

Two ways to be transparent to Finnic vowel harmony

Daniel Currie Hall, Saint Mary's University

Introduction In Finnish and in Votic (two Finnic languages), /i/ is transparent to vowel place harmony, but interacts with consonants. Previous accounts (Nevins 2010, 2015 for Finnish; Blumenfeld & Toivonen 2016 for Votic) have argued that this is best explained by saying that the frontness of /i/ in these languages is non-contrastive, and that harmony refers only to contrastive features, while the vowel–consonant interactions refer to all features. This paper argues instead that it is possible to maintain the stronger hypothesis that non-contrastive features are wholly unspecified, and thus not available to either type of process. This approach plays out differently in the two languages: in Finnish, the vowel–consonant interaction does not need to identify /i/ as front, whereas in Votic, the frontness of /i/ is contrastive, but is specified with a different feature from the other (non-transparent) front vowels.

Finnish In Finnish, the non-low front unrounded vowels /i/ and /e/ are transparent to harmony, illustrated here with data from D'Arcy (2004) and Krämer (2002):

- (1) *syyte-ttæ* ‘action+ABESS.’ (3) *grøtsi-næ* ‘porridge+ESS.’ (5) *væitel-lyt* ‘dispute+PTCP.’
(2) *suure-tta* ‘entry+ABESS.’ (4) *tsaari-na* ‘tsar+ESS.’ (6) *ajatel-lut* ‘think+PTCP.’

The vowels that participate in harmony all occur in phonemic front–back pairs: /y/–/u/, /ø/–/o/, and /æ/–/ɑ/. Many accounts of Finnish have linked the transparency of /i/ and /e/ to their lack of phonemic back counterparts—i.e., to the absence of a contrast with */i/ or */u/ and */ə/ or */ɤ/ (see, e.g., Jakobson et al. 1952; Kiparsky 1985). One way to make the connection between contrast and activity is through underspecification: if non-contrastive features are absent, it follows automatically that they will be invisible to harmony. But Nevins (2015: 59) argues that [–back] cannot be unspecified on Finnish /i/, because it triggers assibilation of /t/ to [s]:

- (7) *halut-a* ‘want+INFINITIVE’ (8) *halus-i* ‘want+PAST’

However, the claim that [–back] is needed for assibilation is predicated on the assumption (adopted from Calabrese 2005) that assibilation must be treated as a kind of palatalization. Absent this assumption, [–back] is not logically necessary for identifying /i/ as the trigger of assibilation (the combination [+high, –round] suffices), nor must it necessarily be available to spread from /i/ to /t/, as the target of assibilation changes only in manner and not in place. Assibilation does not torpedo the underspecification account of transparency.

Votic In Votic, the front–back pairs /y/–/u/, /ø/–/o/, /e/–/ɤ/, and /æ/–/ɑ/ participate in place harmony (9)–(12); /i/, which has no back counterpart in the native phonemic inventory, is transparent, as shown in (13)–(16) (data from Ariste 1968).

- (9) *vævy-ssæ* ‘son-in-law’+ELATIVE (13) *tæi-ssæ* ‘louse’+ELATIVE
(10) *sepæ-ssæ* ‘smith’+ELATIVE (14) *pehmiæ-ssæ* ‘soft’+ELATIVE
(11) *vasara-ssa* ‘hammer’+ELATIVE (15) *poiga-ssa* ‘son’+ELATIVE
(12) *vɛrkko-ssa* ‘net’+ELATIVE (16) *vɛttimɤ-ssa* ‘key’+ELATIVE

An obvious interpretation would be that Votic /i/ is unspecified for [±back], like /i/ and /e/ in Finnish. However, Blumenfeld & Toivonen (2016) show that this cannot be the case. The lateral /l/ is normally velarized [ɫ] in back-harmonic words (17) and clear [l] in front-harmonic words (18), but /l/ immediately followed by /i/ is consistently clear, even in words whose other vowels are back (19)–(20); data from Ariste (1968).

- (17) *pɤHøɫɤssa*: ‘field’ (terminative) (19) *tuli:sɤ*: ‘fires’ (illative pl.)
(18) *miltinle:ɸ* ‘some kind of’ (20) *lintuiɫa* ‘birds’ (allative pl.)

Furthermore, /i/ triggers palatalization of /k/ to [tʃ], as in (21)–(22) (here fed by word-final raising and fronting of /ɤ/; data from Odden 2005: 100–101):

(21) *kurʃi kurʃɑ* ‘stork’ (NOM./PART.) (22) *ʃʃi ʃʃɑ* ‘straw’ (NOM./PART.)

Unlike Finnish /t/→[s] assibilation, the Votic /k/ and /l/ patterns both clearly involve changes in place of articulation, and so it is implausible that the frontness of /i/ is simply unspecified. Blumenfeld & Toivonen (2016) propose an analysis in which [–back] is non-contrastively specified on /i/. Non-contrastive features are invisible to harmony, but visible to /l/ allophony (and presumably also to /k/-palatalization).

However, another factor militates against both the underspecification analysis and Blumenfeld & Toivonen’s parametric visibility account: Votic has /i/. Although there is no /i/ in the native vocabulary, it does occur in borrowings from Russian (Blumenfeld & Toivonen 2016: 1169 fn. 2; Ariste 1968: 1); Harms (1987: 382) describes these loanwords as “well assimilated to Votic phonological and morphological patterns.” Even if the relevant borrowings are marked as lexical exceptions to an otherwise high-ranking constraint against unrounded high back vowels, it is still necessary that /i/ and /i/ have distinct representations, because they can co-occur within a loanword, as in [viʃifka] ‘embroidery’ (< Russian *вышивка*). The frontness of /i/ is not only phonologically active, but also contrastive.

How then to explain the transparency of Votic /i/ to harmony? By inverting two of Blumenfeld & Toivonen’s assumptions: /i/ *does* contrast with /i/, but /i/ is *not* specified as [–back]. Suppose that rather than the harmonizing feature [–back], /i/ is specified with the distinct (and usually consonantal) place feature CORONAL. It is this feature that spreads to /l/ (overriding any secondary velarization conditioned by [+back] on other vowels) and to /k/. The proposition that /i/ is specified with a consonantal place feature CORONAL receives at least circumstantial phonetic support from the fact that intervocalic /i/ can be realized as [dʲ:] (Černjavskij n.d.: 8).

Conclusion The analyses proposed here give a non-unified account of the transparency of /i/ to harmony in Finnish and Votic: Finnish /i/ (like Finnish /e/) is transparent because its frontness is non-contrastive and unspecified; Votic /i/ is contrastively front, but specified with a different feature from other front vowels. However, the disparate accounts both support the strong hypothesis that only contrastive features are specified in phonological representations.

References

- Ariste, P. 1968. *A Grammar of the Votic Language*. Bloomington: Indiana University.
- Blumenfeld, L. & I. Toivonen. 2016. A featural paradox in Votic harmony. *NLLT* 34: 1167–1180.
- Calabrese, A. 2005. *Markedness and Economy in a Derivational Model of Phonology*. Berlin: Mouton de Gruyter.
- Černjavskij, V. n.d. *Vad’d’a tšeeli / Водский язык*. Syktyvkar: Finno-Ugric Cultural Center of the Russian Federation.
- D’Arcy, A. 2004. Unconditional neutrality. *Toronto WPL* 23: 1–46.
- Harms, R. T. 1987. What Helmholtz knew about neutral vowels. In R. Channon & L. Shockey (eds.), *In Honor of Ilse Lehiste*. Dordrecht: Foris, 381–399.
- Jakobson, R., C. G. M. Fant & M. Halle. 1952. Preliminaries to speech analysis. Tech. Rep. 13, MIT Acoustics Laboratory.
- Kiparsky, P. 1985. Some consequences of Lexical Phonology. *Phonology Yearbook* 2: 85–138.
- Krämer, M. 2002. Local constraint conjunction and neutral vowels in Finnish harmony. *Belfast WPLL* 15: 38–64.
- Nevins, A. I. 2010. *Locality in Vowel Harmony*. Cambridge, MA: MIT Press.
- Nevins, A. I. 2015. Triumphs and limits of the contrastivity-only hypothesis. *Ling. Variation* 15: 41–68.
- Odden, D. 2005. *Introducing Phonology*. Cambridge: CUP.