produced almost exclusively front suffixes, which did not conform with their written forms.

The unusual suffixation of loans, though of interest, does not necessarily indicate that suffixal harmony is in a state of decline as these words could form a separate stratum or be lexical exceptions. However, acoustic studies of native words indicate that suffixal harmony in these words may also be less than fully productive, at least for some speakers or dialects. For certain speakers/dialects, the low vowels may be only barely distinct. Kuronen’s (2000) examination of Tampere Finnish vowels shows that low vowels were situated extremely close. Ivonen & Harmud (2005: 65) state that “it is a well-known phenomenon that an auditory confusion of /æ/ and /a/ is possible in the region.” Eerola & Savela’s (2012) work in south-west Finland also shows a similar small difference between these vowels. In Mahonen’s (2011) study of suffix vowels of Helsinki speakers, 20% of her speakers showed overlap of front and back suffixes. In my game data, speakers produced a significant number of neutral suffixes and more front harmonic suffixes.

There thus appears to be evidence that stem and suffixal harmony may not be synchronically productive for all speakers/dialects. If there has been a weakening of the system, what might cause such a shift? Many languages which have lost harmony have been influenced by massive borrowing of disharmonic loans or have succumbed to the influence of internal pressures on the system including vowel mergers and shifts or a change of the [+back] distinction from vowels to consonants (Comrie 1981). Though Finnish does not have these pressures, it has other internal pressures. Most inflectional suffixes contain low vowels which, of the harmonic vowels, are closest in the vowel space. Sentence and word intonation typically employ falling intonation (Suomi et al 2008). Glottalization, breathy voice, and devoicing are all common on final vowels, which are normally unstressed. This conspiracy of phonetic factors may result in lessened prominence of the final vowels, which are often the very harmonic vowels under discussion. Together, these internal pressures may have conspired to reduce the perceptibility of the harmonic suffix vowels, leading to the weakening of harmony.
References


