

Phonological Complexity and Sociolinguistic Variation: Glottalization and Lenition in Sigulai, a Barrier Islands Language – Indonesia

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Abstract

This study is based on recent fieldwork data from Sigulai [ISO 639-3: skh, ~20,000 speakers], an Austronesian language spoken on Simeulue Island in the Central Barrier Islands of Aceh, Indonesia (Billings & McDonnell 2024). To investigate the complexity of glottalization in Sigulai, this paper addresses three guiding research questions: (1) Is glottalization in Sigulai governed by a single phonological factor or by a set of complex factors? (2) How does glottalization contribute to our understanding of sociolinguistic variation across different age cohorts of Sigulai speakers? (3) In what ways does glottalization provide diagnostic evidence for ongoing language change within the speech community?

Sigulai exhibits average sound inventories of 21 consonants and 6 vowels (cf. Maddieson 2013) (see Tables 1 & 2). Within the consonantal inventory, the phonemes [ɟ], [dʒ], and [v] are loaned sounds, likely assimilated from Malay/Indonesian. Cross-linguistically, the Sigulai sound system closely parallels those of other Barrier Islands languages; for instance, Nias possesses 22 consonants and 6 vowels (Brown 2001). A typologically distinct feature of the Sigulai inventory is the presence of the voiceless bilabial fricative [ɸ], which is absent elsewhere across the Barrier Islands linguistic landscape. While previous descriptions identified this sound as a voiceless labiodental fricative [f], a re-examination of its precise articulatory properties confirms its status as a voiceless bilabial fricative.

The process of glottalization in Sigulai manifests through two phonologically intersecting mechanisms. Articulatory features demonstrate that it can be phonetically realized through two distinct manners of articulation: plosive and fricative. Structurally, these alternate realizations are driven by two distinct phonological processes: complementary distribution and lenition.

Regarding the plosive mechanism, glottalization occurs when the voiceless velar stop /k/ occupies the syllable coda. In this position, the sound undergoes lenition, losing its velar place of articulation and surfacing as a glottal stop [ʔ] (Table 3). This distribution is strictly complementary, as the coda environment systematically conditions the glottal variant. Consequently, this phonological rule can be formalized as follows: a velar stop becomes a glottal stop when positioned in the syllable coda (/k/ → [ʔ]/_#).

Conversely, the fricative mechanism involves a historical and synchronic lenition trajectory (cf. Crowley & Bower 2010:24–25). As illustrated in Table 4, the voiceless bilabial fricative [ɸ] has lenited to a voiceless velar fricative [x], which subsequently lenited to the voiceless glottal fricative [h]. We argue that this diachronic shift has resulted in stable synchronic variation rather than the complete displacement of the older variants ([ɸ] and [x]).

Indeed, this phonetic variation correlates strongly with speaker age cohorts. Our data indicate that [ɸ] and [x] are predominantly maintained by elderly speakers over the age of 65. Adult speakers aged 25 to 64 variably employ adpositions beginning with either [x] or [h]. Meanwhile, the younger generation exhibits a strong variation for either the bilabial fricative [ɸ] or the glottal fricative [h] over the velar variant. Although these findings do not yet support a definitive conclusion, there is a discernible tendency for the voiceless glottal fricative [h] to emerge as the dominant variant, particularly among both adult and younger cohorts.

These findings not only clarify the diachronic phonological trajectory of Sigulai but also elucidate how phonetic variation diffuses across the lexicon. Furthermore, this sound change

serves as an empirical lens for understanding how language endangerment in Sigulai may be internally driven by gradual, generationally stratified shifts within the speech community.

Keywords: Glottalization, Lenition, Sigulai, Barrier Islands Languages

	Bib.	Alvel.	Alveo-Pal.	Vel.	Glott.
Plosive	p b	t d		k g	kk[ʔ]
Nasal	m	n		ng[ŋ]	
Trill		r			
Fricative	ff[ɸ]	s		kh[x] rgh[ɣ]	h
Affricates			c[tʃ] j[dʒ]		
Approximant	w[v]		y[j]		
Lateral Approximant		l			

Table 1. Consonant chart

	Front	Central	Back
High	i		u
Mid	e	ə	o
Low		a	

Table 2. Vowel chart

<i>kanduri</i> ‘thanksgiving party’	<i>adik</i> ‘younger sibling’ →	<i>adiʔ</i>
<i>keneng</i> ‘get’	<i>bərangkek</i> ‘depart’ →	<i>bərangkeʔ</i>
<i>kəreta</i> ‘motorcycle’	<i>mandapek</i> ‘to get, to obtain’ →	<i>mandapeʔ</i>
<i>kuini</i> ‘a kind of mango’	<i>kiak</i> ‘branch’ →	<i>kiaʔ</i>
	<i>kuak</i> ‘fall down’ →	<i>kuaʔ</i>
	<i>ləntuk</i> ‘arrive’ →	<i>ləntuʔ</i>

Initial	Final
k	ʔ

Table 3. Complementary Distribution

ɸaibakha	xaibkaha	haibakha	‘inside’
ɸailawa	xailawa	hailawa	‘on/over’
ɸaʔalə	xaʔalə	haʔalə	‘under’
ɸaiɸəna	xaiɸəna	haiɸəna	‘in front of’
ɸaiɸuli	xaiɸuli	haiɸuli	‘behind’
ɸadəndae	xadəndae	hadəndae	‘in the middle’

Table 4. Lenition of Sigulai Adpositions

Sentence 1. (by an elderly speaker of 70 years old)

Jadi	karano	pado	saat	yakhuʔ	naʔeə	xaibaxa	wilayah	Imulun
so	because	at	time	REL.	Dem.Prox	inside	territory	name

‘So that at that time, inside the territory of Imulun.....

Sentence 2. (by an adult speaker of 48 years old)

jadi	təinahən	atədəi	hen	haʔalə	u-afə	balerang	sahinggo
so	then	what	over there	under	PRS-to be	sulphur	so that

bo=ga	man-anə	dulien	mate
If=1PL.EXCL.ABS	AV-plant	durian	die

Therefore, there is sulphur below, so that when we plant durian, it will die.

Sentence 3. (by a younger speaker of 20 years old)

bəbaliʔ	sikola	u=tukar	badu-gu	mi	ɸailawa	loteng-ma
return	school	1SG.ERG=exchange	cloth-1SG.POSS	to	on	upstair-1PL.EXCL.POSS

‘Returning from school, I exchange my clothes on the upstairs (of our house)’

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