

Some remarks on Tongan stress
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Stress in Tongan falls on the penultimate vowel mora [i.e. only vowels count as moras: actually, maybe all syllables are either (C)V or (C)VV?].

If the final contains a long vowel, it receives the main stress:

 /
kotoko: 'to crackle'
 /
kuma: 'rat'

If the final syllable contains a short vowel, the penultimate mora gets stressed, as in the following examples:

 /
fale 'house'
 /
faleni 'houses'

Elsewhere in the word, all syllables with long vowels receive secondary stress, according to Churchward.

...Examples... (grammar not at hand)

An interesting phenomenon occurs in the special situation where the final is light whereas the penult is occupied by a long- vowelled syllable:

ma:ma 'world'

In this case, the penult gets stressed, in the following form: It is 'split' or 'broken' into two monomoraic syllables, the second of which becomes prominent:

 /
ma'ama 'world'

Churchward remarks that this behavior of mainstressed penults with long vowels is distinctly different from all other long- vowelled syllables in the word (which carry secondary stress): The latter are never split into two syllables.

Our tentative analysis here might go as follows: The foot is the trochee [mm], but -- different from Japanese and Greek -- neither the monomoraic 'stressless' [m] nor the 'unbalanced' [mm m] are possible. The complete system is the following (we will comment on the details below):

1. Foot: [mm]
2. Leeway: none (*[m], *[mm m])
3. Edge Foot: Construct F in final position.
4. QS: Assign F to heavy syllables
5. ER(F)

Such a bare-bones trochaic system is obviously asking for trouble.

When the word ends with CVCV or CVV, everything proceeds smoothly:

ko.to.[koo] 'to crackle'
 F

fa.[le.ni] 'houses'
 F

But in all cases with light finals and heavy penults, the foot [mm] cannot be imposed without violating syllable integrity. This is so because the ancillary foot types -- the stressless [m] and the unbalanced [mm m] -- are prohibited. The result is the following:

ma[a.ma] 'world'
 F

We can view this as a structure-changing imposition of the foot, violating syllable integrity. But note that ultimately syllable integrity remains victorious in that syllable structure yields to foot structure, the long vowel splits into two syllables:

ma.[a.ma] 'world'
 F

It would thus be wrong to view this as an instance of mora- structure being independent of syllable structure, it is rather an instance of syllabic adjustment to the stringent requirements of a strict edge foot of the form [mm].

To complete our analysis, we assume that the secondary stresses on all other long-vowelled syllables in the word are derived by a subsequent footing rule that impose the same foot of type [mm] on all heavy syllables (this is essentially "QS" in terms of Prince (1983)). To derive main stress, the final foot in the word is distinguished as the most prominent.

To sum up: In this analysis, the interesting contrast observed in Tonga: splitting of long-vowelled stressed penults vs. nonsplitting of all other long-vowelled syllables (either in final position, with main stress, or earlier in the word, with secondary stress), follows from the following constellation of parameter settings.

1. Foot: [mm]
2. Leeway: none (*[m], *[mm m])
3. Edge Foot: Construct F in final position.
4. QS: Assign F to heavy syllables
5. ER(F)

CONCLUDING REMARK: Poser's analysis is built on the assumption that (at the point of foot construction) there are no long-vowelled syllables; each vowel mora constitutes a separate syllable. This analysis derives ma.[a.ma] directly,

without any prior violation of syllable integrity. Instead, the analysis has a rule of syllable fusion merging the two moras (= syllables, in this analysis) of a long vowel into a single heavy syllable provided the second mora does not bear stress. The disadvantage of this analysis lies in the fact that it cannot explain why ALL long vowels attract stress: If a long vowel is prosodically nothing but a sequence of two light syllables, why should it be only THESE sequences of two lights that attract stress?

Sources: (Churchward, Poser)