

Segmental? Suprasegmental? Nasality in Ticuna (isolate, Western Amazonia)

Ticuna is spoken by about 50,000 Ticunas across Peru, Colombia and Brazil. This talk will be based on spontaneous and elicited data from the Ticuna variety of San Martín de Amacayacu (Amazonas, Colombia; SMAT), where I have been doing fieldwork since 2015.

Orality vs nasality is a phonological dimension in SMAT, as demonstrated by such minimal pairs as [ʔa²] ‘to sing’ vs [ʔǎ²] ‘mosquito’, or [wa:ʔ^{2,3}] ‘to grate’ vs [wǎ:ʔ^{2,3}] ‘to saw’. Whether that phonological parameter belongs to segments or syllables is hard to determine however¹. This question entails wide-ranging consequences as to the overall configuration of SMAT’s phoneme inventory. It further raises interesting typological and theoretical issues, especially as to the bounds between the phonological parameters [voiceless/voiced] and [oral/nasal].

The following are comprehensive inventories of syllable onsets (TABLE 1) and syllable nuclei (TABLE 2) found in *surface* realizations of SMAT stressed syllables:

		Place of articulation					
		labial	alveolar	palatal	labial-velar	velar	glottal
①	(oral) voiceless	p	t̚	tɕ	ɱ	k	ʔ
	(oral) voiced	b	d̚	dʒ	w	g	
②	nasal	m	n̚	ɲ	ɰ̃	ŋ	

TABLE 1 | Inventory of onsets observed in surface realizations of SMAT stressed syllables

		Tongue and lips position							
		Velum position							
①	oral	a	u	ɛ	i	o	u	aɪ	aʊ
②	nasal	ã	ũ	ẽ	ĩ	õ	ũ	ãĩ	ãũ

TABLE 2 | Inventory of nuclei observed in surface realizations of SMAT stressed syllables

¹ Higher-level elements are excluded as candidates for [oral/nasal] to attach to, in particular the morpheme level (because of the existence of partly oral and partly nasal morphemes such as [-wɛ̃³mũ¹] ‘food’).

The surface realizations of most stressed syllables consist of one of these onsets followed by one of these nuclei². Onset-Nucleus combinations are strongly restricted however: with one single exception, onsets from series ① can only associate with nuclei from series ①, and onsets from series ② with nuclei from series ② (onset [ʔ] belongs to both series). Surfacing syllables are thus either *entirely* oral or *entirely* nasal. This can be illustrated as follows:

(1) Possible combinations involving onsets [p], [b], [m], and [ʔ], and nuclei [a] and [ã], in surface realizations of SMAT stressed syllables:

[pa]	e.g.	[pa ⁴³]	‘to be dry’
[ba]		[ba(:) ³⁴ we ⁴]	‘Arrau turtle’
[mã]		[mã ⁴³]	‘to be sad’
[ʔa]		[ʔa ²]	‘(a bird) to sing’
[ʔã]		[ʔã ²]	‘mosquito’

BUT: *[pã], *[bã], *[ma]

A segmental analysis couldn’t attribute the underlying [oral/nasal] parameter to the onsets (e.g. argue for a /p/ vs /b/ vs /m/ contrast and for [ã] to be an allophone of /a/ after /m/). This would fail to account for such contrasts as [ʔa] vs [ʔã], where the only varying element is the nucleus.

Attributing the parameter to the nuclei (e.g. arguing for an /a/ vs /ã/ contrast), on the other hand, makes it hard to account for the absence on the surface of Voiceless Onset-Nasal Nucleus combinations (e.g. *[pã]). One could claim e.g. either that /p/ isn’t compatible with /ã/ (while /b/ is and then surfaces as [m] through nasal harmony); or that /p/, like /b/, surfaces as [m] before /ã/. Both claims are typologically questionable.

Treating the parameter as a suprasegmental one by assigning it to the syllable level, if a segmental [voiceless/voiced] parameter is concurrently maintained (e.g. /p/ vs /b/), doesn’t make it easier to explain why such Voiceless Onset-Nasal Nucleus combinations aren’t found (e.g. *[pã] for /pa[nasal]/).

Given the defects of these analyses, I will consider one last option. This consists in removing the [voiceless/voiced] parameter from the segmental level (leaving only the place of articulation dimension in the inventory of onset phonemes), and including it into a [voiceless] vs [voiced] vs [nasal] suprasegmental contrast belonging to the syllable. This analysis, although admittedly unusual, seems to account better for the language’s facts.

² One syllable coda, namely [ʔ], is also observed in some stressed syllables. Furthermore all syllables are realized with a contrastive tone. These two elements will mostly be ignored in this talk however, as neither of them interferes with nasality issues in SMAT. In coda-less stressed syllables, the vowel nucleus can be lengthened in its surface realization; this optional phonetic detail is not relevant for the points under discussion here.