Prosodic Geography of Island Southeast Asia

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Introduction

The Austronesian languages

What is stress?

Tagalog versus Javanese
  Tagalog and Philippine prosodic systems
  Stresslessness in the Java region

Hiphop as a prosody experiment
  Javanese
  Tagalog

Austronesian prosodic typology

Conclusions
Most languages of the world have some kind of word-based pattern of prosodic prominence.

- Phonemic systems (e.g. /ˈpərmɪt/ vs. /pərˈmɪt/)
- Rule-based patterns

For reasons yet to be understood, languages that make phonemic use of tone are rarely described as having stress.

Another, more exotic, type makes no use of intonation nor stress.

Here, prosodic phenomena can only “see” edges of the prosodic phrase and higher.
A new prosodic typology for the Austronesian languages of Island Southeast Asia (Kaufman & Himmelmann forthcoming).
Austronesian prosody

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  - Prosodic typology: a system for understanding stress and prosodic phenomena, including intonational phenomena on the level of phrases and utterances.
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- Austronesian: A large language family of ~1,250 languages that spans from Madagascar to Easter Island, originating in Taiwan ~6,000 years ago.
- Island Southeast Asia: The areal focus of today’s talk - the Philippines and Indonesia.
The region

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What is stress?

“Stress” is too often treated as a universal property “manifested” in language X with duration, language Y with pitch, language Z with intensity, etc.
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- More careful analyses show the need to separate durational prominence, pitch movements and intensity levels, as these may all have their own organizing principles.
What is stress?

▶ “Stress” is too often treated as a universal property “manifested” in language X with duration, language Y with pitch, language Z with intensity, etc.

▶ More careful analyses show the need to separate durational prominence, pitch movements and intensity levels, as these may all have their own organizing principles.

▶ A major problem in studies of stress is that speakers of canonical stress languages hear word stress where it doesn’t exist.
What is stress?

Hyman (2006:231) identifies the following two key properties of stress systems:

1. “A language with stress accent is one in which there is an indication of word-level metrical structure meeting the following two central criteria:
   a. **OBLIGATORINESS**: every lexical word has at least one syllable marked for the highest degree of metrical prominence (primary stress);
   b. **CULMINATIVITY**: every lexical word has at most one syllable marked for the highest degree of metrical prominence.”
Another property typical of stress systems is **binary footing**.
What is stress?

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- A binary foot is made up of either two syllables (σ) or, if the stress system is **weight sensitive**, two mora (μ), a unit of prosodic weight.
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- A binary foot is made up of either two syllables (σ) or, if the stress system is **weight sensitive**, two mora (μ), a unit of prosodic weight.
- In weight-sensitive stress systems, closed syllables and those with long vowels may be heavy (**bimoraic**) while short open syllables will be light (**monomoraic**).
Metrical stress

There are three basic parameters required to account for the diversity of weight-insensitive stress patterns: (i) iterative/non-iterative, (ii) trochaic/iambic, (iii) left-aligned/right-aligned.

<table>
<thead>
<tr>
<th></th>
<th>ITERATIVE</th>
<th>NON-ITERATIVE</th>
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<tbody>
<tr>
<td>TROCHAIC</td>
<td>σ(σσ)(σσ)</td>
<td>σσσ(σσ)</td>
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<tr>
<td>IAMBIC</td>
<td>σ(σó)(σó)</td>
<td>σσσ(σó)</td>
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**Table:** right-aligned metrical stress patterns

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**Table:** left-aligned metrical stress patterns
Metrical stress

- Another parameter must account for which stress is primary in iterative patterns, e.g. the rightmost stress, as in English (mìsì)(sípi).
- Finally, languages may treat peripheral syllables as “extrametrical”, i.e. invisible for purposes of creating stress feet.
The deceptive nature of Tagalog “stress”

Tagalog has been described as having contrastive stress in which some roots have penultimate stress, e.g. *sábi*, and others have final stress, e.g. *bilí* ‘buy’.
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“Stress” even has a morphological function in Tagalog, e.g. *báyad* ‘payment’ *bayád* ‘paid’.
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- “Stress” even has a morphological function in Tagalog, e.g. báyad ‘payment’ bayád ‘paid’.
- As noted by several authors (Zorc 1972; Schachter and Otanes 1982; Wolff et al. 1991), penultimate and final stress are not phonetically symmetrical.
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- “Stress” even has a morphological function in Tagalog, e.g. báyad ‘payment’ bayád ‘paid’.
- As noted by several authors (Zorc 1972; Schachter and Otanes 1982; Wolff et al. 1991), penultimate and final stress are not phonetically symmetrical.
- Penultimate stress but not final stress correlates with vowel length in Tagalog.
The difference between *bayad* ['baːjad] and *bayád* [baˈjad] should be represented:

/баːjad/ → ['баːjad]
/bajad/ → [ба'jad]
The deceptive nature of Tagalog “stress”

- The difference between *bayad* [ˈbaːjad] and *bayád* [baˈjad] should be represented:
  /baːjad/ → [ˈbaːjad]
  /bajad/ → [baˈjad]

- This is strongly supported by the fact that penultimate stress cannot occur in native words when the penultimate syllable is closed!

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<tr>
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</tr>
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<tbody>
<tr>
<td>OPEN PENULT</td>
<td>ˈCV.CV(C)</td>
<td>CV.ˈCV(C)</td>
</tr>
<tr>
<td>CLOSED PENULT</td>
<td>*ˈCVC.CV(C)</td>
<td>CVC.ˈCV(C)</td>
</tr>
</tbody>
</table>

Table: Tagalog syllable structure with word-level stress analysis
Bloomfield’s misanalysis: stress to length

▶ “In a word of more than one syllable at least one syllable is normally spoken with a greater degree of stress than the others.”

▶ “On a non-final open syllable the primary word-accent involves an increase of stress (less than in English), a pitch-rise of two notes, lengthening of the vowel to about one and one-half times the duration of an unstressed vowel, and open syllable-stress.”

▶ “The primary word-accent on a final syllable or on a closed non-final syllable, consists merely in greater stress than that of an unaccented syllable, accompanied by a pitch-rise of about half a note.”

▶ “Especially a final syllable often loses its accent before another word in the phrase:”

(2)  anŋ malakĩŋ báhay → anŋ malakeŋ báhay
Nom big house  ‘the big house’  (Bloomfield 1917:141-2)
Bloomfield’s misanalysis: stress to length

- A crucial part of Bloomfield’s concept of Tagalog stress could be written as:
  - (3) \( \hat{V} \rightarrow \hat{V}:/_CV \)
- He failed to fully appreciate the fact that not all long vowels attract pitch prominence
- and that pitch prominence attaches to the final long vowel in a particular domain.
The deceptive nature of Tagalog “stress”

We can now explain why stress seems to avoid closed penultimate syllables: closed syllables cannot contain long vowels. (There can be no “super-heavy” syllables.)
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This also explains the assimilation of Spanish loans:

['bala] ‘bullet’ > ['baːla]
['libro] ‘book’ > [libˈro]
We can now explain why stress seems to avoid closed penultimate syllables: closed syllables cannot contain long vowels. (There can be no “super-heavy” syllables.)

This also explains the assimilation of Spanish loans:

- [ˈbala] ‘bullet’ > [ˈbaːla]
- [ˈlibɾo] ‘book’ > [libˈɾo]

Broselow (2007) discusses a very similar case in Fijian where stress in loanwords on non-default syllables is reinterpreted as length.
There is another crucial difference between penultimate and final stress in Tagalog:
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- Penultimate prominence can shift one syllable to the right under suffixation, but final prominence is not bounded by the word at all (already hinted at by Bloomfield).
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(4) a. [taŋa] stupid
   ‘stupid’

   b. [aŋ ta~taŋa ni'la] DET PL~stupid 3P GEN
   ‘How stupid they are!’

(5) a. [bo:bo] stupid
   ‘stupid’

   b. [aŋ bo~bo:bo ni'la] DET PL~stupid 3P GEN
   ‘How stupid they are!’
Phrasal iambicity

![Graph showing phrasal iambicity](image)

- **Pitch (Hz)**
  - 200
  - 180
  - 160
  - 140
  - 120
  - 100

- **Time (s)**
  - 0
  - 1.186

- **Phrasal components**
  - b i n i l i m o b a

- **%H and L-H%**
Prosodic prominence, not “stress”

- Tagalog is thus a very atypical stress system. It is not even clear what corresponds to perceived “stress” on the phrase level.
Prosodic prominence, not “stress”

- Tagalog is thus a very atypical stress system. It is not even clear what corresponds to perceived “stress” on the phrase level.
- It is most likely a combination of pitch accents and vowel length, but the principles for determining the location of each are completely different.
Prosodic prominence, not “stress”

Tagalog is thus a very atypical stress system. It is not even clear what corresponds to perceived “stress” on the phrase level.

It is most likely a combination of pitch accents and vowel length, but the principles for determining the location of each are completely different.

We return to the phonetics of perceived stress later...
Davies’ (2010:51) description of Madurese “stress” seems to hold equally for other languages of Java:

“Word stress is not a salient feature of Madurese, and receives little mention in the literature, e.g. Stevens (1968) mentions it only in passing. As pointed out by Ogloblin (1986), it is likely that the intonation group is the lowest relevant phonological unit in Madurese (which roughly coincides with what Uhlenbeck (1975) refers to as the ‘sentence segment’ in Javanese). Words uttered in isolation exhibit stress on almost any syllable in the root; in consecutive repetitions of single words stress may fall on the first syllable in the first instantiation and on the second in the next and vice versa.”
Evidence for stresslessness

- Van Heuven & van Zanten (2007) sum up some of the relevant literature for Indonesian:
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  - Riesberg et al. (2018) find that speakers of Papuan Malay are unable to agree on which syllables are prominent in short excerpts of spontaneous narrative Papuan Malay speech.
  - Indonesian speakers unable to understand contrastive stress on the subword level (as in English, “cof[FER] not cof[FIN]”) as shown by their inability to judge the pragmatic appropriateness of examples involving such contrasts (van Heuven & Faust 2009).
Evidence for stresslessness

- Indonesian/Javanese “stress” is purely phrasal, not word-based. “Stress” as perceived by English/Dutch ears is wherever a phrasal tone T% happens to dock.
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- Does this imply that such languages have no prosodic words? In other words, does phonology completely ignore word boundaries?
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- Indonesian/Javanese “stress” is purely phrasal, not word-based. “Stress” as perceived by English/Dutch ears is wherever a phrasal tone T% happens to dock.
- Does this imply that such languages have no prosodic words? In other words, does phonology completely ignore word boundaries?
- This has not yet been argued for and would be a striking finding, if true.
Previous research

- Hiphop/rap has been studied scientifically with regard to meter, rhyme and other prosodic features (Adams 2009; Edwards 2009) although almost all this work has been on English.
- Some basic findings from English hiphop include a strong tendency for alignment between stressed syllables and strong beats.
- Predictably, this varies by artist but the significance is consistent (Tait et al. 2014).
Previous research

<table>
<thead>
<tr>
<th>Artist</th>
<th>Stressable AMS</th>
<th>Unstressable AMS</th>
<th>Stress-Meter Alignment Value (SMAV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missy Elliott</td>
<td>2.15</td>
<td>3.48</td>
<td>1.33</td>
</tr>
<tr>
<td>Flo Rida</td>
<td>2.10</td>
<td>3.29</td>
<td>1.19</td>
</tr>
<tr>
<td>Nicki Minaj</td>
<td>2.20</td>
<td>3.37</td>
<td>1.17</td>
</tr>
<tr>
<td>Macklemore</td>
<td>2.24</td>
<td>3.26</td>
<td>1.02</td>
</tr>
<tr>
<td>Jay-Z</td>
<td>2.51</td>
<td>3.42</td>
<td>0.91</td>
</tr>
<tr>
<td>Eminem</td>
<td>2.58</td>
<td>3.37</td>
<td>0.79</td>
</tr>
</tbody>
</table>

Table 2: A ranking of SMAVs across the six artists examined from highest to lowest. These numbers indicate the rate of stress-meter alignment.
Previous research

- Condit-Schultz (2016:135) compares stressed, unstressed and rhymed syllables over a large corpus of up-tempo songs:

![Up-tempo Distribution of Rhythmic Layers Across Metric Positions: One-measure Window](image)

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Hiphop as a prosody experiment

- Hiphop represents a “natural experiment” that is being carried out by hundreds of performers for vast numbers of languages across the Austronesian family.
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Hiphop as a prosody experiment

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- Are there significant differences in the alignment of syllables to strong beats?
- Which syllables are aligned to strong beats in stressless languages?
Javanese

Jogja Hiphop Foundation “Sabdatama”
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**Kaufman**

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**Javanese**

Jogja Hiphop Foundation “Sabdatama”

(1) **midʒil** tuwuḥ saka **kono dumununų-ku**

Born grow from there exist-1s.gen

‘Born and raised from there, my place’ PLAY

(2) **jo** ŋajogdʒókarto hadí-niŋrat negrí-ku

Yeah Jogjakarta Hadiningrat country-1s.gen

‘Yeah, royal Jogja Hadiningrat is my country.’

(3) **nagari gemah_řipah kaŋ** merdʰíko

country fertile RELT free

‘a fertile country that is free’

(4) **kojo kaŋ kaserat íŋ sabdôtómo**

like RELT written in sabdatama

‘like it is written in sabdatama’
Javanese
Jogja Hiphop Foundation “Sabdatama”

(5) merápi ṇéliŋake maraŋ iŋ gústi
merapi remind towards in God
‘Mt. Merapi reminds us of God.’ PLAY

(6) segoro ṇéliŋake kúdhu ṇidʰak búmi
ocean remind must place_foot earth
‘the ocean reminds us we must keep our feet on earth.’

(7) merapi horég, laút kidul gədég
merapi shaking ocean kidul swaying
‘Mt. Merapi is shaking, the south sea is swaying’ PLAY

(8) aŋin ribút udan blədék
wind loud rain pouring
‘the wind is loud, the rain is pouring’
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Javanese

Jogja Hiphop Foundation “Sabdatama”

(9)  tandó bu mí re-resík nandʰaŋ ŋgawé
    sign earth DIST-clean work work
    ‘a sign that the earth (nature) is working to clean’ PLAY

(10) maráŋ ndonó lan manúŋsa-né
    with world and human-3s.gen
    ‘the world and its people’

(11) maráŋ sadulur sikóp kuḍʰu ŋadʒen-í lan
    with family manner must AV.respect-APPL and
    ŋopen-í
    AV.care-APPL
    ‘one must respect and care for their family’

(12) bumi pórtiwí sodará kamí
    earth native_land family 1P.EX
    ‘mother earth is our family’
Javanese

Jogja Hiphop Foundation “Sabdatama”

(13) **jaŋ hárus di-dʒagá di-hórmat-í**
RELT must PV-guard PV-respect-APPL
‘which must be guarded and respected’ PLAY

(14) **mə-nərimá səkalígus məm-bərí**
AV-receive while AV-give
‘receiving while giving’

(15) **búdajá adaláh səndʒatá**
culture COP weapon
‘culture is a weapon’

(16) **me-mánusiá-kan manúsia**
AV-human-APPL human
‘(it) humanizes humans’
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Jogja Hiphop Foundation “Sabdatama”

(17) \text{baŋúń dʒiwa-ŋá \ bəŋúń raga-ŋá}

rise spirit-3s.gen rise body-3s.gen

‘raising the spirit, raising the body’ PLAY

(18) \text{séntosá dalám puspa-warná}

tranquil in kind-flower

‘tranquil within puspawarna (gamelan composition)’

(19) \text{wʌ́t dʒogdʒa wan iz harmɔni in dajvərsıtı}

what Jogja want is harmony in diversity

‘What Jogja wants is “Harmony in Diversity”’ PLAY
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Javanese

Marzuki Mohamad “Ora Minggir Tabrak”
Javanese
Marzuki Mohamad “Ora Minggir Tabrak”

(1) urip urup mukso pati
live life gone die
‘living a life, gone dying’ PLAY

(2) esuk awan
morning noon
‘morning, noon’

(3) surup sirep rino weŋi
sunset disappear arrive night
‘the sun sets and disappears, enter the night’

(4) saiki neŋ kene ŋene di-lakon-i
now in here like.this PV-do-APPL
‘now here, it’s done like this’
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**Javanese**

Marzuki Mohamad “Ora Minggir Tabrak”

(5) `semeleh kudu gelem lan η-gelem-i ja`

sincere must want and AV-want-APPL yeah

‘sincerely (you) must want and really want it’ PLAY

(6) `ya ηgir ora m-ŋgir ora m-ŋgir tabrak`

yeah AV-side NEG AV-side NEG AV-side crash

‘if you don’t move, if you don’t move, you’ll get hit!’

(7) `wiji wutuh wutah pecah`

seed whole fall break

‘the seed is whole, it falls and breaks’

(8) `pecah tuwoh wiji maneh`

break grow seed again

‘it breaks and grows to become a seed again’
Prosodic geography

Javanese

Marzuki Mohamad “Ora Minggir Tabrak”

(9) laku lakon di-lakon-i
deed journey pv-journey-APPL
‘deeds, journeys undertaken’ PLAY

(10) kantʰi semeleh obah mamah
with sincerity move chew
‘with sincerity, we move we chew’

(11) m-ingset n-geget n-ikut n-ra wut
AV-chew AV-bite AV-elbow AV-scratch
‘chewing, biting, elbowing, scratching’

(12) ŋletalak penak won urip kudu tumindak
lay comfortably person live must act
‘lying comfortably, a living person must act’
Rhythmic alignment in Javanese

- Good candidates for beat alignment:
Rhythmic alignment in Javanese

- Good candidates for beat alignment:
  - final and penultimate syllable of the word
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- Good candidates for beat alignment:
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- Bad candidates:
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  - Only one unattested candidate: syllables with /ə/ nucleus
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▶ It seems though that each rapper sets their own alignment “policy” and tends to stick with it, at least for a song.
Rhythmic alignment in Javanese

- Good candidates for beat alignment:
  - final and penultimate syllable of the word
- Bad candidates:
  - Only one unattested candidate: syllables with /ə/ nucleus
- It seems though that each rapper sets their own alignment “policy” and tends to stick with it, at least for a song.
- Beat alignment in Javanese is aesthetically determined (e.g. by syllable count?) rather than linguistically determined.

(13) jo ŋajogdʒókarto hadí-niŋrat negrí-ku
    yeah Jogjakarta Hadiningrat country-1s.gen
    ‘Yeah, royal Jogja Hadiningrat is my country.’

(14) segoro ŋéliŋake kúdʰu ƞidʰak búmi
    ocean remind must place_foot earth
    ‘the ocean reminds us we must keep our feet on earth.’
But can a strict policy of word final alignment as in *Ora Minggir Tabrak* be implemented in the absence of prosodic words?
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It seems to suggest the existence of prosodic words without dictating which syllable of the prosodic word is the “head”. 
Rhythmic alignment in Javanese

- But can a strict policy of word final alignment as in *Ora Minggir Tabrak* be implemented in the absence of prosodic words?
- It seems to suggest the existence of prosodic words without dictating which syllable of the prosodic word is the “head”.
- Another possible approach: deaccenting is equally important as accenting in foot-based stress systems.
Rhythmic alignment in Javanese

- But can a strict policy of word final alignment as in *Ora Minggir Tabrak* be implemented in the absence of prosodic words?
- It seems to suggest the existence of prosodic words without dictating which syllable of the prosodic word is the “head”.
- Another possible approach: deaccenting is equally important as accenting in foot-based stress systems.
- On this inverted approach, stressless languages don’t lack strong syllables but rather lack weak syllables.
Rhythmic alignment in Javanese

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- It seems to suggest the existence of prosodic words without dictating which syllable of the prosodic word is the “head”.
- Another possible approach: deaccenting is equally important as accenting in foot-based stress systems.
- On this inverted approach, stressless languages don’t lack strong syllables but rather lack weak syllables.
- Weakness is not determined metrically but rather by the nucleus: full vowel vs. schwa. The weakness of schwa is clearly an old pattern in Austronesian which rears its head in various ways across languages.
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Aristotle Pollisco “Hari ng Tondo”
Tagalog
Gloc-9 (Aristotle Pollisco) “Hari ng Tondo”

(1) [diː=mo peːdeŋ pi giːlin] [anŋ = alamat] [na umusboŋ]
NEG=2s.GEN can suppress NOM=legend LNK flourish
‘you can’t stop the legend from flourishing’ PLAY

(2) [kaːhit = na ma daːmi] [anŋ = uluponŋ]
even=COMP many NOM=viper
‘even though there are many vipers’

(3) at [haːlos hindːiː i ba ] [anŋ = laːjaʔ] [sa = pagkaku loŋ]
and almost NEG different NOM=freedom OBL=imprisonment
‘and there is nearly no difference between freedom and imprisonment’

(4) [sa = kamaj] [naŋ = iʔilanŋ] [umaʔabuʔsonŋ kiki lan]
OBL=hand GEN=few abusing extort
‘in the hands of the few who abuse and extort’
**Tagalog**

Gloc-9 (Aristotle Pollisco) “Hari ng Tondo”

(5) 
\[aŋ = \text{lahat} \quad \text{naŋ} = \text{pumalag} \quad \text{[walaŋ tanoŋ]} \quad \text{[aj kitilan]} \]
\[\text{NOM=all} \quad \text{GEN=move} \quad \text{NEG.EXT question TOP cut} \]
‘all those who move, without question are cut off’

(6) 
\[\text{[naŋ = buːhaj]} \quad \text{[huːkaj]} \quad \text{[luːha = j]} \quad \text{[magpaːpa tuː naj]} \]
\[\text{GEN=life} \quad \text{hole} \quad \text{tear=} \text{TOP prove} \]
‘from life, the pit, tears will prove’

(7) 
\[\text{[na = kaːhit hindiː ma kuːlaj]} \quad \text{[kailaːŋaŋ magbigaj puːgaj]} \]
\[\text{COMP=even} \quad \text{NEG colorful} \quad \text{must give salute} \]
‘that even if it’s not colorful, one must salute’

(8) 
\[\text{[sa = kuŋ = sino]} \quad \text{[aŋ = laman]} \quad \text{[maŋa = bituːkaŋ ha lan]} \]
\[\text{OBL=COMP=who} \quad \text{NOM=advantage PL=intestine blocked} \]
‘to whoever has the advantage, evil people’
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Gloc-9 (Aristotle Pollisco) “Hari ng Tondo”

(12) [sa=kweːnto] [na=mas astig=pa] [sa=baːgoŋ tahi? na obl=story COMP=more tough=YET OBL=new sewn LNK
8|9 lonta]
pants
‘in the story that’s tougher than newly sewn pants’ PLAY
Tagalog
Badang “Prinsesa”
Tagalog

Badang “Prinsesa”

(13) \[naŋ\] ako = j] \[maʔ in\] lab muli?], [gra:be = talaga]
GEN 1S.NOM=TOP fall.in.love again serious=EMPH
‘when I fell in love again it was truly terrible’ PLAY

(14) \[puːso = ko = j\] \[nabig\] ha:ni] [sa = isan dala:ga]
heart=1S.GEN=TOP captive OBL=one girl
‘my heart was captivated by a girl’

(15) [na puno?] [naŋ = kataŋi:ʔan] at [ma la porsila:na]
LNK full GEN=qualities and porcelain-like
‘who was full of good qualities and porcelain-like’

(16) [aŋ = ku:la:j] [naŋ = balat] [haːlos dinaʔig = ja] [si = rosa:na]
NOM=color GEN=skin almost surpass=3S.GEN NOM=Rosanna
‘was her skin almost even surpassing Rosanna’
Tagalog
Badang “Prinsesa”

(1) [maʔaːŋas] [kuŋ = pu mo:rma] at [astig magsalitaʔ]
haughty COMP=act and tough speak
‘she acts haughty and speaks tough’ PLAY

(2) [kumpaɾa] [sa = mahin hin = sja] [ay meːdyo saliwaʔ]
compare OBL=soft=3s.NOM TOP somewhat inelegant
‘compared to someone delicate, she’s somewhat inelegant’

(3) [aŋ = kanjaŋ maŋa = datiːnan] [aj paɾaŋ si = aisa sigeɾra]
NOM=3s.OBL PL=appearance TOP like NOM=Aisa Siguerra
‘her looks are like Aisa Siguerra.’

(4) [pag maɾiʔ] [aŋ = biɾoʔ = mo] [ay handaŋ makipaggeɾra]
if wrong NOM=joke=2s.GEN TOP ready war
‘if you make a bad joke, she’s ready to go to war’
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Badang “Prinsesa”

(5) [peːro mabaʔit = sja] at [mahu:saj makisa:ma]
but good.hearted=3s.NOM and good socialize
‘but she’s good-hearted and good to be with’ PLAY

(6) [laːlu = na] [kapag baːʔe = na] [aŋ = kanyaŋ kasa:ma]
more=CMPL if woman=CMPL NOM=3s.GEN companion
‘even more so in the company of a woman’
Rhythmic alignment in Tagalog

- Good candidates for beat alignment:
Rhythmic alignment in Tagalog

- Good candidates for beat alignment:
  - penultimate long syllables
Rhythmic alignment in Tagalog

- Good candidates for beat alignment:
  - penultimate long syllables
  - phrase-final short syllables;
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  - 2nd best: word-final (phrase-internal) short syllables;
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- Bad candidates:
  - short syllables adjacent to long syllables;
  - word-internal internal short syllables

- A harmonic scale:

\[
\text{penultimate} \quad \bar{\sigma} \succ \quad \text{phrase-fin.} \quad \sigma \succ \quad \text{phrase-int.} \quad \sigma \succ \quad \text{phrase-int.} \quad \sigma
\]
Rhythmic alignment in Tagalog

▶ A canonical example showing purely phrasal and length-based alignment:

(7) [daʔi countertops = mo = pa] [aŋ = babaʔeːro]
surpass=2s.GEN=YET NOM=womanizer
‘you even surpass a womanizer’
Rhythmic alignment in Tagalog

- A canonical example showing purely phrasal and length-based alignment:

(7) \[\text{daʔig = mo = pa] [aŋ = babaʔe:ro}\]
surpass=2s.GEN=YET NOM=womanizer
‘you even surpass a womanizer’

- Exceptional alignment on hin.

(8) \[\text{kumpaɾa] [sa = mahin}^3\text{hin = sja]} [\text{ay meːdyo}^3\text{ saliwa?}^4|5]\]
compare OBL=soft=3s.NOM TOP somewhat inelegant
‘compared to someone delicate, she’s somewhat inelegant’
Rhythmic alignment in Tagalog

How can we account for these exceptions?

(9) \[\text{[kumpa}^{3}\text{ra]} \ [\text{sa} = \text{mahin}^{4}\text{hin} = \text{sja}] \ [\text{ay}^{3}\text{me}:\text{dyo}^{4}\text{sali}\text{wa}^{5}]\]

compare OBL=soft=3s.NOM TOP somewhat inelegant ‘compared to someone delicate, she’s somewhat inelegant’
Rhythmic alignment in Tagalog

How can we account for these exceptions?

(9) [kumpara] [sa = mahin hin = sja] [ay me:dyo sali wa?]  
compare OBL=soft=3s.NOM TOP somewhat inelegant  
‘compared to someone delicate, she’s somewhat inelegant’

If the ideal beat interval is 3σ here then the optimal 2nd beat would be as in (10). But according to our alignment principles, the best candidate would be (11).

(10) [kumpara] [sa = mahin hin = sja] [ay me:dyo sali wa?]  
compare OBL=soft=3s.NOM TOP somewhat inelegant  
‘compared to someone delicate, she’s somewhat inelegant’

(11) [kumpara] [sa = mahin hin = sja] [ay me:dyo sali wa?]  
compare OBL=soft=3s.NOM TOP somewhat inelegant  
‘compared to someone delicate, she’s somewhat inelegant’
In addition to the alignment principles, there are also constraints against squeezing too many syllables into an interval or stretching out too few.
Rhythmic alignment in Tagalog

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- Rhymes must satisfy the prosodic alignment constraints as well as satisfying *SQUEEZE/*STRETCH constraints.
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Rhymes must satisfy the prosodic alignment constraints as well as satisfying *SQUEEZE/*STRETCH constraints.

Examples of “misaligned” beats are cases where minor stretching or squeezing does not improve the alignment.
Let’s return to the phonetic correlates of prominence in Tagalog.
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Asides from (universal) final lengthening effects, long vowels are lexically determined.
Placement of pitch accents in Tagalog

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- Asides from (universal) final lengthening effects, long vowels are lexically determined.
- Pitch accents are anchored to phrase edges and long vowels.
Placement of pitch accents in Tagalog

- Let’s return to the phonetic correlates of prominence in Tagalog
- Asides from (universal) final lengthening effects, long vowels are lexically determined.
- Pitch accents are anchored to phrase edges and long vowels.
- This coincides very with the alignment of strong beats earlier (with 1 exception).
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(12) [b < in > ili = mo = ba]

<PERF>buy.PV=2S.GEN=QM

‘Did you buy (it)?’

[b in ili mo ba]

<PERF>buy.PV=2S.GEN=QM

‘Did you buy (it)?’
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(13) \([\text{maŋa} = \text{baːtaː} = \text{ŋaː} = \text{pala} = \text{silə}]\)

PL=child=EMPH=MIRA=3P.NOM

‘They’re really children!’
Recall that strong beats were preferably aligned with long vowels as well as phrase-final short syllables (where phrase includes enclitics).
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(15) \[\text{[ma-raːmi = naman]} \quad \text{[aŋ = nag-kɑː-ka-mali?]}\]

\text{ADJ\text{-}many=SWITCH} \quad \text{NOM\text{-}AV\text{-}PROG\text{-}mistake}

‘It is many who make mistakes.’
Placement of pitch accents in Tagalog

- The pitch movements on long vowels and phrase final short vowels are the best candidates for the alignment of strong beats.
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Placement of pitch accents in Tagalog

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- As if phrase-initial accents are phonetic while final accents are phonemic.
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- The pitch movements on long vowels and phrase final short vowels are the best candidates for the alignment of strong beats.
- Pitch movements at the end of words preceding clitics less frequent
- However, the regular pitch movement at the beginning of the iP appears invisible for beat placement.
- As if phrase-initial accents are phonetic while final accents are phonemic.
- Another difference between initial and final accents is that final accents are precisely timed whereas initial accents vary over a 2-3 syllable window.
Variation in Philippine languages

- Cebuano (and Bisayan more generally), differ minimally with Tagalog in treating penultimate closed syllables as heavy, in addition to syllables with a long vowel.
- Only penultimate syllables with a long vowel attract a pitch accent in Tagalog. But both long and closed syllables attract a pitch accent in Bisayan.
- (But note that Tagalog codas have to be moraic (or semi-moraic) to disallow long vowels in the same syllable.)
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Variation in Philippine languages

nag-pa-biːlin=sila didto
AV.PRF-CAU-order=3P.NOM there

Time (s)

Pitch (Hz)

AV.PRF-CAU-order

= 3P.NOM

there
A third type

In parts of Sulawesi and the eastern Austronesian area, regular word-based trochaic stress becomes the norm.
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A third type

- In parts of Sulawesi and the eastern Austronesian area, regular word-based trochaic stress becomes the norm.
- This can be seen in Kulawi, a language of Central Sulawesi belonging to the Pamona-Kaili subgroup.
- Here, every lexical word receives stress on the penultimate syllable, as in more familiar systems.
(16) nam-pegíka díke = na no-pa-dápa hinóko = ra
RL.TR-wait dog=3SG.GEN RL.INTR-CAU-hunt prey=3PL.GEN
‘his dog was waiting while he was hunting their prey.’ PLAY
Trochaic stress in Kulawi

(17) **nam-pegíka díke = na**  **no-pa-dápa**  **hinóko = ra**

*RL.TR-wait  dog=3SG.GEN  RL.INTR-CAU-hunt prey=3PL.GEN*

‘his dog was waiting while he was hunting their prey.’  PLAY
Trochaic stress in Kulawi

(18) padena mo-múli = komi
and IRR.AV-create=2PL.NOM
‘then you create…’
The eastern pattern and the Javanese pattern can be derived from a Philippine system.
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Recall that Philippine languages have two prosodic classes of roots: σːσ and σσ.
Deriving the typology

▶ The eastern pattern and the Javanese pattern can be derived from a Philippine system.

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▶ The eastern type has generalized the penultimate vowel length pattern while the Javanese type has generalized the short penult pattern.
The eastern pattern and the Javanese pattern can be derived from a Philippine system.

Recall that Philippine languages have two prosodic classes of roots: σːσ and σσ.

The eastern type has generalized the penultimate vowel length pattern while the Javanese type has generalized the short penult pattern.

Stress is word-based in the eastern type but phrasal in the Javanese type. Tagalog shows both patterns simultaneously.
Deriving the typology
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Methodological conclusions

Starting from the hypothesis that Philippine languages exhibit stress, an abstract category that can be manifested by pitch, duration and intensity, leads to total perdition.
Methodological conclusions

- Starting from the hypothesis that Philippine languages exhibit stress, an abstract category that can be manifested by pitch, duration and intensity, leads to total perdition.
- The system only makes sense when we separate duration (a lexical phenomenon bounded by the grammatical word) from pitch prominence (a phrasal phenomenon unrelated to the word).
Methodological conclusions

- Music, verbal art and hiphop, in particular, can serve as a prosodic experiment.
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- Unlike true experiments, there are issues of aesthetics and other potentially “interfering” factors, but let’s let the data speak for itself.
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- In the Austronesian case, beat alignment appears to offer support for the most reasonable hypotheses about prosodic typology.
Methodological conclusions

- Music, verbal art and hiphop, in particular, can serve as a prosodic experiment.
- Unlike true experiments, there are issues of aesthetics and other potentially “interfering” factors, but let’s let the data speak for itself.
- In the Austronesian case, beat alignment appears to offer support for the most reasonable hypotheses about prosodic typology.
- The next frontier: gesture and facial expressions.
Theoretical conclusions

- It may be possible to derive the eastern and stressless patterns from the Philippine type.
Theoretical conclusions

- It may be possible to derive the eastern and stressless patterns from the Philippine type.
- The crucial insight is that Philippine languages of the Tagalog type combine both patterns in a single system.
References


