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The Uneven Trochee and the Structure of Kambera Roots

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1. Introduction

In this article we will show that the phonotactic possibilities of roots i Kambera fall under a single prosodic characterization: all are instances c the so-called *Uneven Trochaic Foot* (UT). Having established that the U appears to adequately characterize the Kambera roots, we will discuss a alternative approach based on the Prosodic Template Theory proposed i Kager (1994). Kager does not recognize the UT as a primitive prosod category. We will argue that our analysis is more straightforward tha Kager's and that Prosodic Template Theory in general could benefit fro recognizing uneven feet. The benefit would be that the notion of *loo minimal word* can be dispensed with, so that the notion of compl prosodic template can be reduced to *compound templates* (Kager 199 only.

An obvious objection to our proposal is that to account for the stre systems of the world we do not need the UT as a primitive prosoc category. This is what is generally assumed since Hayes (1986, 1995) h argued that Quantity Sensitive (QS) trochaic systems can be bet analyzed using a so-called Moraic Trochee (MT).

In reply to this objection we will re-open the case against UTs in stre systems and show that there are stress systems which require the U rather than the MT. In addition, the fact that there are processes li trochaic lengthening suggests that bimoraicity is not a necessary (or ev desirable) property of trochaic systems. Leaving an examination of stress facts supporting the MT for another occasion, we will conclude t there is room for both the UT and MT in metrical theory.

The organization of this article is as follows. In section 2 we prov some extralinguistic information on Kambera. Section 3 deals with basic facts of the phonology. In section 4 we show that the phonota possibilities of Kambera roots all are instances of the Uneven Troch Foot. In section 5, we discuss Kager's Prosodic Template Theory propose an alternative that recognizes the UT (rather than the MT) a primitive prosodic category. In section 6 we focus on the evidence in favor of the UT. In section 7 we summarize our main conclusions.

2. Extralinguistic information

Kambera is part of the Central Malayo-Polynesian group of Austronesian languages (Blust 1993). It is spoken by approximately 150.000 speakers in the eastern region of the island of Sumba (province Nusa Tenggara Timur, NTT) in Eastern Indonesia. Kambera is closely related to the languages spoken in the western part of Sumba, such as Weyewa and Kodi, and to the languages of Bima, Savu and Timor. The data analysed here are primary data and come from fieldwork research by the second author. For a more detailed description of the phonology we refer to Klamer (1994, Chapter 2).

3. Segmental inventory

We analyze the vowel system as having 5 short, 3 long and 2 diphthongal vowels:

(1)	i		u	i:		u:
	e		o	ai		au
		a			a:	

The analysis of the root structure will reveal firstly that the appropriate representation of the contrast between the two vowel sets involves syllable quantity, i.e. long vowels occupy two positions in the syllable rhyme and, secondly why we take the two short-vowel combinations /au/ and /ai/ — unlike all vowel combinations — to be diphthongs that are part of the long vowel paradigm.

Not all vowels can occur in all positions in the (prosodic) word. The basic distributional facts are stated in (2):

(2)	a. pre-stress: /a/	(prefixes)
	b. primary stress: all vowels	(first syllable of the root)
	c. post-stress: /i/, /a/, /u/	(second syllable of the root)

In addition, clitics can also contain /i/, /a/ and /u/ only. Primary stress is on the first syllable of the root. Thus, (2a) implies that prefixes can only have the vowel /a/. Below we recognize a further weak, post-post-stress position in which only an epenthetic ('paragogic') vowel [u] may occur.

Distributional patterns like these are essentially arbitrary, unless the are interpreted in the context of an explicitly developed theory o prosodic structure that expresses such distributional patterns a manifestations of head — dependent relations (cf. Dresher & van de Hulst 1995, forthc.). For a discussion of the structure of Kamber prosodic words, we refer to Klamer (1994) and to Van der Hulst & Klamer (to appear).

The Kambera consonant system is as follows:

(3)	p	t	k		voiceless stops
	mb	nd	ŋg		prenasalized stops
	ɓ	ɗ			implosives
		ʤ			voiced affricate
	m	n	ŋ		nasals
		nʤ			prenasalized affricate
				h	laryngeal fricative
		r			rhotic liquid
		l			lateral liquid
	w	j			approximants
		nj			prenasalized approximant

Our analysis of Kambera syllable structure entails that the languag allows for CV and CVV syllables, both occurring with and without lexical onset consonant; empty onsets are realized with a glottal stop. Ou discussion of the vowel distributions implies that (C)VV syllables ca only occur under main stress, i.e. as the first syllable of the root, whe they contrast with (C)V. Other than primary stress positions only hav (C)V:

(4)	*stress*	*no stress*
	(C) V (V)	(C) V

At first sight, Kambera has (underlying) closed syllables *root-finall* since roots may end in a consonant (only /l, r, h, t, k, ŋ/). One may als think of this consonant as being extrasyllabic. Alternatively, one migl propose to analyze the root final consonant as the onset of an separa syllable. This is supported by the fact that a paragogic vowel [u] appea there. This [u] is 'weak' and may disappear in rapid speech. We favor tl second alternative, but for the present article the differences betwe these analyses are not crucial:

(5)
C V C V C V
| | | | | :
n u l a ŋ [u] 'pillow'

In the next section we turn to the central topic of this article: the phonotactic structure of roots.

4. Root structure

Roots in Kambera cannot be too small and neither can they be too big. In this section we will demonstrate that the lower and upper limit of roots can be understood under the assumption that all roots are instantiations of a single prosodic template, i.e. the Uneven Trochaic Foot (UT).

We start with the lower limit. There are no roots that consist of a single syllable containing a short vowel.[1] This means that Kambera roots minimally consist of one syllable with a branching rhyme or two light syllables. In other words, Kambera adheres to a minimal word constraint: the word must minimally contain two moras.

Research in the area of metrical phonology has suggested that the source of such a bimoraic minimality constraint, which occurs in many languages, lies in the fact that monomoraic feet are universally strongly dispreferred. We must note, however, that it is very common to find that only morphemes belonging to major syntactic categories such as verbs, nouns or adjectives must fulfill the bimoraic minimality constraint, whereas items from non-major categories, such as pronouns, conjunctions and the like, can be monomoraic, and, in fact, typically are. This situation is also attested in Kambera.

[1] There are some minimal morphological units with the shape CV such as /ŋa/ /pi/ and /ni/ in (i, ii, iii) below, but these are prosodically dependent units (Klamer 1994:48), i.e. they only occur in combination with another syllable consisting of, for instance, the Kambera default consonant /ŋ/ plus the paragogic vowel [u], as in (i, ii); or the suffix /-ŋ/ plus the paragogic vowel, as in (iii). The nasal suffix derives verbs from deictic elements (among other things, cf. Klamer 1994:189-228).

(i) ŋa + ŋ [u] 'eat X'
eat

(ii) pi + ŋ [u] 'to know X'
know

(iii) ni + ŋ [u] 'be here; be where speaker is'
DEI: 'near speaker'

Dresher and Van der Hulst (1995, forthc.) therefore propose a more sophisticated reason for minimality constraints and why such constraints typically hold for major category forms only. They relate these facts to a recurrent asymmetry between heads and dependents in prosodic structure, to the effect that heads tend to be more complex than dependents. In the case at hand, heads at the phrasal level are required to be bimoraic and since such heads will typically be major category words, we can understand the minimal word constraint as involving the 'lexicalization' of a constraint on phrase-level prosodic structure. Non-major categories will typically be non-heads, and therefore need not be bimoraic. Non-major categories share this characteristic with clitics, clitics being units that, while belonging to a major category, fail to meet the prosodic requirements that a 'head' status calls for. We refer Van der Hulst & Klamer (to appear) for a discussion of the phonotactic properties of Kambera clitics.

Having considered the lower limit of Kambera roots, let us now turn to a discussion of their apparent upper limit. In what follows we will demonstrate that we can understand the various root types occurring in Kambera by showing that all of them fall within the possible expansions of a foot type that is known as the UT.

The following roots exemplify the possibilities:[2,3]

[2] From this table one may get the impression that all roots containing less th
three morae are non-verbal. This is not the case.

[3] Frequencies of root types (rough estimates):

a + h	= 50 %
b + c	= 15 %
d	= 25 %
e + f + g + h + i + j	= 10 %

(6) POSSIBLE ROOT TYPES IN KAMBERA

b i m o r a i c:

a. (C) V (C) V
n o m u
'six'

b. (C) V V
w a i
'water'

c. (C) V V
y u u
'tongue'

b i m o r a i c *plus* extra CV:

d. (C) V (C) V C V
n u l a ŋ u
'pillow'

e. (C) V V C V
p a u t u
'grab (a chicken)'

f. (C) V V C V
d a a ŋ u
'many'

t r i m o r a i c:

g. (C) V V (C) V
p a i t a
'bitter'

h. (C) V V (C) V
h i i l i
'again'

t r i m o r a i c *plus* extra CV:

i. (C) V V (C) V C V
w a i nd a l u
'sway arm; throw X away'

j. (C) V V (C) V C V
r a a i ŋ u
'be industrious'

The cases in (7), then, are not attested:

(7) TABLE OF (SOME OF THE) IMPOSSIBLE ROOT TYPES

a. all monomoraic roots
b. all quadrimoraic roots
c. the following trimoraic roots:

	(C)	V	C	V	V
i.	l	u	t	a	u
ii.	k	i	m	a	a
iii.	l	u	m	i	a

	(C)	V	C	V	(C)	V
iv.	l	e	k	i	n	a
v.	k	u		a	n	i
vi.		u		i		a

A noteworthy fact about roots that have three V positions is that they appear to be limited to those in which the first two positions form a sequence /ai/, /au/ or a long vowel. We interprete this to mean that, firstly, /ai/ and /au/ are indeed diphthongs, and, secondly, that a root can be trimoraic only if the first two moras are tautosyllabic, i.e. form one heavy syllable.

Our analysis singles out trisyllabic roots with a final [u] vowel, as in (6d) and in (8):

(8) [nulaŋu]

We do not analyze such roots as trisyllabic trimoraic forms of the 'forbidden' type (e.g. **lekina*, (7c, iv)), since such an analysis would fail to explain why roots like (8) always contain the vowel [u] in the third and final syllable. Also, given that onsets in general are optional, if this were the correct analysis we would expect to find trimoraic forms ending in a vowel sequence (e.g. **lutau* (7c,i) and **lumia* (7c,iii)) — contrary tc fact.

We can summarize the attested and unattested patterns as follows:

(9) (C) V V = heavy syllable = H
(C) V = light syllable = L

Attested	Unattested
H	L
L L	H H
H L	L H
	L L L

Following Kager (1994), we will refer to the set of attested types as *template pool*. To exclude the illformed roots in (7) from this pool, would not be sufficient to say that roots must be minimally bimoraic ar maximally bisyllabic since this would not exclude the first two forms (7). These two forms consist of a light syllable followed by a hea syllable (L H). In order to exclude the LH-type root from the templa pool, we must say that the pool is defined in terms of the UT, represented in (10):

(10)

	Head	Dependent	
H:	C V V		minimal expansion
	V V		
LL:	C V	C V	minimal expansion
	C V	V	
	V	C V	
	V	V	
HL:	C V V	C V	maximal expansion
	C V V	V	
	V V	C V	
	V V	V	

The UT as illustrated in (10) is minimally bimoraic and maximally bisyllabic; an additional restriction is that in case it combines two syllables of different weight it must place the L(ight) syllable in second position.

The root forms with an 'extra consonant' such as (6d,e,f) and (6i,j) above do not 'fit' in the trochaic template as sketched in (10). This is not at all surprising, because historically the extra consonant developed out of consonant-suffixes (Jonker 1906, Blust 1993) for which some synchronic evidence can still be found (Klamer, in prep.). Hence, to state the *synchronic* root structure of Kambera we have no choice but to appeal to the concept of an UT *plus* an extra light syllable, a so-called "FootPlus", to account for the root forms with an additional consonant. This move is precedented by template analyses proposed for Arabic Finite Verbs and Akkadian verb stems, both discussed in Kager (1994).

We believe that our appeal to the UT provides us with an elegant and, we think, insightful characterization of the possible and impossible Kambera roots. It shows that prosodic categories are relevant to morphological matters — morpheme structure conditions in this case.

In Kager (1995) it is argued that also in a number of Australian languages roots can be characterized in terms of foot structure. Kager analyses the prosodic template pools in terms of the Prosodic Template Theory that was proposed in Kager (1994). In this theory there is no UT prosodic template. In the next section we will therefore examine the relevant Kambera data in the context of Kager's Prosodic Template Theory.

5. Kager's Prosodic Template Theory

The analysis that we have presented so far assumes that the UT is a prosodic category, i.e. a prime of the theory. The UT was such a basic unit in the so-called 'standard theory' (cf. Vergnaud & Halle 1978, Hayes 1981, Halle & Vergnaud 1987). However, Hayes (1986, 1995), as well as McCarthy & Prince (1986, 1990) have argued against the UT and in favor of the Moraic Trochee (MT). Kager (1993) adopts the latter theory, extending it to iambic stress systems as well. Thus, he proposes a theory that recognizes only the bimoraic foot as a basic prosodic category. In the next section we discuss the stress evidence that bears on the elimination of the uneven feet. The difference between the old ('standard') and the new theory as far as uneven feet are concerned is shown in (11) (heads are capitalized):

(11)	**Old ('standard')**	**New**
a.	Uneven Trochee	Moraic Trochee
	H l	——
	H	H
	L l	L l
b.	Uneven Iamb	Moraic Iamb
	l H	——
	H	H
	l L	l L

However, the literature on the prosodic shapes of morphological templates has revealed many cases where a template appears to be bigger than bimoraic. Therefore, McCarthy & Prince (1990) introduce the notion 'loose minimal word', which is a foot plus an extra light syllable. Kager (1994) then examines a wide range of cases where prosodic templates exceeding the size of basic prosodic categories have been proposed, and designs a parametric system that generates a set of *complex templates*. Since Kager (unlike McCarthy & Prince) does not recognize the uneven iamb he must appeal to such complex templates to deal with languages that have template pools including LH in addition to HL templates.

In (12) we give a slightly adapted picture of Kager's parametric system:

(12) **Parameters for Complex Prosodic Templates**

A complex template consist of a head and a dependent basic prosodic category

a. Type of Dependent:	light syllable/foot
b. Side of Head:	left/right/unspecified
c. Type of Head:	heavy syllable/foot
d. Total Size:	minimally/maximally/ precisely/unspecified

If (12a) is fixed on the value 'light syllable' we get the *loose minimal word* type. The other value produces what Kager calls *compound templates*, combinations of two feet which stand in a head-dependent relation. In this case, as well as in case we fix the value 'foot' in (12c), the *type* of foot must be specified as well (i.e. trochee or iamb). (12d) specifies the limits on the total number of syllables the templates contained in a pool.

Let us see whether we could characterize the Kambera root template pool homogeneously without recognizing the UT as a basic foot type. We can deal with the Kambera roots if we assume the following parameter settings:

(13) **Kambera roots {HL, H, LL}**

a. Type of Dependent:	light syllable
b. Side of Head:	left
c. Type of Head:	foot (moraic trochee)
d. Total Size:	precisely two syllables

Parameter (13d) is crucial to exclude a sequence of three light syllables from the template pool:

(14) a. [(m m) (m)] e.g. * *lekina*

b. H
LL
H L
LL L (excluded by (13d))

The template pool in (14) does not acknowledge the 'extra consonant' of some Kambera roots (cf. above), so this part of Kambera roots must either be 'ignored' or it must be allowed that a further dependent light

syllable may be included in the root.

Although it seems obvious that a characterization of the root structure of Kambera that appeals to the UT is more straightforward than one that excludes the use of this foot type, the theoretical status of the UT can be supported more generally by looking at other instances of templatic constraints on root structure. We will argue that the recognition of uneven feet as basic prosodic categories even results in a simpler theory of templates. To this end we examine the list of cases of complex templates of the loose minimal word type that are given in Kager (1994). We have added the Kambera root template pool to Kager's list in (15):

(15)

Morph. cat.	Pool	Head Type	Head Side	Total Size
Chugach PV	{H, LH}	H	R	—
Yawelmani V	{H, LH}	H	R	—
S. Miwok PV	{H, LH, HL}	H	—	—
Arabic TV	{LH, HL}	H	—	=2
Kikuyu DR	{LL, HL}	F	L	=2
Arabic FV	{LL, HL}	F	L	=2
English NN	{H, LL, HL}	F	L	≤2
Kambera R	{H, LL, HL}	F	L	≤2
Arabic BP	{H, LL, LH}	F	R	≤2
Akkadian V	{LL, LH, HL}	F	—	=2
Axininca MR	{H,LL,LH,HL,LLL}	F	—	—

The abbreviations PV, V, etc. refer to morphological categories or operations in the language in question. We refer to Kager (1994) for further references on all these cases.

In the alternative that we propose, templates can only be characterized as either iambic or trochaic feet. In addition, we propose to limit the expansions of these foot types by excluding the less optimal ones. We then claim that the instantiations in (16) are less than optimal expansions of the iamb and the trochee, respectively:

(16) Iamb : H, l L
Trochee : H, L l

A sequence of two light syllables is less optimal because the head constituent is not more complex than the dependent, whereas a single heavy syllable suffers from not having a dependent with reference to which it is more complex. In short, we claim that bimoraic instantiations are less optimal because they fail to show a foot level manifestation of the head — dependent asymmetry, and we would like to claim that such an asymmetry is a desirable property of optimal metrical constituents. Given this, it is natural to expect that individual systems disallow less optimal expansions. This is represented in (17):

(17)

Morph. cat.	Pool	ia/tr	H	LL
Chugach PV	{H, LH}	iamb	y	
Yawelmani V	{H, LH}	iamb	y	
S. Miwok PV	{H, LH, HL}		y	
Arabic TV	{LH, HL}			
Kikuyu DR	{LL, HL}	trochee		y
Arabic FV	{LL, HL}	trochee		y
English NN	{H, LL, HL}	trochee	y	y
Kambera R	{H, LL, HL}	trochee	y	y
Arabic BP	{H, LL, LH}	iamb	y	y
Akkadian V	{LL, LH, HL}			y
Axininca MR	{H, LL, LH, HL, LLL}		y	y

If no value is specified in the ia(mb)/tr(ochee) column, we intend to say that both options apply for that particular language. A 'y' ('yes') in the other two columns means that the less optimal expansion is de facto allowed.

We believe that the parameters proposed here make intuitive sense and also that our approach goes a long way in dispensing with the rather loose prosodic category of 'complex templates'. This implies that the relevance of prosodic templates for the theory of prosodic categories is reinforced, because in our approach the number of cases where templates are allowed to be only indirectly related to basic prosodic categories are severely limited.

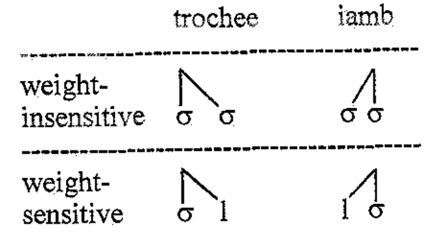
Our goal in this article, however, is not to argue in favor of the superiority of (17) over (15). Here, we merely wish to give substance to the claim that from the view point of templatic morphology there is no reason whatsoever to be suspicious of uneven foot types. In fact, the empirical evidence might very well point in the opposite direction.

6. Uneven and even feet

6.1 Views on the foot inventory

In early versions of metrical theory two parameters are proposed for foot form: headedness (trochee/iamb) and weight sensitivity (Y/N). With these two parameters define four foot types were defined:

(18)



Weight-sensitive feet allow *uneven* expansions, i.e. the grouping of a light and heavy syllable.

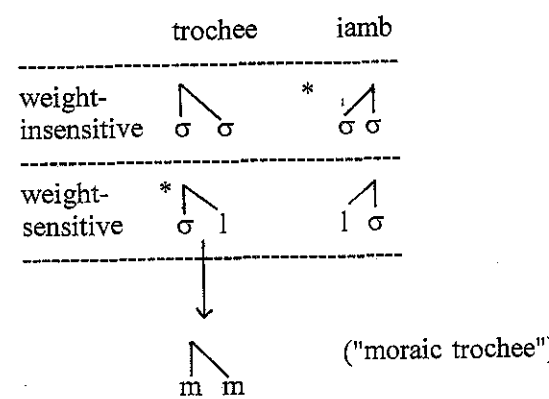
Combined with the parameter of Direction (LR/RL) and Word Headedness (LH/RH), the theory predicts 16 possible systems. Although Hayes (1980) sets out to show that all the 'cells' of the metrical theory can be 'filled', Hayes (1985, 1987, 1995) concludes that some serious 'data gaps' remain:

(19) **Data gaps**

a. Weight-insensitive iamb: rare in both LR and RL direction
b. Weight-sensitive trochee: absent in LR direction

He proposes to change (18) as in (20); a similar foot inventory was independently proposed in Prince & McCarthy (1986, 1990):

(20)



Thus, the weight-insensitive iamb is completely removed from the inventory, whereas the weight-sensitive left-headed trochee is replaced by the so called moraic trochee. The latter differs from the former in excluding the uneven combination hl (heavy syllable followed by a light syllable) to be a foot.

In addition, Hayes proposes to put severe restrictions on the occurrence of non-branching feet, arguing that such feet should be either banned or avoided in weight-insensitive systems, whereas in weight-sensitive systems only heavy syllable should be allowed to form a non-branching foot. This move assumes that single syllables can remain unparsed; cf. Kenstowicz (1994) for a discussion of this issue.

Van der Hulst (forthc. a, b, c) contains detailed discussions of the differences between the old and the new foot typology. In this section, we will confine ourselves to a brief (re)examination of the difference between the 'old' weight-sensitive, uneven trochee and the 'new' moraic trochee.

First, we note that the descriptive capacity of the uneven trochee and the even trochee are the same in right-to-left application, if we ignore differences in bracketing. This is shown in (21). However, in LR-mode a systematic difference comes out, as in (22):

(21) **Right-to-left direction (RL)**

a. Uneven trochee

```
     x   x      x    x        x
... (h) (l  l) (h  l) (l    l) (h l) ]
```

b. Moraic trochee

```
     x   x      x    x        x
... (h) (l  l) (h) l (l    l) (h)  l ]
```

(22) **Left-to-right direction (LR)**

a. Uneven trochee

```
      x          x      x    x
[  (h  l) l   (h l)  (l l) (h l) ...
```

b. Moraic trochee

```
     x      x     x   x       x
[  (h)   (l  l) (h) (l l) l  (h) l ...
```

According to Hayes (1987, 1995) no LR systems using the uneven trochee have been attested, whereas systems that have the pattern with the even trochee occur. The documented cases involve a number of Arabic dialects (p. 67-71: Cairene Arabic and p. 125-130: Palestinian Arabic among others) and Cahuilla (p. 132-140). These cases suggest that where the uneven trochee and the moraic trochee differ, the moraic trochee wins on empirical grounds. Crucially, these systems assign an accent to the first of a sequence of two post-heavy light syllables:

(23)

```
    (x) (x  .)
...  h   l  l ...
```


Here, we will accept the evidence in favor of the moraic trochee, but we would like to suggest that it is too early to conclude from this that the uneven trochee should be dispensed with (cf. Kenstowicz 1994), because we believe that the basis for postulating the even trochee *to the expense* of the uneven trochee is too narrow.

6.2 Witnesses for the defense: MadiMadi and Bani-Hassan Bedouin

In this section we will consider the accent system of MadiMadi, an Australian language of New South Wales. The data are from Hercus (1986). Goedemans (1993) discusses this case and points out that we need an uneven trochee. The basic facts are as follows:

(24) MadiMadi: peninitial in case of [σh, otherwise initial[4]:

```
  x          x          x        x
[ h l      [ l h      [ h h    [ l  l
```

Of special interest for us are words in which an initial heavy syllable is followed by two light syllables. The point we wish to focus on is the location of secondary accent. Under a moraic trochee analysis we expect a secondary accent on the posttonic syllable in case the initial syllable is heavy, as in (25a). However, the pattern generated by the uneven trochee, shown in (25b) is the correct one:

(25) a. Even moraic trochee

```
(x.)  (x   .)   .    (x.)   .   (x.)
bun   di   la   Θa   wai    wu  laŋ
```

b. Uneven moraic trochee

```
(x.   .) (x    .)   (x.    .)  (x.)
bun   di  la   Θa   wai    wu  laŋ
```

Despite the fact that MadiMadi presents some extra complications (cf. above), it seems that the rhythmic structure of this language does not show the pattern in (23).

Hayes (1995: 366) discusses the system of Bani-Hassan Bedouin arguing that it seems to point to an uneven trochee. Again the diagnostic

[4] An extra complication is that a sequence of 'light-light' syllables in which the second light syllable starts with a coronal or is onsetless 'acts as if' it is heavy, hence accent falls on the second syllable in these cases. In all cases where the second syllable has accent, a secondary accent is reported on the first syllable.

is that a light syllable following a heavy syllable is not accented. Hayes suggests as an alternative analysis to the uneven trochee the so-called *weak local parsing*, a parsing mode proposed for dealing with ternary systems, that would involve skipping a light syllable each time a foot has been assigned (i.e. [(h) l (ll)....). Crucial strings to test this alternative are words consisting of a sequence of five light syllables; however, the language lacks such words.

The weak local parsing alternative can presumably also be considered for MadiMadi. However, in the absence of independent evidence for weak local parsing, the uneven trochaic analysis seems to be a more straightforward alternative.

6.3. Further arguments

Besides the stress systems of Cahuilla and a number of Arabic systems, there is one type of evidence in favour of the even trochee that we have not considered so far. It has been argued that some processes of vowel shortening can be understood as attempts to 'save' trapped syllables by incorporating them into a trochaic foot that can accommodate no more than two moras:

(26)	(x)	.		(x	.)
	V:	V	=>	V	V

We would have to explain the context for this 'trochaic shortening' by relying on the notion of moraic trochee (cf. Mester 1993, who analyzes Latin trochaic shortenening with a moraic trochee). Trochaic shortening is also attested in Fijian (cf. Hayes 1995: 142-149). The argument would be that if we used the notion of uneven trochee for these languages, trochaic shortening would be an unexpected process since it would lack a rationale, as shown in (27):

(27)	(x	.)		(x	.)
	V:	V	=>	V	V

There are two arguments against this line of reasoning. Firstly, the loss of vowel length is not necessarily a foot-based phenomenon. As is well-known, Latin has eventually lost all its vowel length distinctions — not only in contexts where it lead to the rescue of trapped syllables but also to cases were it did *not*. Secondly, also under an uneven trochee analysis there would be a rationale for trochaic shortening: The loss of length is likely to occur first in the position where the occurrence of length can — erroneously — be seen as a manifestation of headedness, i.e. in the head of an uneven trochee.

But even if we do accept that certain instances of shortening support the use of the even trochee, this cannot be taken to imply that there is no room for the uneven trochee. As a matter of fact, processes in other languages than Latin and Fijian involve *lengthening* of vowels that occur in the head position of trchaic feet: Open syllable lengthening in many of the Germanic languages seems to fall into this category. Piggott (1992) refers to this process as 'trochaic lengthening'. It seems difficult to reconcile such processes with a exclusively bimoraic view on feet, unless one considers this kind of vowel lengthening to be simply phonetic (Polgárdi 1995).

7. Conclusions and further research

In this article we have offered a prosodic analysis of the phonotactic structure of roots in Kambera. In particular, we have drawn attention to the fact that the minimal and maximal structure of Kambera roots can be characterized prosodically as an uneven trochee (UT) to which an extra consonant can be added. Having presented this analysis we examined the merits of an alternative analysis that favours the moraic trochee (MT) as a prosodic primitive at the dispense of the UT. We concluded that the rejection of the UT is not supported by the templatic analysis of Kambera and many other instances of templatic morphology.

This lead us to re-examining the evidence against the UT from stress systems. What we found is that there are stress systems and stress-related processes that support the UT. Although further research is required, we feel that, given this evidence, there is sufficient reasons for a rehabilitation of the Uneven Trochaic Foot a prosodic primitive.

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