Two ways to be transparent to Finnish vowel harmony

1. Finnish

Finnish /i/ and /e/ are famously transparent to vowel harmony, as shown here with examples from D’Amy (2003) and Kotimer (2002):

(i) Front-harmonic words
   a. syystä ‘actions’-address
   b. grotsi ‘porridge’-ess.
   c. vauhdit ‘dispute’-fut.
   This has often been linked to the fact that /i/ and /e/ do not have back counterparts in the phonemic inventory.

   Front vowel inventory

   Jakobson, Fant, and Halle (1952: 4):

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The Finnish vowel inventory

The Finnish facts are consistent with multiple approaches to the role of contrast:

- Calabrese (1995); Nevins (2010):
  What’s special about contrastive features?
  All features are specified, but some rules ignore redundant features.

- Hall (2011): What’s special about contrastive features?
  Only contrastive features are specified.

- Nevins (2013): How are contrastive features identified?
  Features are assigned in a contrastive hierarchy.

   (3) Contrastive hierarchy for Finnish vowels

   -low [ ]
   -round [ ]
   -high [ ]
   -back [ ]
   -back [ ]

   Dresher (2009).

Nevins (2015: 59) writes that Hall (2011) “falls prey to” the “temptation” of treating vowel harmony in isolation, and contends that “[– back]” must be specified on Finnish /i/ to account for its ability to trigger assimilation of /i/.

   (4) a. halut-a ‘want’-INFINITIVE
   b. halus-i ‘want’-PAST
   • This assumes (per Calabrese 2000) that assimilation ispalatalization.
   • But assimilation changes only manner; there is no spreading of place from /i/ to /i/.
   • And we don’t need [– back] to identify /i/ as the trigger; [– high, – round] suffices.

2. Votic

Blumenfeld and Toivonen (2016) identify a ‘paradox’ in the behaviour of /i/ in Votic (an endangered Finnish language spoken in western Russia, near the Estonian border). As in Finnish, Votic /i/ is transparent to vowel harmony, as shown below with examples from Ariste (1968) and Ahlqvist (1986):

   (5) /i/ in front stem + ELATIVE
   a. id-sae ‘father’
   b. tei-sae ‘son’
   c. pehminä ‘soft’

   (6) /i/ in back stem + ELATIVE
   a. siib-sae ‘bridge, floor’
   b. poig-o-sae ‘boy, sist’
   c. vartamo-sae ‘key’

Because /i/ has no back counterpart in the native inventory, an obvious inference would be that it is unspecified for [– back], as in Finnish. However, Blumenfeld and Toivonen show that this cannot be the case, based on how /i/ affects /l/.

   Votic /i/ is normally clear [i] in front-harmonic words but velarized [i] in [back]-harmonic words, as shown here with data from Ariste (1968):

   (7) Front stem + PL. /-i/ + ELATIVE
   a. tfie-sae ‘stones’
   b. soo-s-hm ‘teeth’
   c. luntu-s ‘birds’

   (8) Back stem + PL. /-i/ + ELATIVE
   a. soo-s-s ‘teeth’
   b. many-s ‘seeds’
   c. tcomb ‘combative person’

   But before /i/, even in an otherwise back-harmonic word, /i/ is clear:

   (9) [i] in front-harmonic words
   (10) [i] in back-harmonic words

   a. leppä ‘older’
   b. id-sae ‘father’
   c. lylten ‘pal’
   d. dyläras ‘village’-address
   e. miltte ‘some kind of’
   a. shof ‘beer’
   b. kusamänu ‘devil’
   c. polios-sae ‘feed’-TERMIN.
   d. poiga-s ‘boy, son’-address
   e. milta ‘from me’ (SIGRABL.

   But before /i/, even in an otherwise back-harmonic word, /i/ is clear:

   a. silmä ‘we were’
   b. toppmilku ‘combinative person’
   c. tol-ias ‘finish’-FL-ELATIVE
   d. lint-si ‘bird’-FL-ALLATIVE

   The frontness of /i/, though ignored by harmony, blocks or overrides velarization of /i/. (Forms like (10e) [m] ilk ‘name’ show that we can just say that velarization is triggered by an immediately following [– back] vowel, pace Černjavskij n.d.: 6.)

   Furthermore, /i/ triggers palatalization of /k/ to /ʧ/ (here fed by word-final raising and fronting of /i/; data from Odden 2005: 190–191):

   (12) Partially nominative

   a. kurk-s-aa ‘curry’-mark
   b. siik-sa ‘shy’-traw
   c. kohko ‘kitchen’

  Unlike Finnish /i/ > [i] assimilation, the Votic /k/ and /i/ patterns both involve place of articulation, so the frontness of /i/ cannot simply be unspecified.

   Blumenfeld and Toivonen propose that [–back] is ‘weakly’ (i.e., non-contrastively) specified on /i/ in Votic. They follow Calabrese (1995), Nevins (2010), and Rhodes (2010) in allowing redundant features to be visible to some processes but not others; harmony ignores weak specifications.

   The contrastivity-only approach (Hall 2011) predicts that if place is phonologically active on /i/, it must also be contrastive.

   It is. Votic has /i/, though only in loanwords from Russian (Ariste 1968: 1, Blumenfeld and Toivonen 2010: fn. 2).

   These loans are “well assimilated to Votic phonological and morphological patterns” (Harms 1987: 38a).

3. Proposal: The feature that (contrastively) marks frontness on /i/ is not the same feature that is involved in harmony.

   Specifically:

   (13) Partial contrastive hierarchy for Votic

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   But there is independent support for specifying /i/ as coronal rather than [– back]? Why is it transparent to harmony?

   - Loanword with harmonizing native suffix (Harms 1987: 38a; Ariste 1968: 1)
   - rinkos ‘marketplace’ + PL. + ADHESIVE < Russian rynok ‘market’ /ˈrɪnok/ /ˈrɪnok/
   
   We can say that borrowings from Russian are exceptions to a high-ranking constraint against unrounded high back vowels. Even so, there must be a lexical contrast between /i/ and /u/ because they can co-occur within a loanword:


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