Vowel harmony: nucleus to nucleus or vocalic node to vocalic node?
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1 Background
➢ There are two nonlinear models for vowel harmony (Syllable-Head and Feature Geometry).

➢ Motivating questions: Are both of these models necessary? What is the essence of vowel harmony?

➢ Case Study: Two languages that treat glides and palatal consonants differently.

<table>
<thead>
<tr>
<th></th>
<th>Pasiego</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glides Participate</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Palatal Cs Participate</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

➢ OT: Analyses always refer to *vowels* to the exclusion of consonants.

Agree [feature]
Adjacent segments have the same value for a given feature (here vowels are assumed to be adjacent and consonants are ignored) (Bakovic 2003)

Spread [feature]
Spread a feature to all vowels in a word. (Walker 2001)

Align ([closed], [Suffix L, Stress, L])
For all suffix vowels that are closed, there exists a [closed] such that the left edge of that occurrence of [closed] and the left edge of the stressed vowel coincide (Parkinson 1996)

Extend [feature]
The autosegment [feature] must be associated to all available vocalic positions within a word. (Kaun 1995)

Combination of Expression[F] and *[F, Consonant]
The feature [F] must be expressed on every element in an F-domain. // [F] → not Consonantal. (Cole & Kisseberth 1997)
(3) Representation of palatal segments and glides

<table>
<thead>
<tr>
<th>a. Derived glide</th>
<th>b. Underlying glide</th>
<th>c. Palatal and palatalized C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td>Root</td>
<td>Root</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>C-place</td>
<td>C-place</td>
<td>C-place</td>
</tr>
<tr>
<td>vocalic</td>
<td>[coronal]</td>
<td>[coronal]</td>
</tr>
<tr>
<td>V-place</td>
<td>aperture</td>
<td>V-place</td>
</tr>
<tr>
<td>[+high]</td>
<td>(Levi: in preparation)²</td>
<td>[+high]</td>
</tr>
</tbody>
</table>

(4) V C V C V

<table>
<thead>
<tr>
<th>V-place</th>
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<th>V-place</th>
</tr>
</thead>
<tbody>
<tr>
<td>vocalic</td>
<td>vocalic</td>
<td>vocalic</td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

3 Pasiego Raising Harmony

3.1 Basic Data (Penny 1969b: 156)

Direction: Leftward
Trigger: Stressed high vowel
Target: Mid vowel
Transparent: [a] (low vowels)
Spreading Feature: Height (also ATR, not discussed here)

(5) bebèr ‘to drink’ bibi:s ‘you (pl) drink’ (indic.)
bebámos ‘we drink’ bibía ‘he was drinking’ (indic.)
komèr ‘to eat’ kumíria ‘he would eat’.
komájs ‘you (pl)’ kumí:s ‘you (pl) eat’ (indic.)
eat’ (subj.)

(6) el pán ‘the bread’ il kúrdíru ‘the lamb’
kon pán ‘with bread’ kun il májistrú ‘with the teacher
po la káye ‘down the street’ po l kumínu ‘along the path’

3.2 Glides


<table>
<thead>
<tr>
<th>V-Place Theory</th>
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</thead>
<tbody>
<tr>
<td>Locality/Level of</td>
</tr>
<tr>
<td>scansion</td>
</tr>
<tr>
<td>Explanation for inertness of consonants</td>
</tr>
</tbody>
</table>

Nuclear:
Post-consonantal: .C[GV]

Non-nuclear:
Prevocalic: .G[V]
Postvocalic: .C[V]G

➢ Glides in Spanish are derived from vowels and are not phonemic/underlying.

➢ 'la falsa separación' (Penny 1969a: 94) j is an allophone of the glide/vowel laz jenás < las sjenás 'temples of the forehead'

¹ The feature [+high] will be used here for convenience, but see Parkinson 1996 for a different representation of the aperture node.
² This analysis is similar to that used in Hume 1995.

(7) a. amfístár ‘to infect’ amfíójón ‘infection’
bérd ‘green’ birdíjár ‘to turn green’
merendér ‘to snack’ mirjénd ‘a snack’
sorbé ‘to suck’ surbitójár ‘to snuffle’
ménus ‘less’ miñwár ‘to lessen’
koxér ‘to take’ kuxjó ‘he took’
b. me lo kompró ‘he bought me it’ mì lu djó ‘he gave me it’
se kasó ‘he got married’ si kemjó ‘it’s been eaten’
lu málu ‘the bad thing’ lu pjór ‘the worst’
el ganáw ‘cattle’ il mjéw ‘fear’

Non-nuclear (Onset) Glides do not trigger VH (Kaisse 2000)

(8) a. krejér *krijér ‘to believe’
krijémus *krijémus ‘we believe’
krijés (alternate dialect form krejés) ‘you (pl.) believe’
b. se jó lo águ *si jó lo águ ‘if I do it’ (Penny 1969b: 155)
   ne jó *ni jó ‘nor I’
   cf. ni línó ni lútró ‘neither one nor the other’
el jélsu *il jélsu ‘the plaster’
   cf. il kaminó ‘the road’

Non-nuclear (Coda) Glides do not trigger VH (Hualde 1991)

(9) koxájs *kuxájs ‘take 2p pl subj’

3.3 Palatal consonants

Palatal consonants show variable behavior.

(10) Expected pattern if palatal Cs are triggers

<table>
<thead>
<tr>
<th></th>
<th>Raising</th>
<th>No Raising</th>
</tr>
</thead>
<tbody>
<tr>
<td>In σ</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>In š</td>
<td>21</td>
<td>0</td>
</tr>
</tbody>
</table>

(11) Incidence of raising by palatal consonants ṣ and .Receive

<table>
<thead>
<tr>
<th></th>
<th>Raising</th>
<th>No Raising</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>In š</td>
<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>

(12) Incidence of raising by palatal consonants ṣ and ŋ

<table>
<thead>
<tr>
<th></th>
<th>Raising</th>
<th>No Raising</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>bůłu ‘cumulus cloud’</td>
<td></td>
</tr>
<tr>
<td>In š</td>
<td>supár (c.f. st. sopar ‘to dream’)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tšár (also tešár ‘to plank’)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>urď njár (cf. st. orđenar ‘arrange’)</td>
<td></td>
</tr>
</tbody>
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3.4 Analysis of Pasiego

<table>
<thead>
<tr>
<th></th>
<th>σ-Head</th>
<th>V-Place Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nuclear vowels [i] and [u] trigger VH.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Nuclear [j] and [w] trigger VH.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Non-nuclear [j]/[w] (onset) and [j]/[w] (coda) do not trigger (though they are derived from /i/ and /u/).</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>

4 Turkish Backness Harmony

4.1 Basic Data

Direction: Rightward
Trigger: Any vowel
Target: Any vowel
Transparent: None
Spreading Feature: Backness (also round, not discussed here)


<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ip</td>
<td>ip-in</td>
<td>ip-šěr</td>
<td>ip-šěr-in ‘rope’</td>
</tr>
<tr>
<td>kiz</td>
<td>kiz-in</td>
<td>kiz-lar</td>
<td>kiz-lar-in ‘girl’</td>
</tr>
<tr>
<td>jyz</td>
<td>jyz-šn</td>
<td>jyz-šěr</td>
<td>jyz-šěr-in ‘face’</td>
</tr>
<tr>
<td>son</td>
<td>son-un</td>
<td>son-lar</td>
<td>son-lar-in ‘end’</td>
</tr>
</tbody>
</table>

[4] Nor are plain consonants (l and n) targets: [limpjs] ‘he cleans’.
4.2 **Turkish glides**

- The palatal glide is transparent to VH in Turkish

(14) koj koj-da *koj-de koj-u *koj-i 'cove'
paj paj-da *paj-de paj-i *paj-i 'share'

- Glides in Turkish are underlying (Levi 2001).
- Glides in Turkish are not nuclear (Levi 2001).

4.3 **Turkish palatal consonants**

(15) /petro/ 'gasoline'
    petro-y *petro-u accusative
    petro-de *petro-da locative

4.4 **Analysis of Turkish**

<table>
<thead>
<tr>
<th></th>
<th>(\sigma)-Head</th>
<th>V-Place Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vowels (nuclear) trigger VH.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Underlying glides (non-nuclear) do not trigger VH.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Palatal consonants (non-nuclear) trigger VH.</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

5 **Conclusion**

- Both representations of VH are necessary but there may be correlations with the type of harmony. For instance:
  1. If stress-based, then nucleus-to-nucleus? (heads are relevant).
  2. If height-based, then nucleus-to-nucleus? (why?)

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5 Partial evidence comes from the fact that Turkish has very few disharmonic native roots. If surface glides were derived from underlying vowels, then they would constitute a huge class of native disharmonic roots (e.g. [oja] 'pinking, embroidery')

6 And plain consonant (l) is a target: [ip-\(\_\_\)-er] ‘ropes’.

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**References:**


