

# A'INGAE REDUPLICATION IS PHONOLOGICALLY OPTIMIZING

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## Overview

- **A'ingae** (or Cofán, iso 639-3: con): an understudied and endangered Amazonian isolate
- the reduplicant: suffix  $-ʔσ$  • **ineffability**: **only disyllabic roots** can be reduplicated
- root parsed as a trochaic foot • second syllable undergoes monophthongization
- the base + the reduplicant together (henceforth *reduplicated stem*) =  $(^{σ_1}σ_2ʔ)σ_2$
- **model**: reduplicant-specific *cophonology* (e.g. Orgun, 1996; Sande et al., 2020)
  - a ranking of constraints **independently motivated** elsewhere in A'ingae (Dąbkowski, 2022)
- A'ingae reduplication is **highly phonologically** optimizing
- all the data were collected by the author

## Description and analysis

- the reduplication of a verb expones subject superplurality (i.e. a large number of entities)
- $-ʔσ$  can attach to disyllabic roots, either underlyingly stressless (1b.i-ii) or stressed (1b.iii-iv)<sup>1</sup>
- **ineffability**: monosyllabic and trisyllabic roots cannot be reduplicated (1a,c)

(1) a. MONOSYLLABIC		b. DISYLLABIC		c. TRISYLLABIC	
ROOT	REDUPL	ROOT	REDUPLICATED	ROOT	REDUPL
i. $p^hi$ ‘sit’	—	i. $fet^ha$ ‘open’	$(^{h}fet^haʔ)t^ha$	i. $otɪfi$ ‘wash hands’	—
ii. $ā$ ‘eat’	—	ii. $fiite$ ‘help’	$(^{h}fiiteʔ)te$	ii. $opat^hi$ ‘pick’	—
iii. $^ndo$ ‘split’	—	iii. $(^{h}kati)$ ‘cast’	$(^{h}katiʔ)ti$	iii. $avɪha$ ‘rejoice’	—
iv. $k^he$ ‘get lost’	—	iv. $(^{h}ānā)$ ‘sleep’	$(^{h}ānāʔ)nā$	iv. $sɪforo$ ‘fart’	—
v. $ki$ ‘get warm’	—	v. $fɪ^ndii$ ‘sweep’	$(^{h}fɪ^ndiʔ)^ndii$	v. $(^{h}kō^nda)se$ ‘tell’	—
vi. $^ndʒai$ ‘sit’	—	vi. $opi$ ‘shelter’	$(^{h}opiʔ)pɪi$	vi. $(^{h}afa)se$ ‘offend’	—

- in reduplicated stems, stress on the **second syllable to the left of the reduplicant** (1b.i-iv)
  - **independently attested** effect in A'ingae to occur with **any ʔ-initial suffix** (Dąbkowski, 2022)
  - (2b-c, cf. default penultimate stress in 2a)
- modeled with  $[ALʔ]$ : *Every glottal stop is right-aligned with a foot* (tableau in 3)

(2)	a. $/fiite -hi/$ [ $fii(^{h}tehi)$ ] help -PRCL	b. $/fiite -ʔhe/$ [ $(^{h}fiiteʔ)he$ ] help -IPFV	c. $/fiite -ʔgi/$ [ $(^{h}fiiteʔ)^gi$ ] help -VEN	d. $/fɪ^ndii -ʔhe/$ [ $fɪ(^{h}ndiiʔ)he$ ] sweep -IPFV	e. $/fɪ^ndii -ʔgi/$ [ $fɪ(^{h}ndiiʔ)^gi$ ] sweep -VEN
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- the last vowel in diphthong-final roots is truncated (1b.v-vi), but preserved in the reduplicant
- independently attested restriction on A'ingae foot shape (Dąbkowski, 2022)
  - $[FrSH]$ : *Feet are binary trochees with monomoraic (i.e. light; non-diphthongal) right branches.*
- Dąbkowski motivates  $FrSH$  with (2d-e); high ranking of  $FrSH$  results in a violation of  $ALʔ$ )
- in reduplication, the violated constraint is  $[MAXV]$ : *For every vowel in the input, there is a corresponding vowel in the output* (tableau in 5)
- regular ʔ-initial suffixes and  $-ʔσ$  both avoid violations of  $FrSH$ , but in different ways

<sup>1</sup> Both stressless and stressed roots surface with penultimate stress in isolation. In morphologically complex forms, penultimate default stress is assigned to underlyingly stressless forms  $/fet^ha-hi/$  ‘open-PRCL’  $\rightarrow$   $[fe(^{h}ahi)]$ , but underlying stress surfaces faithfully  $/(^{h}kati)-hi/$  ‘cast-PRCL’  $\rightarrow$   $[(^{h}kati)hi]$ .

## Description and analysis, part 2

I assume that reduplication involves a violation of  $[INTσ]$ : *No syllable in the input has multiple correspondents in the output*. Since reduplication is modeled as input-output correspondence, the input diphthong is faithfully rendered in the reduplicant, avoiding a gratuitous violation of  $MAXV$ . Finally, mono- and trisyllabic roots cannot be reduplicated (1a,c). I attribute this to  $[AL[ωf]]$ : *Every foot is aligned with the left edge of the word*. In the cophonology of the reduplicative  $-ʔσ$ ,  $AL[ωf]$  ranks above the Empty Output Constraint ( $[EOC]$ ): *Assign a violation mark to the empty output* (Prince et al., 1993). Other constraints which outrank EOC include  $[MAXσ]$ : *Input syllables have correspondents in the output*, which prevents the truncation of trisyllabic stems, and the previously introduced  $ALʔ$ ) and  $FrSH$ . This ranking captures the impossibility of reduplicating mono- and trisyllabic roots (4, 6).

(3)	$fet^ha -ʔσ$	$ALʔ$ , $FrSH$ , $AL[ωf]$ , $MAXσ$ »	$EOC$ »	$MAXV$ , $INTσ$
i.	$∅$		*	
ii.	$fet^haʔt^ha$	*		*
☞ iii.	$(^{h}fet^haʔ)t^ha$			*

(5)	$fɪ^ndii -ʔσ$	$ALʔ$ , $FrSH$ , $AL[ωf]$ , $MAXσ$ »	$EOC$ »	$MAXV$ , $INTσ$
i.	$∅$		*	
ii.	$fɪ^ndiʔ^ndii$	*		*
iii.	$(^{h}fɪ^ndiʔ)^ndii$	*		*
☞ iv.	$(^{h}fɪ^ndiʔ)^ndii$		*	*
v.	$(^{h}fɪ^ndiʔ)^ndi$		**	*

(4)	$p^hi -ʔσ$	$ALʔ$ , $FrSH$ , $AL[ωf]$ , $MAXσ$ »	$EOC$ »	$MAXV$ , $INTσ$
☞ i.	$∅$		*	
ii.	$p^hiʔp^hi$	*		*
iii.	$(^{h}p^hiʔ)p^hi$	*		*
iv.	$(^{h}p^hiʔ)p^hi$	*		*

(6)	$atapa -ʔσ$	$ALʔ$ , $FrSH$ , $AL[ωf]$ , $MAXσ$ »	$EOC$ »	$MAXV$ , $INTσ$
☞ i.	$∅$		*	
ii.	$atapaʔpa$	*		*
iii.	$a(^{h}tapaʔ)pa$	*		*
iv.	$(^{h}tapaʔ)pa$		*	*

## Alternative analyses

The account above models the shape of the reduplicated stem with a reduplicant-specific ranking of constraints which are independently attested in the A'ingae grammar. An alternative analysis could make use of a subcategorization frame, such as (7).

- (7) SUBCATEGORIZATION FRAME FOR  $-ʔσ$ :  $\#σσ\_$  (i.e.  $-ʔσ$  selects for a disyllabic stem)
- The frame in (7) allows for dispensing with the EOC, since (7) does the job of ruling out the reduplication of mono- and trisyllabic roots. However, subcategorization is an arbitrary selectional requirement and need not be phonologically optimizing (Paster, 2007). As a consequence, (7) misses the phonological motivation behind the root size restriction: The root must be disyllabic because it is parsed as a foot. This is in turn because  $-ʔσ$  is ʔ-initial and the A'ingae glottal stops, as per  $ALʔ$ ), must be right aligned with a foot.

Finally, the phonology of reduplicated stems differs from other affixes in a way not captured by (7): Diphthongs in weak branches of a foot are avoided by truncating the diphthong in reduplication ( $FrSH \gg MAXV$ , as in 1b.v-vi), but by misaligning the glottal stop with the foot elsewhere ( $FrSH \gg ALʔ$ ), as in 2d-e). In sum, the subcategorization analysis misses the phonologically optimizing aspect of A'ingae reduplication and still requires associating the reduplicative  $-ʔσ$  with a morpheme-specific cophonology.

## Elevator pitch

[shows link](#)

## Digital poster

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## Comments, questions

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