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The Phonetics and Phonology of Laryngeals in Chinantec

The Usila Dialect Reanalyzed
Skinner (1962)
Reanalysis
Conclusion

The Usila Dialect Reanalyzed

In this section I investigate the Usila dialect of Chinantec (Skinner 1962), in light of the findings of the previous section.

It is shown that dialect-internal and cross-dialectal peculiarities resulting from Skinner's account do not arise when reanalyzing the data in light of the Comaltepec findings.

Skinner (1962)

Skinner (1962) argues for the segment inventory of Usila shown in (x).

(x)	p	t	t ^y	k	i	u
	b	d	d ^y	g	e	o
	f	s			a	
	m	n	ñ	ng		
		l				
		r				

?,h

Skinner argues that only /?/ and /g/ may close syllables in Usila, and furthermore, that /g/ occurs only after /a,e/. Coda /g/ is phonetically the velar spirant [ɣ]:

(x)	/a ⁴ lág ³⁴ /	[a ⁴ láy ³⁴]	it was fixed
	/a ⁴ lég ³⁴ /	[a ⁴ ley ³⁴]	it is finished

*/ig/, */og/, */ug/

Note that other dialects of Chinantec have not been unequivocally claimed to possess coda /g/.¹

Skinner claims that the following segments may be preglottalized or preaspirated in onset position: /m,n,ñ,ng,l,d^y/.

Usila is thus claimed to contrast with most other dialects, in that it allows the prelaryngealization of an obstruent ([?d^y, hd^y]), whereas other dialects solely allow the prelaryngealization of sonorants (and sometimes /g/). He additionally argues that Usila does not possess the glides /y,w/, thus differing again from most other dialects.

In light of the experimental findings presented above, I will reanalyze those aspects of Skinner's presentation that result in irregularities both within the Usila system itself, and across the Chinantec system in general. This reanalysis will regularize the Usila system in accordance with cross-dialectal generalizations.

First, if the surface obstruent [d^y] is instead analyzed as the palatal glide /y/, Usila may begin to pattern more regularly. There are several arguments in favor of this analysis of [d^y].

¹Foris (19) actually does include a coda /g/ in his analysis of the Sochiapan dialect, but in his footnote 4 confesses that this segment may just as readily be considered vocalic, and is considered to be /g/ to accord with certain other analyses (presumably Skinner's).

Recall, as already noted, that positing an underlying /y/ for surface [dʲ] results in a segment inventory more typical of Chinantec, and further, results in the more regular patterning of prelaryngealization attested elsewhere: sonorants (and sometimes the velar stop) may be prelaryngealized, while obstruents may not.

Second, Skinner reports that the aspirated portion of preaspirates is actualized "as the voiceless counterpart of the following phoneme, except before dʲ, where it is actualized as [I] [voiceless [i] -- d.s.]" (p.252).

/haʔ⁴/	[Aaʔ⁴]	creature
/he¹/	[Ee¹]	field
/hie⁴/	[Iiᵉ⁴]	it is coming
/o¹huá³/	[o¹Uuá³]	ashes
/hmaʔ³/	[Mmaʔ³]	only
/o¹hdʲi³/	[o¹Idʲi³]	fire

If phonetic [dʲ] is analyzed as phonological /y/, then the patterning of preaspiration is fully symmetrical across the system, in that it is always realized as the voiceless counterpart of the following sonorant.

Skinner additionally reports some seemingly peculiar properties of complex nuclei. In vowel clusters /ia,io,ua/, the second vocoid is reportedly the syllable peak: [iᵃ,iᵒ,uᵃ].

/kia³⁴/	[kᵃᵢᵃ³⁴]	ten (inanimate)
/cio³héu³/²	[tSo³Eéu³]	Ladino, mestizo
/kua¹/	[kᵃuᵃ¹]	corner

However, in /ie,ue/, it is the *first* vocoid that is reportedly syllabic: [iᵉ,uᵉ].

/kie⁴/	[kiᵉ⁴]	twenty (inanimate)
/kue³/	[kuᵉ³]	long (inanimate)

Thus in a high - non-high vowel sequence, the high vocoid is considered the syllabic peak when the mid vowel /e/ follows, but is considered an onglide when the mid vowel /o/ follows.

In (x) is a list of all theoretically possible diphthongs involving high-vowel on-/off-glides. Attested forms are underlined. If a surface form is phonetically distinct from its hypothesized underlying form, this is shown in parentheses. Additionally, all theoretically possible rimes involving coda /g/ are presented.

(x)	<u>offglides</u>		<u>onglides</u>	
	<u>i-glides</u>			
	iᵃ		iᵃ	iᵃ
	<u>eᵃ</u>	oᵃ	<u>iᵉ (= [iᵉ])</u>	<u>iᵒ</u>
	<u>aᵃ</u>		<u>iᵃ</u>	

²Skinner writes "/...hEu³/". I assume the epsilon is a typo.

u-glides

i ^u			o ^u	u ^u		u ⁱ			u ^o	u ^u
	<u>e^u</u>							<u>u^e (= [u^e])</u>		
		<u>a^u</u>						<u>u^a</u>		

/g/-codas

ig		ug
	<u>eg (= [eɣ])</u>	og
	<u>ag (= [aɣ])</u>	

To summarize, three generalizations emerge when considering attested complex rimes. First, complex nuclei involving high syllabic vocoids are disallowed. Second, only onglides involving /e/ as the second element seem to reverse expected syllabicity, in that the less sonorous segment is apparently syllabic. Third, only /e/ and /a/ may co-occur with coda /g/.

Regarding these second and third generalizations, this rather strange state of affairs may be explained if the so-called complex nuclei /ie,úe/ (where the peak element is indicated by accent), are re-analyzed as possessing post-vocalic aspiration, and are thus of the form /ih,uh/³. This hypothesis earns support when recalling that so-called coda /g/ occurs solely after /a,e/ nuclei, phonetically implemented as a velar spirant. If we re-analyze these forms as possessing post-vocalic aspiration as well, the so-called coda system acquires near-symmetry, and further, becomes more in line with other dialects:⁴

The reanalyzed system appears in (x).

(x) offglides
i-glides

i ⁱ			o ⁱ	u ⁱ		i ⁱ			i ^u
	<u>eⁱ</u>							i ^e	<u>i^o</u>
		<u>aⁱ</u>						<u>i^a</u>	

onglides

u-glides

i ^u			o ^u	u ^u		u ⁱ			u ^o	u ^u
	<u>e^u</u>							u ^e		

³This hypothesis gains credibility when considering that Skinner himself entertains, though dismisses, this possibility. It is thus quite possible that the segment in question is phonetic /h/, though perceived as simply a weakly articulated, perhaps voiceless, off-glide.

⁴Skinner makes no mention of ballistic syllables in his analysis. I am inclined to think that were he to incorporate ballisticsity, exactly those syllables I am reanalyzing as possessing post-vocalic aspiration would be considered ballistic.

<u>a^u</u>	<u>u^a</u>
<u>/g/-codas</u>	
<u>ig(=[i^e])</u>	<u>ug(=[u^e])</u>
<u>eg(=[eɣ])</u> og	
<u>ag(=[aɣ])</u>	

The table in (x) shows Skinner's analysis of complex nuclei and coda consonants, alongside their conflated treatment under the present analysis.

Skinner's analysis:

present analysis:

<u>coda /g/</u>	<u>complex nuclei</u>	<u>post-vocalic aspiration</u>
/ag/ [aɣ]	unreported	/ah/
/eg/ [eɣ]	unreported	/eh/
*/ig/	/ie/ [i ^e]	/ih/
*/og/	(?) ⁵	/oh/(?)
*/ug/	/ue/ [u ^e]	/uh/

Under the present analysis, several irregularities present in Skinner's system are explained away. The patterning of the post-vocalic velar stop, an irregularity both within and across systems, is no longer problematic, as this segment is considered to be surface post-vocalic aspiration. Further, the asymmetrical patterning of high - non high nuclei does not arise, as such sequences are also considered to possess post-vocalic aspiration. The gaps in both irregular systems are accounted for when positing the presence of post-vocalic aspiration.

As can be seen in (x), asymmetries remain, in the system of complex nuclei involving syllabic mid vowels. Further research (data collection) may reveal that this asymmetry is only apparent.

Finally, we may observe that onglides /i,u/ occurring in so-called complex nuclei are the missing glides /y,w/: /u/ may serve as an onset ([w]), and thus, as other sonorant onsets, may be preaspirated (/o¹huá³/) or, presumably, preglottalized. It may also serve as a syllable nucleus (/ku²/ - cold (inanimate)). /i/ may also serve as onset, where it is phonetically implemented as [d^v] (perhaps neutralizing with palatalized /d/). As other sonorants, it may be preaspirated or preglottalized in this position. /i/ may additionally serve as syllable peak, where it is phonetically [i].

In the table in (x), Column (1) contains some examples of Skinner's hypothesized lexical representations, while Column (2)

⁵Skinner reports no diphthongs with /o/ as the first member. I assume this is either an accidental gap or that such forms simply eluded Skinner in his investigation. Such forms are predicted under the present analysis to be considered /og/ by Skinner, as he perceives high-vowel nuclei as diphthongs in the relevant environment, while non-high vowels are perceived with coda /g/. Why non-high vowels preceding aspiration results in perceived velar frication remains as yet unexplained under the present account.

contains lexical representations according to the current reanalysis.

(x)	(1) <u>Skinner's UR</u>	(2) <u>reanalyzed UR</u>	
	/d ^y ie ⁴ /	/yih ⁴ /	(day after tomorrow)
	/ʔdva ³ /	/ʔya ³ /	(he beats, mixes)
	/o ¹ hdvi ³ /	/o ¹ hyi ³ /	(fire)
	/hie ^{ʔ4} /	/hih ^{ʔ4} /	(it is coming)
	/a ⁴ lag ³⁴ /	/a ⁴ lah ³⁴ /	(it was fixed)
	/kie ⁴ /	/kih ⁴ /	(twenty)

Usila may now be seen to fall in line with most other dialects of Chinantec. As in other dialects, all sonorant consonants (except /r/), including the glides, may be preaspirated or preglottalized (underlined forms), while none of its obstruents may. Furthermore, the only allowable coda is /ʔ/. Aspirated vowels phonetically linearize their laryngeal features, and thus post-vocalic aspiration surfaces. Any vowel may be present with post-vocalic aspiration.

(x) presents the reanalyzed Usila inventory, followed by Rensch's reconstructed Proto-Chinantec inventory. As can now be seen, the two systems are by and large equivalent.

(x) Renalyzed Usila segment inventory

p	t	k	i	u
b	d	g	e	o
f	s		a	
<u>m</u>	<u>n</u>	<u>ng</u>		
	<u>l</u>			
	r			
	<u>y</u>	<u>w</u>		
?,h				

(x) Proto-Chinantec segment inventory (Rensch 1976)

p	t	k	k ^w	i	i	u
b	z	(<u>g</u>)	g ^w	e	@	
	s			a		
<u>m</u>	<u>n</u>	<u>ng</u>				
	<u>r</u>					
	<u>l</u>					
	<u>y</u>	<u>w</u>				
?,h						

Conclusion

In this section we have seen how the surface post-vocalic [sg] specification, experimentally shown to be present in Comaltepec, has explanatory power in other dialects as well. According to the analysis of Skinner (1962), the Usila dialect behaves internally inconsistently, and aberrantly with respect to other dialects in terms of onset patterning, coda allowability, and complex nuclei.

Reanalyzed in light of present findings, the Usila system may be seen as patterning fully regularly.