

Triqui phonetics and phonology

Linguistics 460/560

Spring 2024

Week 2

Professor DiCanio

1. Symmetry, stress, and the inventory

In languages like English, we tend not to think of phonemic contrasts in terms of stress, but in Triqui, we have to.

We talk about allophony in terms of stress though, e.g. aspiration in English.

[ə'p^hi:ɹ]
'appear'

['p^heɪpə]
'paper'

['æp^hl̩]
'apple'

['p^hɹapəri]
'property'

[p^hə't^heɪrɔ]
'potato'

In Itunyoso Triqui, and in the Triqui languages more generally, all the major contrasts occur on the final syllable of roots/morphemes.

Table 3: Segments occurring in different positions in polysyllabic words

Manner	Antepenultimate- σ	Penultimate- σ	Ultimate- σ
Stops	t̥, k, k ^w	t̥, k, k ^w	p, t̥, k, k ^w , ʔ
Pre-nasalized Stops			ⁿ d, ^ŋ g, ^ŋ g ^w
Affricates	tʃ	tʃ, (tʃs)	tʃ, (tʃs)
Fricatives	s̥, ʃ	s̥, ʃ	(ð), s̥, ʃ, h̥
Nasals	m, n	m, n	m, n
Approximants	l, r	β, j, l, r	β, j, l, r
Pre-Stopped Nasals		^c n	
Glottalized Sonorants			^ʔ m, ^ʔ n, ^ʔ j, ^ʔ β ^ʔ l, (^ʔ r), ^{ʔn} d, ^{ʔŋ} g
Vowels	i, a, u, e*, o*	i, a, u, e, o*	i, a, u, e, o, ã, ã̃, ã̄

- We may call this type of patterning in Triqui “stress”, but it differs somewhat from what some linguists may consider to be their prototype of a stress system.

“Depending on the language, stress is diagnosed in different ways: through a combination of physical properties, speaker intuitions, and phonological properties such as segmental constraints and processes.”

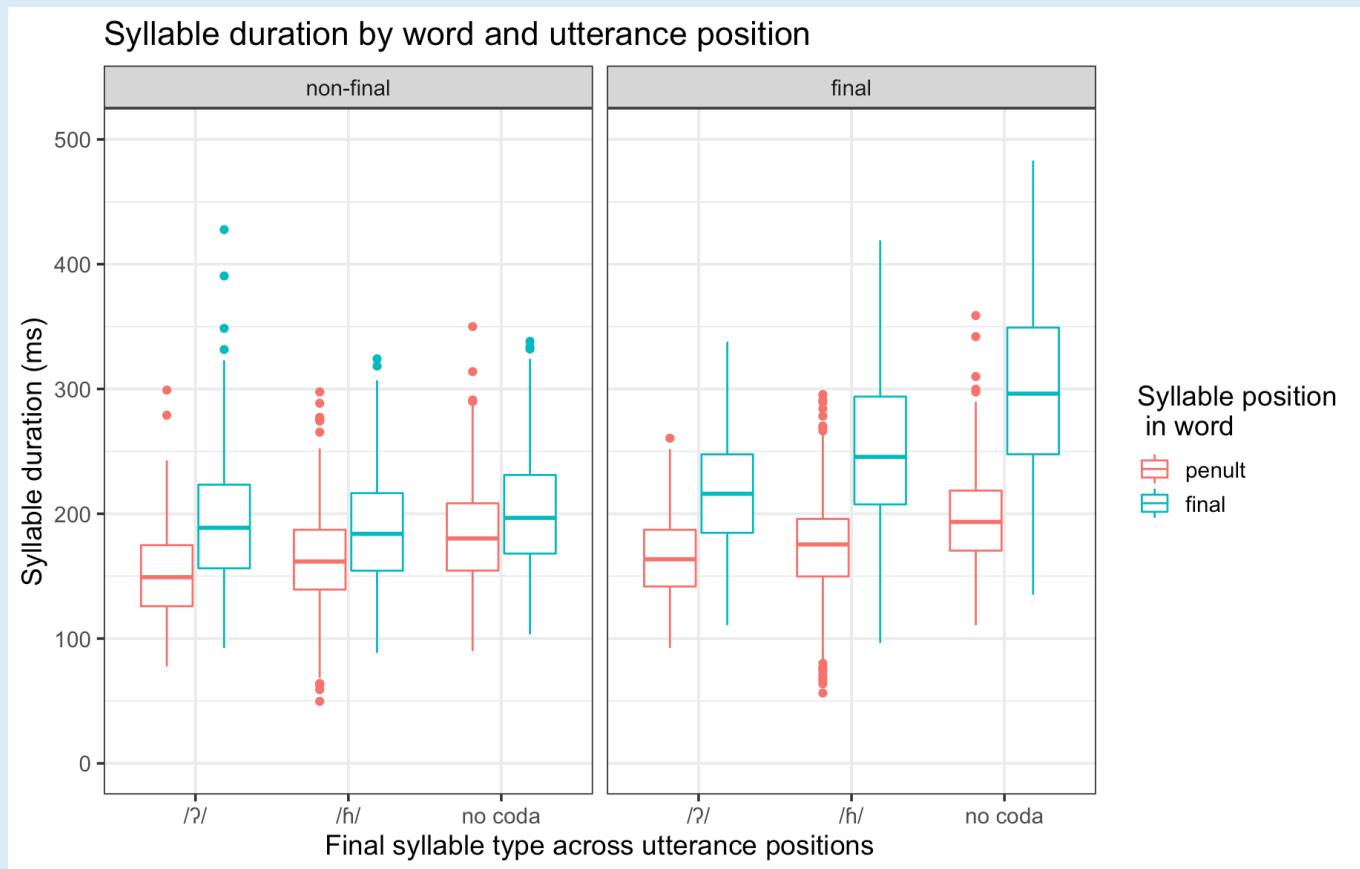
(p.66, Gordon and van der Hulst, 2020)

- In practice, many linguists think *primarily* of the physical properties and the speaker intuitions over segmental constraints and processes.
- In Triqui, since pitch is used for marking tone, pitch on the root-final syllable is not necessarily any different than on any other syllable. Pitch is **not** a cue for stress.

- There are additional languages motivating a perspective of stress primarily based on distributional properties rather than the physical ones.
- In Ibibio (Cross-River), Punu (Bantu), and Lulamogi (Bantu), the distribution of segmental and tonal contrasts are restricted to stem-initial or word-penultimate positions, but other cues to word stress/accent are absent (Hyman, 2019).
- Hyman argues that these languages demonstrate prominence relations via distributional restrictions and patterns of reduction/assimilation.

Phonetic patterns

In Triqui, final syllables are still longer than non-final syllables though. So, duration plays a role too. Observe the following from the chapter on Triqui prosody.



This syllable duration for disyllabic words with different coda types: /ʔ/ - /h/ - no coda in both utterance-final position (the right panel) and in utterance-non-final position (the left panel).

This is durational data averaged across 11 speakers and a number of different experimental trials.

Note that final syllables are about 50% longer than penults and even longer than penults in utterance-final position.

- There are **both phonological and phonetic cues** to stress in Triqui, but if we ignored stress, we would need to include many caveats whenever we discussed different segment types.
- If we just looked at the segmental inventory here, we might be misled to believe that everything was contrastive everywhere in the word.

2. The Triqui inventory

Table 1: Itunyoso Trique Consonant Inventory

	Bilabial	Dental	Alveolar	Palatoalveolar	Palatal	Retroflex	Velar	Labiovelar	Glottal
Stops	p	t̪, t̪ː					k, kː	kʷ, kʷː	ʔ
Pre-Nasalized			ⁿ d, ^ʔ n d				^ŋ g, ^ʔ ŋ g	^ŋ gʷ	
Affricates				tʃ, tʃː		(tʂ, tʂː)			
Fricatives		s, (ð)		ʃ					ɦ
Nasals	m, mː, ^ʔ m		n, nː, ^ʔ n						
Pre-Stopped					^c n				
Approximants	β, βː, ^ʔ β		l, lː, ^ʔ l		j, jː, ^ʔ j				
Taps			r, ^ʔ r						

Table 2: Itunyoso Triqui Vowel Inventory

	Front	Central	Back
Close	i, ï		u, ù
Close-Mid	e	ẽ ~ ẽ̃	o
Open		a	



The stop system

The stop system includes /p, t̪, k, kʷ/. These are all voiceless stops. There are no voiced stops. In the onsets of stressed syllables, they are variably realized with some preaspiration.

/p/		/t̪/		/k/		/kʷ/	
pa ² la ³	‘lizard’	t̪a ³ k̃ ³	‘hill’	ka ³ siʔ ³	‘honey’	kʷe ³ ʔleʔ ³	‘fragile’
pe ³ ʔeh ⁵	‘infant’	t̪i ³ ni ³²	‘nopal cactus’	ku ³ t̪ãh ³	‘porcupine’	kʷi ⁴ juh ⁴	‘raccoon’
		ni ³ t̪ĩ ⁴	‘to be roasted’	ni ³ kĩʔ ³	‘to be standing’	a ³ kʷah ⁴	‘to yell’
		nu ³ t̪a ¹	‘tamal’	ne ³ ka ³	‘scissors’	nu ³ kʷãʔ ³	‘word(s)’



There are in fact some voiced stops and fricatives, but these occur in only a couple native words.

[ð]	ru ³ ðaʔ ³	‘metate leg’	
[ɣ]	ka ³ ɣaʔ ³	‘1. metal 2. bottle’	
[ɣ ^w]	a ³ ɣ ^w ah ⁴	‘to yell’	
[ɣj]	ni ³ ɣjãh ⁵	‘Tlaxiaco (town)’	
	ri ³ ɣjaʔ ³ ~ ri ³ jaʔ ³	‘traditional stool’	

Loanwords from Spanish include voiced stops and fricatives too.

sna ⁴ ðu ⁴³	‘police’ < <i>estado</i>	ⁿ da ⁴ ðu ⁴³	‘deputy of mayordomo’ < <i>diputado</i>
djo ³ si ¹	‘angel’ < <i>dios</i>	pa ³ ɣa ³ ðo ⁴³	‘ambassador of mayordomo’ < <i>embajador</i>



Affricates

- For most speakers, there is one phonemic affricate in Itunyoso Triqui - /tʃ/. However, there are two additional affricate allophones.
 - Older speakers distinguish a retroflex: /tʂ/ and a palatoalveolar /tʃ/, e.g. /tʂeh³²/ 'path' vs. /tʃeh³/ 'his/their father.'
 - Younger speakers have merged these two affricates to /tʃ/, though you can hear a more retracted affricate sometimes before back vowels with speakers, e.g. /tʃeh³²/ 'path' but /tʂũ³/ 'tree.'
- The post-dental affricate [tʃ̣] is an allophone of /ṭ/ before /i/.

Sonorants

- The **sonorant series** is rather simple: /m, n, β, l, r, j/.
- Note that the bilabial "fricative" is given here. It is normally produced with either no frication [β̥] or with some frication [β]. However, it *patterns* with the sonorants.
- The "tap" actually varies quite a bit - it can be voiceless or voiced, a tap, trill, or retroflex flap: [ɾ, ɽ, ɹ, ɻ, ɽ̠, ɽ̠̥].



βeʔ³
'house'



li⁴³
'small'



rã³¹
'lightning'



ju^{3ʔ}βe³²
'ice'



mã³
'that
(distal)'



nã³
'this
(proximal)'

tsu³βe³

'dog'



ku³li³²

'magpie'



tʃi³rah⁵

'back,
behind'



ma²jah³¹

'yellow'



tsu³mã^{ʔ3}

'town,
community'











tʃi³neh⁵

'cliff,
precipice'











Pre-glottalization in sonorants

- There is a series of prenasalized stops in the language as well /^ɲd, ^ɲg, ^ɲg^w/. These occur only in root-final syllables in native words. The velar prenasalized stop is much more common than the alveolar one.

 ⁿ duh ³ 'pimple'	 ⁿ da ¹ 'until, up to'	^ɲ go ² 'one'	 ^ɲ ga ¹ 'with'	 ^ɲ g ^w i ³¹ 'person'	
ku ²ⁿ du ³ 'short'	 tʃa ^{3ɲ} go ⁴ 'ground wasp'	tʃi ^{3ɲ} ga ⁴ 'garden'		tʃu ^{3ɲ} g ^w i ¹ 'world'	 tu ^{3ɲ} g ^w a ³ 'San Juan Mixtepec'

Glottalized sonorants

There are pre-glottalized sonorants in Itunyoso Triqui - all sonorants and the prenasalized stops can have a preceding glottal stop. This can occur for some consonants in word-initial position, though pre-glottalization only occurs in the root-final syllable.

$ʔnĩh^5$ 'corn'		$ʔnaʔ^3$ 'to come'		$ʔβi^1$ 'raw, uncooked'		$ʔjã^{31}$ 'scar'		$ʔjah^3$ 'to do'	
ni^{31} 'night'		na^4na^4 'long ago'		$βĩ^3$ 'to be (equative)'		$jã^{32}$ 'salt'		jah^{32} 'flower'	

- It can be hard to hear the contrast between plain and pre-glottalized in word-initial position when these words are in isolation. You can hear it when another word (or prefix) precedes these roots though.
- Glottalized sonorants most often occur in word-medial position - it is easier to hear the glottalization here for both Triqui speakers (and probably for the rest of us).

ta^{3ʔ}nĩh⁵
'child of'

ka³-ʔnaʔ³
'PERF-come'

βa² ʔβi¹
'to.be + raw'



tʃa^{3ʔ}jãh³
'coyote'



a^{3ʔ}mã³
'to heat up'



a^{3ʔŋ}ga³²
'to be born'



ku^{3ʔn}diʔ³
'prickly pear'



ʔo^{3ʔ}lo³
'rooster'



ni^{2ʔ}rua⁴³
'much'



- The IPA has not historically had a consistent practice for transcribing preglottalization or prenasalization. Linguists variably transcribe these as sequences or with superscripts, e.g. /nd/ vs. /ⁿd/, /ʔn/ vs. /^ʔn/ (Keating et al. 2021).
- This variation in transcriptional practice is independent from whether the linguist is arguing that these are single segments or not.
- On the basis of many phonetic descriptions, including DiCanio (2010), Keating et al. (2021) propose superscripts for the IPA transcription of preaspiration, preglottalization, and prenasalization.
- When we're using IPA for Triqui, we'll be following this practice. However, in the *transcriptional orthography*, everything is written as a sequence. This is used in the dictionary and texts and later in the course.

The marginal pre-stopped nasal

- Itunyoso Triqui has a pre-stopped nasal which begins as palatal and is released into an alveolar nasal /^cn/. It is found in a few common words, but it is undergoing loss/shift for many speakers, merging with /n/ or /t̪/.



^cnãh⁵

‘brother’



nãh⁵

final particle expressing obligation











n:ãh⁵









‘to wash’

3. Consonant length

There is a contrast between short and long consonants, but only in the onset of monosyllabic roots. There are more contrasts among the sonorants than obstruents.

Singleton onset		Geminate onset	
t̪a ³	‘this, that (discourse)’	t̪:a ³	‘field’
koh ³	‘last year’	k:oh ³²	‘herb, medicinal plant’
k ^w eh ⁴	‘PERF.jump’	k ^w :eh ³²	‘edible green’
tʃa ⁴³	‘PERF.eat’	tʃ:ĩɽ ²	‘ten’
tʃsa ⁴	‘neck’	tʃ:a ³	‘tortilla’
mõ ³	‘this (proximate spatial)’	m:õ ⁴	‘PERF.exist’
nũ ³²	‘be.inside.of’	n:ũ ³²	‘epazote (herb)’
li ⁴³	‘small’	li:h ³	‘a baby, small child’
βe ⁴	‘TOP marker’	β:e ⁴	‘hair’
jo ³	‘in front of’	j:oɽ ³	‘year’

βa¹ ‘already, yet’ 
tʃa[?]³ ‘music’ 
ka[?]³ ‘spool-lifting
stick for weaving’ 
k^wi³ ‘day, sun’ 
li⁴³ ‘small (adj)’ 
mã³ ‘that (distal)’ 
nãh⁵ ‘oblig. final part.’ 
ṭa³ ‘this (disc)’ 

β:a¹ ‘sharp’ 
tʃ:a³ ‘tortilla’ 
k:a[?]³ ‘candle’ 
k^weh³² ‘edible green’ 
li^h³ ‘small (N)’ 
m:ã¹ ‘there is (IMP)’ 
n:ãh⁵ ‘to wash’ 
ṭ:a³ ‘field’ 

The phonetics of length

It is hard to hear the contrast between long and short voiceless stops in Itunyoso Triqui, but when we put them in a sentence, we can hear and see the length difference.

We will normally transcribe the long consonants with a doubled consonant instead of IPA [ː].

Example from DiCanio (2012a).

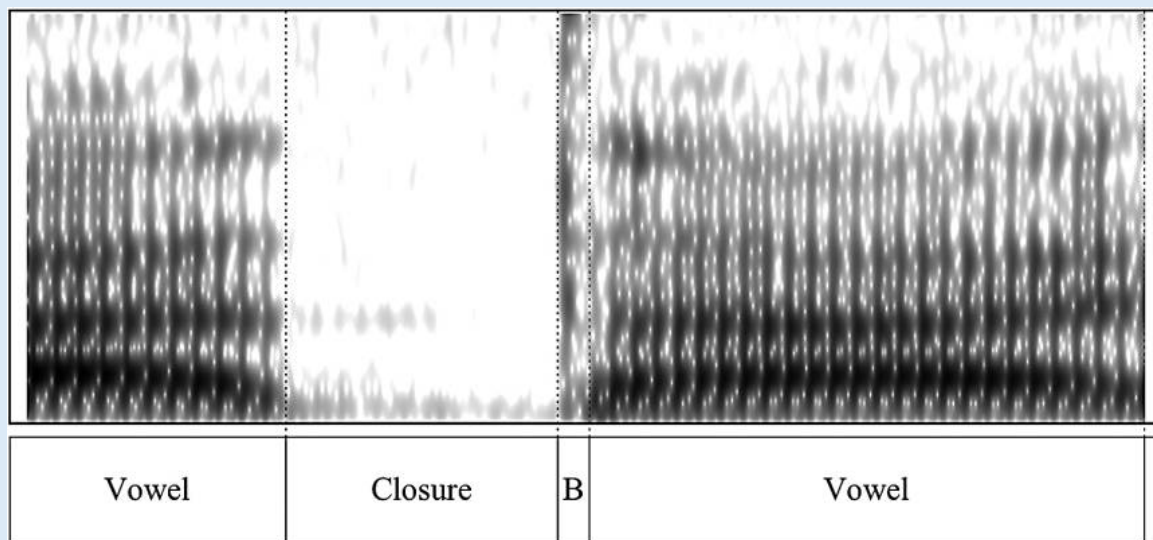
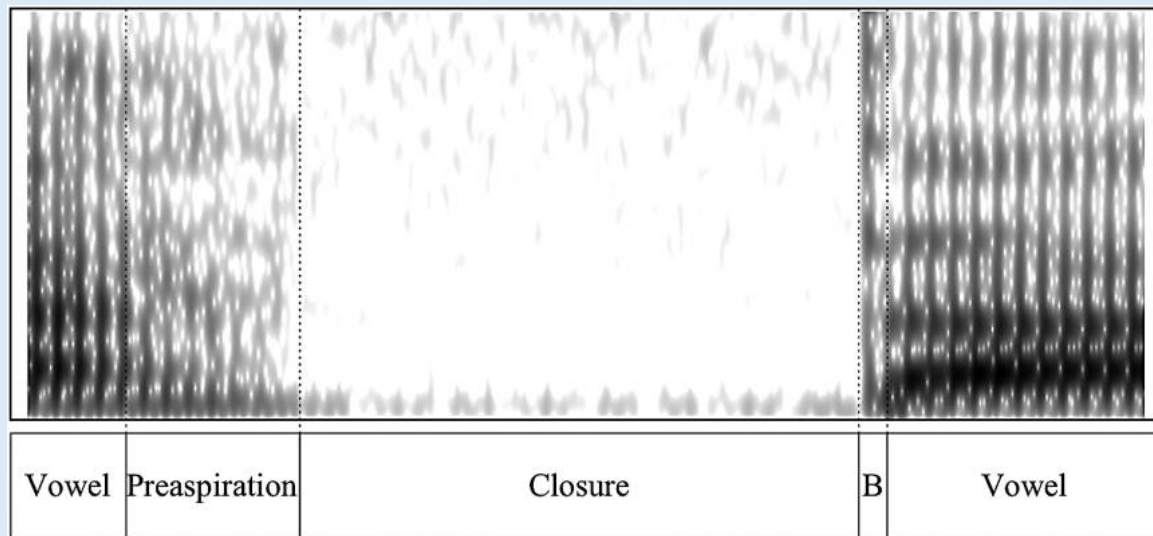
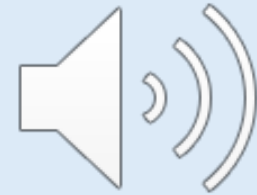


FIG. 2.—Acoustic differences between obstruents /t:/ (above) from the word [t:a³] ‘field, plain’ and /t/ (below) from the word [ta³] ‘that’. Both spectrograms show windows of identical duration.

Examples in context

ki³-ni⁴ka⁴³ tʃ:iʔ² tʃ:eh⁵ tʃ:ũ³
PERF-bring.1S ten load wood
‘I brought ten loads of wood.’



k^weh⁴ tʃa³ṭa³² tʃa³¹ ra³ʔa³ tʃ:ũ³
PERF.jump eagle head arm tree
‘The eagle flew/jumped to the tree branch.’



The length differences are robust in carrier sentences (ibid).

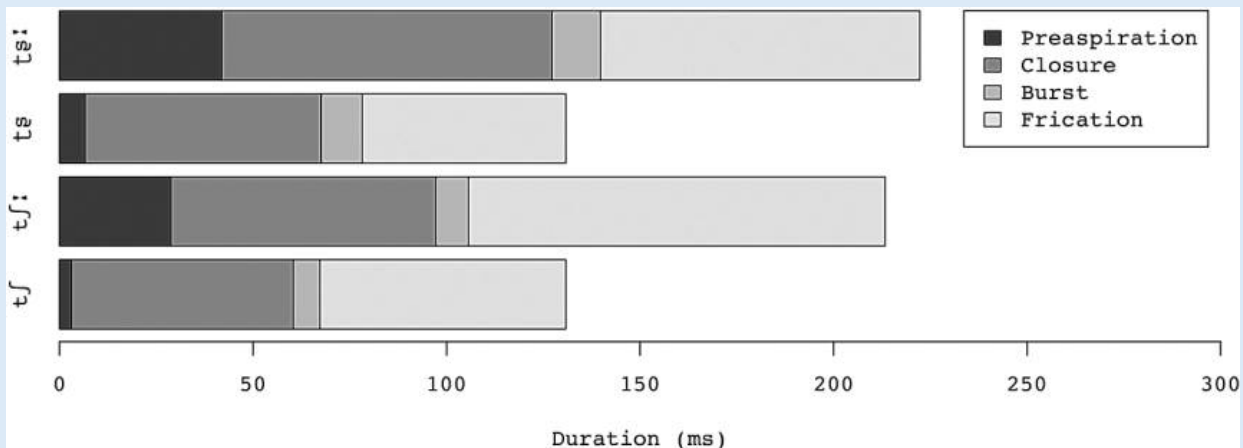
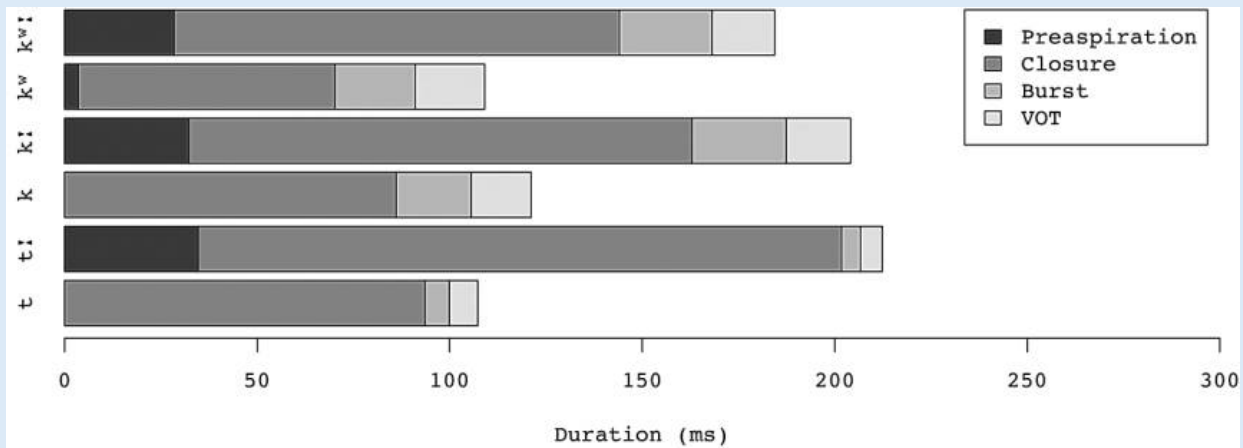


FIG. 3.—Fortis–lenis obstruent duration.

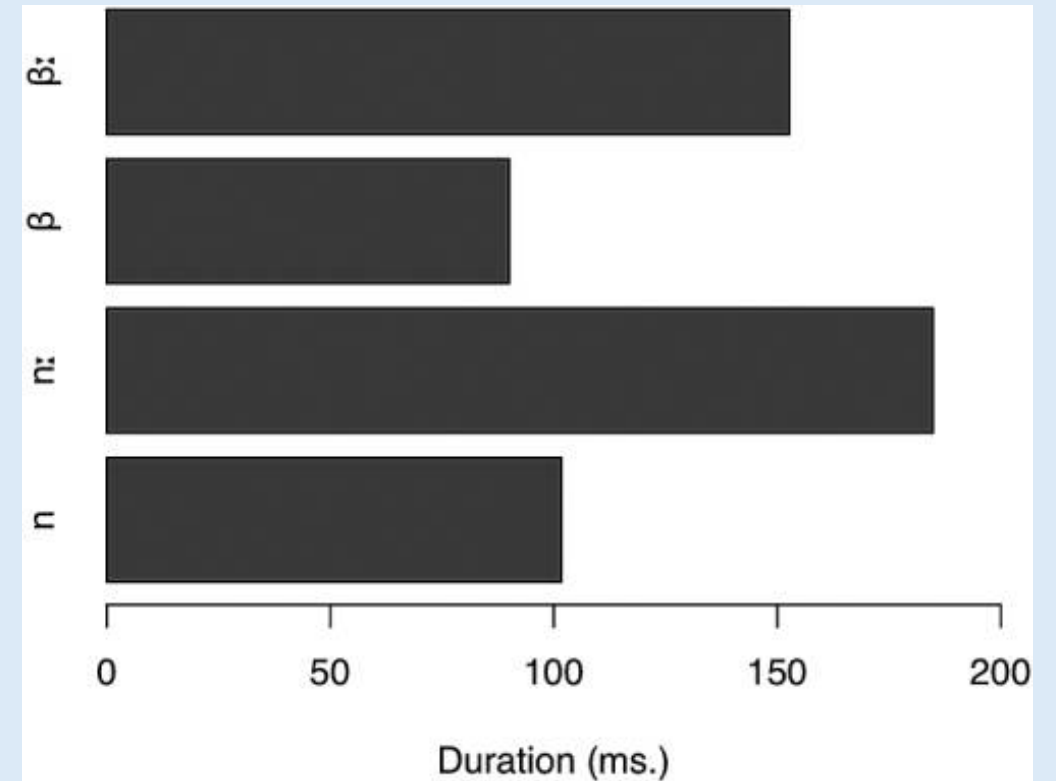


FIG. 4.—Fortis–lenis sonorant duration.

Why is length *only* contrastive word-initially?

- Consonantal length contrasts tend to occur word-medially in languages of the world (Dmitrieva, 2012; Ladefoged and Maddieson, 1996; Maddieson, 1985; Muller, 2001; Thurgood, 1993). Word-initial geminates are rare.
- Of 30 known languages with word-initial geminates, 24/30 (80%) also have a length contrast word-medially (Muller, 2001).
- 6/30 languages have word-initial geminates but not word-medial geminates: Pattani Malay, Sa'ban, Leti, Nhaheun, Yapese, and Itunyoso Triqui (DiCanio, 2008).

The origin is pre-tonic vowel loss.

Itunyoso	Chicahuaxtla	Copala	*Proto-Triqui	Gloss
ββe ³²	wwe ³²	ju ³ ve ³²	*/ju ³ we ³² /	<i>maguey</i>
ββeh ³⁵	wwe ⁵	ju ³ ve ⁵	*/ju ³ weh ⁵ /	<i>straw mat</i>
ββe ³	wwe ³	ju ³ va ³¹	*/ju ³ wa ³¹ /	<i>brave</i>
ββeh ³	wwehe ³	ju ³ veh ³	*/ju ³ weh ³ /	<i>boundary stone</i>
βĩ ³	wwĩ ³	a ³ vi ³²	*/a ³ wĩ ³² /	<i>to be</i>
nna ²	na ² na ²	na ² na ²	*/na ² na ² /	<i>slowly</i>
nni ²	a ² ni ¹	ja ³ ni ¹	*/ja ³ ni ¹ /	<i>ugly, gross</i>
mmi ³	mmi ³	ju ³ mi ³	*/ju ³ mi ³ /	<i>soap</i>
mmi ³¹	mmi ³¹	ju ³ mi ¹	*/ju ³ mi ¹ /	<i>bridge</i>
mmi ³²	mmi ³²	ju ³ me ³	*/ju ³ mi ³ /	<i>sweet potato</i>
ttah ³⁵	ta ⁵	(u)ta ³	*/u ³ ta ⁵ /	<i>to be above</i>
ttuh ³⁵	tu ⁵	i ³ tu ⁵	*/i ³ tuh ⁵ /	<i>knot, goiter</i>
ttu ³²	si ⁵ tu ²	i ³ tu ³²	*/i ³ tu ³² /	<i>thief</i>
ttfih ²	tfih ²	(i)tfih ²	*/itfih ² /	<i>seven</i>
ttfi ²	tfi ²	(i)tfi ²	*/itfi ² /	<i>ten</i>
ttṣoh ³	tṣoho ³	ni ³ tṣoh ³	*/ni ³ tṣoh ³ /	<i>female's belt</i>

But it also started pre-Triqui

Itunyoso	Chichahuaxtla	Copala	*Proto-Triqui	*Proto-Mixtec	Gloss
nnãh ³	nnãh ³	nãh ³	*/nnãh ³ /	*/jonoʔ/	<i>bag</i>
nnãh ³²	nnãhãh ³	nãh ³²	*/nnãh ³² /	*/inoʔ/	<i>cigarette</i>
kk ^w eh ³	k ^w eh ³	k ^w eh ¹	*/kk ^w eh ³ /	*/lak ^w aʔ/	<i>pus</i>
tta ³	ta ³	ta ³²	*/tta ³² /	*/jođoʔ/	<i>field</i>
ββih ²	wwih ²	vih ¹	*/wwih ² /	*/uwi/	<i>two</i>
kkã ³	kã ³	kã ³²	*/kkã ³² /	*/jĩkĩʔ/	<i>squash</i>
kka ³²	ka ³²	ka ³²	*/kka ³² /	*/jokoʔ/	<i>peg, pin</i>
kkoh ³	koho ³	koh ³	*/kkoh ³ /	*/juku/	<i>herb</i>
kkih ³	kĩhĩ ³	kih ³	*/kkĩh ³ /	*/jukuʔ/	<i>hill</i>

Note common historical */(j)V-/ on all Proto-Mixtec words from Josserand (1983).

Similar changes in Sa'ban (Austronesian)

TABLE 11

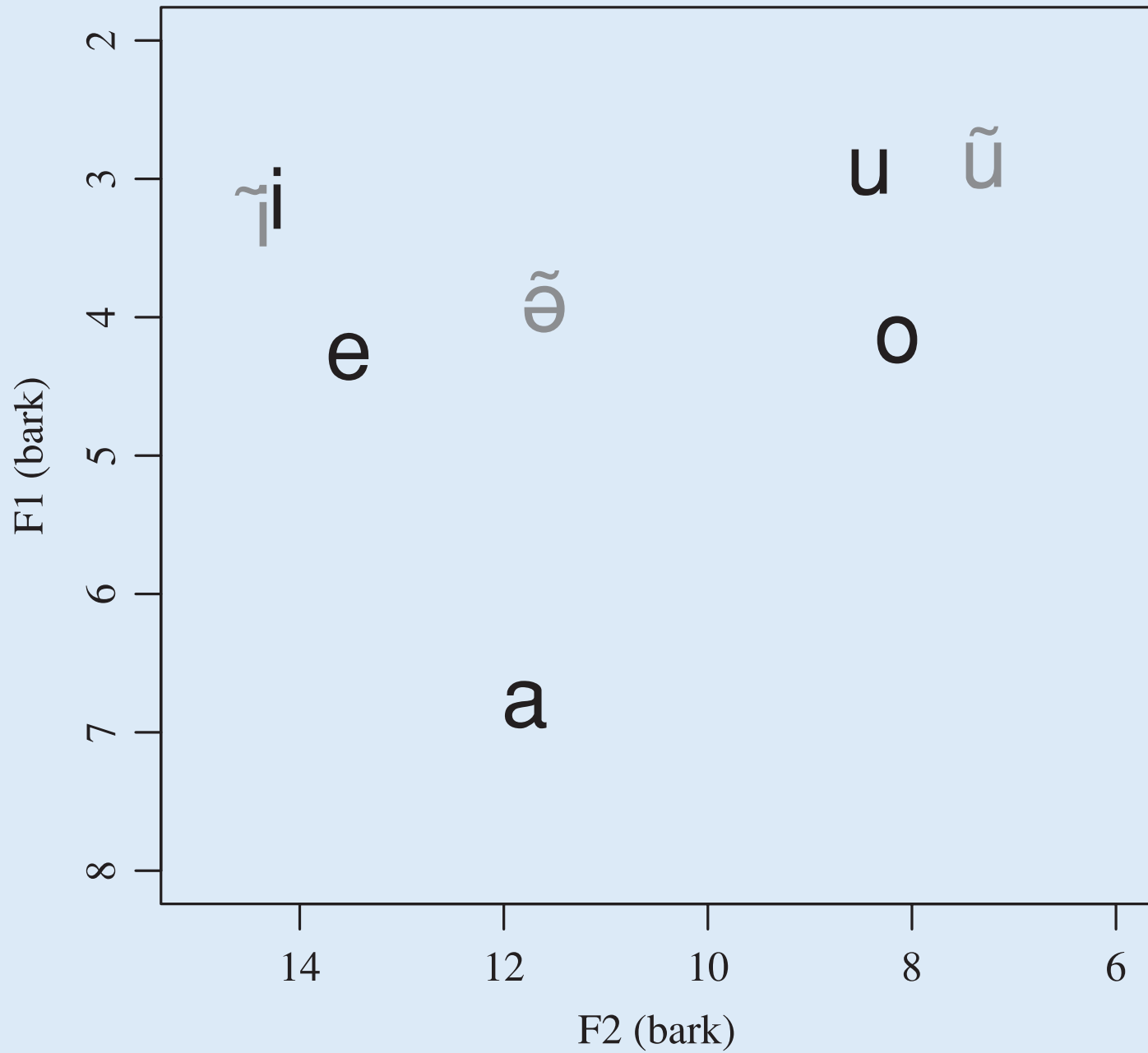
Syncope non-low penultimate vowels in reflexes of PKLD disyllables

No.	PKLD	Sa'ban	English
1.	*bebhek	ppek	pounded fine
2.	*bedhuk	ssuek	coconut monkey
3.	*belih	bley	purchases
4.	*melih	mley	to buy
5.	*berat	bréet	heavy
6.	*beti	ttay	calf of the leg
7.	*bukuh	kkew	node, joint
8.	*buyur	jjuel	too long (clothes)
9.	*getimel	hmel	bedbug
10.	*k-inih	hnay	this way; now
11.	*me-keluk	plok	slack, as a rope
12.	*lulun	lluen	roll something up
13.	*muka	ngkoe	early
14.	*muned	nnet	correct
15.	*perek	prek	crowded, packed in
16.	*pudut	dduet	way, manner; shape
17.	*ŋerimer	mmel	to wrinkle

- Proto-Kelabit-Lun-Dayeh (Northern Sarawakan; Austronesian) had longer words.
- Stress shifted to final syllables and pre-tonic high vowels were lost, conditioning gemination in only monosyllables in the language (Blust 2001, p.288).
- Sound familiar?

4. Vowel contrasts and nasalization


- There are five oral vowels in Triqui: /i, e, a, o, u/ and three nasal vowels /ĩ, ã, ũ/.
- The quality of the low nasal vowel is [ẽ], not [ã].
- Contrastive nasalization on vowels is restricted to... the final syllable of the root.




DiCanio (2010)


kkih³ ‘mountainside’ 


kkĩh³

‘corn masa/dough’ 

kka³² ‘espiga de maíz’ 

kkã³

‘sandal’ 

tʃa³tu⁴³ ‘jerk, a\$\$hole’ 

tʃa³tũ³

‘runt of litter’ 

Nasalization is equally contrastive before a coda glottal consonant as it is in open syllables.

Progressive and contrastive nasalization

- After nasal consonants, high vowels are obligatorily nasalized [ĩ, ã], but this does not happen with low vowels [e, o, a].

nũ³² ‘to be inside’

a³nĩ³ ‘to squeeze’

- There is a phonological contrast between a nasal and non-nasal low vowel *after* a nasal consonant.

nã⁴ ‘sunbeam’

a⁴nãh⁴ ‘to weave’

na⁴ ‘a long time ago’

a⁴nah⁴ ‘to work the field’

Regressive nasalization spreading

- Nasalization spreads from a final vowel onto preceding syllables if the intervening consonants are glottal consonants or a glide.

/jã ³² /	‘salt’	>	[jã ³² ~ ɲã ³²]
/βĩ ³ /	‘to be’	>	[βĩ ³ ~ mĩ ³]
/ra ³ ?ã ³ /	‘mushroom’	>	[rã ³ ?ã ³]
/tʃi ³ jãh ⁵ /	‘town, place’	>	[tʃĩ ³ jãh ⁵ ~ tʃĩ ³ ɲãh ⁵]
/ki ³ ?jãh ³ /	‘party, festival’	>	[kĩ ³ ?jãh ³ ~ kĩ ³ ?ɲãh ³]

5. Glottal consonants


- The glottal stop occurs as an onset in final root syllables, e.g. /ra³?a³/ ‘hand.’ These are **disyllabic** words in Itunyoso Triqui since you can get sequences of different vowels and you observe syllable-final lengthening, [ra³.?a:³].



- There is an important contrast among words which end with a /?/, /h/, and no coda. This distinguishes many words in the Triqui lexicon -- about **50% of all roots** end with a glottal coda.
- Glottal codas are the *only* codas permitted in the language. It is typologically *very rare* for /h/ to only occur as a coda, not an onset.

Final glottal contrasts


- Non-final syllables do not have codas and always have short vowels.
- Final syllables either have short vowels with a glottal coda, /ah, aʔ/, or a long vowel /a:/. Since the length is predictable (via the absence of a coda), it is not usually transcribed.

 a^{3ʔŋ}ga³²

‘to be born’

a³ṭa³


‘to carry/load’

 a^{3ʔŋ}gaʔ³

‘to laugh’

a³ṭaʔ³

‘to lift up on top’

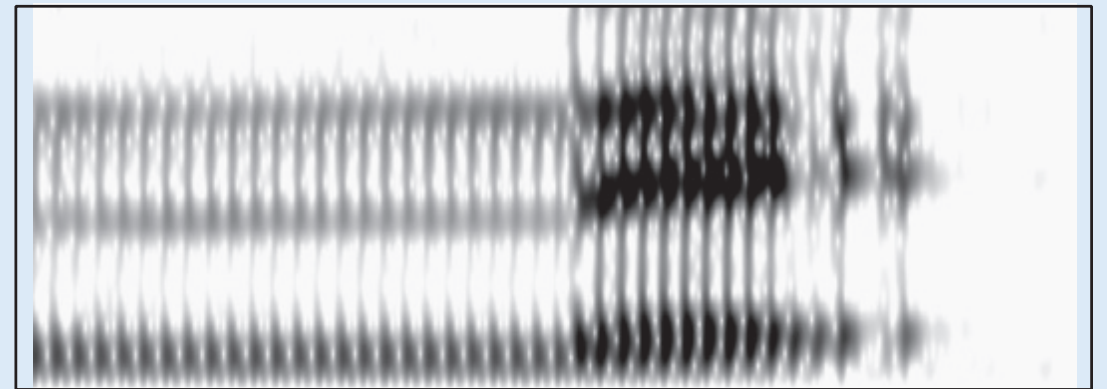
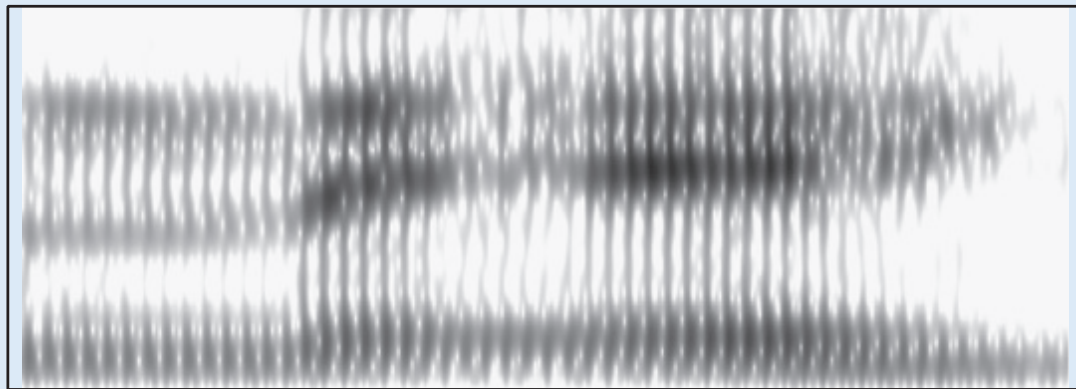
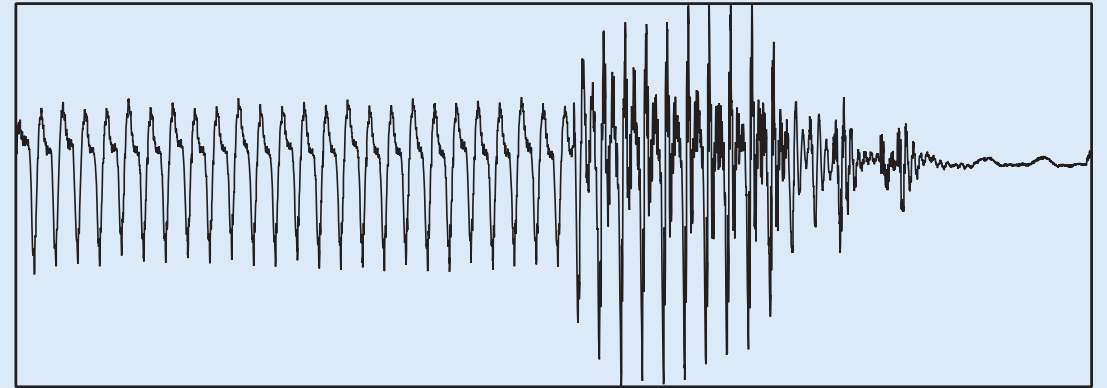
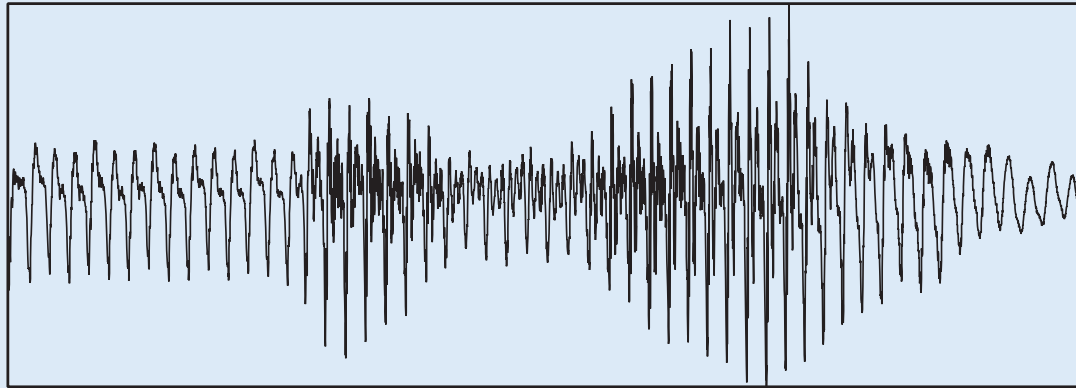
 a^{3ʔŋ}gah³

‘to be hurting’

a³ṭah²

‘to say’

Lenited vs. non-lenited glottal stops



n	e	ʔ	e	h
---	---	---	---	---

n:	e	ʔ
----	---	---

ne³ʔeh³ 'child'

nneʔ³ 'straw rope'

Figures from DiCanio (2012a)

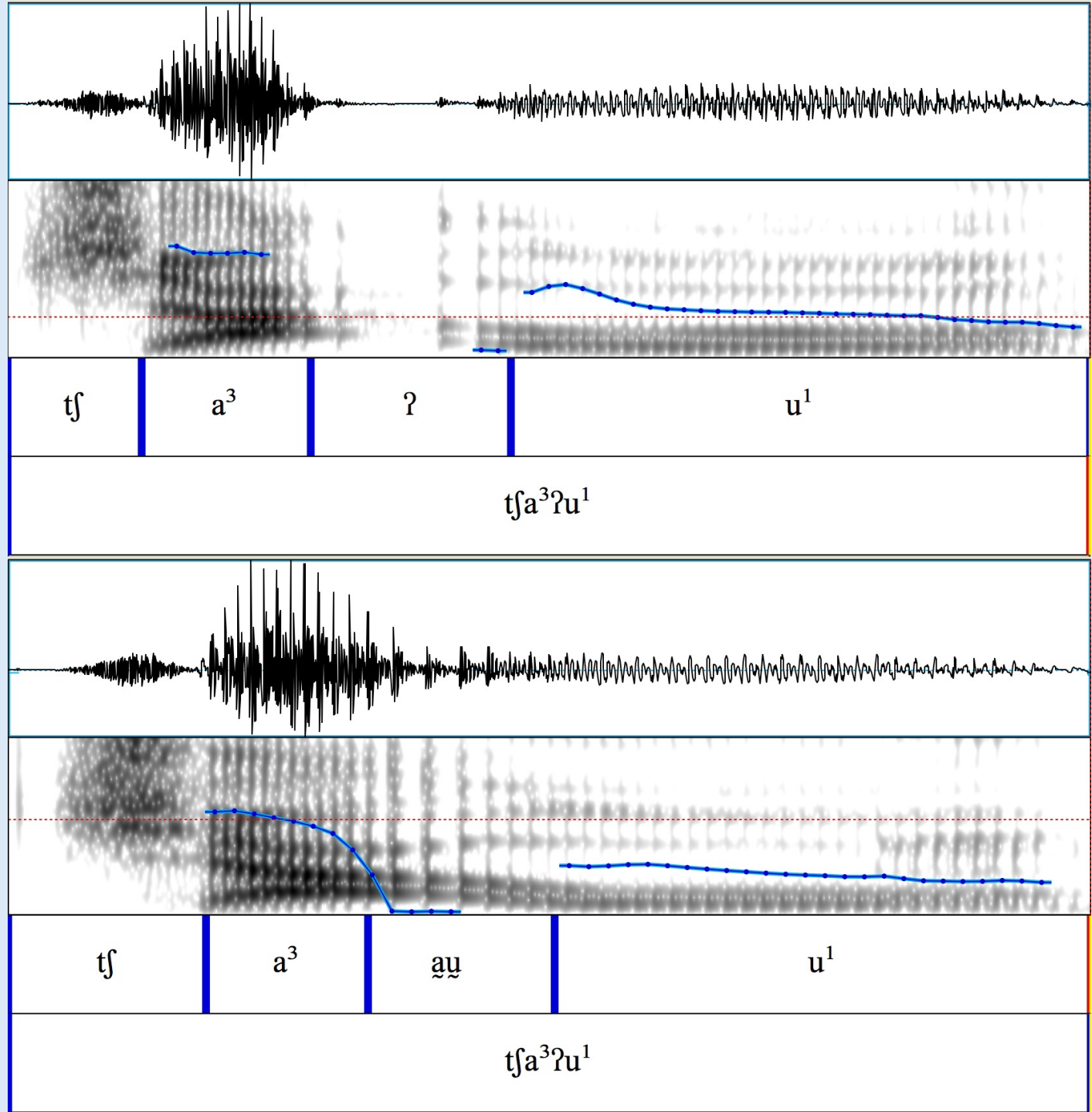
Variation in glottal stops

Medial glottal stops can be realized with complete closure (above)

or without complete closure (below)

/tʃa³ʔu¹/

‘barn owl / tecolote’



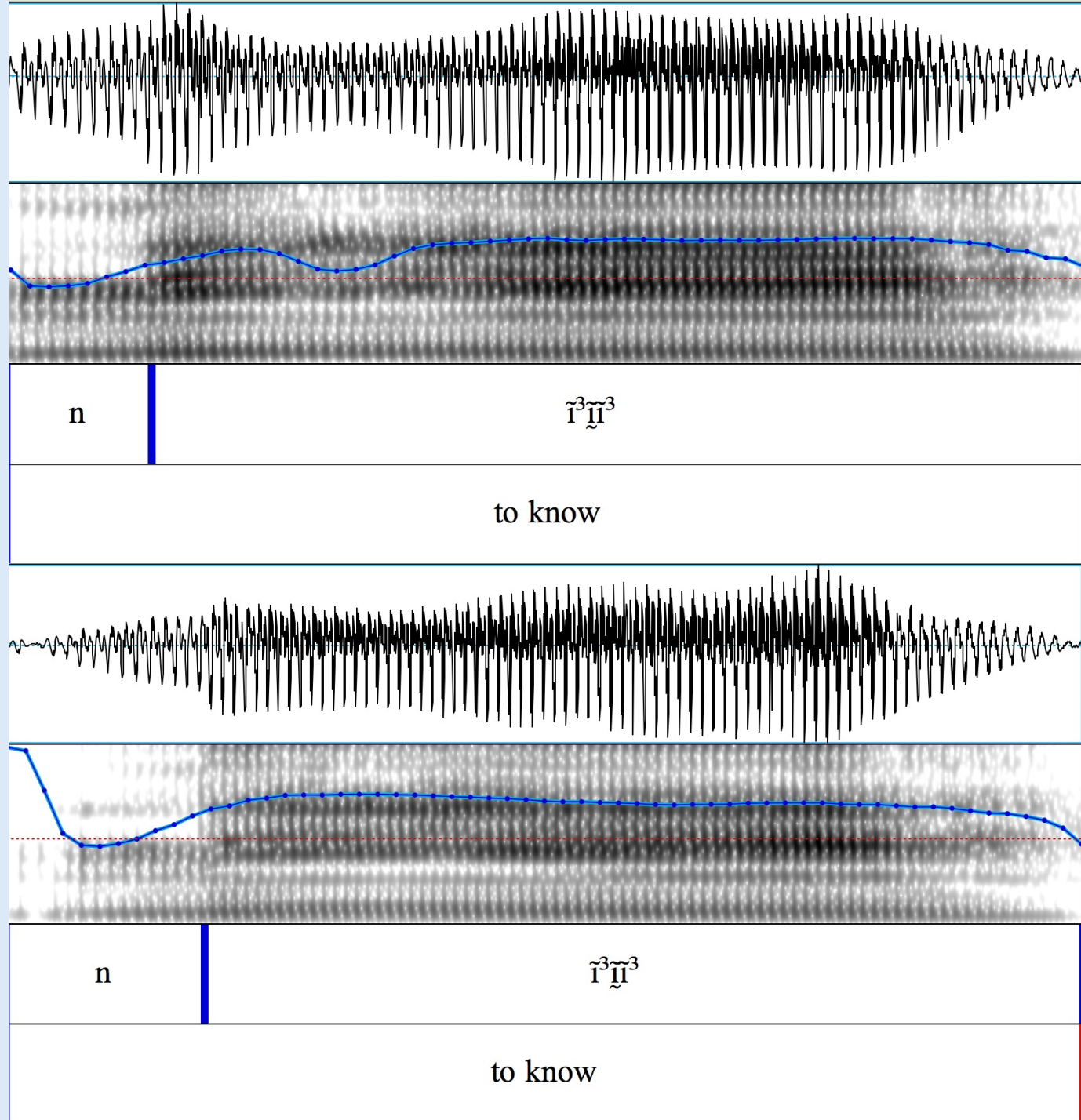
Both sound like they have closure, right?

But medial glottal stops can *also* be realized with non-modal phonation (creak, vocal fry, diplophonia)

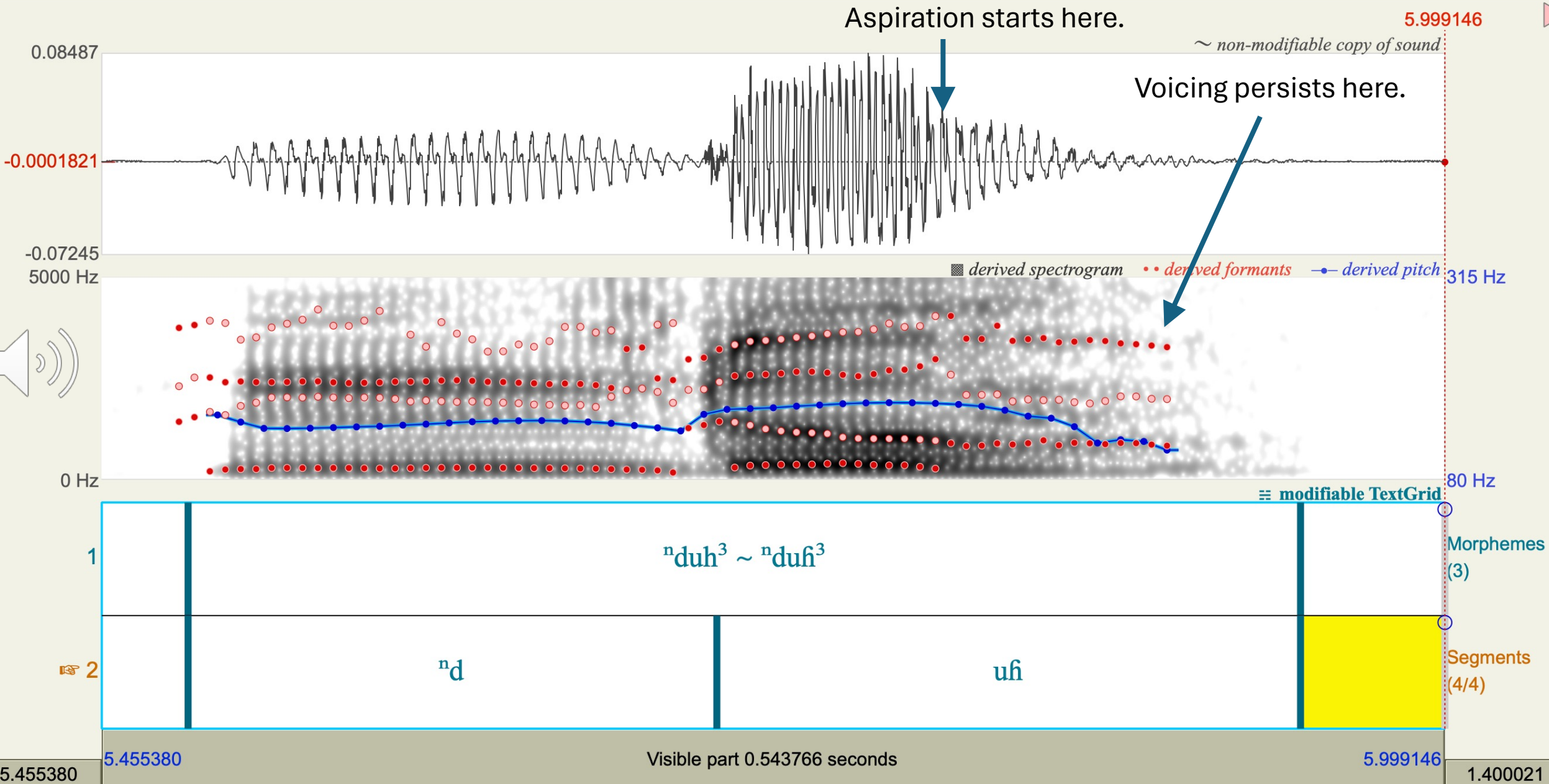
or only very subtle visible changes in voice quality

/ni³?i³/

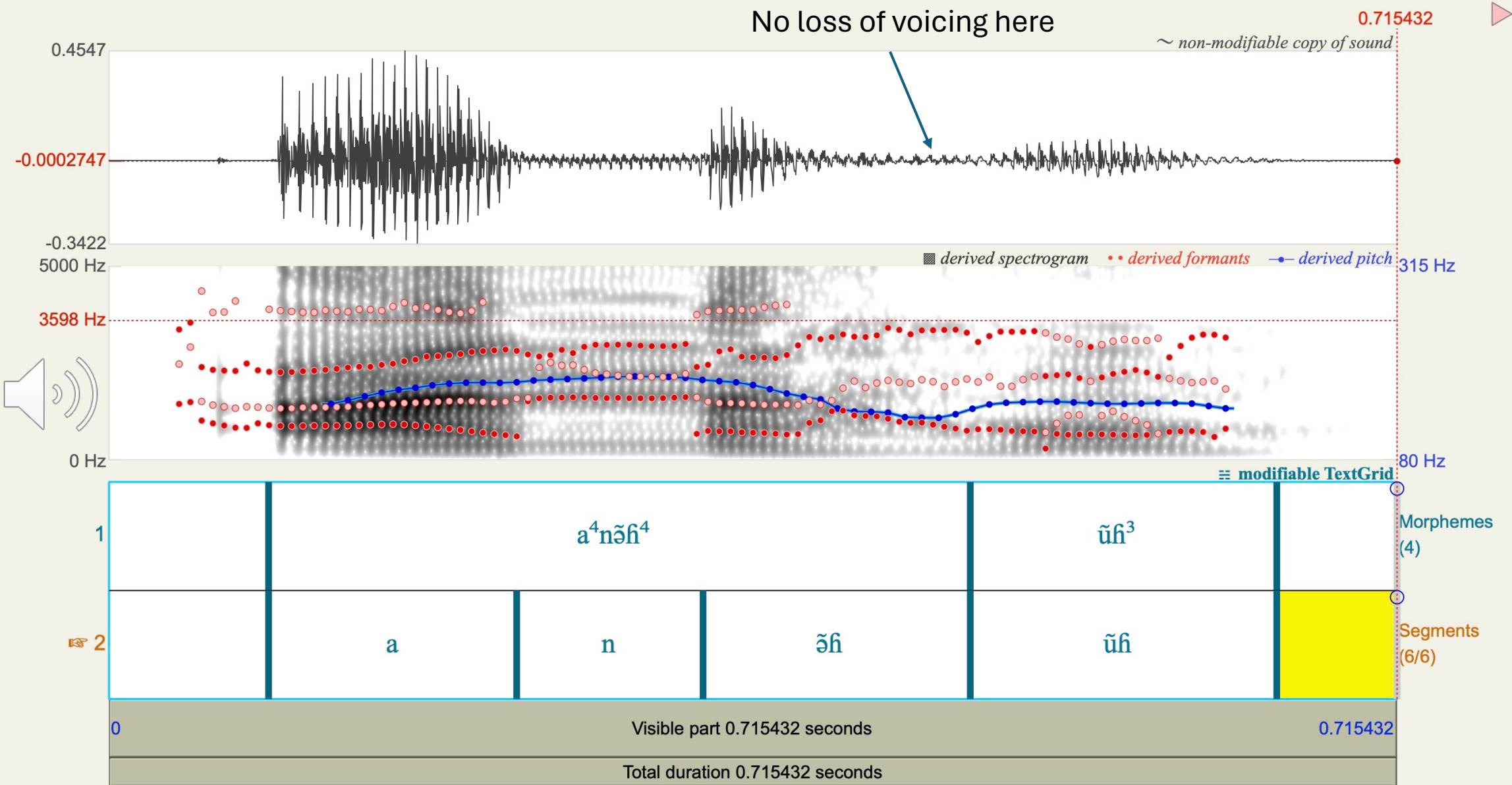
‘to know / saber~conocer’



The final /h/ also varies in its production – it can be variably realized as [h] or [h̥], with the latter being more common.



[a⁴nãh⁴ = ãh³] ‘she is weaving’



Final glottal consonants and tone

- Final glottal consonants both restrict the range of tonal contrasts and influence the phonetics of tone production (DiCanio 2012b, DiCanio et al. 2020).

Table 4: The distribution of Itunyoso Triqui tones in relation to glottal consonants

Tone	Open σ	Coda /h/	Coda /ʔ/	/VʔV(h)/
/4/	$\beta\beta e\text{:}^4$ `hair'	$y\tilde{a}h^4$ `dirt'	$tʃiʔ^4$ `our ancestor'	$r\tilde{a}^4ʔ\tilde{a}h^4$ `to dance'
/3/	$nne\text{:}^3$ `plough'	$y\tilde{a}h^3$ `paper'	$tsiʔ^3$ `pulque'	$n\tilde{a}^3ʔ\tilde{a}h^3$ `limestone'
/2/	$nne\text{:}^2$ `to lie'	$n\tilde{a}h^2$ `again'	$ttʃiʔ^2$ `10'	$ta^2ʔa\tilde{h}^2$ `some, half'
/1/	$nne\text{:}^1$ `naked'	$k\tilde{a}h^1$ `naked'	$tʃiʔ^1$ `sweet'	$na^1ʔa\tilde{h}^1$ `shame'
/45/		$n\tilde{a}h^{45}$ `to wash'		$n\tilde{a}^3ʔ\tilde{a}h^{45}$ `I return'
/13/	$\beta\beta i\text{:}^{13}$ `two of them'	$n\tilde{a}h^{13}$ `this (one)'		$k\tilde{a}^1ʔ\tilde{a}h^3$ `four of them'
/43/	$tʃe\text{:}^{43}$ `my father'	$nn\tilde{a}h^{43}$ `mother! (voc.)'		$ko^4ʔo\text{:}^{43}$ `to drink'
/32/	$nne\text{:}^{32}$ `water'	$nn\tilde{a}h^{32}$ `cigarette'		$s\tilde{a}^3ʔ\tilde{a}h^2$ `money'
/31/	$nne\text{:}^{31}$ `meat'			$k\tilde{a}^3ʔ\tilde{a}^1$ `wind, breath'

Final glottal contrasts and morphology

- This contrast is rather important in Triqui morphology.

a ³ ta ³	‘to carry/load’
a ³ ta ^h ⁵	‘I carry’
a ³ ta ^h ³	‘they (mentioned) carry’
a ³ to [?] ⁴	‘we carry’

Note that /a/ > /o/ with the 1st person plural, but other vowels do not change.

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