istic Sciences 24:1/2 (1994)

rmation-based syntax and semantics. Center for the Study of Language and

id-driven phrase structure grammar. go Press.
. Cambridge, Mass.: MIT Press.
son of WH-clefts and pseudo-clefts in -906.
itroduction to unification-based ap- ecture Notes Series. Stanford: Center and Information. [Distributed by

antics and pragmatics of preposing. n.D. dissertation in Linguistics.

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"LA DOUBLE VIE DE W" OR THE STATUS OF [w] IN KARUK*

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In Karuk there are two phonetically identical but phonologically distinct labial glides. Based on the patterning of these glides in glide deletion, coda nasalization, and vowel harmony, I will argue that one of the glides is consonantal in nature and the other is vocalic in nature.

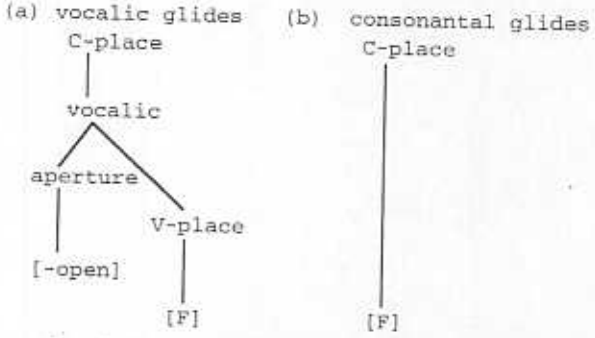
1. Introduction

Karuk has two phonetically identical but phonologically distinct labial glides. I will present evidence that one of the glides is consonantal in nature and the other is vocalic in nature. The existence of a contrast between vocalic and consonantal glides in a single language argues against the widely-held assumption that glides and vowels are featurally identical and differ only in prosodic properties.

2. Theoretical background

The distinction between vocalic and consonantal glides may be captured representationally using the model of feature organization presented in Clements & Hume (1994). (See also Clements, 1991, Herzallah, 1991, and Hume, 1992.)

(1)



In these representations, vocalic segments have a vocalic node dominating the aperture and V-place nodes. This is motivated by harmony processes in which all height and place features spread across intervening consonants. The separation of the vocalic node into aperture and V-place nodes is motivated by assimilation processes in which only height features, to the exclusion of place

features, or only place features, to the exclusion of height features, spread. The C-place node dominating the vocalic node is motivated by the spreading of minor articulations with major articulations, as well as by the cross-linguistic inability of consonant place features to spread from consonant to consonant across a vowel. (Since glides are redundantly high, the aperture features for glides are not crucial to my analysis and will be disregarded throughout.) Consonantal segments are represented with their place features immediately dominated by the C-place node, as in (1b) above.

The No-Crossing Constraint in (2) successfully prevents elements from being multiply-linked for features across vowels.

(2) No-Crossing Constraint

Association lines linking two elements on tier *j* to two elements on tier *k* may not cross. (Clements & Hume, 1994)

The ill-formed multiply-linked structures in (3), (adopted from Hume, 1992) which represent multiple-linking of features across a vocalic segment, all violate the No-Crossing Constraint.

(3) Ill-formed multiply-linked structures

a) * C-place C-place C-place
vocalic vocalic
V-place V-place
[F1] [F2]

b) * C-place C-place C-place
vocalic vocalic vocalic
V-place V-place
[F1] [F2]

c) * C-place C-place C-place
vocalic vocalic vocalic
V-place V-place V-place
[F1] [F2]

The well-formed multiply-linked structures in (4) on the next page, (adopted from Hume, 1992) which represent multiple-linking of features across a consonantal segment, do not violate the No-Crossing Constraint.

3. Vocalic and consonantal glides cross-linguistically

Cross-linguistic evidence has shown that there is a difference between vocalic and consonantal glides. (This analysis of vocalic and consonantal glides follows Hume, 1993.)

In Ainu the transitivizing suffix vowel assimilates completely to the stem vowel, so the vocalic nodes of the suffix and stem vowels are multiply-linked across the consonant. (Data in (5) drawn from Itô (1984), original data from Chiri (1952).)

(4) Well-formed multiply-linked

a) C-place C-place C-place
vocalic
V-place
[F1] [F2]

c) C-place C-place C-place
vocalic vocalic
V-place V-place
[F1] [F2]

(5) a. [mak-a] 'to open' f
b. [ker-e] 'to touch' g
c. [pis-i] 'to ask' h
d. [pop-o] 'to boil' i
e. [tus-u] 'to shake' j

The multiply-linked surface represe
consonant from (5h), for example, is

(6)

[i k + i]
C-place C-place C-place
vocalic
V-place
[coronal] [dorsal]

In Ainu, the glides are opaque to vo
these cases surfaces as [e]. This m
suffix or this may be the default va
crucial point is that the suffix vowel

(7) a. [ray-e] 'to kill' g.
b. [chaw-e] 'to solve' h.
c. [hew-e] 'to slant' i.
d. [piw-e] 'to cause to run' j.
e. [poy-e] 'to mix' k.
f. [huy-e] 'to observe' l.

The opacity of glides to vowel har
vocalic nature. If glides are represe
multiple linking of the vocalic noc
formed, as shown in (8). This is the

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to the exclusion of height features, nating the vocalic node is motivated culations with major articulations, as ıability of consonant place features to ıant across a vowel. (Since glides are 'eatures for glides are not crucial to garded throughout.) Consonantal seg- ir place features immediately domi- (1b) above.

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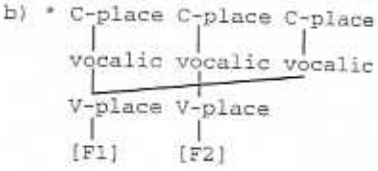
l structures in (3), (adopted from multiple-linking of features across a No-Crossing Constraint.

structures



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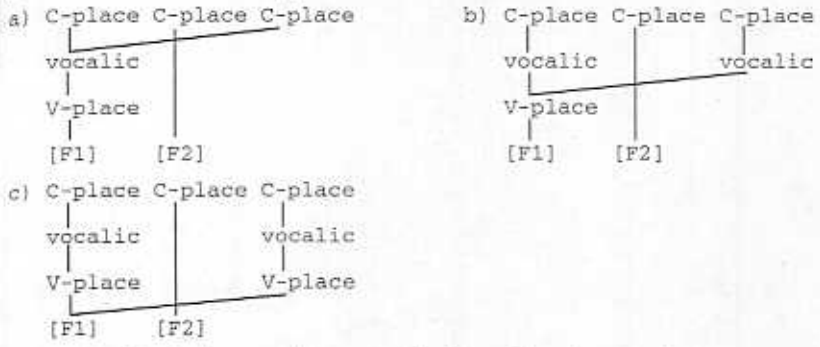
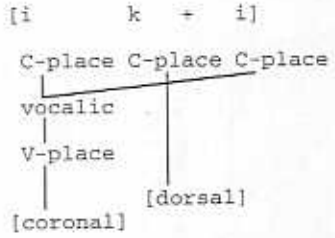
(4) Well-formed multiply-linked structures



(5)	a.	[mak-a]	'to open'	f. [tas-a]	'to cross'
	b.	[ker-e]	'to touch'	g. [per-e]	'to tear'
	c.	[pis-i]	'to ask'	h. [nik-i]	'to fold'
	d.	[pop-o]	'to boil'	i. [tom-o]	'to concentrate'
	e.	[tus-u]	'to shake'	j. [yup-u]	'to tighten'

The multiply-linked surface representation of the vowels across the consonant from (5h), for example, is given in (6).

(6)

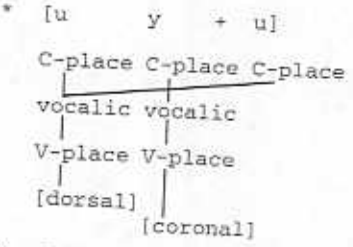


In Ainu, the glides are opaque to vowel harmony. The suffix vowel in these cases surfaces as [e]. This may be the underlying form of the suffix or this may be the default value for an unspecified vowel. The crucial point is that the suffix vowel is not assimilated.

(7)	a.	[ray-e]	'to kill'	g. [say-e]	'to wind'
	b.	[chaw-e]	'to solve'	h. [taw-e]	'to pull'
	c.	[hew-e]	'to slant'	i. [rew-e]	'to bend'
	d.	[piw-e]	'to cause to run'	j. [chiw-e]	'to sting'
	e.	[poy-e]	'to mix'	k. [moy-e]	'to move'
	f.	[huy-e]	'to observe'	l. [tuy-e]	'to cut'

The opacity of glides to vowel harmony in Ainu demonstrates their vocalic nature. If glides are represented as vocalic, as in (1a), then multiple linking of the vocalic node across a glide would be ill-formed, as shown in (8). This is the desired result, blocking harmony.

(8)



Therefore, glides in Ainu are best represented as vocalic. Some languages, on the other hand, have glides which are best represented as consonantal. Kirghiz (data and analysis from McDougall, 1994, original data from Herbert & Poppe, 1963) and Efik (data and analysis from Parkinson, 1994) are two such languages. One effect of the consonantal nature of glides in Kirghiz and Efik is their transparency in vowel harmony. In Kirghiz, a vowel agrees in coronality and labiality with the preceding vowel.

(9) a. [ištɛn] 'from the job'
b. [ettɛn] 'from the meat'
c. [köldön] 'from the lake'
d. [asandan] 'from Asan'

Glides in Kirghiz are transparent to vowel harmony.

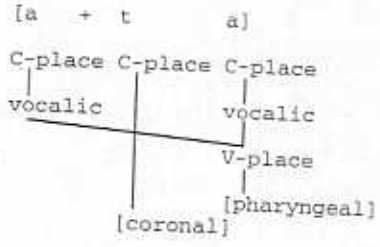
(10) a. [üydön] 'from the house' b. [tokoydon] 'from the forest'

Similarly, in Efik the non-root vowel /ɛ/ (shown here using the second person singular subject marker and the negative particle /kɛ/) assimilates in place features to the following stem vowel.

(11) a. [ɔ-bɔ́p] 'you (sg.) build'
b. [o-bom] 'you (sg.) break'
c. [o-kút] 'you (sg.) see'
d. [ɛ-nɛ́k] 'you (sg.) dance'
e. [ɛ-tí] 'you (sg.) remember'
f. [a-tá] 'you (sg.) chew'
g. [í-dɛ-kɛ́-dɛ] 's/he is not sleeping'
h. [í-kot-kó-kot] 's/he is not seeing'

Following Parkinson (1994), this is analyzed as place assimilation which, as exemplified in (12), results in the V-place node of the root vowel being multiply-linked to both the root and the prefix vowels.

(12)



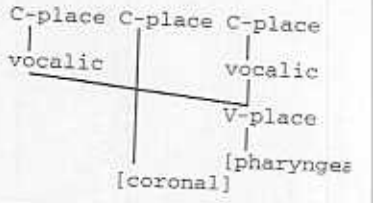
Even if a glide intervenes, th vowel's place features.

(13) a. [á-twá] 'you (s
b. [o-wút] 'you (s
c. [á-yak] 'you (s
d. [í-yɪbi-kɛ́-yɪbí] 's/he is
e. [í-wut-kó-wut] 's/he is
f. [í-wap-ka-wáp] 's/he is

The transparency of glides to their consonantal nature. If glid nantal (as in (14a)), then harm in a well-formed structure. On sented as vocalic (as in (14b)), incorrectly result in an ill-form No-Crossing Constraint.

(14)

a) [a + y a] b



The data from Ainu, Kirghiz have either vocalic or consonar theory must recognize two distin Given the existence of these rep contrast between vocalic and con should exist.

4. Karuk

The prediction that vocalic a in a single language is confirmed from Karuk show a contrast bet nantal and vocalic glides. Both prosodic position.

(15) vocalic /w/
a. /ikriw/ 'to sit, live'
b. /θaw/ 'to knock down acor
c. /yaw/ 'good'

Evidence for the status of glides as phonological patterning, as parts 5,

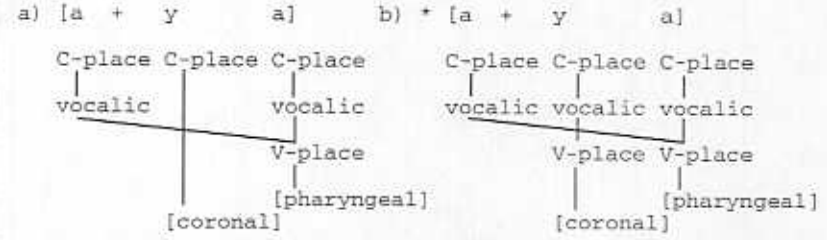
Data from Karuk are drawn f a slightly different transcription sy

Even if a glide intervenes, the vowel assimilates to the following vowel's place features.

(13) a. [á-twá] 'you (sg.) cry'
b. [o-wút] 'you (sg.) show'
c. [á-yak] 'you (sg.) drop (a plate)'
d. [í-yɪbi-ké-yɪbí] 's/he is not flogging'
e. [í-wut-kó-wut] 's/he is not showing'
f. [í-wap-ka-wáp] 's/he is not tearing'

The transparency of glides to vowel harmony in Efik demonstrates their consonantal nature. If glides in Efik are represented as consonantal (as in (14a)), then harmony across the glide correctly results in a well-formed structure. On the other hand, if glides are represented as vocalic (as in (14b)), then harmony across the glide would incorrectly result in an ill-formed structure due to violation of the No-Crossing Constraint.

(14)



The data from Ainu, Kirghiz, and Efik show that languages may have either vocalic or consonantal glides. Therefore, phonological theory must recognize two distinct representations for a given glide. Given the existence of these representations, the prediction is that a contrast between vocalic and consonantal glides in a single language should exist.

4. Karuk

The prediction that vocalic and consonantal glides may contrast in a single language is confirmed in Karuk[1], a Hokan language. Data from Karuk show a contrast between phonetically identical consonantal and vocalic glides. Both types of glides occur in the same prosodic position.

(15)	vocalic /w/		consonantal /w/	
a.	/ikriw/	'to sit, live'	d. /ikyiw/	'to fall'
b.	/θaw/	'to knock down acorns'	e. /θaw/	'to float'
c.	/yaw/	'good'	f. /saw/	'to flow'

Evidence for the status of glides as vocalic or consonantal comes from phonological patterning, as parts 5, 6, and 7 will show.

Data from Karuk are drawn from Bright (1957). I have adopted a slightly different transcription system than the one used by Bright.

I transcribe all bilabial spirants as /w/. Bright transcribes what I am calling "consonantal /w/" as /ϑ/ and what I am calling "vocalic /w/" as /v/. I transcribe all length on vowels as /:/. Bright transcribes underlying length on vowels with a single dot and derived length with a colon. I transcribe all rhotic approximants as /r/. Bright transcribes all stem-final /r/s as /r̃/, to indicate that they nasalize pre-consonantally (see part 6 for discussion of nasalization). The phoneme inventory of Karuk is presented in (16). Length is distinctive on vowels, but the phonemic status of [o:] and [e:] is questionable, since they only appear long and are often transparently the result of coalescence of a high vowel with a low vowel. Additional diacritics used here (as well as by Bright) include the high level tone marked [á], and the falling tone marked [â]. (Tonal phenomena and lengthening and shortening phenomena will not be addressed in this paper.)

(16) Phoneme Inventory

	p	m	w	u	o	t	θ	s	č	n	y	r	i	e	k	x	ʔ	h	a
sonorant	-	+	+	+	+	-	-	-	-	+	+	+	+	+	-	-	+	+	+
continuant	-	-	+	+	+	-	+	+	-	-	+	+	+	+	-	+	-	+	+
constr. gl.																	+	-	
labial	•	•	•	•	•														
dorsal															•	•			
pharyngeal																			•
coronal						•	•	•	•	•	•	•	•	•					
distributed						-	+	-	+	-	+	-	+	+					

5. Glide deletion

The two types of glides in Karuk pattern differently in glide deletion. Vocalic glides delete between vowels.

(17) a. /ikriw + išrih/ → [ikrîːšrih] 'to sit down'
b. /θiw + išrih/ → [θîːšrih] 'to put down'
c. /piw + išrih/ → [pîːšrih] 'to step down'
d. /ʔáxaw + ak/ → [ʔáxaːk] 'cliff'
e. /ikyaw + ara/ → [ikyáːra] 'to make with'
f. /ʔay + at/ → [ʔâːt] 'was afraid of'

Evidence that this is deletion, not insertion, comes from the unpredictability of the word-final glide.

(18) a. /ikyaw/ 'to make'
b. /iyway/ 'to pour'

c. /ʔáxaw/ 'to collapse, used esp.of earth'
d. /ʔáxay/ 'to take (something) from (someone)'

e. /ʔaːw/ 'California wild grape'
f. /ʔáːy/ 'face'

g. /ʔuːw/ 'to put, take'
h. /ʔuːy/ 'mountain, hill'

Further evidence that this is dele
appearance of these glides in
consonantally.

(19) a. /piw + kara/ → [pîːwk
b. /iyway + rámnih/ → [iywáː
c. /iyway + kurih/ → [iywaːr

Therefore, the glide~Ø alternation
not glide-insertion.

Other segments do not delete

(20) a. /tásir + ara/ → [tásiraː
b. /ʔáːkram + ar/ → [ʔaːkra
c. /ikrup + ara/ → [ikrúpa
d. /iškax + išrih/ → [iškáxiː
e. /ihyárih + išrih/ → [ihyáriš
f. /ʔěːθ + eːp/ → [ʔěːθeːp

The difference between segments
those which do not is that the seg
node. The distinguishing feature of
[sonorant], because [r m] do not del
be [continuant], because [x h θ] do
nor can it be a place feature, beca
delete, as shown in (20b, c), coron
in (20f), dorsals which do not delet
segments which do not delete, as
unifying the deleting segments and
segments is their vocalic node.

(21)

```
*μ          μ
:          :
:          :
vocalic vocalic vocalic
```

Another set of glides does not

(22) a. /ikyiw +išrih/ → [ikyîwišrih]
b. /ʔaw + at/ → [ʔáwat]
c. /ikraw + ara/ → [ikráwara]
d. /ʔiw + iruw/ → [ʔîwiruw]

e. /saw + a/ → [sawa]
f. /ʔaraw + uk/ → [ʔarâwuk]
g. /ʔátiw + a/ → [ʔátiwa]

Given the argument that deleting s
vocalic node, the non-deleting segm
terized with a vocalic node. (23) sh

Further evidence that this is deletion, not insertion, comes from the appearance of these glides in other environments, such as pre-consonantally.

(19) a. /piw + kara/ → [pi̍:wkara] 'to step out over'
b. /iyway + rámnih/ → [iywá:yramnih] 'to pour into'
c. /iyway + kurih/ → [iywa:ykurih] 'to pour (into a hole)'

Therefore, the glide~Ø alternation must be analyzed as glide-deletion, not glide-insertion.

Other segments do not delete intervocalically.

(20) a. /tásir + ara/ → [tásirara] 'brush for acorn flour'
b. /ʔá:kram + ar/ → [ʔa:kramar] 'to go argue'
c. /ikrup + ara/ → [ikrúpara] 'to sew with'
d. /iškax + išrih/ → [iškáxišrih] 'to quiet down'
e. /ihyárih + išrih/ → [ihyárihišrih] 'to stand still'
f. /ʔč:θ + e:p/ → [ʔč:θe:p] 'to take away from'

The difference between segments which delete intervocalically and those which do not is that the segments which delete have a vocalic node. The distinguishing feature of segments which delete cannot be [sonorant], because [r m] do not delete, as shown in (20a, b), nor can it be [continuant], because [x h θ] do not delete, as shown in (20d, e, f), nor can it be a place feature, because there are labials which do not delete, as shown in (20b, c), coronals which do not delete, as shown in (20f), dorsals which do not delete, as shown in (20d), and placeless segments which do not delete, as shown in (20e). The only feature unifying the deleting segments and excluding all of the non-deleting segments is their vocalic node.

(21)

```
*μ          μ
 :          :
 :          :
vocalic vocalic vocalic
```

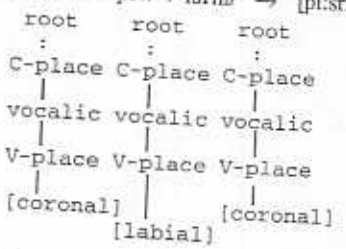
Another set of glides does not delete intervocalically.

(22) a. /ikyiw +išrih/ → [ikyi̍wišrih] 'to fall down'
b. /ʔaw + at/ → [ʔáwat] 'ate'
c. /ikraw + ara/ → [ikráwara] 'to grind with'
d. /ʔiw + iruw/ → [ʔi̍wiruw] 'to be nearly dead from exhaustion'
e. /saw + a/ → [sawa] 'river'
f. /ʔaraw + uk/ → [ʔarawuk] 'to start from'
g. /ʔátiw + a/ → [ʔátiwa] 'burden-basket load'

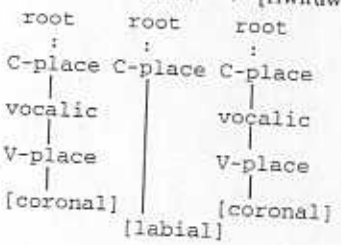
Given the argument that deleting segments are characterized with a vocalic node, the non-deleting segments in (22) must not be characterized with a vocalic node. (23) shows how the distinct behavior of

glides which delete and glides which do not may be attributed to their feature structure.

(23) a. /piw + išrih/ → [pî:šrih]



b. /ʔiw + iruw/ → [ʔiwiruw]



6. Coda nasalization

The two types of glides also pattern differently in coda nasalization. /r/ nasalizes in non-final coda position (alternatively: pre-consonantally).

(24)

a.	/kû:r + taku/	→	[kuntaku]	'to sit on'
b.	/ʔîhar + ko:/	→	[ʔihanko:]	'to go there to dance'
c.	/tásir + *reduplication*/	→	[tasînsir]	'to brush repeatedly'
d.	/wur + tih/	→	[wú:ntih]	'to be flowing'
e.	/ikmar + *reduplication*/	→	[ikmánmar]	'to beat up'

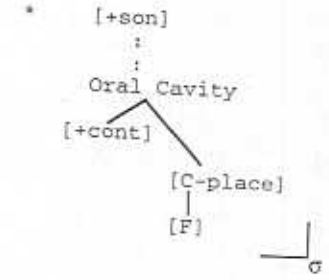
The consonantal /w/ also nasalizes pre-consonantally. The stems with final /w/s which nasalize (25) are exactly those stems whose final /w/s did not delete in glide-deletion (22). (/r/ nasalizes following a nasal segment, as shown in (25c, e, g).)

(25)

a.	/ikyiw + suru/	→	[ikyî:msuru]	'to fall off'
b.	/ʔaw + tih/	→	[ʔa:mtih]	'to be eating'
c.	/ikráw + raw + a/	→	[ikrá:mnawa]	'hopper for meal'
d.	/ʔiw + kara/	→	[ʔî:mkara]	'to drown'
e.	/saw + rupu/	→	[sá:mnupu]	'to flow downriver'
f.	/ʔaraw + sipriw/	→	[ʔáramsipriw]	'to start out'
g.	/ʔátiw + ram/	→	[ʔátimnam]	'pack basket'

There seems to be a constraint against [+son, +cont] segments with a consonantal constriction in non-final coda position.

(26)



The language is otherwise
nants, and all consonants excep
in coda. Neither /y/ nor the vo
with a consonantal constriction,
in (26), and so they do not nas
same stems whose final glides d

(27)

a.	/ikriw + ra:m/	→	[ikriw
b.	/θiw + taku/	→	[θî:wt
c.	/piw + kaθ/	→	[pî:wk
d.	/ʔáxaw + suru/	→	[ʔáxa

/y/, which is always vocalic, doe

(28)

a.	/ikwa:y + ku/	→	[ikwá:
b.	/iyway + kurih/	→	[iywá:

To summarize, the vocalic l
coda position. The consonantal la
fined as the natural class of [+son
constriction) nasalize in non-final

7. Vowel harmony

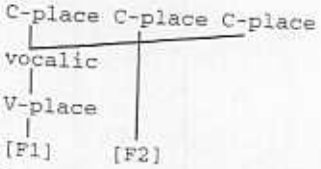
The two types of glides als
mony. There are a few suffixe
(which are represented with V).

(29)

a.	/ikxip + Vwraθ/	→	[ik
b.	/taxarap + Vwraθ/	→	[ta
c.	/ikfuk + Vwra:/	→	[ik
d.	/taknih + Vθuna/	→	[ta
e.	/paθ + Vθuna/	→	[pa
f.	/ikfuk + Vθuna/	→	[ik

The harmony produces a suffix
vocalic node of the stem vowel.[2]

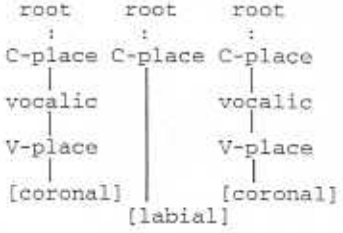
(30)



If the consonantal /w/ is specifie
inated by C-place, the prediction
parent to vowel harmony (similar
Efik discussed above in (10) and
suggestive evidence that the cons
are the only available examples of
has been shown to be consonantal

which do not may be attributed to

b. /ʔiw + iruw/ → [ʔiwiruw]



so pattern differently in coda nasal- al coda position (alternatively: pre-

[kuntaku] 'to sit on'
[ʔibanko:] 'to go there to dance'
[tasinsir] 'to brush repeatedly'
[wu:ntih] 'to be flowing'
[ikmánmar] 'to beat up'

asalizes pre-consonantally. The stems (25) are exactly those stems whose glide-deletion (22). (/r/ nasalizes wn in (25c, e, g).)

yi:msuru] 'to fall off'
:mtih] 'to be eating'
ra:mnawa] 'hopper for meal'
:mkara] 'to drown'
:mnupu] 'to flow downriver'
ramsipriw] 'to start out'
timnam] 'pack basket'

raint against [+son, +cont] segments n non-final coda position.

The language is otherwise quite free in allowing coda consonants, and all consonants except /r/ and consonantal /w/ may occur in coda. Neither /y/ nor the vocalic /w/ is a [+son, +cont] segment with a consonantal constriction, so they do not violate the constraint in (26), and so they do not nasalize. Note that these are exactly the same stems whose final glides deleted in (17).

(27) a. /ikriw + ra:m/ → [ikriwra:m] 'house'
b. /θiw + taku/ → [θi:wtaku] 'to lie on'
c. /piw + kaθ/ → [pi:wkaθ] 'to step over (a creek)'
d. /ʔáxaw + suru/ → [ʔáxawsuru] '(earth) to cave off'

/y/, which is always vocalic, does not nasalize either.

(28) a. /ikwa:y + ku/ → [ikwá:yku] 'to lean against'
b. /iyway + kurih/ → [iywá:ykurih] 'to pour into a hole'

To summarize, the vocalic labial glides are allowed in non-final coda position. The consonantal labial glides and the /r/ (together defined as the natural class of [+son, +cont] segments with a consonantal constriction) nasalize in non-final coda position.

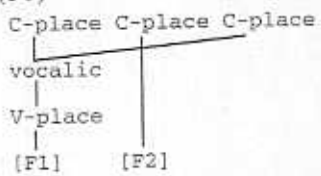
7. Vowel harmony

The two types of glides also pattern differently in vowel harmony. There are a few suffixes with harmonizing initial vowels (which are represented with V).

(29) a. /ikxip + Vwraθ/ → [ikxip-iwraθ] 'to fly over'
b. /taxarap + Vwraθ/ → [taxarap-awraθ] 'to stride over'
c. /ikfuk + Vwra:/ → [ikfuk-uwra:] 'to climb over'
d. /taknih + Vθuna/ → [taknih-iθuna] 'to roll around'
e. /paθ + Vθuna/ → [paθ-aθuna] 'to throw around'
f. /ikfuk + Vθuna/ → [ikfuk-uθuna] 'to crawl around'

The harmony produces a suffix vowel multiply-linked with the vocalic node of the stem vowel.[2]

(30)



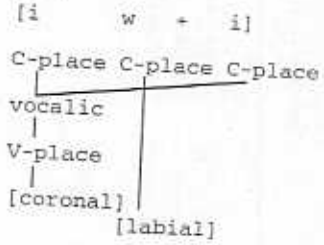
If the consonantal /w/ is specified with [labial] immediately dominated by C-place, the prediction would be that it should be transparent to vowel harmony (similar to the examples from Kirghiz and Efik discussed above in (10) and (13)). The following forms provide suggestive evidence that the consonantal /w/ is transparent. These are the only available examples of a stem with a final glide which has been shown to be consonantal (see (22a) and (25a)) combining

with harmonizing suffixes. The harmonizing vowel does have the same quality as the final stem vowel.

(31) a. /ikyiw + Vwraθ/ → [ikyiw-iwraθ] 'to fall into a sweathouse'
b. /ikyiw + Vwruk/ → [ikyiw-iwruk] 'to fall over (a bank)'

The well-formed structure that would result from multiple-linking of vocalic nodes across a consonantal glide is shown here.

(32)

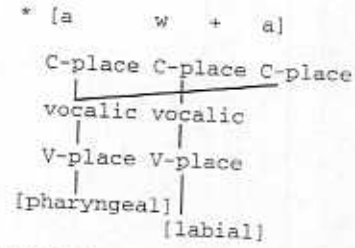


As expected, the vocalic /w/ patterns differently than the consonantal /w/ in vowel harmony. The only available example of a stem with a final glide which has been shown to be vocalic combining with a harmonizing suffix is shown here. (See 17d and 27d for evidence of this glide's vocalic nature.)

(33) /ʔáxaw + Vwruk/ → [ʔáxawruk] '(earth) to slide down over (a bank)'

One possible explanation for this form is that multiple-linkage across the vocalic glide is prohibited.

(34)



Since the unspecified vowel remains unspecified on the surface, it is deleted by well-formedness constraints. The degemination of adjacent identical oral sonorants which results is seen elsewhere in the language. Despite a lack of independent supporting evidence for this proposal, the crucial point here is that the vocalic /w/ does not pattern with the consonantal /w/ in being transparent to vowel harmony.

8. Conclusion

In conclusion, there are two phonologically distinct /w/s in Karuk—one which patterns with /r/ and one which patterns with /y/.

The /w/ which patterns with /r/ i
in nature. It does not delete bet
position, and it is transparent to
sented as bearing only a C-place
/y/ can be characterized as voc
vowels, does not nasalize in coda
harmony. It may be represented
V-place node. The facts from K
provide new evidence regarding t
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glides, but also a single language
sonantal glides.

NO

* Grateful acknowledgment to
with this project. Thanks also to M
Parkinson for comments on earli
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munication.)

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[u]. There are two possible analyses
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REFERI

BRIGHT, W. 1957. The Karok Langu
lications in Linguistics, volur
California Press.
CHIRI, M. 1952. "Ainugo ni okeru b
Ainu language)." Hokkaido Uni
101-118. Reprinted in Chiri Ma
Mashio Chiri), vol. 4, 201-225 (
CLEMENTS, G. N. & Elizabeth V. Hu
of speech sounds. A handbook
John Goldsmith. Oxford: Blackwe
HERBERT, R. & N. Poppe. 1963. I
Series. vol 33. Bloomington: Ind

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/r/ and one which patterns with /y/.

The /w/ which patterns with /r/ can be characterized as consonantal in nature. It does not delete between vowels, it nasalizes in coda position, and it is transparent to vowel harmony. It can be represented as bearing only a C-place node. The /w/ which patterns with /y/ can be characterized as vocalic in nature. It deletes between vowels, does not nasalize in coda position, and is opaque to vowel harmony. It may be represented as bearing also a vocalic and V-place node. The facts from Karuk are significant because they provide new evidence regarding the status of glides in the world's languages. Not only can languages have *either* vocalic or consonantal glides, but also a single language can have *both* vocalic and consonantal glides.

NOTES

* Grateful acknowledgment to D. Odden and E. Hume for help with this project. Thanks also to M. Bradshaw, C. McDougall, and F. Parkinson for comments on earlier drafts. Any mistakes are, of course, my own.

[1] Pronunciations of the name of this language vary. "Karok" is the more anglicized version of the name while "Karuk" is preferred by native speakers. Therefore, most recent works written about this language used the name "Karuk." (Monica Macaulay, personal communication.)

[2] Problems with assuming that this is total assimilation arise from cases involving [e:] and [o:]. When the stem vowel is [e:], the suffix vowel is [i] and when the stem vowel is [o:], the suffix vowel is [u]. There are two possible analyses. Either this is complete harmony linking vocalic nodes, but [e:] derives from /ai/ and [o:] derives from /au/, or else this is place harmony linking V-place nodes to prespecified high suffix vowels, and a constraint against high pharyngeal vowels produces the correct result when the stem vowel is /a/.

REFERENCES

BRIGHT, W. 1957. The Karok Language. University of California Publications in Linguistics, volume 13. Berkeley: University of California Press.

CHIRI, M. 1952. "Ainugo ni okeru boin chowa (Vowel harmony in the Ainu language)." Hokkaido University Bulletin in Humanities 1, 101-118. Reprinted in Chiri Mashio Zenshuu (Collected works of Mashio Chiri), vol. 4, 201-225 (1974). Tokyo: Heibonsha.

CLEMENTS, G. N. & Elizabeth V. Hume. 1994. The internal organization of speech sounds. A handbook of phonological theory., ed. by John Goldsmith. Oxford: Blackwell.

HERBERT, R. & N. Poppe. 1963. Kirghiz manual. Uralic and Altaic Series. vol 33. Bloomington: Indiana University Publications.

HUME, E. 1992. Front vowels, coronal consonants, and their interaction in non-linear phonology. Cornell University Ph.D. dissertation.
Hume, E. 1993. On the representation of glides. Talk presented at the University of Illinois Linguistics Department.
ITÔ, J. 1984. Melodic dissimilation in Ainu. Linguistic Inquiry 15:3.505-513.
MCDOUGALL, C. 1994 An optimality theoretic account of height-dependent vowel harmony in Yakut and Kirghiz. Department of Linguistics, The Ohio State University, MS.
PARKINSON, F. 1994. The place feature [pharyngeal] as a marker of height in Efik vowel harmony. Department of Linguistics, The Ohio State University, MS.

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CONTRA [CONSO

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In this paper we challenge t exists a distinctive feature [cons cases in which [consonantal] has describe natural classes of sound changes that a sound undergoes, evidence in support of the featur that [consonantal] is superfluous from feature theory.

1. Introduction

The status of the major class feat theoretical limelight recently, with M [sonorant] and [consonantal] are contai thus cannot spread or dissimilate exce lation or deletion. This proposal is chal feature [consonantal], citing examples Cho & Inkelas 1993 challenge the evi analyzing certain cases of [consonantal approach the question differently, by that there EXISTS such a feature. The (tal] spreads then becomes meaningless nantal' which we claim is not a distinct

This paper reviews some of the feature [consonantal]. Evidence in supp ious forms. For example, a feature m changes that a sound or class of sounds in describing sounds as a natural class; scribe existing phonemic contrasts. Our is no such evidence for [consonantal], should be dispensed with entirely.

Before examining the evidence, it what this supposed feature entails. Fo definition below.

(1) Consonantal sounds are produced tion in the midsagittal region of t nantal sounds are produced with (Chomsky & Halle 1968:302)

The intent of this definition is to grou consonants as one natural class, and