LABIAL PLACE IN PHONOLOGY: UNIVERSAL AND VARIABLE

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11/11/11

OUTLINE

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Jakobson's generalization

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- This contrast "cannot be lacking anywhere, provided that there is no mechanical deformity of the speech apparatus."
- Labrets and their phonetic consequences in Tlingit:

"Even in these cases the labial series finds a characteristic substitute in velar consonants with an accompanying *u*-sound: in this way, e.g., *yāk* ('shell fish') and *yāk*^{u} ('canoe') are distinguished."

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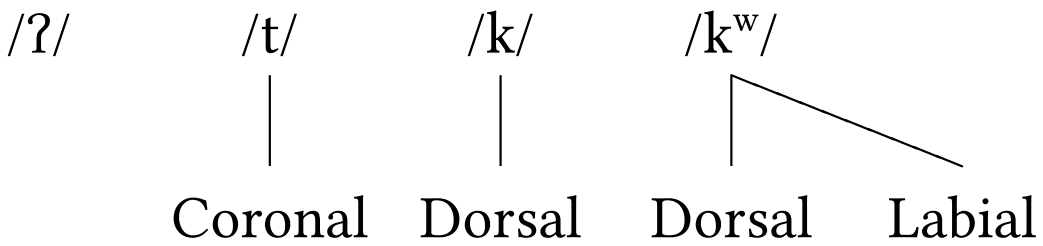

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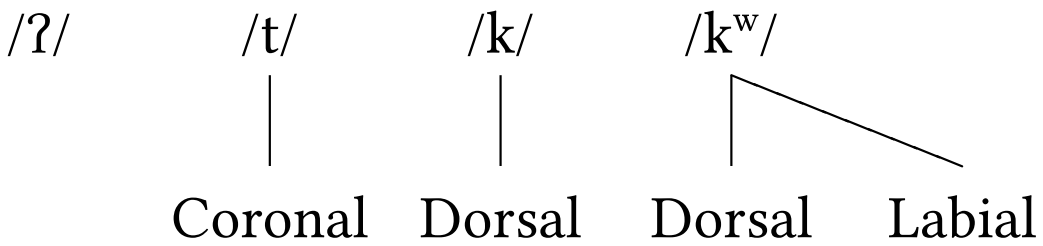

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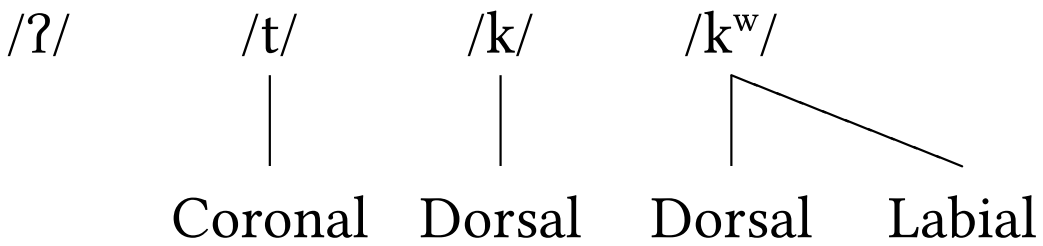

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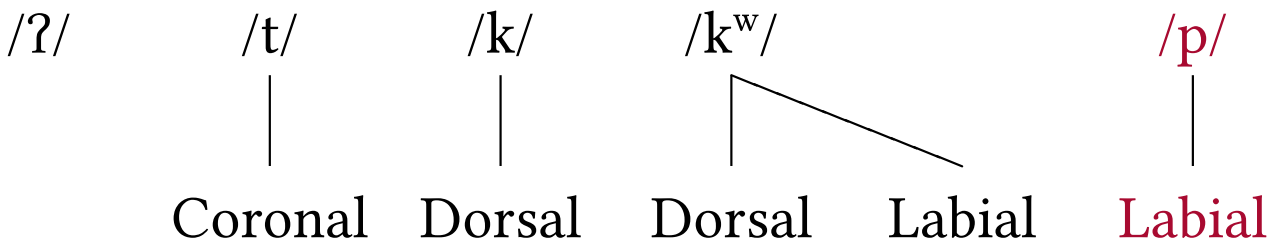

  - consistent with Jakobson's generalization
  - consistent with the phonetic realization as [kw]
  - The presence of Labial in the feature system may explain why Mohawk was receptive to adding /m/ and /p/ in borrowings from French.

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t	k	k^w	ʔ
(ʧ)			
s			h
n			
l/r			
j		w	

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- Rather than using labialization as a contrastive secondary articulation on a wide range of consonants, these languages look as if they treat 'labialized dorsal' as a distinct primary place.

TYPOLOGICAL EXPECTATIONS

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- Feature economy
- Marked feature avoidance
- Robustness
- Phonological enhancement

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Feature economy (Clements 2003, 2009):

> *Features tend to be combined maximally.*

(see also Hall 2007: §4.3.3; Mackie & Mielke 2011)

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Less economical

		k^h
p	t	
	d	g
b^h		

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More economical

p^h	t^h	k^h
p	t	k
b	d	g
b^h	d^h	g^h

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This looks circular. (Languages tend to avoid rare sounds?)
But it does have empirical content…

Predictions of Marked feature avoidance:

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- Marked sounds are a last (or at least latter) resort for any inventory.
- There should be no sounds that occur only in small inventories.
- The markedness of a segment should correlate negatively with the number of inventories in which it occurs…
- …and positively with their mean size.

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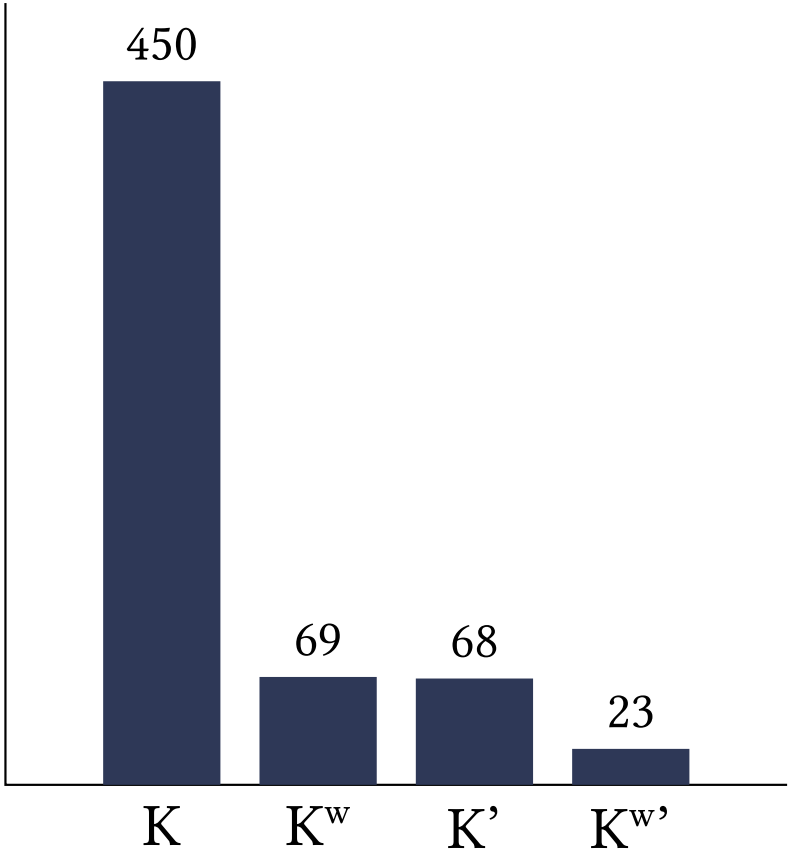

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K = plain dorsal stop; K^w= labialized dorsal stop;
K' = plain dorsal ejective; K^w' = labialized dorsal ejective

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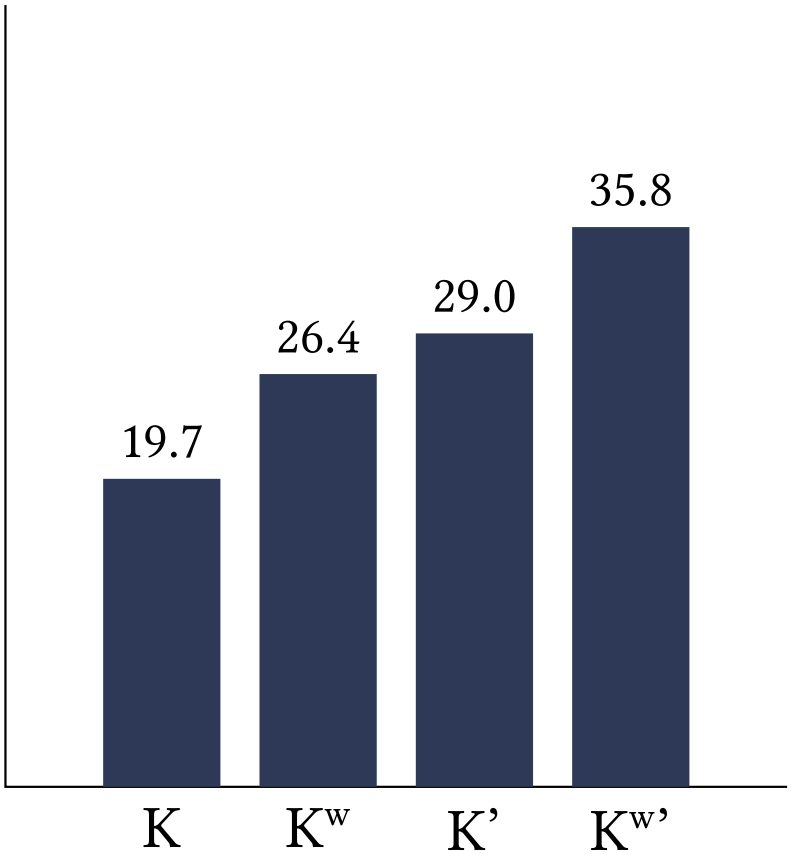

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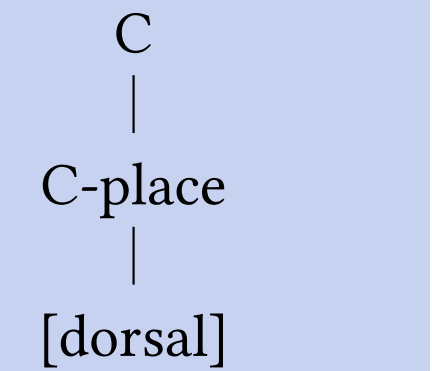

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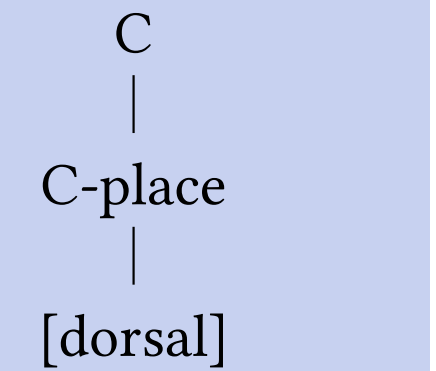
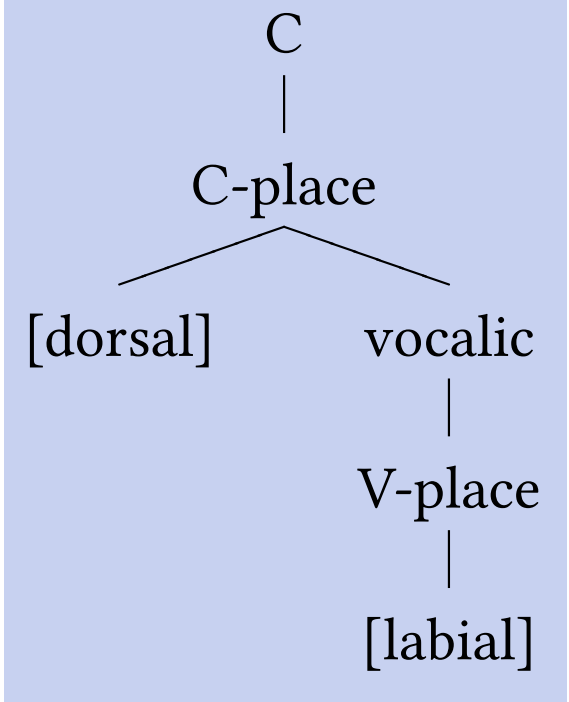


k^w



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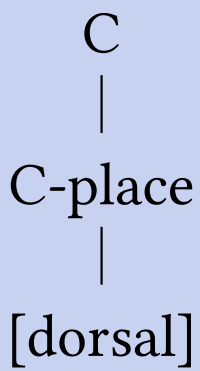
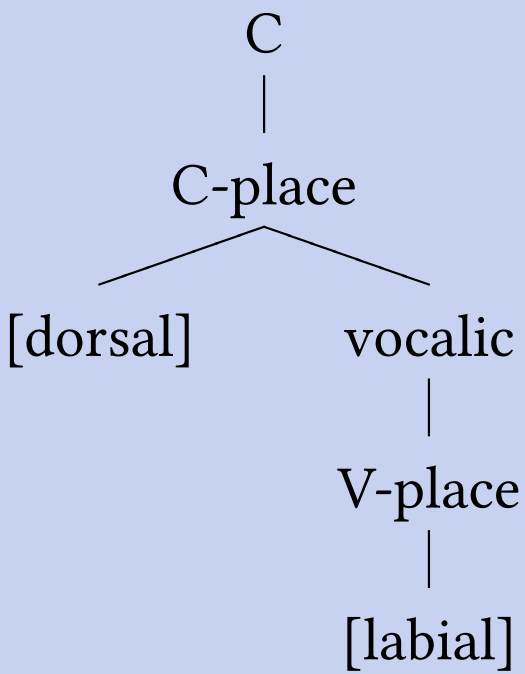
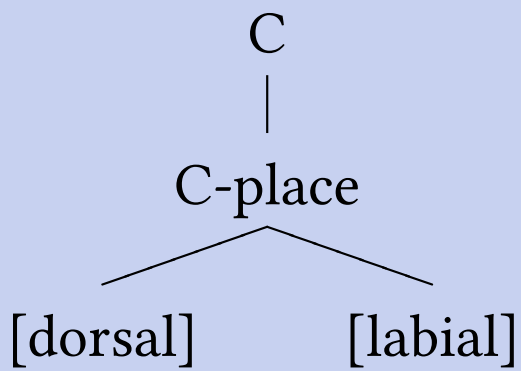


k^{w}



k͡p



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- Primary and secondary articulations can vary independently (within anatomical limits).
- The presence of labialization on consonants is marked…
- …but there is no reason to expect any specific combination of primary and secondary place to be more or less marked than the others…
- …except to the extent that some place features are inherently more or less marked than others.

TYPOLOGICAL SURPRISES

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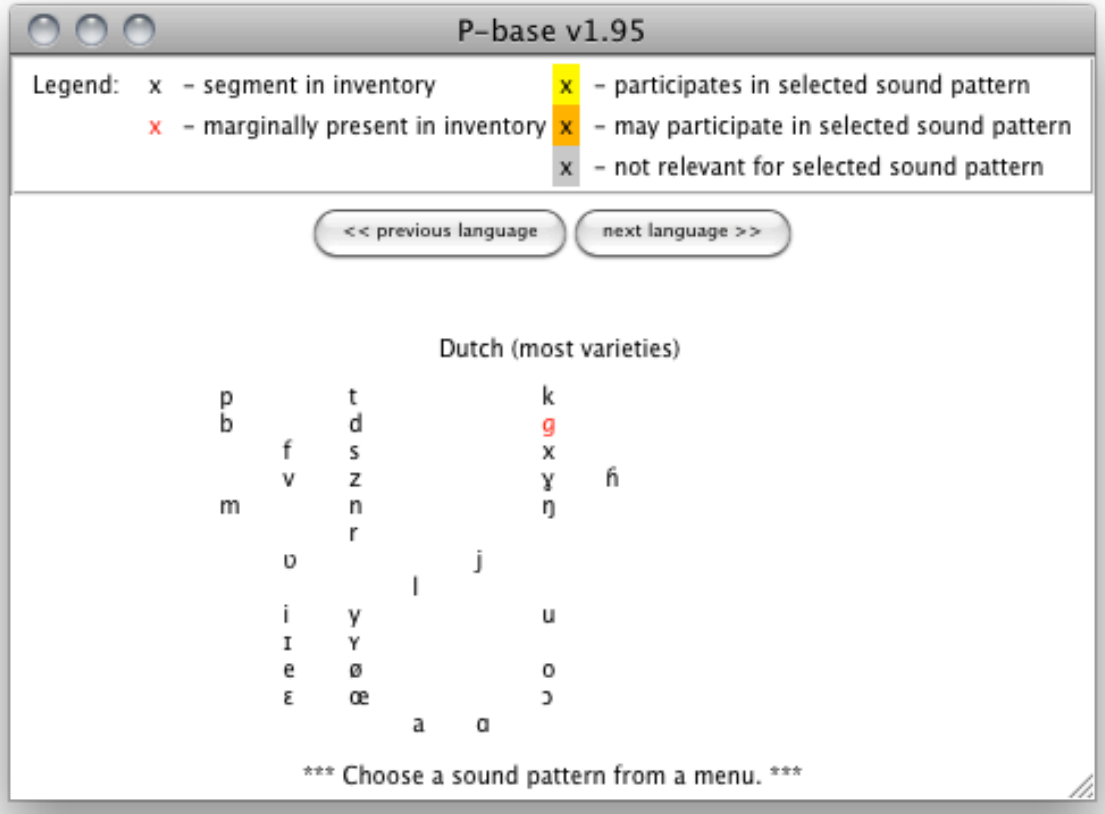
- Database: P-base (Mielke 2008)
- 628 varieties of 548 spoken languages



TYPOLOGICAL SURPRISES

Unsurprising inventories

Tangale (Chadic)

p		t		k	ʔ
		t^w		k^w	
b	ɖ	d	ʤ	g	
b^w		d^w		g^w	
^mb		nd	$^nʤ$	$^{\square}g$	
ɓ		ɗ			
$ɓ^w$		$ɗ^w$			
		s	ʃ		
		s^w	$ʃ^w$		
		z	ʒ		
		z^w	$ʒ^w$		
m		n		ŋ	
w		r	j		
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- manner (except nasality)
- airstream

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ts		
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r		
j	w	

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- Economy: Minimal benefit from [±round].
- Markedness: More marked /k^w/ should entail less marked /p/.

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Surprising inventories

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Cuna (Chibchan)

p	t		k
			k^w
	s		
m	n		
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Passamaquoddy (Algic)

p	t	ʧ	k	
			k^w	
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m	n			
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Dani (Austronesian)

p	t	k	ʔ
		k^w	
	s		h
m	n	ŋ	
	l		
w		j	

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Esse Ejja (Tacanan)

p	t	ʧ	k	ʔ
			k^w	
ɓ	ɗ			
	s	ʃ	x	h
m	n	ɲ		
w		j		

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p	t	k	ʔ
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Sonora Yaqui (Uto-Aztecan)

p	t	ʧ	k	ʔ
b				
b^w				
	s			h
m	n			
	l			
	ɾ			
w		j		

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			k^w	
ɓ	ɗ			
	s	ʃ	x	h
m	n	ɲ		
w		j		

Sonora Yaqui (Uto-Aztecan)

p	t	ʧ	k	ʔ
b				
b^w	< $*k^w$ (Dedrick & Casad 1999)			
	s			h
m	n			
	l			
	ɾ			
w		j		

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Kombai (Trans-New Guinea)

ᵐb	ⁿd	ɟ	ɠ	ɠʷ
ɸ			x	xʷ
	l			
	r			
		j ɥ		w

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Kombai (Trans-New Guinea)				
^{m}b	^{n}d	ɟ	ɡ	ɡ^{w}
ɸ			x	x^{w}
	l			
	r			
		j ɥ		w

Ojibwa (Algic)				
p	t	ʧ	k	k^{w}
b	d	ʤ	g	g^{w}
	s	ʃ	h	h^{w}
	z	ʒ		
m	n		ŋ	
		j		w

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Sinaugoro (Austronesian)

	t	k	k^w
b	d	g	g^w
f	s		
v	r	ɣ	$ɣ^w$
m	n		
	l		

Ojibwa (Algic)

p	t	ʧ	k	k^w
b	d	ʤ	g	g^w
	s	ʃ	h	h^w
	z	ʒ		
m	n		ŋ	
		j		w

TYPOLOGICAL SURPRISES

Surprising inventories

Even in inventories with more labialized consonants, rounding often does not cross-classify with place:

Sinaugoro (Austronesian)

	t	k	k^w
b	d	g	g^w
f	s		
v	r	ɣ	$ɣ^w$
m	n		
	l		

Tigrinya (Semitic)

p	t	ʧ	k	k^w		ʔ
b	d	ʤ	g	g^w		
p’	t’	ʧ’	k’	k^w’		
f	s	ʃ			ħ	h
	z	ʒ			ʕ	
	s’					
m	n	ɲ				
	r					
	l	j		w		

TYPOLOGICAL SURPRISES

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Even in inventories with more labialized consonants, rounding often does not cross-classify with place:

Halkomelem (Salishan)

p		t			k	k^w	q	q^w	ʔ
p’		t’			k’	$k’^w$	q’	$q’^w$	
			ʧ						
	tθ’	tɬ’	ʧ’						
	θ	ɬ	ʃ	ç	x	x^w	χ	$χ^w$	h
m									
		l							
				j	w				

Tigrinya (Semitic)

p	t	ʧ	k	k^w		ʔ
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	z	ʒ			ʕ	
	s’					
m	n	ɲ				
	r					
	l	j		w		

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	θ	ɬ	ʃ	ç	x	x^w	χ	$χ^w$	h
m									
		l							
				j	w				

Kilivila (Austronesian)

p	p^w	t	k	k^w
b	b^w	d	g	g^w
β		s		
m	m^w	n	ŋ	
		r		
		l		
		j	w	

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- Number of inventories in P-base containing the indicated segments

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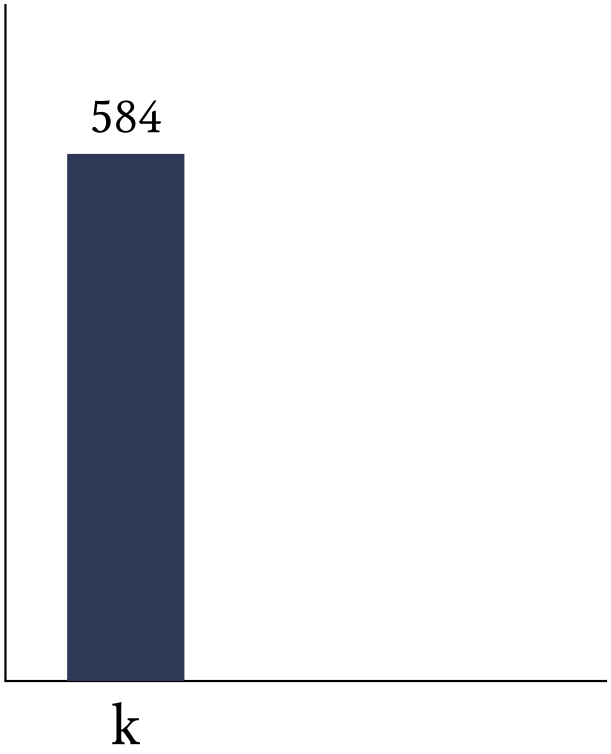

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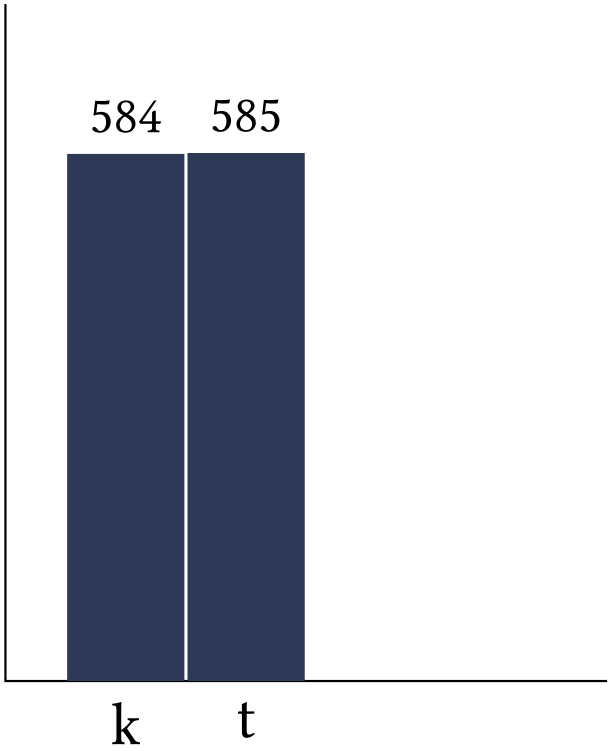

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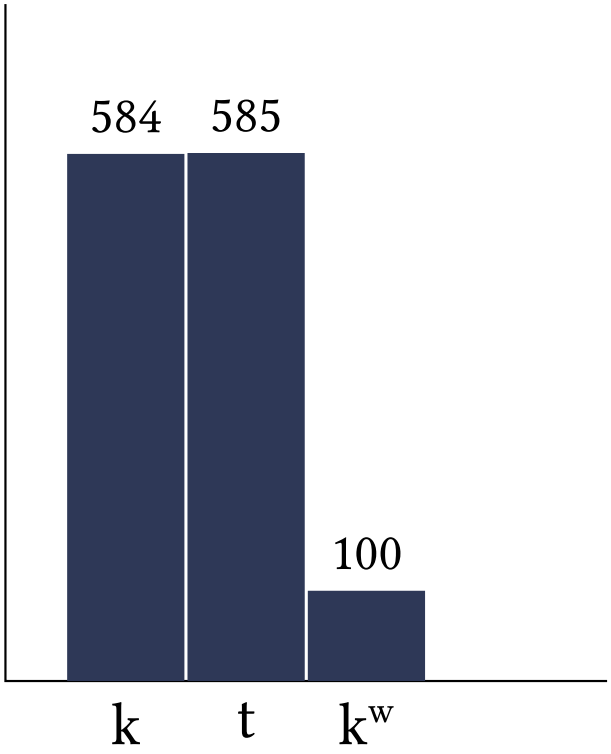

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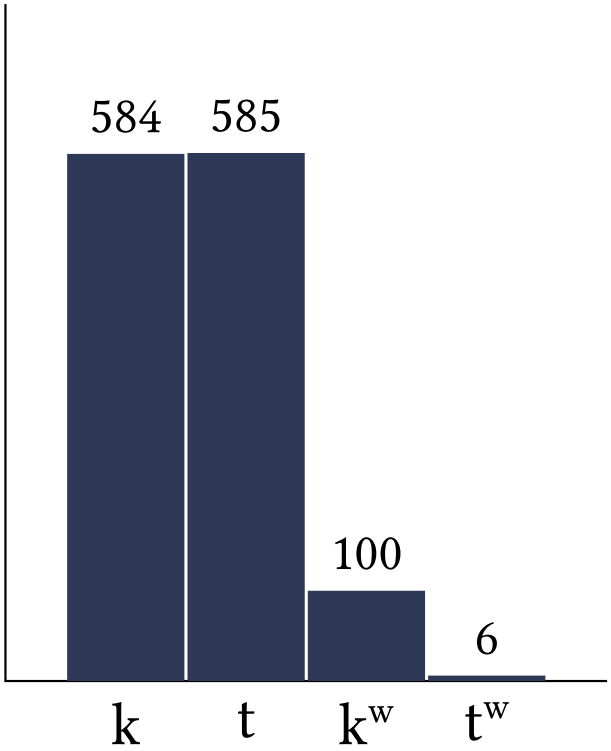

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TYPOLOGICAL SURPRISES

Surprising numbers

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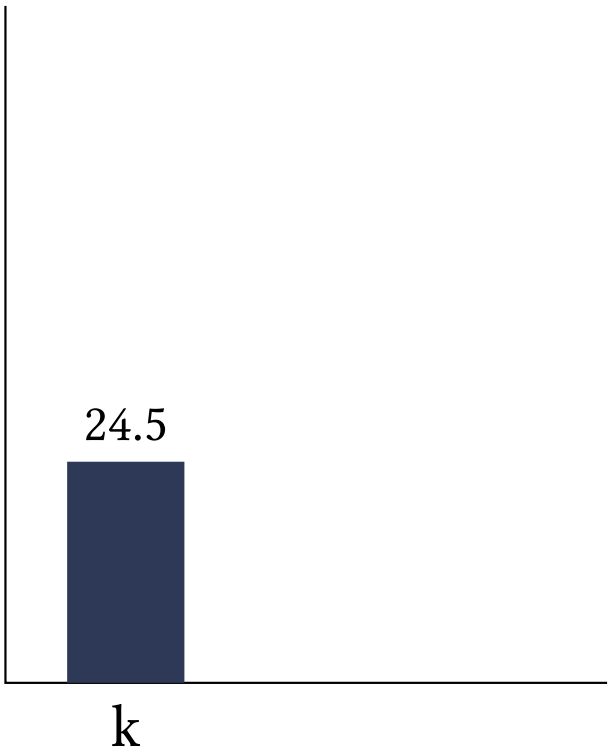

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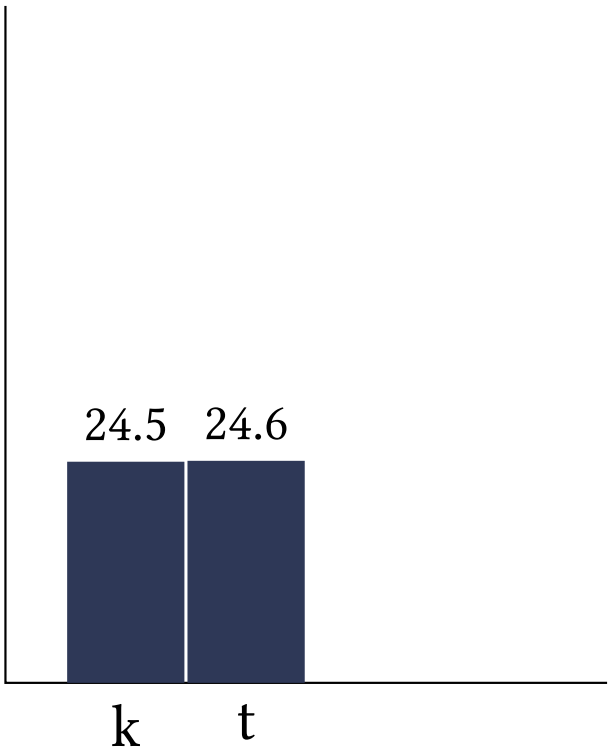

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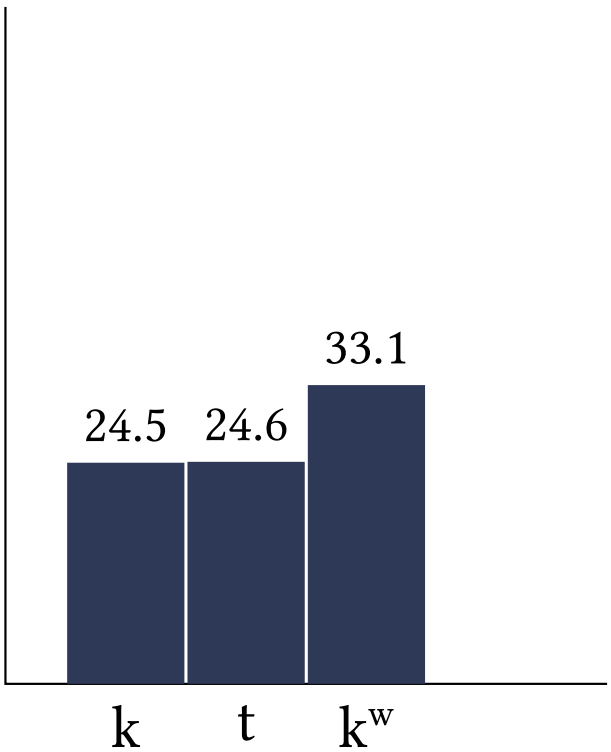

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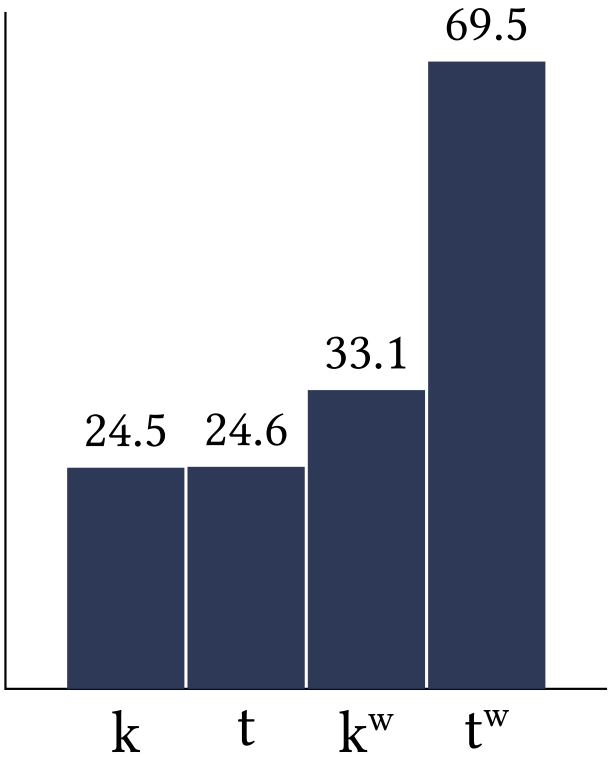

- Mean numbers of consonants in inventories in P-base containing the indicated segments

- By these tests, /t^{w}/ is much more marked than /k^{w}/…

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- ...but /t/ is not any more marked than /k/.

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- ...but /t/ is not any more marked than /k/.
- The markedness of complex segments is not simply the sum of their features.

The typological pattern presents two puzzles:

1. Why is contrastive rounding on consonants so often deployed in an apparently uneconomical way?

The typological pattern presents two puzzles:

1. Why is contrastive rounding on consonants so often deployed in an apparently uneconomical way?
2. Why do we find contrastive rounding primarily on velars, then on uvulars and labials, and only rarely on coronals?

PROPOSAL

- Rice & Avery (1993); Rice (1995, 2002): Dorsal and labial places are encompassed by Peripheral.

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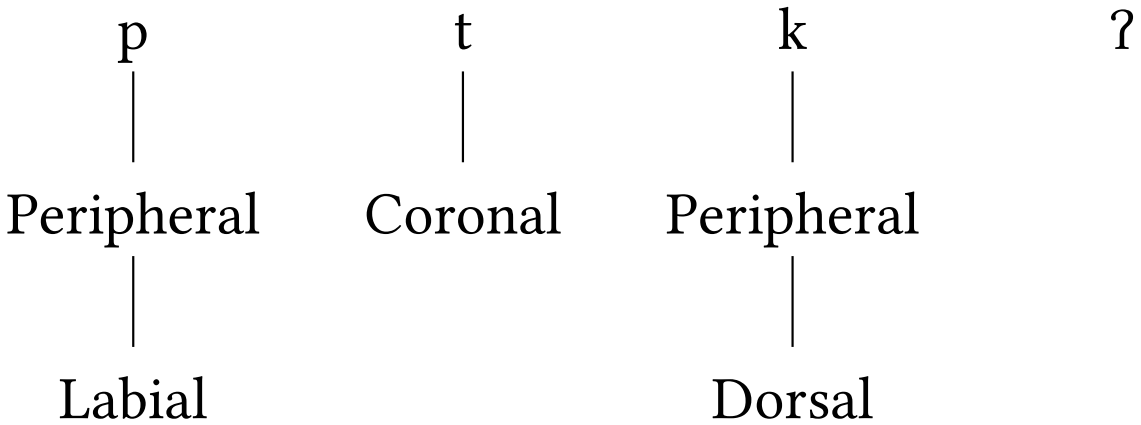
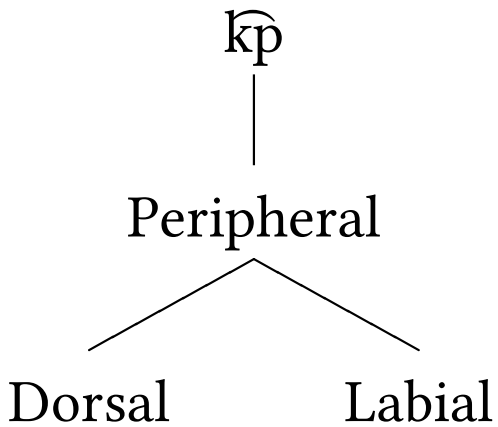
  - Peripheral is in opposition to Coronal.
  - (Cf. Jakobson, Fant & Halle's (1955) opposition grave vs. acute.)
- Basic place representations look something like this (setting aside some aspects of underspecification):



- This is an obvious representation for a labial-velar:



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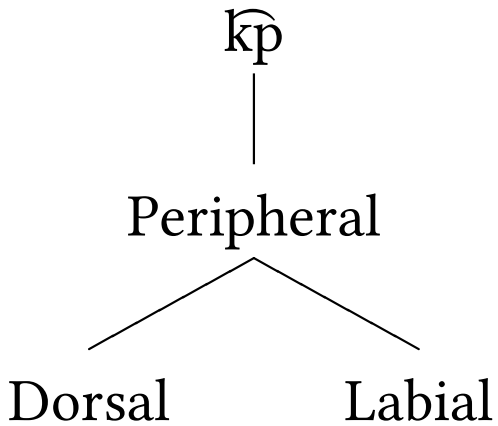

- But what if it can also represent /k^{w}/?

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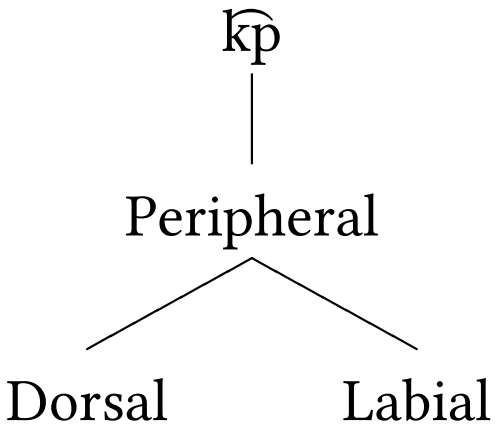

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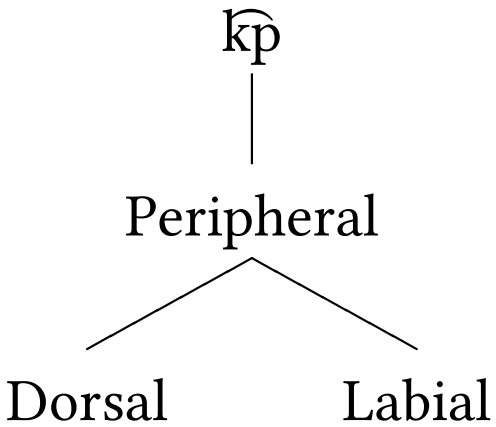

- But what if it can also represent /k^{w}/?
- In other words, labialized velars (in some systems) are represented as a distinct major place of articulation.
- The fact that one of the two places of articulation is phonetically secondary might not need to be explicit in the phonological representations.

PROPOSAL

Two types of systems

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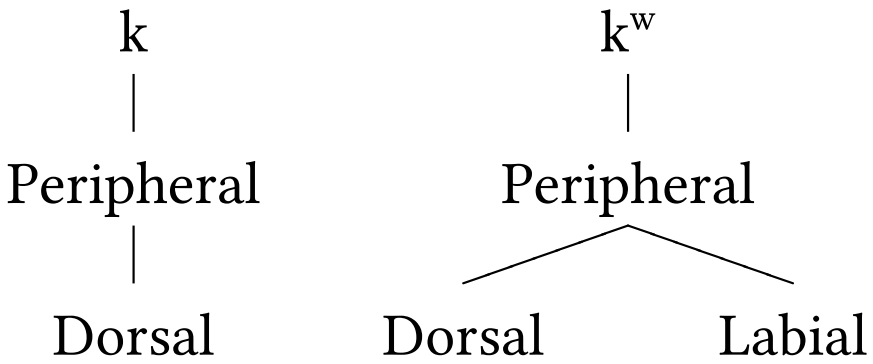
- Wichita-type: Labialized dorsals are a complex primary place.



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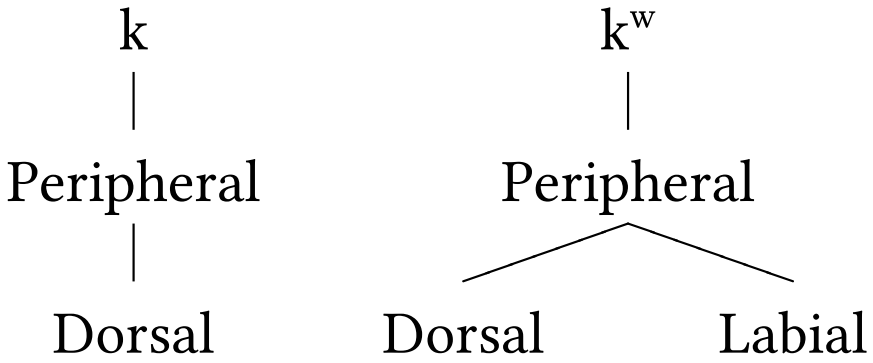

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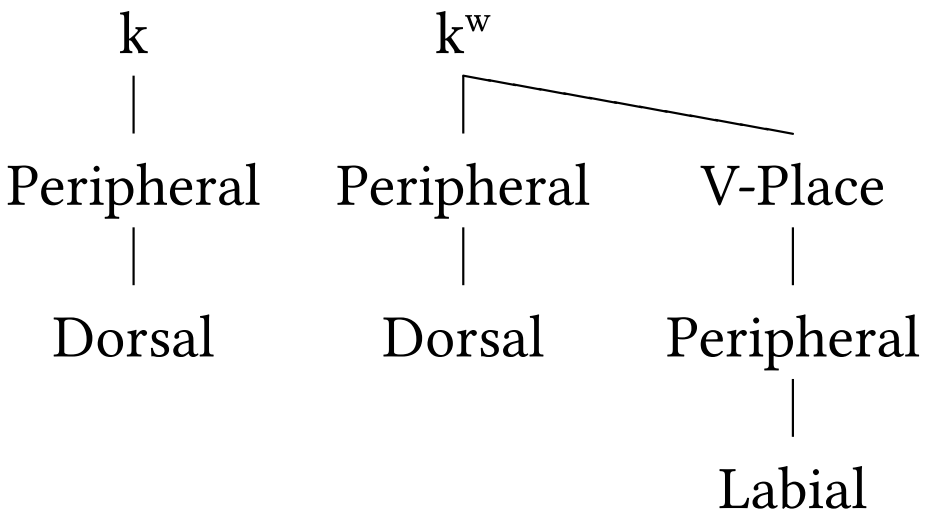

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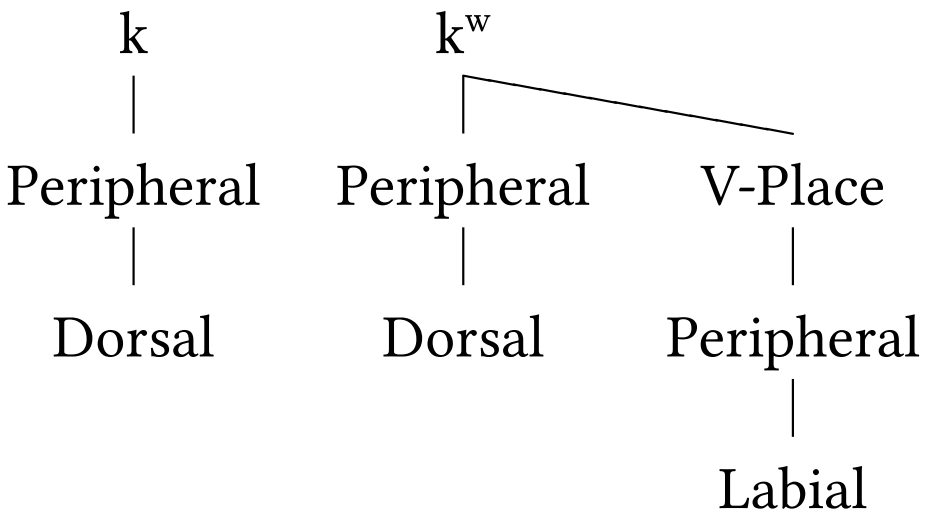

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- Tangale-type: Secondary labiality is secondary.
  - Secondary rounding can be added to any consonant.
  - Labialization involves considerable marked structure.

PROPOSAL

Intermediate possibilities

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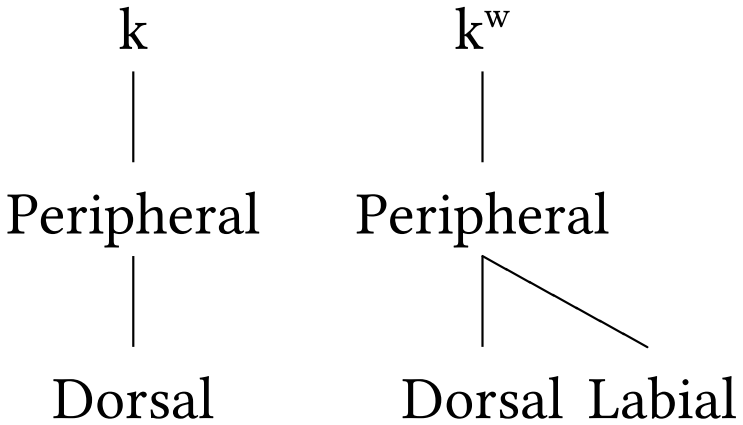

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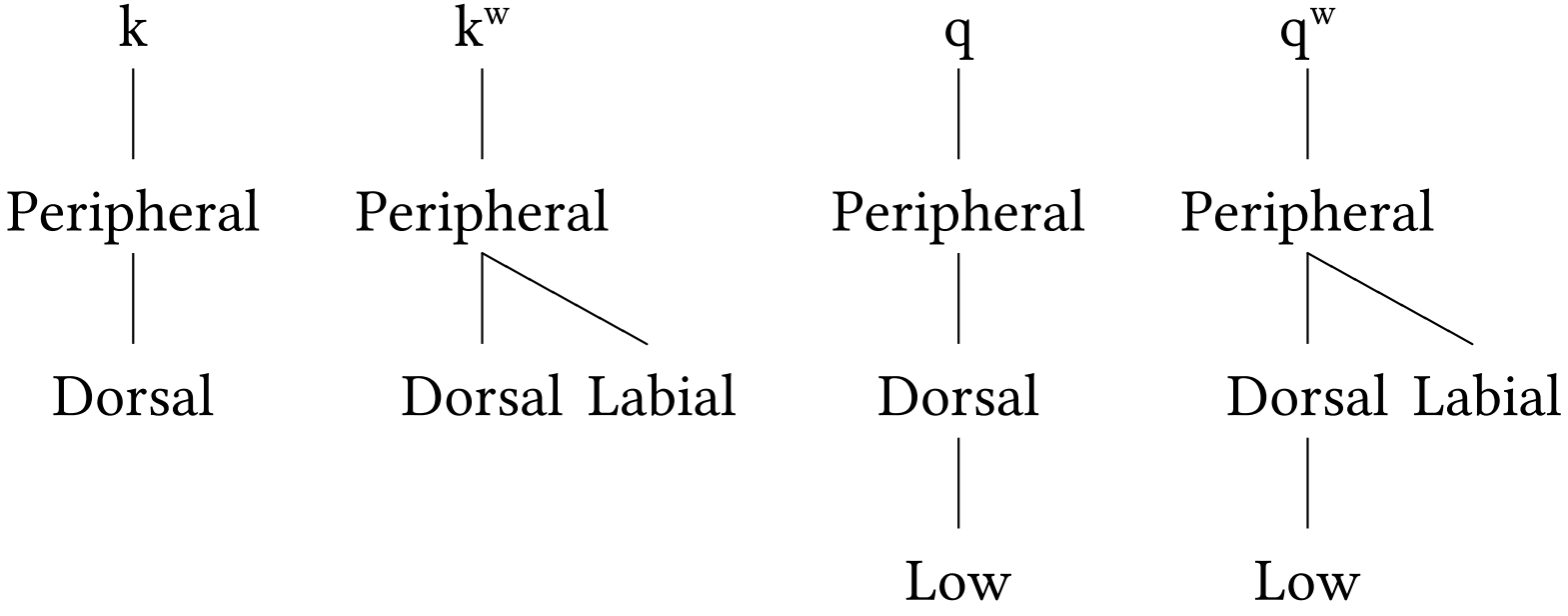

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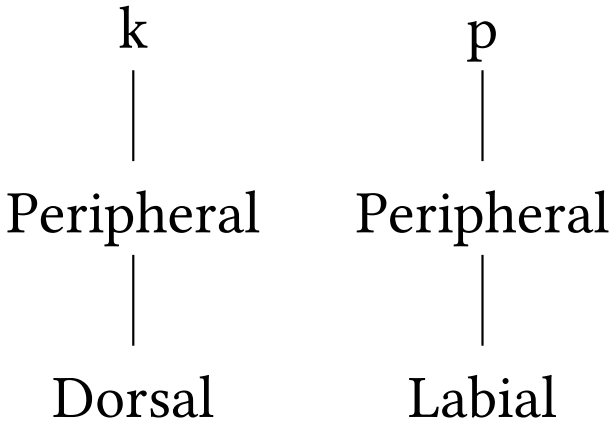

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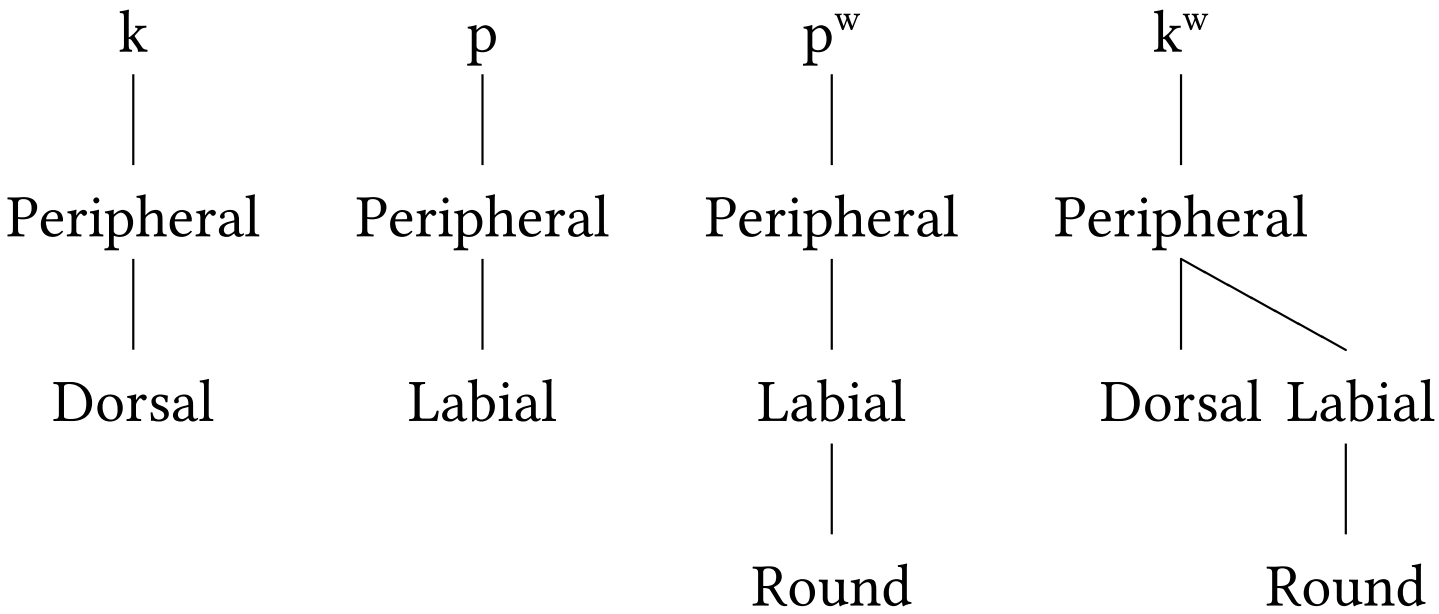

- Woleaian (Sohn 1975) appears to have contrastive velarization on labials only.

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Woleaian (Austronesian) orthographic transcriptions

p		t	ch	k
f	b		sh	g
m	mw	n		ng
		l	r	

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p		t	ʧ	k
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m	$m^{ɣ}$	n		ŋ
		ɾ	ɻ	

PROPOSAL

The flip side

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Woleaian (Austronesian) IPA transcriptions

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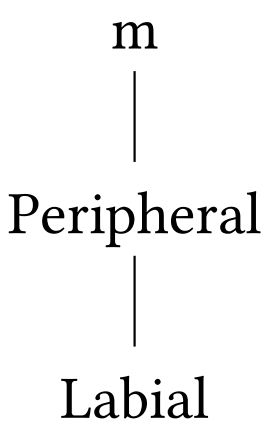
m	mˠ	n		ŋ
		ɾ	ɻ	



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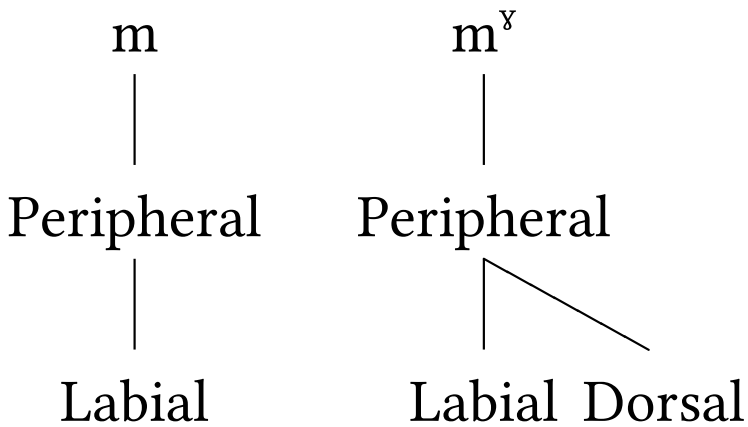

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- The proposed representations (should) have phonological consequences.

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k^{w}ra	amkray	‘rent’
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- Why does secondary labiality dissimilate from primary labiality, if one is C-Place and the other is V-Place?

PHONOLOGICAL CONSEQUENCES

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- The (plain) labials do not contrast with rounded counterparts.

Tashlhiyt (Berber)

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b	d	$d^ʕ$			g	g^w		
f	s	$s^ʕ$	ʃ	$ʃ^ʕ$	x	x^w		
	z	$z^ʕ$	ʒ	$ʒ^ʕ$	ɣ	$ɣ^w$		
m	n	$n^ʕ$						
	l	$l^ʕ$						
	r	$r^ʕ$						

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- Ní Chiosáin & Padgett's story: It has to do with contrast.
- The (plain) labials do not contrast with rounded counterparts.
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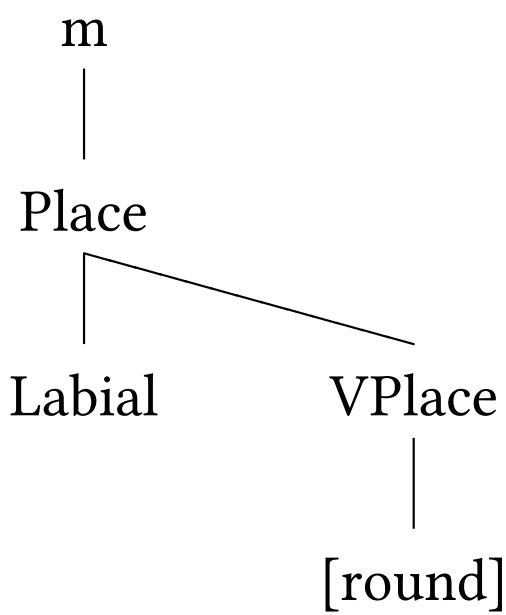

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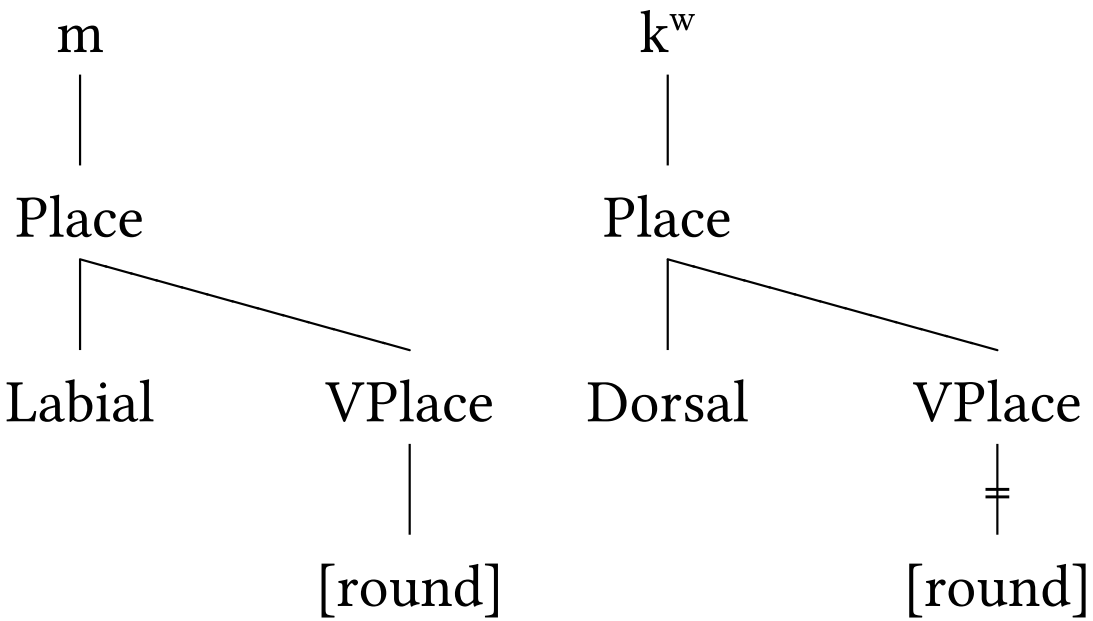

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- Therefore, they are redundantly specified with VPlace [round].
- The dissimilation takes place entirely on the VPlace tier.

- Contrastive overspecification: If the absence of a V-Place feature on a given segment is not contrastive, then the absence of that feature is omitted from the representation.

PHONOLOGICAL CONSEQUENCES

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- The rounded dorsals do not contrast with labial-velars or rounded non-dorsals.

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b	d	dˤ			g	gʷ		
f	s	sˤ	ʃ	ʃˤ	x	xʷ		
	z	zˤ	ʒ	ʒˤ	ɣ	ɣʷ		
m	n	nˤ						
	l	lˤ						
	r	rˤ						

PHONOLOGICAL CONSEQUENCES

- An alternative story: It still has to do with contrast.
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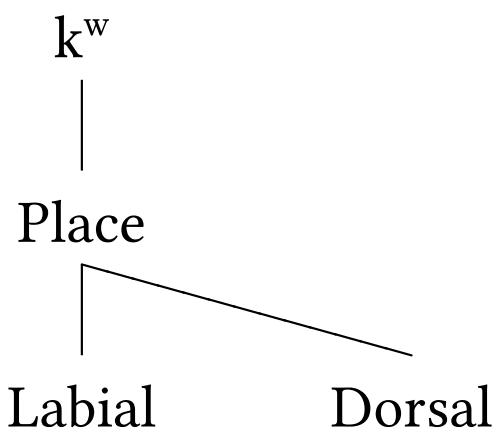
- Therefore, their labiality is represented as part of their primary place



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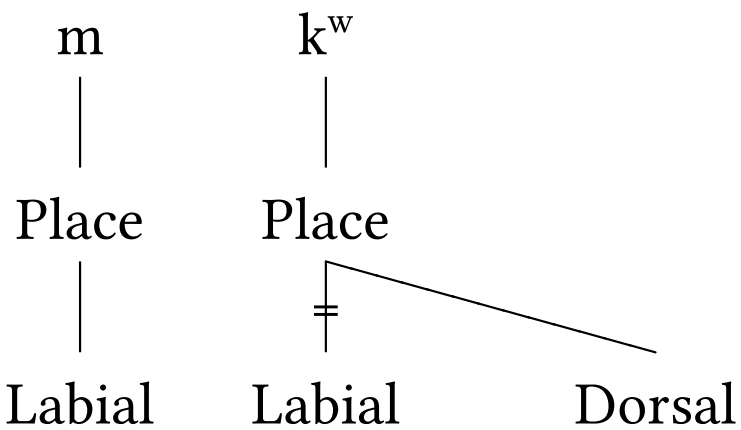

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- The dissimilation takes place entirely on the (C-)Place tier.

- Contrastive underspecification: If the secondariness of a place feature is not contrastive, then the additional structure that would distinguish the feature from a primary place feature is omitted from the representation.

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