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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.

	Pasiego	**Turkish**
Glides Participate	Yes	No
Palatal Cs Participate	No	Yes

➢ 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)

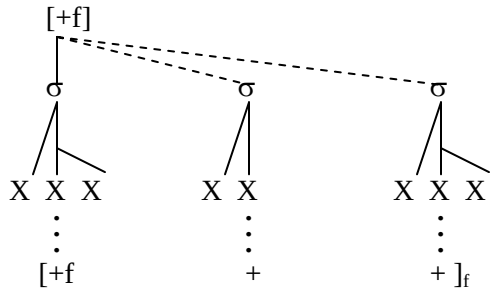
EXTEND [feature]
The autosegment [feature] must be associated to all available *vocalic* positions within a word. (Kaun 1995)

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)

2 Two representations of Vowel Harmony

I. Syllable-head approach (adapted from Hulst & Weijer 1995: 509)

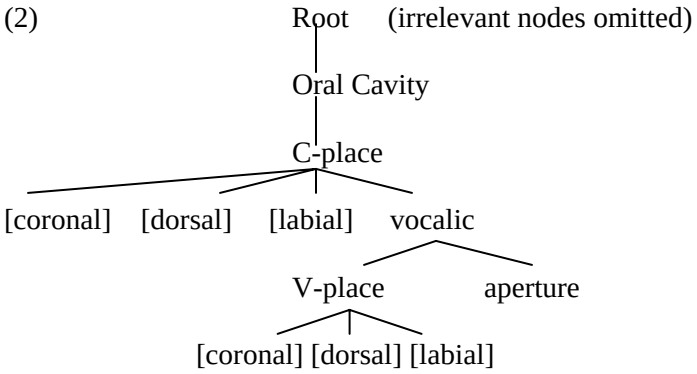
(1)



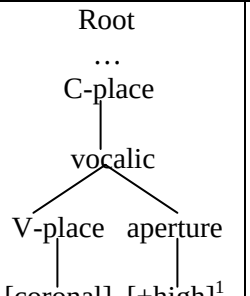
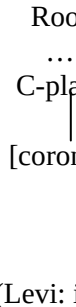
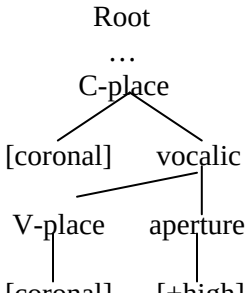
	σ-head
Locality/Level of scansion	adjacent syllable nodes
Explanation for inertness of consonants	only nuclear segments can spread features

II. Feature Geometry (V-Place Theory) (Clements & Hume 1995)

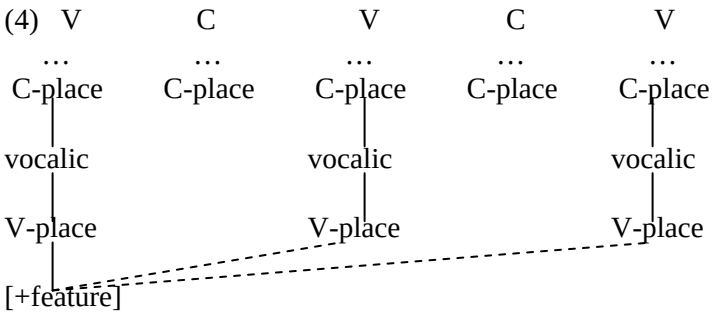
(2)



(3) Representation of palatal segments and glides

a. Derived glide	b. Underlying glide	c. Palatal and palatalized C
	 (Levi: in preparation)[2]	

(4)



	V-Place Theory
Locality/Level of scansion	adjacent vocalic nodes
Explanation for inertness of consonants	most Cs do not have vocalic features

[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.

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)	b**e**bér	'to drink'	b**i**bí:s	'you (pl) drink' (indic.)
	b**e**bámus	'we drink' (subj.)	b**i**bía	'he was drinking' (indic.)
	k**o**m**é**r	'to eat'	k**u**m**i**ría	'he would eat'.
	k**o**májs	'you (pl) eat' (subj.)	k**u**mí:s	'you (pl) eat' (indic.)

(6)	**e**l pán	'the bread'	**i**l kʊrdírʊ	'the lamb'
	k**o**n pán	'with bread'	k**ʊ**n **ɪ**l majɟístrʊ	'with the teacher
	p**o** la káʌe	'down the street'	p**ʊ** l kɐmínʊ	'along the path'

3.2 Glides

➢ Syllabic Constituency of glides (Harris 1983, 1989; Harris & Kaisse 1999; Hualde 1991):

<u>Nuclear:</u>
Post-consonantal: .C[GV]

<u>Non-nuclear:</u>
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) j̯ is an allophone of the glide/vowel

laz j̯enz̯s < las sjenz̯s 'temples of the forehead'

➢ Nuclear Glides trigger VH (Penny 1969b: 153, Hualde 1989, 1991)

(7) a.	amf**e**stár	'to infect'	amf**i**θjón	'infection
	b**é**rdẹ	'green'	b**i**rdigjár	'to turn green'
	m**e**rendér	'to snack'	m**i**rjéndɐ	'a snack'
	s**o**rb**é**r	'to suck'	s**u**rb**i**tjár	'to snuffle'
	m**é**nus	'less'	m**i**ŋwár	'to lessen'
	k**o**xér	'to take'	k**u**xjó	'he took'
b.	m**e** l**o** kompró	'he bought me it'	m**i** l**u** djó	'he gave me it'
	s**e** kasó	'he got married'	s**i** k**u**mjó	'it's been eaten'
	l**o** málu	'the bad thing'	l**u** pjór	'the worst'
	el ganáw	'cattle'	**i**l mjéw	'fear'

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

(8) a.	kr**e**ɟér	*kr**i**ɟér	'to believe'
	kr**e**ɟémus	*kr**i**ɟémus	'we believe'
	kriɟí:s (alternate dialect form kreɟéjs)		'you (pl.) believe'
b.	s**e** ɟó lo águ	*s**i** ɟó lo águ	'if I do it' (Penny 1969b: 155)
	n**e** ɟó	*n**i** ɟó	'nor I'
	cf. n**i** lúnʊ n**i** lútrʊ		'neither one nor the other'
	el jélsu	***i**l jélsu	'the plaster'
	cf. **i**l kamínʊ		'the road'

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

(9)	k**o**xájs	*k**u**xájs	'take 2p pl subj'

3.3 Palatal consonants

➢ Palatal consonants show variable behavior.

(10) Expected pattern if palatal Cs are triggers

	Raising	**No Raising**
In σ	0	19
In σ́	21	0

(11) Incidence of raising by palatal consonants ʎ and ɲ

	Raising	**No Raising**
In σ	1	18
In σ́	9	12

(12) Incidence of raising by palatal consonants ʎ and ɲ

	Raising	**No Raising**
In σ	búʎɐ 'cumulus cloud'[3]	s**e**ɲalár 'to mark'
In σ́	s**u**ɲár (c.f. st. soɲar 'to dream') t**i**ʎar (also teʎar 'to plank') **u**rd**i**ɲár (cf. st. ordeɲar 'arrange')	am**o**raʎár 'stack grass' p**e**ɲáskʊ 'crag'

3.4 Analysis of Pasiego

	σ-Head	**V-Place Theory**
1. Nuclear vowels [i] and [u] trigger VH.	✓	✓
2. Nuclear [j] and [w] trigger VH.	✓	✓
3. Non-nuclear [ɟ]/[w] (onset) and [j]/[w] (coda) do **not** trigger (though they are derived from /i/ and /u/).	✓	☒
4. Non-nuclear palatal consonants generally do not trigger.[4]	✓	☒

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)

	Nom.	Gen.	Nom. pl.	Gen. pl.	
(13)	ip	ip-**i**n	ip-ʎ**e**r	ip-ʎ**e**r-**i**n	'rope'
	kɨz	kɨz-**ɨ**n	kɨz-l**a**r	kɨz-l**a**r-**ɨ**n	'girl'
	jyz	jyz-**y**n	jyz-ʎ**e**r	jyz-ʎ**e**r-**i**n	'face'
	son	son-**u**n	son-l**a**r	son-l**a**r-**i**n	'end'

[3] [bóʎɐs] in another consultant, perhaps related to Standard Castilian [boʎo] 'bread roll'.

[4] Nor are plain consonants (l and n) targets: [límpjɐ] '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-ɨ	*paj-i	'share'

➢ Glides in Turkish are underlying (Levi 2001).[5]

➢ Glides in Turkish are not nuclear (Levi 2001).

4.3 Turkish palatal consonants

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

4.4 Analysis of Turkish

	σ-Head	**V-Place Theory**
1. Vowels (nuclear) trigger VH.	✓	✓
2. Underlying glides (non-nuclear) do **not** trigger VH.	✓	✓
3. Palatal consonants (non-nuclear) trigger VH.[6]	☒	✓

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?)

[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-ʎ**e**r] ‘ropes’.

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