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# **Glottal stops and heavy feet in A'ingae,** or the morphophonology of A'ingae lexical stress

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Maksymilian Dąbkowski

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Brown University



- the Cofán people
  - indigenous to Ecuador and Colombia
  - traditionally hunter-gatherer (Cepek, 2012)
- the A'ingae language
  - language isolate
  - ca. 1 500 speakers (Repetti-Ludlow et al., 2019)
  - highly complex morphophonology (Dąbkowski, in prep.)
    - interaction between **glottal stops and stress**
    - glottal stops contribute to **“foot-level weight”**
    - data elicited from three Ecuadorian speakers

- structural
  - heavy nuclei (long vowels, diphthongs)
  - codas

(1) a. *gentle*

b. *genteel*

(English)

- qualitative
  - voiceless onsets
  - low vowels

(2) a. *kààgàì*

‘word’

b. *bĩsàì*

‘red’

(Pirahã, D. Everett and K. Everett, 1984)

# puzzle and solution

- glottal stops influence stress assignment

(3) a. *fetha-ye*

‘open-INF’

b. *fi’thi-ye*

‘kill-INF’

- in a way unattributable to syllabic weight
- despite the presence of syllabic weight distinctions
  - there are no long vowels
  - only diphthongs contribute to syllabic weight
  - glottal stops are the only codas
- typologically unattested stress assignment
- glottal stops contribute to foot-level weight
- novel application of “weight” beyond the syllable

Borman (1962) and Fischer and Hengeveld (forthcoming)

- contrastive

- |     |                                |                                 |
|-----|--------------------------------|---------------------------------|
| (4) | a. <i>chiga</i><br>'god'       | b. <i>chi'ga</i><br>'not want'  |
| (5) | a. <i>an=mba</i><br>'eat=ss'   | b. <i>a'mba</i><br>'yuca'       |
| (6) | a. <i>umba</i><br>'up'         | b. <i>u'mba</i><br>'be full'    |
| (7) | a. <i>tsa=ma</i><br>'that=ACC' | b. <i>tsa='ma</i><br>'that=FRS' |

- apostrophes are codas, nasals are not

Repetti-Ludlow et al. (2019)

- the only coda
- only in codas
  - sometimes metathesized

(8) a. *tsa'u*

'house'

b. *tsau'-'pa*

'house-N,' 'nest'

- often suffix-initial: *-'je* 'IMPV,' *-'ja* 'CNTR,' *-'ya* 'VER,' ...
  - responsible for many glottal minimal pairs

	penultimate	regular (penultimate)	weight- sensitive	
(10)	a. <i>f<u>e</u>tha</i> 'open'	b. <i>f<u>e</u>th<u>a</u>-ye</i> 'open-INF'	c. <i><u>f</u>e<th>th</th>a-'je</i> 'open-IMPV'	th
(11)	a. <i>f<u>û</u>ite</i> 'help'	b. <i>f<u>û</u>it<u>e</u>-ye</i> 'help-INF'	c. <i><u>f</u>ûit<u>e</u>-je</i> 'help-IMPV'	
(12)	a. <i>f<u>û</u>ndûi</i> 'sweep'	b. <i>f<u>û</u>nd<u>û</u>i-ye</i> 'sweep-INF'	c. <i>f<u>û</u>nd<u>û</u>i-'je</i> 'sweep-IMPV'	

- regular suffixes: -ye 'INF,' -*khu* 'RCPR,' -*ji* 'PRCM,' ...
- weight-sensitive suffixes: -'je 'IMPV,' -'ngi 'VEN,' -'nga 'AND,' ...



penultimate stress by default

weight-sensitive stress  
to the left of a glottal stop

- penultimate default suggests **trochees** (left-dominant feet)
- glottal-stop pattern suggests **weight sensitivity**

c. (10) (fethə-')je      (11) (fûite-')je      (12) fû(ndûi-')je  
           'open-IMPV'            'help-IMPV'            'sweep-IMPV'

- observe that glottal stops are final **in the head foot**
- reveals the A'ingae foot shape: ( L L ), ( H L ), ( H )
  - branching-head trochee
- what about glottal stops final **in the head syllable?**

(3) b. (fi'thi)-ye  
           'kill-INF'

- **glottal stops** must be located **in the head foot**
  - in the head foot  $\stackrel{def}{=}$  in the coda of either head foot syllable
- ALIGN(?, R, WDHD, R), or ALIGN?
 

every glottal stop is right-aligned with a word head

  - word head  $\stackrel{def}{=}$  head **syllable**  $\vee$  head **foot**
  - aligned with a word head = in the head foot

(McCarthy and Prince, 1993; Prince and Smolensky, 1993)
- underspecifies the position of stress
 

c. (10)    ( <u>f</u> <u>e</u> tha-')je *f <del>e</del> ( <u>th</u> a-'je) 'open-IMPV'	(11)    ( <u>f</u> <u>û</u> ite-')je *f <del>û</del> i( <u>te</u> -'je) 'help-IMPV'
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- a **low-ranking** constraint pushes for **word-initial feet**
  - independently motivated by initial dactyls

(Furby, 1974; Hayes, 1980, 1995; McCarthy and Prince, 1993)
- ALIGN? ranking derives complexities (Dąbkowski, in prep.)

- structural and qualitative weight alike  
attract stress to the heavy syllable, not the heavy foot
- the applicability of weight to feet is a typological novelty

- glottal stops are **deleted** in certain environments

(13) a. a(tapa)

‘reproduce’

b. a(tapa-')chu

‘reproduce-SBRD’

(14) a. (áfa)se

‘insult’

b. (áfa)se-**chu**

‘insult-SBRD’

- proposal

glottal stops must be located in the head foot

- consequence**

glottal stops **outside** of the head foot **are deleted**

glottal stops contribute to weight  
at the foot level

which is a typological novelty

and accounts for stress patterns  
as well as glottal stop deletion

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