PHILIPPINE PROSODY AND CONTRAST PRESERVATION*

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Most Philippine languages display a two way prosodic distinction in roots, which Zorc terms oxytone (final prominence) and paroxytone (penultimate prominence). This distinction has been interpreted variously as stemming from a stress system and as an underlying vowel length distinction which attracts pitch accents. Here, I argue that the location of pitch accents in Philippine languages function to enhance an underlying vowel length distinction, an analysis that explains the variability in tonal anchoring and the prosody of Philippine languages that have lost the vowel length distinction historically. Finally, I turn to Western Albay Bikol, a language that has lost the original vowel length distinction in roots but has reinnovated vowel length in affixes, which plays a vital role in morphology. Here, we find that all roots behave prosodically like Tagalog oxytone roots and unlike the indigenous languages of Mindanao. This pattern can be attributed to the existence of morphological vowel length, despite the loss of root length.

1. Introduction

Kaufman and Himmelmann (2024) posit an areal prosodic typology for Austronesian languages containing the four following regional prototypes, whose geographical distribution is shown in Figure 1:

- **Western Rim prototype**: Final prominence either on the word or phrase level.
- **Philippine prototype**: Phonemic vowel length distinction in open penultimate syllables. Both initial and final phrase edges are tonal targets, with long vowels in penultimate position in a phrase attracting (intonational) edge tones. Suffixes but not clitics shift length rightwards.
- **Java prototype**: No length distinctions and no other type of word-level prominence. Prominence in pitch, duration and intensity is inherited from higher prosodic levels (prosodic phrase and intonational phrase). Effects of suffixes and enclitics on prominence are highly variable and often difficult to discern.
- **Eastern prototype**: No phonemic length/stress. Penultimate prominence on the phrasal or word level, commonly shifting to final position to avoid schwa.

Here, I explore the margins of the Philippine prototype to fill in some descriptive gaps and make a hypothesis about how and to what extent Philippine languages vary in their prosodic systems. I aim to answer the following three questions:

1. What are the Philippine patterns that fall outside of the Philippine prototype?
2. What is the basic prosody of Philippine languages lacking contrastive vowel length?
3. What is the status of trochaic stress in the Philippines?

On a deeper level, I aim to explain the relation between vowel length and pitch accent in the

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Figure 1: Western Austronesian areal prosodic typology (Kaufman and Himmelmann 2024)

Philippine prototype and why there exist certain entailments in Austronesian prosodic typology, as presented in the following section.

2. Prosodic parameters

The following binary parameters for prosodic prominence, which, in principle, could vary independently, show strong areal tendencies and entailments across Philippine languages:

- Contrastive vowel length in roots? (Central and northern Philippines)
  - Root length restricted to penult? (Almost always)
  - Root length restricted to open syllables? (Almost always)
  - Vowel length shifts with suffixation? (Almost always)
  - Vowel length shifts with enclitics? (Almost never)
- Morphological function for vowel length? (Central and northern Philippines)
- Default final prominence? (Central and northern Philippines)
- Final prominence shifts with enclitics? (Almost always)
- Penultimate closed syllables attracts stress? (Bisayan)
- Iterative footing/prominence? (Certain southern languages?)
- Vowel reduction in non-prominent syllables? (Certain southern languages)

Zorc (1972, 1993) has explored the loss and reinnovation of phonemic accent in Philippine languages, as well as its morphological function. Here, I focus on two non-trivial entailments that emerge from the cross-linguistic comparison of Philippine languages, shown in (1).

(1) a. No contrastive V-length ⊨ Default penultimate prominence
b. Contrastive V-length in roots ⊨ Default final prominence

I argue that an optimal synchronic account of any Central Philippine language should predict both of these facts. To approach this problem, we must first understand the somewhat controversial nature of Tagalog "stress".

3. Tagalog-type prosody: stress vs. length

Until recently, stress had been treated as a phenomenon that, with the possible exception of tone languages, appeared in nearly all languages of the world, albeit with various phonetic instantiations. The cross-linguistic variation in how stress can be realized (duration, pitch, intensity, vowel quality, etc.) together with the over-reliance on impressionistic observations was critiqued early on by Bolinger (1958). More recent analyses have shown the need to separate durational prominence, pitch movements, and other phonetic manifestations of prosody as these may all have independent organizing principles. A serious confound in cross-linguistic investigations of prosody exists in the kinds of expectations that the researcher's mother tongue give rise to. Himmelmann (2022, 348) notes that stress in West Germanic languages like English are in fact a somewhat exotic "multi-dimensional cluster concept" involving the elements in (2).

(2) a. acoustic and auditory prominence
b. phonotactic structure, phonological alternations
c. metrical structure (foot structure)
d. lexical structure
e. function in text-tune alignment (intonational anchoring)
f. function in conveying information-structural distinctions

The properties above are often independent outside of this language group (cf. Gordon and Roettger 2017; Roettger and Gordon 2017). As we would expect, native speakers of Germanic-type stress languages have been found to perceive stress in languages where it does not exist, a phenomenon known as "stress ghosting" (Tabain et al. 2014). Given the nebulous nature of stress as a crosslinguistic phenomenon, it is unclear which elements should be taken as criterial and which are secondary. I adopt here the two properties in (3) proposed by Hyman (2006, 231), as they are straightforward to diagnose and clearly describe a large number of unrelated languages.[1]

(3) "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."

[1] Hyman's definition includes the notion of *metrical* structure, which leads to another set of questions about evidence for binary rhythm or feet. In fact, evidence for feet in Philippine languages is quite slim, as iterative stress is vanishingly rare and the only real evidence for feet in languages like Tagalog is disyllabic minimality constraint on lexical roots and the fact that long vowels can only occur on the penultimate syllable, both of which can be explained without reference to metrical structure.

Tagalog has been described as having contrastive stress in which some roots have penultimate (or "paroxytone") stress, e.g. *sábi*, while others have final (or "oxytone") stress, e.g. *bilí* 'buy'. This prominence has a morphological function in Tagalog, as well, as seen in a large number of pairs such as *báyad* 'payment' vs. *bayád* 'paid', *túlog* 'sleep' vs. *tulóg* 'asleep'.

As noted by several authors (Bloomfield 1917; Zorc 1972; Schachter and Otanes 1982; Wolff et al. 1991), paroxytone and oxytone words are not phonetically symmetrical. Most importantly, apparent penultimate stress but not final stress correlates with vowel length in Tagalog and the majority of Philippine languages. Figure 2 shows a minimal pair in Ilokano, *ráman* 'include' vs. *ramán* 'taste', with phonetic segmentation and a pitch track. While the second syllables show the effects of final lengthening, the vowel of the first syllable is clearly over twice as long in the paroxytone word compared to the oxytone one. Note also that the prominent syllables in this example do not correlate with a pitch peak or rise.

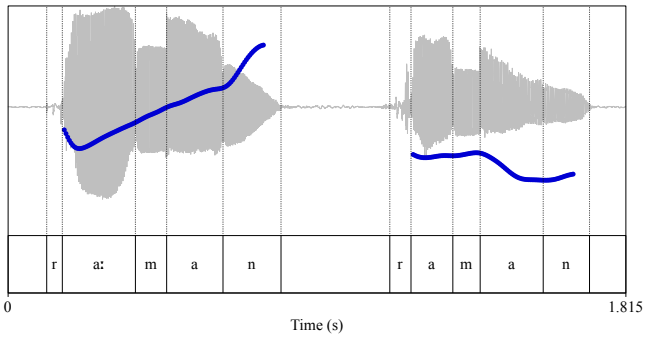

Figure 2: Ilokano paroxytone vs. oxytone

Intensity has also been investigated over many years and has never been found to be a significant correlate of prominence/stress in Philippine languages (nor has it been shown to be significant for English). Acoustic studies (Gonzalez 1970; Hwang et al. 2019; Llamzon 1976; Klimenko and San Juan 2010; Tantiangco 2010) converge on the observation that the duration of the penultimate vowel is by far the most reliable correlate of the paroxytone-oxytone contrast.

If we take length as the phonemic distinction underlying the paroxytone-oxytone contrast then differences like that between *báyad* 'payment' vs. *bayád* 'paid' are best represented as in (4), where penultimate vowel length attracts a pitch accent that would otherwise fall on the final syllable. The stress mark in (4) thus represents the location of pitch prominence, which is determined in part by the presence of long vowels.

(4) a. /baːjad/ → [ˈbaːjad] 'payment'
b. /bajad/ → [baˈjad] 'paid'

The length approach is strongly supported by the fact that penultimate stress cannot occur in native words when the penultimate syllable is closed, an otherwise puzzling fact. This holds true for a large number of Philippine languages that are not particularly closely related to each other (cf. Rubino 1997, 18: "Stress in Ilocano falls on the last syllable if the penultimate syllable

	TROCHAIC	IAMBIC
OPEN PENULT	ˈCV.CV(C)	CV.ˈCV(C)
CLOSED PENULT	*ˈCVC.CV(C)	CVC.ˈCV(C)

Table 1: Tagalog syllable structure with word-level stress analysis

is closed"). The length approach explains why stress appears to avoid closed penultimate syllables; closed syllables cannot contain long vowels in accordance with the widespread avoidance of "super-heavy" syllables.[2] This also explains the assimilation of Spanish loans, exemplified in (5), where penultimate stress in Spanish is reinterpreted as vowel length in Tagalog when the penult is open, but shifted to the final syllable when the syllable is closed.[3]

(5) Spanish Tagalog
a. [ˈbala] > [ˈbaːla] 'bullet'
b. [ˈlibro] > [libˈro] 'book'

Compensatory lengthening offers additional support for an underlying length distinction in Tagalog and closely related Philippine languages. Tagalog word-final glottal stops are deleted before enclitics and, in casual speech, a wider range of utterance-medial positions. The deletion of glottal stop codas results in compensatory lengthening of the preceding vowel, as shown in (6).

(6) [walaːna]
/walaʔ=na/
NEG.EXT=CMPLT

The existence of compensatory lengthening itself already provides strong evidence for an underlying length contrast; Kavitskaya (2002) shows that compensatory lengthening is almost always structure preserving. In her survey of 80 languages with compensatory lengthening, 72 already had a vowel length distinction. Therefore, if Tagalog did not have phonemic length underlyingly, we would not expect glottal stop deletion to yield long vowels.

There is another crucial difference between penultimate and final stress in Tagalog: Penultimate prominence can shift one syllable to the right under suffixation, but final prominence is not bounded by the word. This can be seen in (7) and (8), where an oxytone and paroxytone root, respectively, combine with various enclitics. Whereas the prominence on the ultima found in oxytone roots shifts completely to the last syllable of the clitic cluster, this is not so for paroxytone roots, which maintain prominence on the penultimate syllable of the root. Note, however, that (8) is a simplification, as there also exists prominence on the final syllable of the clitic cluster in (b) and (c), where it does not clash with prominence on the preceding syllable, as seen in §4.

[2] And yet, there are Philippine languages that appear to allow such super-heavy syllables. Blust (2013, 177) notes that Itawis, Pangasinan, Hanunóo and Palawan Batak, among others, allow closed syllables to bear a length/stress distinction. No phonetic investigations have been done on these languages to explore whether penultimate prominence is also a regular reflex of vowel length, a critical gap in our overall understanding of Philippine prosody.

[3] Broselow (2007) discusses a very similar case in Fijian where stress in loanwords on non-default syllables is reinterpreted as length.

(7) a. [daˈla]
/dala/
carry
'load/carried thing'
b. [dalaˈmo]
/dala=mu/
carry=2S.GEN
'your carried thing'
c. [dalamonaˈba]
/dala=mu=na=ba/
carry=2S.GEN=CMPLT=QM
'Are you carrying (it) already?'

(8) a. [ˈmaːna]
/maːna/
inherit
'inheritance'
b. [ˈmaːnamo]
/maːna=mu/
inherit=2S.GEN
'your inheritance'
c. [ˈmaːnamonaba]
/maːna=mu=na=ba/
carry=2S.GEN=CMPLT=QM
'Is (that) your inheritance already?

Finally, Reed (2022), in her corpus-based study, shows the same asymmetry in reduplication. The length based analysis would suggest that the penultimate syllables of a paroxytone root would retain prominence in both the base and the preceding reduplicant while the oxytone roots would only show default stress on the final syllable of the phrase, with relatively even prominence across the two syllables of the preceding reduplicant. On the other hand, the stress based analysis, where trochaic and iambic patterns are symmetrical, predicts that the reduplicant shows the same prominence relations as the base, regardless of its stress pattern. These predictions are shown schematically in (9)-(10), assuming the structure (REDUP)(BASE). Crucially, Reed's results conform to the expectations of (9) rather than (10), with prosodic differences across syllables of oxytone roots being neutralized in the reduplicant.

(9) LENGTH ANALYSIS
a. /(σːσ)(σːσ)/ → [(ˈσːσ)(ˈσːσ)]
b. /(σσ)(σσ)/ → [(σσ)(σˈσ)]

(10) STRESS ANALYSIS
a. /(ˈσσ)(ˈσσ)/ → [(ˈσσ)(ˈσσ)]
b. /(σˈσ)(σˈσ)/ → [(σˈσ)(σˈσ)]

Stress analyses of Tagalog and related languages are furthermore forced to posit primary and secondary stress, which length based analyses simply treat as multiple instances of long vowels in morphologically complex words. An example is shown with *magbabayad* AV-IMPRF-pay 'will pay' in (11), where a paroxytone root is subject to CVː-reduplication for imperfective aspect.

(11) LENGTH ANALYSIS
a. mag-baː-baːjad
STRESS ANALYSIS
b. mag-ˌba-ˈbajad

In the length analysis, a pitch accent or local edge tone will avoid the final syllable and will tend to be attracted to the penultimate long vowel, although alignment to the antepenultimate long vowel may also be attested. Under the stress analysis, the fact that length is the only consistent cue for 'secondary stress' must be stipulated, as French (1991, 162) does in claiming that secondary stress is "realized as phonetic length with optional pitch".

Similarly, Hayes and Abad (1989, 371) note that there is variability in which syllable receives main stress in Ilokano when the root is preceded by a reduplicated long syllable, as shown

in (12). They formalize this with the optional rule in (13).[4]

(12)a. /ag-ŋiː-ŋiaw/ → [agŋiːŋjáw] ∼ [agŋíːŋjàw]
AV-IMPRF-meow
b. /ag-saː-saʔo/ → [agsaːsaʔó] ∼ [agsáːsaʔò]
AV-IMPRF-speak
c. /ag-daː-dáʔit/ → [agdaːdáːʔit] ∼ [agdáːdàːʔit]
AV-IMPRF-sew

(13) OPTIONAL ILOKANO STRESS SHIFT (Hayes and Abad 1989)
VːXV́ → V́ːXV̀

Note that putative secondary stress in most Philippine languages, analyzed here as vowel length, is never predictable but rather morphological, as shown in (14), for Tagalog.

(14)a. mag-na-naːkaw
AV-PROF-steal
'thief'
b. mag-naː-naːkaw
AV-IMPRF-steal
'will steal'

The indeterminate nature of "stress" in Philippine languages and the fact that only vowel length is truly consistent across different contexts suggests that we are dealing with something other than a typical stress system. I thus concur here with a long tradition of treating the Philippine paroxytone/oxytone distinction as one of penultimate vowel length (Gonzalez 1970; Llamzon 1976; Zorc 1972; Schachter and Otanes 1982; Wolff 1972; Wolff et al. 1991; Zorc 1993; Kaufman and Himmelmann 2024). We now turn to accounting for the placement of pitch accents, a primary contributor to the illusion of canonical stress in Philippine languages.

4. Philippine Prototype and contrast enhancement

The role of contrast enhancement in phonology has long been incorporated into functionalist synchronic models of phonology in various ways (Martinet 1955; Lindblom 1990; Stevens and Keyser 1989; Padgett 2003; Flemming 2004; Cohn 1990; Steriade 2009; Łubowicz 2012). In this vein, I propose that pitch accent placement in languages of the Philippine prototype is best understood as a contrast-driven phenomenon. A tonal target associated with the final edge of a prosodic or intonational phrase naturally on the phrase-final syllable unless the preceding syllable contains a long vowel. In this case, the tonal target docks on the penultimate syllable as a means of enhancing

[4] This analysis is similar to Bloomfield (1917), who describes Tagalog prosody as showing a stress-to-weight pattern, although he terms the underlying distinction as 'word-accent': "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" (Bloomfield 1917, 141-2). This is formalized by Hayes and Abad (1989, 358) as in (i).

(i) V́ → V́ː/__CV

the underlying length contrast. This approach accounts for several otherwise disparate facts about Philippine prosody and intonation.

Recall that vowel length is not contrastive in the final syllable of roots. Gordon (2002) shows that this is a very common pattern cross-linguistically and is perceptually motivated by the neutralizing effects of final vowel lengthening. As contrastive duration could easily be masked by final lengthening effects, it is harder to perceive and thus more likely to be lost over time, leading to the attested typology through recurring sound change (Blevins 2004).

But what is the connection between a (typically upwards) pitch movement and vowel length and how can the former enhance the latter? These two seemingly independent prosodic dimensions turn out to be closely linked perceptually. Lehiste (1976), Pisoni (1976) and Rosen (1977) demonstrate that syllables with level contours are perceived to be shorter than those with pitch movements while Blicher et al. (1990) furthermore shows that syllables with rising pitch contours tend to be perceived as longer than those with falling contours. This accounts for the strong tendency to align edge tones with contrastive long vowels in Philippine languages, as maintaining default final alignment here would contribute to the perception of the final vowel being longer than the penultimate one and thus jeopardize the contrast.

As an enhancement effect, we predict that the tonal targets on long vowels do not have the same status as the underlying length contrast itself. This is a welcome prediction, as we find that a basic intonational phrase in Tagalog only has two nearly obligatory pitch movements: an initial rise and a final HL (in declaratives) or LH (in polar interrogatives), as seen in Figure 3, a rendition of the sentence in (15), which has several long vowels (the first underlying and the latter two derived via compensatory lengthening).

(15) [máŋa baːtaː ŋaː pala silá]
/maŋa=baːtaʔ=ŋaʔ=pala=sila/
PL=child=EMPH=MIRA=3P.NOM
'They're really children!'

In more affective utterances, we typically find pitch movements at phrase edges and possibly pitch accents associating with syllables containing a long vowel, as in the rendition of (16) shown in Figure 4.

(16) [maráːmi namán] [aŋ nagkaːkamalíʔ]
[ma-raːmi=naman] [aŋ=nag-kaː-kamaliʔ]
ADJ-many=SWITCH NOM=AV-PROG-mistake
'It is many who make mistakes.'

Given that there are typically edge tones associated with the beginning and end of higher level prosodic categories, we must ask what happens to these tones in utterances containing a single word, especially as single word utterances have had an inflated effect on our understanding of Austronesian prosody (Himmelmann and Kaufman 2020; Kaufman and Himmelmann 2024). In utterances containing only a disyllabic word, we do not find pitch movements on both the first and second syllable at normal speech rates, a fact I attribute to the avoidance of tonal crowding. Tonal crowding is typically resolved as shown in (17) and (18), where • represents a possible docking site for an initial tone, • represents a possible docking site for a final tone, and * represents a disfavored docking site.

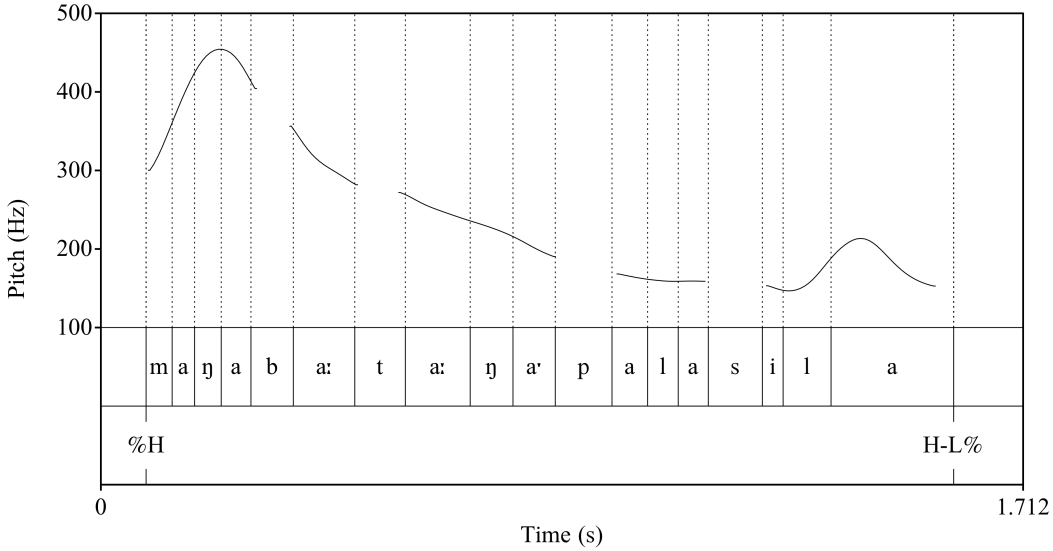

Figure 3: Basic Tagalog intonational phrase

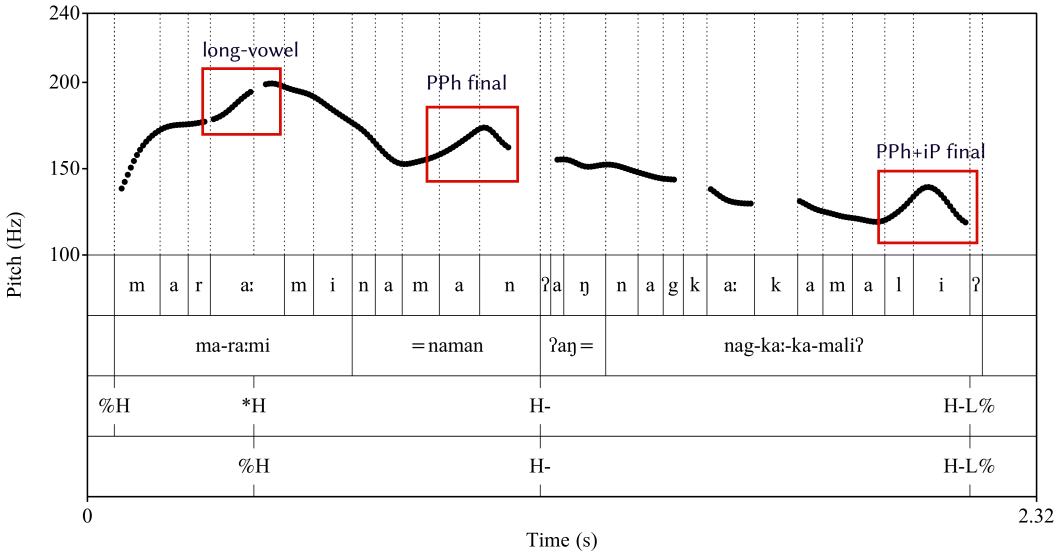

Figure 4: Tagalog intonational phrase with intermediate edge tone and pitch accent

(17)a. [dála]
/dala/
carry
'carried'

b. [dálana]
/dala=na/
carry=CMPLT
'carried already'

c. [dálanaba]
/dala=na=ba/
carry=CMPLT=QM
'carried already?'

(18)a. [maːná]
/maːna/
inherit
'inherited'

b. [maːnaná]
/maːna=na/
inherit=CMPLT
'inherited already'

c. [maːnanaba]
/maːna=na=ba/
inherit=CMPLT=QM
'inherited already?'

While it cannot be easily determined whether a single tone originates from an initial or final prosodic boundary, the difference is not particularly relevant for present purposes. In disyllabic words, the tonal target will dock on the last syllable in oxytone roots but tend to dock on the penultimate syllable in paroxytone roots, as seen in the comparison between (17a) and (18a) above, which gives the impression of an iambic versus trochaic stress pattern. In the trisyllabic (b) examples, there is a larger possibility of realizing edge tones from both initial and final boundaries simultaneously, as the intervening syllable can prevent tonal crowding. Finally, in the quadrisyllabic examples in (c), we find a wider window for the initial edge tone when there is no local long vowel but a stricter alignment when the initial syllable contains a long vowel.[5]

The schemas in (17) and (18) represent the kind of prosodic patterns we find in elicited examples and plain speech. I would like to underscore, however, that deviations from the pattern found in (18a) are commonplace. In actual discourse, a tonal target is often aligned to the final syllable even in a paroxytone words, a fact which has been entirely neglected in the literature. The following three examples in (19)-(21) were culled from a single episode of the popular television show *Bubble Gang*.[6] In each one, a penultimate syllable containing a long vowel in a paroxytone word is ignored for the purposes of tonal alignment and the edge tone is instead aligned to the final syllable. The pitch tracks for (19)-(21) are shown in Figures 5-7, respectively.

(19) [binoːto=naːmín]
b<in>uːtu=naːmin
<PRF>vote=1P.EX.GEN
'we voted'

(20) [sa laːŋít]
sa=laːŋit
OBL=sky
'in the sky'

(21) [. . . bat ako nataːló]
ba(ki)t=aku na-taːlu
why=1S.NOM STA.PRF-lose
'. . . why did I lose.'

I interpret this pattern as the emergence of default final prominence in the absence of a contrast enhancing shift. Note that the penultimate syllable is lengthened precisely as expected when containing a long vowel and the final syllable, although containing a short vowel, has a similar duration due to regular phonetic effects of final lengthening. Once again, the penultimate vowel length of paroxytone words proves to be immutable while the alignment of pitch accent depends on higher level intonation patterns. This is predicted by the contrast enhancement analysis

[5] I must emphasize that this schematic proposal, while based on many years of observation, still lacks necessary support from instrumental evidence. There are other underlying structures which I do not have space to explore here but which are key to understanding the overall pattern. Specifically, cases in which a word-final glottal stop gives rise to a long vowel via compensatory lengthening. In such cases (and only such cases), we have the potential for long vowels at the end of a morphological word, potentially preceded by a syllable with a long vowel.

[6] A full video recording of the original episode, *Bubble Gang: Nandaya na, natalo pa!*, can be found at: `https://www.youtube.com/watch?v=P2uMfEG-7PE`.

argued for here, as we predict that the enhancement should be more variable than the contrastive length itself.

The contrast enhancement approach makes at least two more predictions. The first is that if the length distinction should be lost historically, it would have immediate effects on the intonational pattern. This is what appears to have happened in nearly all related languages south of the Philippines and most of Mindanao, which we turn to next. The second is that there should be no language which has a Philippine like length distinction in the penultimate syllable and regular penultimate stress. This, too, is borne out by what we know of Philippine languages. As we will see, regular penultimate prominence is a pattern that only emerges after the loss of the vowel length distinction.

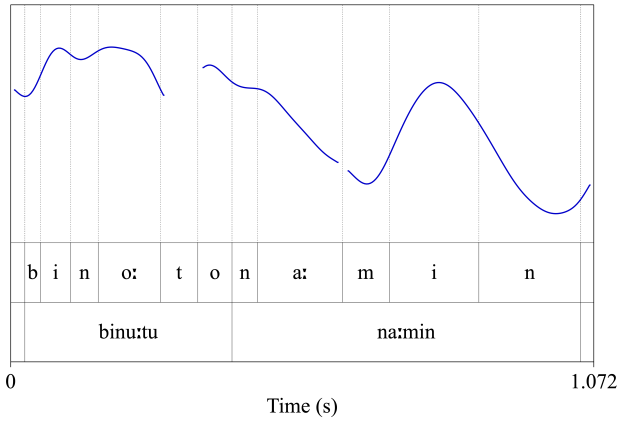

Figure 5: Final accents with penultimate length (a)

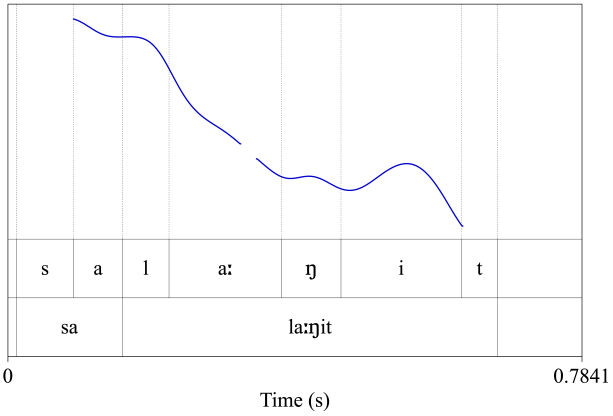

Figure 6: Final accents with penultimate length (b)

5. Austronesian prosodic typology reexamined

Two of the attested Austronesian prototypes posited in Kaufman and Himmelmann (2024), Javanese and Philippine, are shown schematically in (22). In the Javanese prototype, to which Jakartan Indonesian also belongs (see Zanten et al. 2003, Athanasopoulou et al. 2021, Kaufman and Himmelmann 2024 and references therein), there is no underlying prosodic contrast nor is there a regular stress pattern. As a result, edge tones (represented by the green dot as above) freely dock on either the penultimate or final syllable depending on higher level intonational considerations and the presence of schwa, which typically shuns prominence. In the Philippine prototype, the

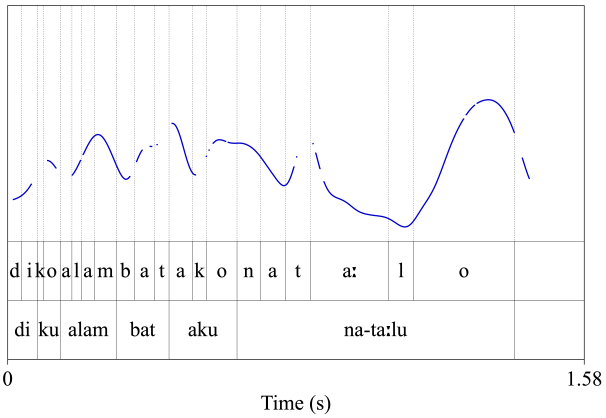

Figure 7: Final accents with penultimate length (c)

position of edge tones is shifted from the final edge when the penult contains a long vowel, as argued above. Crucially, a possible third type which combines a Philippine-style length contrast with default penultimate stress, as shown in (22c) is unattested.

(22)a. NO UNDERLYING CONTRAST (Javanese prototype)
[CV́CVC] ∼ [CVCV́C]
/CVCVC/

b. STRONG CONTRAST (Philippine prototype)
[CV́:CVC] vs. [CVCV́C]
/CV:CVC/ /CVCVC/

c. WEAK CONTRAST (unattested)
[CV́:CVC] vs. [CV́CVC]
/CV:CVC/ /CVCVC/

From the Philippine prototype above, we find two developments in opposite directions. The Bisayan languages have taken a step towards a more canonical stress system while the languages of Mindanao, further south, have taken a step towards the Javanese prototype. We examine these two developments in the following.

5.1. Bisayan

Zorc (1972, 1977, 1993) observes that one of the key historical innovations uniting the Bisayan languages is a shift from final prominence to penultimate prominence in words that have a closed penult. Thus, a cognate such as /basbas/ 'bless' surfaces as [bás.bas] in Cebuano, a Bisayan language but [bas.bás] in Tagalog and other non-Bisayan languages of the Central Philippine group. Recall that this feature militates against a canonical stress analysis of Tagalog, as a heavy penultimate syllable appears to systematically avoid stress while a light one does not. The development of the Bisayan pattern from a system closer to Tagalog is relatively simple, as the original length-driven enhancement can easily be reinterpreted as a weight-sensitive stress system. At that point, both long vowels and closed syllables attract pitch accents in the penult and the pitch can no longer

	TROCHAIC	IAMBIC
OPEN PENULT	ˈCVː.CV(C)	CV.ˈCV(C)
CLOSED PENULT	ˈCVC.CV(C)	*CVC.ˈCV(C)

Table 2: Bisayan syllable structure with word-level stress analysis

be said to merely enhance the length contrast. although edge tones will still dock on the final syllable when the penult is light. The stress analysis shown earlier in Table 1, which was rejected for Tagalog, can be more plausibly applied to Bisayan, once vowel length is included, as seen in Table 2. It simply presents as a weight-sensitive iambic stress pattern. (cf. Shryock 1993)

There is no strong evidence for the extrametricality of word-final codas in Bisayan. If such codas were extrametrical, we would have no way of accounting for the impossibility of long vowels in these syllables. Putting aside extrametricality, then, the Bisayan prominence pattern must distinguish between a penultimate and final syllable in CVC.CVC words in order to stress the penult. This seemingly minor fact entails a major typological shift as the right edge of the morphological word has no special status in languages like Tagalog. Accents which dock on the ultima of the morphological word do so incidentally when that syllable coincides with the right edge of a prosodic phrase. When enclitics follow the lexical word, its final syllable bears no special prominence at all and it is the last enclitic that hosts the edge tone.

With word-level penultimate heavy syllables being stressed, we expect that words in phrase-medial position may be more prominent than in Tagalog, and this appears to be true. As an example, Figure 8, from a Cebuano religious recording, shows how a word with a closed penultimate syllable in phrase-medial position (an adjective modifying a following noun) still attracts a pitch prominence equal to the following phrase-final noun. While this is not impossible in Tagalog, it is quite rare. Similarly, Figure 9, from the same recording, clearly shows a pitch accent on the final open syllable of a verb (*gidala*) followed by an enclitic (=*nija*), a pattern which is vanishingly rare in Tagalog, but expected if the morphological word has been reanalyzed as the domain of a weight-sensitive iambic stress pattern.

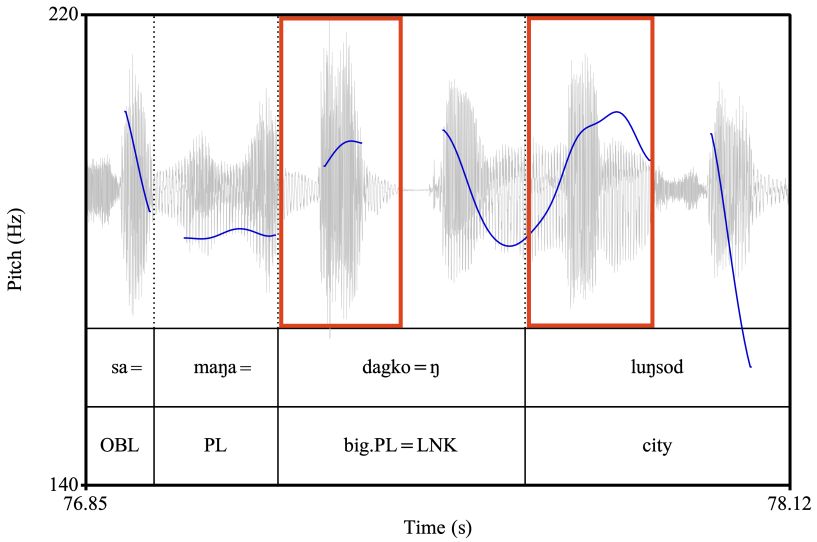

Figure 8: Stressed phrase-medial heavy penult in Cebuano (Bisayan)

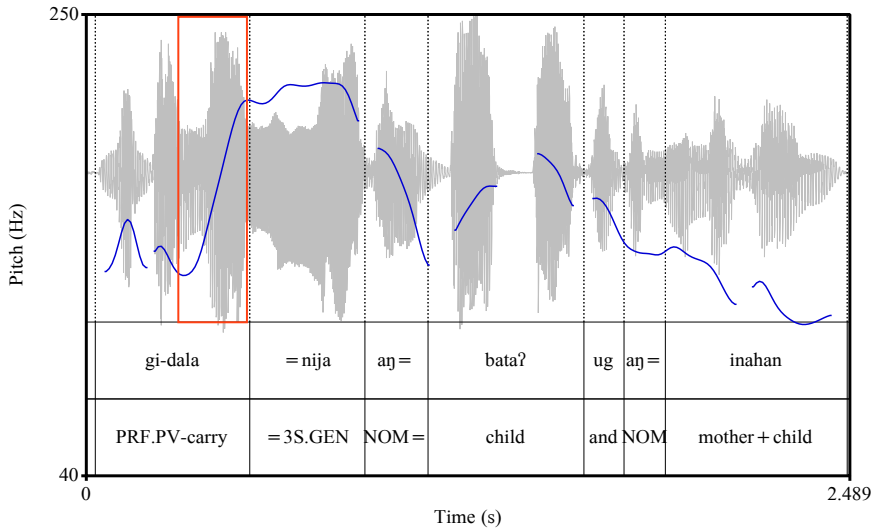

Figure 9: Stressed light ultima in Cebuano (Bisayan)

In yet other languages, we find optionality. Hayes and Abad (1989, 335) note that Ilokano has been described with a basic pattern approximating Tagalog (as in Rubino 1997, 2000 *inter alia*) but they observed prominence on either the penult or ultima when the penult is closed:

> "Second, the distinction between closed and open syllables is referred to in the Ilokano stress system: all native words with closed penults have final stress (see Vanoverbergh (1955, p.28-29)). [Footnote 3:] *In the dialect we describe, this final stress may optionally retract to the penult, so that native words with closed penults have vacillating stress. In contrast. final stress in words with light (i.e. open) penults remains consistently on the final syllable.*"

My own observation of both rehearsed and spontaneous speech confirms common 'retraction' of prominence to closed penults, suggesting a system that is intermediate between Tagalog and Bisayan, and this is further supported by other descriptions as well (Bloomfield 1942). Moreover, in adjacent syllables containing identical vowels separated by a glottal stop, e.g. /baʔaj/ [báʔaj] 'k.o. tree', /daʔan/ [dáʔan] 'road', an environment which does not allow a paroxytone/oxytone contrast in many Philippine languages, we find predictable prominence on the penult, rather than the ultima. If Ilokano shares with Bisayan the need to refer to the boundaries of the lexical word for accent placement, we might expect that Ilokano, too, will treat the oxytone pattern as word-based stress rather than a phrasal edge tone. Indeed, we find that enclitics in Ilokano do not have the same effect as they do in Tagalog of 'shifting' the final prominence of oxytone words to the end of the clitic cluster. Tagalog (7) can be compared with Ilokano (23) in this respect.

(23)a. [sinaludsódna]
s<in>aludsud=na
<PRF>ask=3S.GEN
'He/she asked.'

b. [kasasaŋpétko]
ka-sa∼saŋpet=ku
RCNT-RCNT∼arrive=1S.GEN
'I just arrived.'

We have seen here that variation across Philippine languages in environments that disallow a length distinction (word-final ultimas and closed syllables) may lead to the reinterpretation of

a prosodic system that is predominantly characterized by edge tones (e.g. Tagalog) to one which approaches a canonical stress system (e.g. Cebuano and possibly Ilokano).

5.2. Languages of Mindanao

5.2.1. Iranon

Contrastive vowel length has been lost in most of the languages indigenous to Mindanao (e.g. Manobo, Subanon, Danao, Bilic subgroups). Some of these languages have been summarily described as showing penultimate word stress on the basis of anecdotal evidence but instrumental studies in this region have been entirely lacking.

Iranon is a Danao languages spoken by roughly 250,000 people in the province of Maguindanao in western Mindanao, also spoken by an offshoot community in Sabah, Malaysia. It is closely related to Maranao and Maguindanao (Allison 1979), perhaps forming a subgroup with the Subanon and Manobo families (Walton 1979). The data discussed here were recorded over the course of a fieldmethods course at Queens College, CUNY in 2022 with native speaker Inteshar Victor.

As seen in Figure 10, words in isolation were pronounced regularly with a high tone located on the penultimate syllable. A well known exception to this pattern is found in words containing a schwa in the penult, which is shorter than full vowels, as seen in [ləman].

Words in context present a different picture, however. Word-final prominence is found commonly preceding an enclitic, as seen in *ari* 'brother' in the first example in Figure 10, as well as on postposed demonstratives. In other cases, such as *mama* 'man', in the second example, and *wataʔ* in the third example, it is unclear what, if anything, causes higher prominence on the ultima.

The observations regarding Iranon must be treated as highly preliminary, but even within our limited corpus, the unpredictable nature of prominence in sentential contexts gives the impression that it derives from the phrasal level, making it a better exemplar of the Javanese Prototype than of the Eastern Prototype, where penultimate stress is both highly predictable and word-based. Most important for our purposes is the fact that the length distinction in penultimate syllable has been lost together with the default final anchoring of phrasal edge tones, two features which I claim are linked via contrast enhancement.

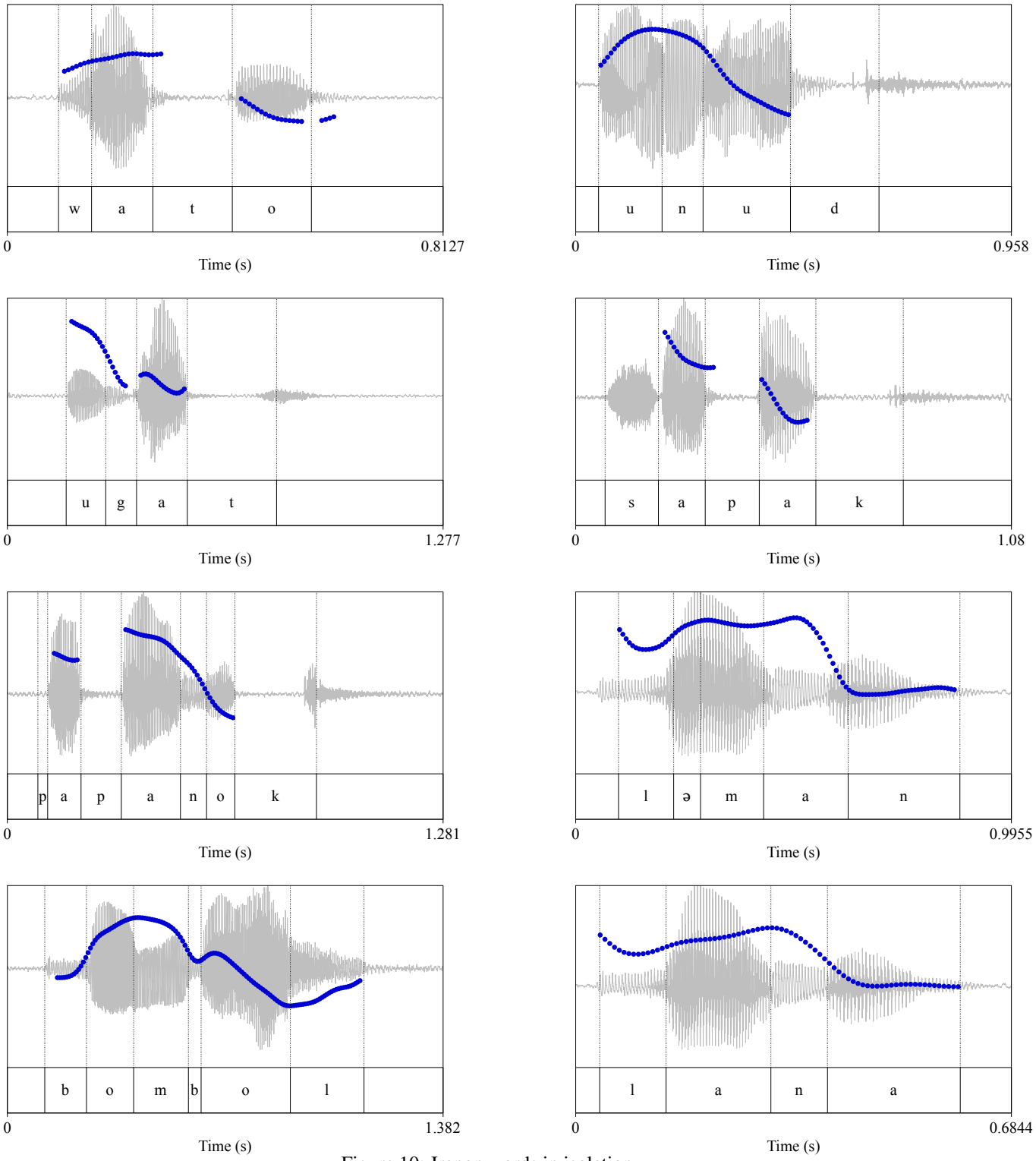

Figure 10: Iranon words in isolation

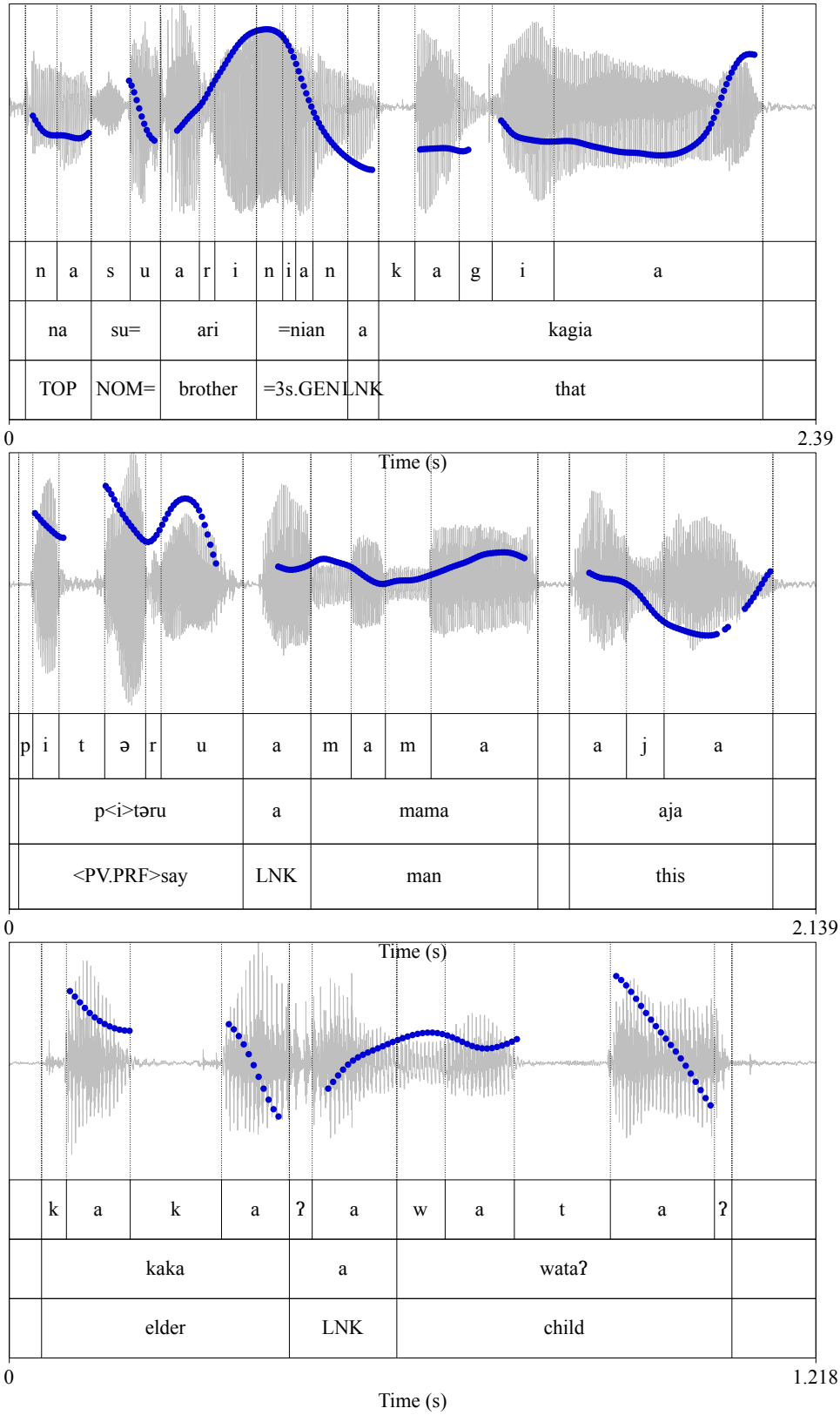

Figure 11: Iranon words in context

5.2.2. Western Subanon

Western Subanon is spoken in the Zamboanga Peninsula by roughly 125,000 people and described in a recent dissertation by Sharon Estioca (née Bulalang). The examples discussed here are from publicly available recordings from a fieldmethods class taught at UH Mānoa in which Sharon Estioca was the consultant.[7]

At least two dialects of Subanon, Northern Subanen and Western Subanon, have been described as having an iterative right-aligned trochaic stress pattern, in which main stress shifts to the final syllable when the penult contains a schwa:

> "In general, stress in Northern Subanen is assigned to the phonological word. Primary stress usually occurs on the penultimate syllable. However, if the nucleus of the penultimate syllable is occupied by a mid-central vowel, primary stress falls on the last syllable. Secondary stress can be recognised in phonological words consisting of more than three syllables. It falls on every alternate syllable to the left of the syllable that bears the primary stress." (Daguman 2004, 33)

> "Primary stress is typically on the penultimate syllable in both unaffixed and affixed words. [...] The secondary stress is only marked in words of four or more syllables. It falls on the alternate syllable of the syllable bearing the primary stress." (Estioca 2020, 21)

On closer inspection, this pattern does not appear to hold as strongly for sentential contexts as it does for elicited words in isolation, although, like Iranon, the variation here is not well understood. The examples in (24) originate from a procedural narrative recorded as part of the same Western Subanon fieldwork project mentioned in fn.7. The corresponding acoustic data is shown in Figure 12.

(24)a. bila motoŋow niha **noŋ mitom mitóm nà**
bila mo-toŋow=nika noŋ=m-itom≈m-itom=na
when POT-see=2S.GEN GEN=STA-black≈STA-black=CMPLT
'When you see that it's already dark...'

b. toŋtoŋan niʔa og **tulíŋ noŋ niug kojón**
toŋtoŋ-an=nika og=tuliŋ nog=niug kojon
see-LV=2S.GEN NOM=color GEN=coconut that
'Look at the color of the coconut.'

Observing the first example in Figure 12 and setting aside the segmental microprosody effects appearing in the first portion of the utterance, we note the clear anchoring of a tonal target to the final syllable of the morphological word *mitom-mitom* as well as the even duration and pitch on the two syllables of the reduplicant (the first copy). Recall that, in isolation, *mitom*, like all lexical words not bearing a schwa in the penult, gives the impression of a right-aligned trochee. The sentential realization of duration and pitch suggests that prominence is determined by phrasal boundaries rather than word boundaries in Subanon. This accounts for the enclitics being included

[7] The recordings, made in 2015-16, can be accessed here: `https://scholarspace.manoa.hawaii.edu/collections/4abd5fe0-77a3-4836-9a9a-e27d7d14d073`.

in the putative "stress window" and for the fact that reduplicants, which are necessarily phrase-medial, are pronounced with symmetrical prominence on all syllables containing full vowels.

Turning now to the latter part of the second example in (24), we find two additional features of Western Subanon prosody. The tonal target associated with the phrase containing *tuliŋ* docks not on the penultimate syllable but on the ultima. This recurring pattern seems to be determined by the prosodic phrasing of the syntactically proclitic case marker as a phonological enclitic in rapid speech (Kaufman and Bulalang 2025), the so-called "ditropic" pattern, which is well-attested cross-linguistically (Anderson 1992; Kaufman 2010; Cysouw 2005). Finally, note that phrasal prominence targets the final syllable of the demonstrative *kojon* rather than the penultimate one, another seemingly widespread pattern in which function words are "extra-prosodic" and do not attract prominence to their penult, as seen in a number of languages of Central Sulawesi which fall into the Eastern Prototype (c.f. Kulawi in Kaufman and Himmelmann 2024).

This early look at Iranon and Subanon suggests that prominence may be phrasally determined rather than word-based, making a better contender for the Javanese Prototype (no word stress) in comparison to the Eastern Prototype (regular trochaic word stress). What should be very clear, however, is that in both of these languages, the default final prominence that emerges in other Philippine languages when the penultimate vowel is short has disappeared together with the historical loss of the vowel length distinction in the penult. Default penultimate prominence, be it word based or phrase based, bears an exceptionless correlation to the loss of the length distinction. We turn now to an apparent exception to this correlation and show that on closer inspection this language, too, follows the generalization.

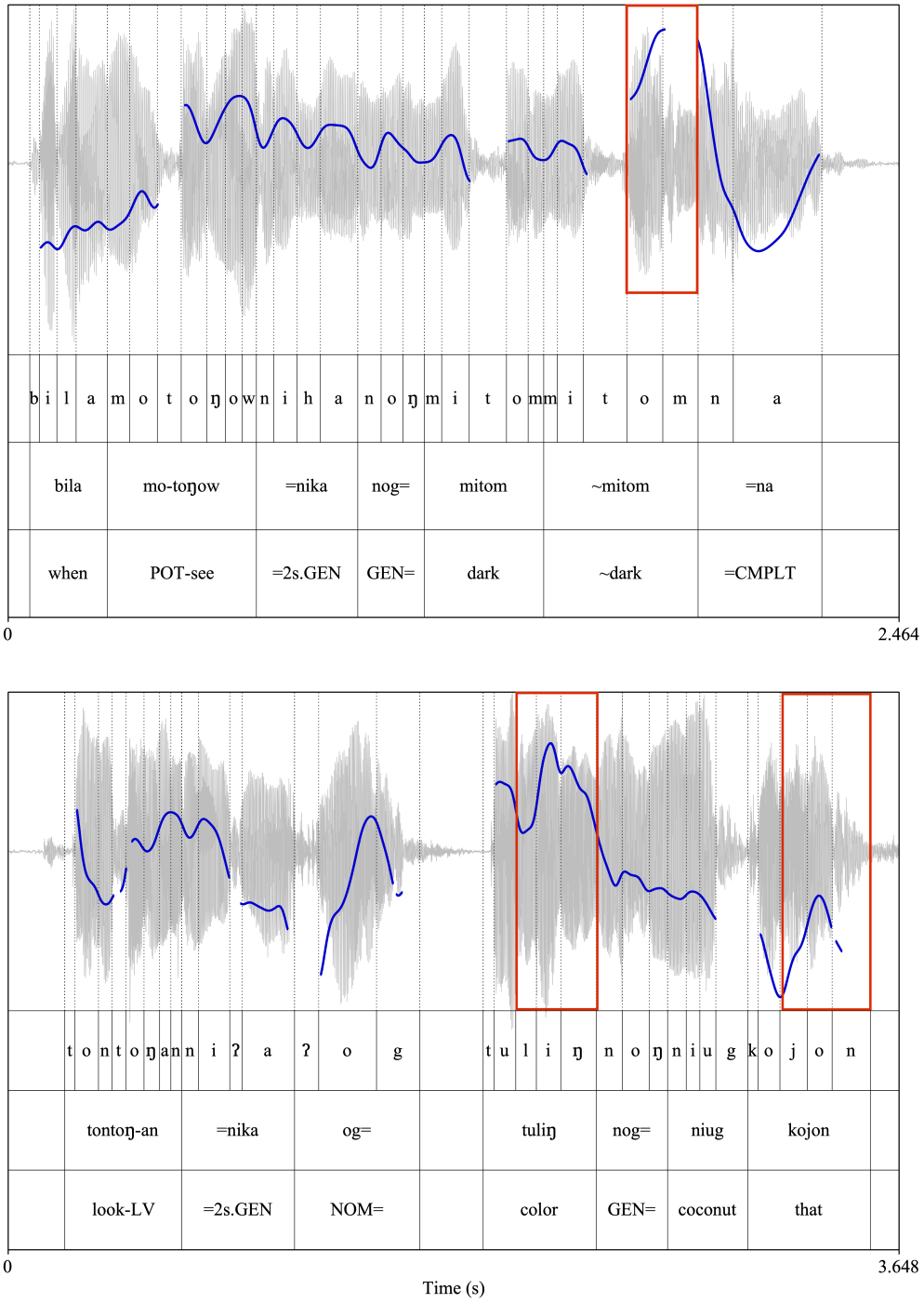

Figure 12: Iranon words in context

5.3. West Albay Bikol

West Albay Bikol (WAB) consists of several dialects spoken in the Albay province of southern Luzon. Here we focus on the varieties of Polangui and Balogo. The data reported on here are from fieldwork conducted with Nhia Borja and from Borja (2024). Like the Mindanaoan languages,

WAB has lost contrastive vowel length on roots, although this must have taken place independently, as Bikol bears no special phylogenetic or areal relation to the languages of Mindanao, being well ensconced by other members of the Central Philippine subgroup. This can be seen in Figure 13, which shows two words *bukid* 'mountain' and *lubid* 'rope' that, historically, contain long penultimate vowels (cf. Tagalog /buːkid/ and /luːbid/, respectively).

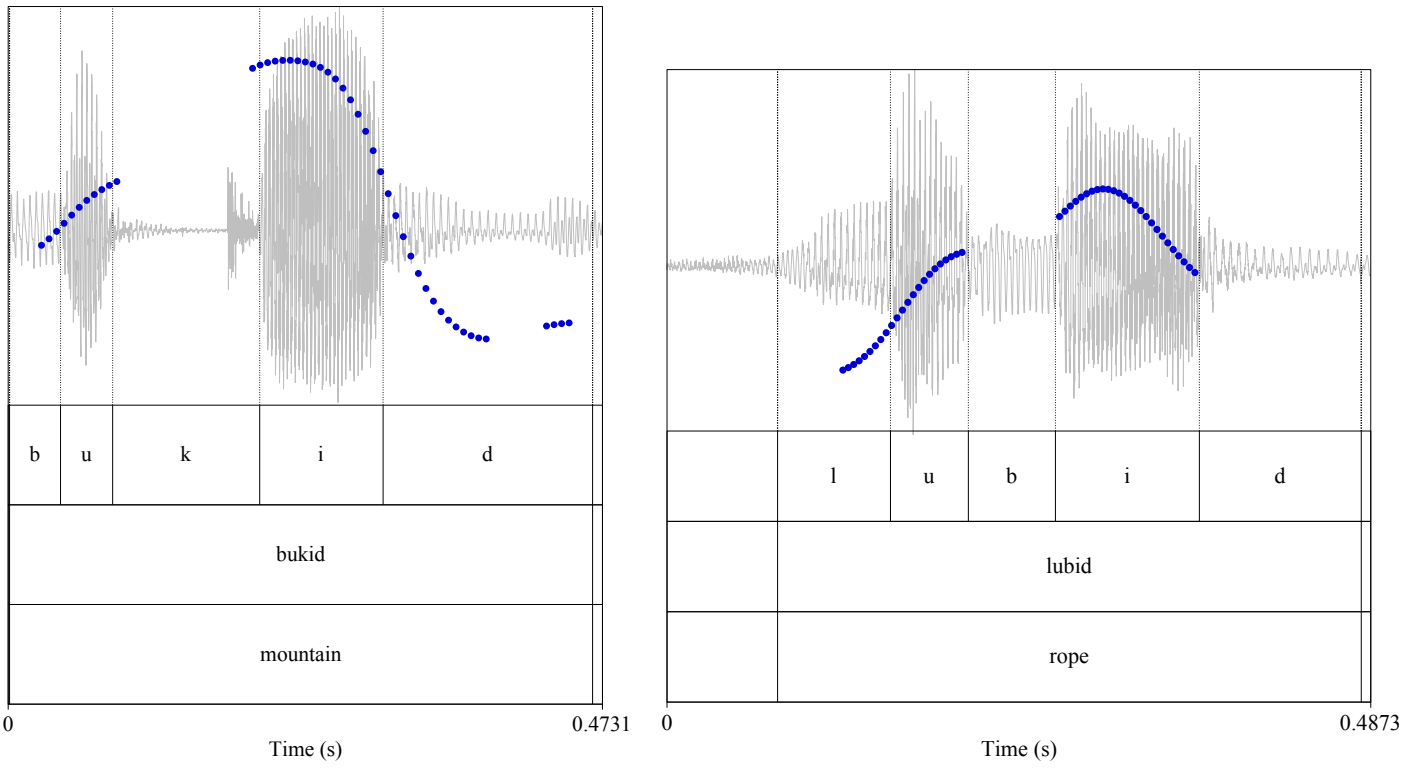

Figure 13: Final prominence in Balugo (WAB)

Similarly, we see a single speaker pronouncing *asawa* 'spouse' first in Tagalog, where it has penultimate vowel length, i.e. /asaːwa/, and then in Balugo, where it does not, i.e. /asawa/. Note that the tonal target is clearly aligned with the long vowel in the Tagalog rendition but on the ultima in the Balugo rendition.

WAB thus seems to contradict the generalization that default final prominence is only found in languages showing contrastive vowel length in the penult. But to understand this apparent exceptionality, we must first turn to other aspects of WAB phonology. Prevocalic glottal stops have been lost historically in WAB and, unlike many other Philippine languages, are not epenthesized to provide an onset to vowel-initial syllables. As a result, WAB allows vowel hiatus, which is relatively rare in the Central Philippine languages, but it is resolved via diphthongization and assimilation, as shown in (25).

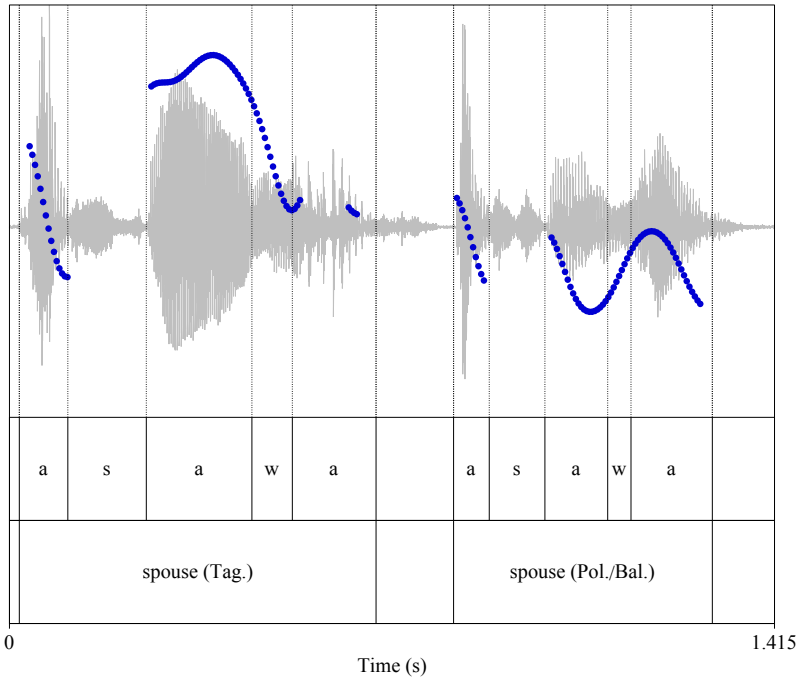

Figure 14: Final prominence in Balugo (WAB)

(25) Western Albay hiatus resolution (Borja 2024, 24)
   a. /saimo/ → [sej.mo] ‘to you’
   b. /pa-idtu/ → [pe.id.to] ‘to go there’
   c. /pa-unu/ → [pow.no] ‘how’
   d. /ma-init/ → [mej.nit] ‘warm’
   e. /daun/ → [down] ‘leaf’

Crucially, when two identical vowels come together through the historical loss of a consonant or synchronically across a morpheme boundary, a long vowel results. Furthermore, what was historically CV-reduplication in the verb paradigm has developed into morphological vowel length, as well. Both of these phenomena can be seen in the inflectional paradigms in Tables 3 and 4. Note that vowel length is the only feature distinguishing the perfective from the progressive and the infinitive and progressive in both paradigms.[8]

So while WAB has lost the historical vowel length distinction in roots, the distinction has reentered the phonology via the loss of the glottal stop and the reinterpretation of reduplication. As a result, the vowel length distinction carries an equally important functional load in WAB as it does in other Central Philippine languages that have maintained the historical contrast. Specifically, I argue that the realization of progressive and prospective aspect using penultimate vowel length on V-initial roots is what maintains the default prominence on the ultima, as seen above.

[8] While there exists a way disambiguate these aspects using the variant with *i-* in the dynamic paradigm, no such option exists in the potentive.

	ABILITATIVE	STATIVE	LOCATIVE
INFINITIVE	maka-turog	ma-turog	ma-turug-an
PERFECTIVE	naka-turog	na-turog	na-turug-an
PROGRESSIVE	na**ka:**-turog	**na:**-turog	**na:**-turug-an
PROSPECTIVE	ma**ka:**-turog	**ma:**-turog	**ma:**-turug-an

Table 3: Potentive actor voice paradigm in Balugo (WAB)

	ACTOR VOICE		
INFINITIVE	/mag-abut/	→	[magabot]
PERFECTIVE	/nag-abut/	→	[nagabot]
PROGRESSIVE	/nag-i-abut/	→	[nagiabot] ∼ [na**ga:**bot]
PROSPECTIVE	/mag-i-abut/	→	[magiabot] ∼ [ma**ga:**bot]

Table 4: Dynamic actor voice paradigm with a V-initial root in Balugo (WAB)

6. Conclusion

I've argued here for a length based analysis of the Philippine oxytone-paroxytone distinction using novel typological evidence that is best explained by contrast preservation. In languages that maintain a length distinction on the penult, phrasal tonal targets are aligned to the ultima by default but shift to a preceding long vowel when one is present. The rising contour typically found on penultimate long vowels enhances the perception of length. Its absence on short vowels in the penult thus creates a more robust perceptual contrast. By treating this tonal alignment as enhancement we are able to explain why it is variable in slow and affective speech while vowel length is generally invariant, as noted in all preceding acoustic studies of Tagalog. It also explains the loss of final prominence in Philippine languages that have historically lost the vowel length distinction, such as the indigenous languages of Mindanao. West Albay Bikol, an apparent but fleeting counterexample, was shown to maintain default final prominence thanks to the reinnovation of a morphological vowel length contrast despite its loss in roots.

While this paper presented novel acoustic data from languages that have not been previously studied instrumentally, thorough quantitative analysis with a larger number of speakers is very much required to solidify the conclusions herein. Ongoing work (Kaufman and Bulalang 2025) seeks to address this lacuna for several varieties of Subanon but much remains to be done for the many other languages on the borderlands between the Philippine prosodic prototype and its neighbors.

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