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Authors

Hyman, Larry M
Kobepa, Niko

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On the Analysis of Tone in Mee (Ekari, Ekagi, Kapauku)

Larry M. Hyman & Niko Kobepa
University of California, Berkeley *Australia National University*

1. Introduction

It is striking how elusive the conceptualization of a relatively simple prosodic system can be. Both complex stress systems such as English and multiple tone height systems such as Yoruba are easily identified as such. Languages which have relatively few tonal contrasts seem, however, to pose a problem. One has but to consult the extensive literature on Tokyo Japanese word prosody, where virtually every logical position has been taken. According to McCawley (1968) Japanese words can have “at most one pitch-drop” from H(igh) to L(ow), but some also lack a pitch drop. Should this pitch-drop be identified as an “accent”, perhaps marked by a diacritic asterisk (*) or arrow ([↓]), or as a tone? If a tone, which part of the HL sequence should be indicated in underlying representations: the H? the L? both? While many follow Pierrehumbert & Beckman’s (1988) basic analysis of a HL “pitch-accent”, it is probably safe to say that we have not seen the last of the strictly tonal conceptualizations, and there may be new ones.¹ The problem is that two-height systems with relatively sparse tonal contrasts lend themselves to often very reasonable, conflicting interpretations.² Or, as we might say, the data of Tokyo Japanese underdetermines the theory.

In this paper we consider another such case from Mee, a Wissel-lakes Papuan language spoken in the West Central Highlands of Papua (Indonesia), whose prosodic system will in many ways be reminiscent of Tokyo Japanese as well as Western Basque (Hualde 1999), and especially Mayo (Hagberg 2006a,b), where words contrast a /H/ (or is it a “stress”?) on either their first or second syllable.³ Although much less studied than Japanese, past studies of the language have taken different positions on the type system it has, but have not provided a precise description. Stating that the prosodic classification of Mee “proves particularly problematic”, van Zanten & Dol (2010) summarize the literature as follows:

“Drabbe (1952) ... contains only little information on word prosody, uses the term emphasis, not stress... Drabbe (1952) also mentions some minimal stress pairs, for instance ‘ego ‘shy’ versus e ‘go ‘tooth’. Lexical tone is not mentioned...” (pp. 133-4)

“According to Doble (1987: 58-61), ‘There are two pitch-accent contrasts in Ekari. High pitch is marked, but of limited distribution. Apart from the term ‘pitch-accent’, Doble seems to use ‘stress-accent’ and ‘stress’ in a synonymous way.” (p.134)

“The third source, Steltenpool & van der Stap (n.d.) states that Ekari has three lexical tones as well as (contrastive) stress... This suggests a hybrid system.... tone and stress are related in the sense that

¹ I am intrigued, for instance, by the title of Backley & Nasukawa (forthcoming), “The role of L in the pitch accent system of Tokyo Japanese,” which I have not yet seen.

² Although Somali restricts its “at most one H tone” to the final vs. penultimate mora of the word, I formalized this via diacritic accents in Hyman (1981), but have since presented the system as assigning a culminative H tone by morphological rules.

³ Mee is also known as Ekari, Ekagi and Kapauku. The findings we will report in this paper are based on joint work between the two authors in Berkeley during August 2011. We would like to thank Mark Donohue and the A.N.U. for making the second author’s visit to Berkeley possible, as well as the NSF Grant #BCS0951651 “Prosodic systems in New Guinea: Integrating computational and typological approaches to linguistic analysis” (Mark Liberman, PI; Steven Bird, co-PI), which allowed follow-up work in Canberra in December 2011. The data presented here are based on the Paniai dialect, as spoken by the second author.

the stressed syllable is always the highest in the word, and words usually follow a mid-high-low pattern. These facts point at a pitch-accent system in the classical definition, with the melody spreading over any pre-stress syllables. On the other hand, monosyllables consisting of a long vowel can have contrastive lexical tone, as in *ii* ‘yes’ (high fall) vs. *ii* ‘sand’ (mid tone).”

Concerning this last comparison, van Zanten & Dol add the following footnote:⁴

“Notice that this analysis is virtually the reverse of Doble’s (1987), who attributes neutral pitch to *ii* ‘yes’, and high pitch to *ii* ‘sand’.” (p.134n).

Having had access to Drabbe and Doble, we came away as perplexed as van Zanten & Dol: do words in Mee contrast in tone? in stress? in both? It is clear from the above quotes that the authors had ideas of what is going in the language, but something held them back. As we shall see, the situation is actually quite simple, thereby reinforcing our opening statement: It is sometimes the simplest prosodic systems which prove the most difficult to identify—or, as van Zanten & Dol put it, to “classify” in terms of word-prosodic typology. In the following sections we shall present the basic tonal contrasts in §2, followed by discussion of analysis in §3. We then briefly discuss tone beyond the word in §4 and summarize in §5.

2. The basic tonal contrasts

We would like to state at the outset that Mee can be easily analyzed as two-height tone system, i.e. with a H vs. L contrast on the surface. We were, however, ourselves initially held back by two factors:

The first factor concerned phonetic issues, most notably that the H tone is relatively low in the second author’s speech. Thus, what sounded like trisyllabic M-M-L, where M = mid pitch, was originally interpreted as L-L-L with a phonetic drop on the word-final syllable, rather than the ultimate analysis of H-H-L. It also took us some time to correctly interpret what we transcribed as M-[↓]ML as H-L on a CVCVV sequence (where VV = a long vowel or diphthong). Instead of a clean M-L pitch drop on CVCV and CVVCV sequences, when the drop is realized on a CVV it often consists of a noticeable falling pitch within the CVV syllable, starting lower than the preceding tone, but going even lower, which we transcribed as M-[↓]ML.

While these phonetic issues had to be overcome to realize that we at most needed only H and L tones, the second factor concerned how to analyze these Hs and Ls. We realized early on that we were not getting H vs. L contrasts on all positions of the word. Should this system therefore be underlyingly analyzed as /H/ vs. /L/, or should one member of the contrast be set up as a privative tone, i.e. /H/ vs. Ø or perhaps /L/ vs. Ø? On the other hand, could this be an accentual system? In what follows we will mark each vowel with a H (´) or L (˘) tone and put off discussion of this last question until §3.

As previous researchers appeared to acknowledge in the above quotes, the basic observation is that words of similar syllable structure allow two contrasting tone patterns on all word shapes except CV. This is seen in the following table of minimal and near-minimal pairs:⁵

⁴ As will be seen in Table 1, we found the above-cited words to exhibit the following contrasts: *égò* ‘shame, shy’, *égó* ‘eye’, *ii* ‘yes’, *ii* ‘sand’.

⁵ Although the different syllable structures are indicated with an initial C, as seen, word-initial syllables need not have an onset.

	<i>Pattern A</i>		<i>Pattern B</i>	
CV	má	‘body, trunk’		
(4)	bó	‘leg’		
CVV	bóù	‘wind’	bóú	‘to skin’
(31A 23B)	dáà	‘frog’	dáá	‘forbidden’
	ìì	‘yes’	íí	‘sand’
	káì	‘to become’	káí	‘to spread’
	kéì	‘to net-fish’	kéí	‘these, those’
CVCV	dídì	‘illness’	dídí	‘mouse (sp.)’
(185A, 94B)	égò	‘shame, shy’	égó	‘tooth’
	épà	‘sky’	épá	‘base, first wife’
	údò	‘heavy’	údó	‘testicle’
	úwò	‘water’	úwó	‘ridge pole’
CVVCV	díìbù	‘gnat, mosquito’	díípi	‘gnat, mosquito’
(6A,10B)	gáábò	‘quiet’	gááti	‘ten’
	káìyà	‘where’	káídò	‘jewsharp’
	náápò	‘vegetables’	wáánè	‘singing (style)’
CVCVV	áwìì	‘to put sth. into sth.’	áwíí	‘weather’
(73A, 39B)	bádìì	‘to uproot’	bádíí	‘clan name’
	énàà	‘good’	énáá	‘ripe’
	kádèè	‘brideprice’	kádéé	‘grasshopper’
CVVCVV	múùmàì	‘to finish’	búúmàì	‘to swim’
(12A, 22B)	píìpìì	‘urine’	píípàà	‘bird (sp.)’
	yóòníì	‘to stand’	yííyìì	‘to wail’
CVCVCV	áyàmù	‘chicken’	ágíyà	‘net bag’
(3A, 44B)	íkànè	‘fish’	ípáǵì	‘to sneeze’
CVVCVCV	máákòdò	‘true’	áákàtà	‘to belch’
(3A, 4B)	kúútàkà	‘strong, loud’	píípòǵà	‘utopia’
CVCVVCV	kápàùkà	‘Mee language’	épáútà	‘stump, basis, source’
(7A, 11B)	áwèìdà	‘daytime’	étáìdà	‘light (in weight)’
CVCVCVV	pútèwèè	‘knife’	dókégàà	‘waves’
(4A, 29B)	ítòkòù	‘now’	áníǵòù	‘to wake up (intr.)’
CVVCVCVV	máàǵiyòò	‘what’	tíítiwàà	‘student’
(2A, 2B)	kónàiyòò	‘beard’	áyááyòò	‘tickle’
CVCVCVCV	nákàpìdù	‘squash’	dígímìtà	‘darkened’
(4A, 8B)	píyàǵàpàà	‘horn’	wákìbèǵò	‘lightning’
	ébèpèkà	‘face’	tókápùǵà	‘gecko’
CVCVVCVCV	kédèètiyà	‘stomach’	yégéénàkà	‘glorious’
(5A, 3B)	ídàànità	‘rainy time’	áyéyòkà	‘baby’
	épèèpìtè	‘well, thoroughly’	dábáádìyò	‘charm’
CVCVCVVCV	ítònàǵò	‘today’	mátókààtò	‘behind (s.o.’s back)’
(3A, 2B)				

Table 1. Tonal Contrasts by Syllable Structure

The two contrasting tone patterns are referred to as pattern A vs. B. The numbers in parentheses indicate how many of each tone pattern is found with each word-syllable shape (based on our lexicon of 554 entries). It is striking that pattern A predominates on CVCV and CVCVV words, but pattern B predominates on CVVCVV and CVCVCV words, something to which we shall return in §4. For the time being we are interested in capturing the nature of the contrast between the two patterns.

Except for the few CV words in the language, which are H, the contrast has to do with how many H tone moras occur at the left edge of the word: Pattern A words have one H mora, all subsequent moras being L. In most cases, pattern B words have two H moras, any and all subsequent moras being L. The one complication concerns pattern B words which begin CVCVV: instead of having an initial H-HL tonal pattern, with a drop on the second mora of the CVV syllable, both syllables are H; i.e. such word begin H-H, followed by L on any subsequent moras. We will further address this complication in §3. For our present purpose, let us note the following two observations: (i) There are only two possible tone patterns on a word of any given syllable structure; (ii) The two tone patterns are calculated from the left edge of the word. As seen, in pattern A there is only one H tone mora at the left edge. In Pattern B there can be either two H tone moras on words that begin CVCV or CVVCV, or three H tone moras on words that begin CVCVV. In no case is a H tone found anywhere beyond the second syllable of a word. The moras of all such syllables are L.

While Table 1 illustrates these patterns mostly on nouns, the same is found on verbs. Table 2 presents some sample verb paradigms which are representative of the inflectional tones on verbs (which we have studied in greater detail, but do not report on here).

		<i>citation</i>	<i>P₁ Def</i>	<i>P₂ Indef</i>	<i>F₁ Def</i>	<i>Ant P₁</i>
‘strip bark’	CVV	wái	wáàgà	wáátà	wáìnèègà	wáátòògà
‘see’	(A)	dòù	dóògà	dóótà	dòùnèègà	dóótòògà
‘evaporate’	CVV	wéí	wéégà	wéétà	wéínèègà	wéétòògà
‘cook’	(B)	yóú	yóógà	yóótà	yóúnèègà	yóótòògà
‘go’	CVCVV	úwìì	úwèègà	úwítà	úwììnèègà	úwítòògà
‘open’	(A)	kébàì	kébààgà	kébátà	kébàìnèègà	kébátòògà
‘put into’	CVCVV	áwíí	áwéégà	áwítà	áwíìnèègà	áwítòògà
‘speak’	(B)	wégáí	wégáágà	wégátà	wégáìnèègà	wégátòògà
‘swim’	CVVCVV	búúmàì	búúmèègà	búúmítà	búúmàìnèègà	búúmítòògà
‘choose’	CVCVCVV	wítókàì	wítókèègà	wítókítà	wítókàìnèègà	wítókítòògà

Table 2. Tonal Contrasts in Verbs

As seen the citation forms all end in a CVV syllable. We also see that citation tone is contrastive on both CVV and CVCVV verbs. Longer verbs (CVVCVV, CVCVCVV) all show pattern B.

Once we enter the verbal paradigm, the pattern A vs. B of the citation form can be found in certain inflections, e.g. the near past and near future (hodiernal) definite tenses (P₁ Def, F₁ Def). On the other hand, both the general past (before today) indefinite tense (P₂ Indef) and the anterior near past (Ant P₁) both assign pattern B to all verbs. Even the few irregular pattern A

CVV verbs which have a short vowel in the P₂ Indef exhibit pattern B H-H tone: *wéì* ‘cultivate’ → *wétá*, *mèì* ‘come’ → *métá*, *tóù* ‘stay’ → *tótá*.

3. Interpreting the contrasts

As seen, the Mee tone system is rather simple, and yet, as we saw in §1, the descriptions have been anything but clear. It should be noted that we have not seen any need to recognize a stress contrast. Those words like *nápó* ‘egg’, which Doble (1987) writes with a final accent, are simply H-H (pattern B).⁶ To test for stress, we investigated, but did not find any skewing in the distribution of consonants or vowels, based on patterns A vs. B. (We did of course find some numerical inequities in the distribution of the two patterns on words of different shapes, as noted above). We therefore conclude that there is no phonological evidence for setting up a stress system, whether related to the placement of tones or otherwise.

The main problem, then, is how to interpret the two patterns. While we have fully specified all vowels (moras) with a H or L tone in Tables 1 and 2, it is clear that there is much redundancy in these transcriptions. Assuming that we do not want to mark the difference with a stress (or other accent) mark we could do either of the following, each with clear implications for a parsimonious orthography: (i) Mark the position of the last /H/. Pattern A would have an acute accent on the first vowel, pattern B on the second. (ii) Mark the position of the first /L/, if occurring. Pattern A would have a grave accent on the second vowel, pattern B on the third (if there is one). Examples of both systems are given in Table 3.

<i>Syllable pattern</i>	<i>tone</i>	<i>marked-H</i>	<i>marked-L</i>	<i>gloss</i>
CV	H	bó	bò	‘leg’
CVV	HL	wéé	wèè	‘cutter’
	H	méé	mèè	‘person’
CVCV	H-L	yoka	yòka	‘child’
	H-H	napó	napo	‘egg’
CVVCV	HL-L	díibu	diibu	‘sting’
	H-L	teége	teegè	‘devil’
CVCVV	L-L	mítoo	mitòo	‘bone’
	H-H	miyoó	miyoo	‘small’
CVVCVV	HL-L	yóonii	yoónii	‘stand’
	H-L	tuúmai	tuumài	‘pour’
CVCVCV	H-H-L	yagúmo	yagumò	‘woman’
	H-L-L	íkane	ikàne	‘fish’
CVVCVCV	HL-L-L	góotoki	goòtoki	‘startled’
	H-L-L	piípoga	piipòga	‘utopia’
CVCVVCV	H-L-L	áweida	aweida	‘day’
	H-H-L	ogoógi	ogoogi	‘roll’
CVCVCVV	H-L-L	pútewee	putèwee	‘knife’
	H-H-L	kagúmaa	kagumàa	‘knee’

⁶ All words end in a vowel in Mee, and especially when short, a word-final vowel may be followed by a glottal stop, e.g. [nápóʔ] ‘egg’. Perhaps Doble interpreted this short H pitch with glottal stop as accented.

CVCVVCVV	H-L-L H-H-L	ítóokei aweétaa	itòokei aweetàa	‘formerly’ ‘tomorrow’
CVCVCVCV	H-L-L-L H-H-L-L	píyagapaa diglímita	piyàgapaa diglìmita	‘horn’ ‘dark’
CVCVVCVCV	H-L-L-L H-H-L-L	kédeetiya yegeénaka	kedèetiya yegeenàka	‘stomach’ ‘glorious’

Table 3. Marked-H vs. Marked-L Analyses/Orthographies

In the marked-H analysis, anything after the /H/ would be L, but the one or two moras that precede the /H/ in pattern B would be H.⁷ This could conceivably be attributed to an initial %H boundary tone, whose effect is observed only in pattern B. In the marked-L analysis, anything before the /L/ would be H (again perhaps due to a %H boundary tone), while everything following the /L/ would be L. The fact that no word can be all L, as well as the limited distribution of the H may recommend the marked-H analysis, especially as H tones are more restricted and hence more sparse than Ls. Also, the placement of the marked-H in pattern B could be attributed to initial extrametricality, something which is a bit more difficult in the marked-L analysis, where the L can get as far in as the third syllable. On the other hand, we prefer the marked-L notation as an orthography, since it would directly mark the pitch drop. In short, we do not see much analytic advantage to one vs. the other of these two interpretations.

Note in the above that we have not emphasized the fact that a word cannot be all L, for which we have entertained the possibility that there is a left-edge %H boundary tone. An alternative view is that the obligatory H is “accentual”. A third alternative that needs therefore to be considered is a /HL/ “pitch-accent” similar to Pierrehumbert & Beckman’s analysis of Tokyo Japanese, which would align differently in patterns A vs. B. In pattern A, the two tones of the /HL/ pitch-accent would link to the first two moras of the word. In pattern B, the H would link to the second mora, or in the case of #CVCVV... to the third mora. Again, the one or two moras which would precede the H in pattern B would be realized H, and any moras following the L would be realized L.

A fourth and final alternative we will consider is to recognize two tonal melodies, /HL/ for pattern A vs. /H/ for pattern B. In this case we would need to set up a special left-edge domain within which one vs. the other melody is realized. As suggested to us independently by Florian Lionnet and Tony Woodbury in personal communications, we could build a left-edge iambic foot as follows:

- # (CV) # (monosyllabic CV words)
- # (CVCV) ...
- # (CVCVV) ...
- # (CVV) ...

As seen, CV words would constitute an iambic foot even though monomoraic. As in all of the analyses, we would not expect a contrast: only the H of the /HL/ melody could map, thereby

⁷ Actually the first syllable may optionally begin slightly lower than the second, e.g. *nápó* ~ *nāpó* ‘egg’. This plus the common final glottal stop may also given Doble the impression that [pó?] is accented (cf. note 6).

merging CV words with the pattern B /H/ melody.⁸ Bisyllabic and longer words which begin CV would form either a CVCV or CVCVV iamb within which the /HL/ or /H/ melody would link. Monosyllabic and longer words beginning CVV would form a monosyllabic iamb at the left edge, to which again the /HL/ or /H/ melody would link. The one interesting implication that this analysis could have is that we'd expect the second syllable of #CVCV... to be prominent in some sense, perhaps slightly (to us inaudibly) lengthening its vowel, as Heath (2011) tentatively found in a pilot study. We acknowledge that this last analysis is not only promising, but also the most interesting. It definitely should be followed up by additional instrumental work.

4. Tonology beyond the lexical word

Up until now we have focused on word tones, since that is where the contrasts are determined. In this section we consider the effects of compounding and enclitics on tone, and briefly the very little we have found in the phrasal tonology.

Many of the polysyllabic words that are in our lexicon are clearly compounds. A few examples suffice to show that the second word loses its tones, as it typically occurs too far to the right to influence the tonal pattern of the compound. For clarity we mark Hs and Ls on all input vowels:

pútè	'iron, metal'	+	wéè	'cutter'	→	pútèwèè	'knife'
úgí	'sandhill'	+	éníyà	'spirit'	→	úgééniyà	'snake'
íyò	'hair, feather'	+	píyà	'wood'	→	íyópìyà	'cassowary' (bird sp.)
dágì	'head'	+	ébà	'mat'	→	dágèèbàì	'head cover, hat cloth'
bá	'excrement'	+	ówàà	'house'	→	báàwà ⁹	'toilet'
úkí	'ant'	+	úkwà	'louse'	→	úkíúkwàà	'ant'
dágì	'head'	+	ida	'on, above'	→	dágiidà	'noon'

Table 4. Compounds

As seen, the first noun typically determines the tonal pattern of the compound. More compounds need to be studied, but among the ones we have, only 'cassowary' involves a change, in this case from the pattern A of the first noun to pattern B in the compound.

A much more intriguing change from pattern A to B concerns some CVCV nouns. Of the 82 such nouns in our lexicon, 27 change to pattern B when they precede any of the following enclitics (which are realized with L tone):

=ido	'plural'	=yago	'having, with'
=kaa	'with'	=pa	'at, in'
=too	'only'	=duba	'inside'
=ma	'and'	=maida	'on'

Representative examples are given in Table 5.

⁸ As indicated in Table 1, there are only four such words in our lexicon. These are: *bó* 'leg', *bá* 'excrement', *dó* 'kind of tree', *má* 'body, trunk (of tree)'.
⁹ The fact that this compound comes out as *báàwà* rather than **bááwà* can mean either that the second noun first reduces to all L, hence *ówàà* → *òwàà*, or that *bá* has a /HL/ pattern A melody.

(i) H-L → H-L (no change) (n = 55)			
bédò	‘bird’	→	bédò =ùdò ‘birds’
bádò	‘foot’	→	bádò =kàà ‘with the foot’
dódi	‘dog’	→	dódi =tòò ‘only a dog’
góti	‘bread’	→	góti = mà ‘and bread’
pékà	‘eye’	→	pékà =yàgò ‘with (having) an eye’
pékà	‘eye’	→	pékàà =pà ¹⁰ ‘at (close to) the eye’
ébà	‘skin’	→	ébà =dùbà ‘inside the skin’
íyè	‘leaf’	→	íyè = màidà ‘on the leaf’
(ii) H-L → H-H (n = 27)			
mógò	‘stone’	→	mógó =ùdò ‘stones’
yókà	‘child’	→	yóká =kàà ‘with a child’
míti	‘seed’	→	mítí =tòò ‘only seeds’
kágò	‘branch’	→	kágó =mà ‘and a branch’
módò	‘belly’	→	módó =yàgò ‘with (having) a belly’
mógò	‘stone’	→	mógóó =pà ‘at the stone’
yúmà	‘nose’	→	yúmá =dùbà ‘inside the nose’
púgà	‘tail’	→	púgá = màidà ‘on the tail’

Table 5. CVCV Noun + Enclitic

As seen, group (ii) H-L nouns become H-H before the above enclitics. Nouns with other syllable shapes do not change their tone before an enclitic. The question is how to account for the changes in (ii) above? Why do they occur, and why do they affect only CVCV nouns?

First, note that the change of H-L to H-H does not seem to have a much better explanation in any of the four analyses we considered in §3. In both the marked-H and marked-L analyses, we would have to say that the marked tone shifts over one mora when the relevant CVCV nouns occur before an enclitic. If we assumed initial extrametricality to get the marked-H pattern B, the change would consist of imposing output extrametricality in (ii) above, which would seem odd. The HL pitch-accent analysis would again have to shift its alignment appropriately, while the initial iambic foot analysis would require a change of the melody from /HL/ to /H/. It does not seem that any of these analyses holds an advantage over the others, or over an analysis with a simple rule of H tone spreading applying in this restricted environment.

We have not said how the set of nouns in (ii) can be identified in order to undergo the observed change. One alternative is to simply have two classes of pattern A CVCV nouns, distinguished diacritically. A more appealing analysis would be to provide representations that distinguish the pattern A nouns in (i) vs. (ii). As seen in Table 6, both the marked-H and marked-L analyses would require at least some adjustment to what we have assumed thus far:

Pattern B:	/napó/	/napo/	‘egg’
Pattern A(i):	/bédo/	/bedò/	‘bird’
Pattern A(ii):	/mogo’/	/mogo`/	‘stone’

Table 6. Representational Analyses of CVCV nouns

¹⁰ As seen, =pà ‘on’ also lengthens the final vowel of the preceding noun.

In the marked-H analysis on the left, the pattern A(i) and B nouns are as before. The pattern A(ii) nouns would have to have a floating marked-H after them. This H would link onto the noun only when followed by an enclitic, otherwise it would delete. What this would mean is that the initial H of *mógò* ‘stone’ would have to come from the %H boundary tone, not from an underlying lexical (or accentual) /H/. In the marked L pattern B CVCV would be unmarked, while pattern A(i) would have a L linked to its second mora. As seen, group (ii) nouns such as ‘stone’ would have a floating L after it. This L would link onto the noun unless it is followed by an enclitic, onto which the L would instead link. The marked-L analysis seems reasonable, but it’s not clear that it is right.

One issue to determine is whether the two CVCV H-L patterns indicate a merger of an earlier more extensive tone system—or whether a gradual change is affecting different lexical items of one proto pattern for reasons that we do not currently understand. Recall from Table 1 that trisyllabic CVCVCV consists almost entirely of the pattern B tonology: 44 vs. 3. Of the 3, one is a WH word (*ménòkà* ‘when’) while the other two are borrowings from Indonesian (*ikàné* ‘fish’, *tédòkò* ‘spoon’). Could one of the two CVCV H-L groups be the missing trisyllabic pattern A CVCVCV? It would seem more likely that the unchanging group (i) would be the better candidate: an original H-L-L becomes H-L by loss of one of the L syllables, and these nouns remain tonally stable before an enclitic. The other group (ii) would be the real H-L which simply undergoes a H tone spreading rule to become H-H when followed by an enclitic. We unfortunately will have to leave things where they are and hope that the mystery can be cleared up by considering comparative evidence.

Although we have focused mostly on nouns, secondarily on verbs, it should be clear that it’s not just these form classes that contrast the two patterns. As the following table summarizes, the demonstrative ‘this/these’ shows an interesting contrast:

	<i>singular</i>	<i>plural</i>
<i>masculine</i>	kíí	kéi
<i>feminine</i>	kóú	kóù

Table 7. *Demonstrative Forms*

As seen, the singulars have pattern B, and the plurals pattern A. In the feminine the only difference between the singular and plural is tonal: *yágúmò kóú* ‘this woman’ vs. *yágúmò kóù* ‘these women’.

Finally, we note that we have not found any tonal interaction between full words in the sentence. Phonetic studies should be done of the downdrifting phenomena, and also potential resetting of the register at major syntactic breaks. For now we leave this for future research.

5. Summary

In the preceding sections we have attempted to show that Mee has a very simple tonal system: every word must have at least one H tone which is exclusively on the first mora in pattern A, but requires two moras (and ultimately two syllables) in pattern B. There is no need to posit a canonical stress system. We considered several possible analyses, but did not conclude that any one of them is clearly right. (We were most intrigued by the suggestion of a left-edge iambic

foot, however.) In other words, although we clearly know what is going on in the sense of being able to predict the sparse tonal contrasts that the language recognizes, the exact formalization is a different story. Sometimes it just comes out this way: We know what's going on, but there are too many (near-)equivalent "implementations" and so little to go on to choose between them. This is the case for Mee, at least as far as the strictly phonological distributions and minor tonal alternations are concerned. Whether phonetic research can aid in choosing one vs. another interpretation remains to be seen.

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