On the variable parsing of long vowels

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We propose that in some languages a syllable with a long vowel can be parsed as one heavy syllable or as two light syllables, depending on the phonological environment. In the latter case one 'phonetic' syllable maps into two 'phonological' syllables, showing that phonological representations can diverge quite a bit from what seems to be physically obvious. This 'abstract' approach solves three outstanding problems: 1) Accent Assignment in Tokyo Japanese, 2) Accent retraction in Ancient Greek, 3) A curious case of Tonal Accents in Franconian that has recently come under the attention of generative linguists (Köhnlein 2011).

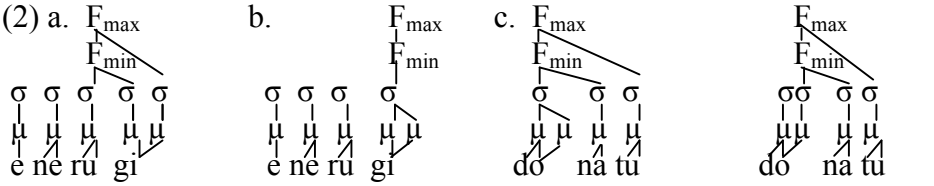
Tokyo Japanese

Words that are borrowed into the Tokyo dialect receive accent on the antepenult mora, unless that mora is the second half of a heavy syllable, in which case the accent is assigned to the fourth mora from the right (McCawley 1968, Kubozono 2006).

(1) ku.ri.sú.ma.su 'Christmas'
e.ne.rú.gii 'energy'
dóo.na.tu 'donut'

Adopting recursive feet, as in Martínez-Paricio and Kager (2014), we can say that a 'layered' trochee is assigned at the right edge. Formally it means that $Foot_{min}$, the lower foot level, gravitates as far to the left as is possible, provided that $Foot_{max}$ is aligned to the right edge. We furthermore propose that W-to-S (Weight-to-Stress) cannot be violated in Tokyo; that is, a heavy syllable cannot occupy a weak position in the foot. We can now account for the Tokyo system, assuming that long vowels are variably parsed; they are parsed in such a way that the accented mora is placed as far to the left as is possible. The first form in (1) is trivial; the antepenult syllable (= mora) receives the accent. In the second form the (final) long vowel is parsed as *two light syllables*, because that allows the accent to be placed on the penult syllable (2a); if the long vowel would be parsed as one syllable, then that syllable would be heavy, and high-ranking W-t-S does not allow a heavy syllable to be skipped by the accent (2b). On the other hand, in the third form, exactly the opposite happens. There *the long vowel is parsed as one* (heavy) *syllable*, because that allows the accent to be located further to the left. This does not violate W-to-S, because the heavy syllable is located in the foot's head (2c).

(2) a. b. c.



Ancient Greek

Here, a trochee is assigned at the right edge. If the final syllable has a long vowel, it absorbs the trochee entirely; if the penult has a long vowel, then the trochee dominates not only that long vowel, but also the final (light) syllable, in order to be properly aligned to the word edge. This is shown by forms like *anthroo^{H}(po^{L}on)* 'persons, gen. pl.' and *a^{H}n(thro^{L}opos)* 'person, nom. sg.' We mark the domain of the foot with brackets. In Ancient Greek a HL melody is assigned at the left foot edge, with H being assigned to the vowel immediately to the left of the foot edge and L to the first vowel to the right of the foot edge (Sauzet 1989). In Ancient Greek W-to-S is high ranked. Therefore, if the final syllable contains a long vowel, it will be accented, irrespective of whether it is parsed as two light syllables or as one heavy syllable. If, on the other hand, a long vowel is located in the prefinal syllable and the final syllable is light,

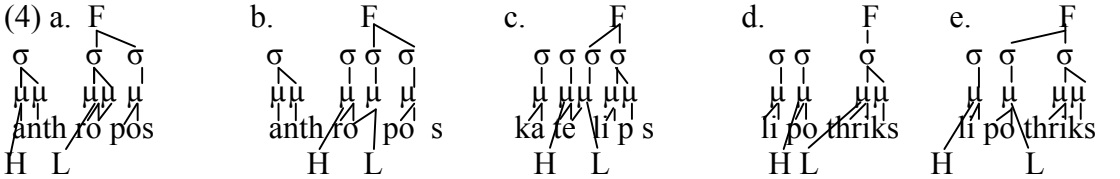
then the long vowel is parsed as one heavy syllable, because then the trochee can be made bigger, while still being aligned to the right word edge (4a).

Ancient Greek has an interesting accent retraction rule that so far has not been understood. If the final syllable ends in two consonants, then the foot expands one mora to the left, but only if that mora is the second half of a long vowel. This is shown in (3).

(3) li. po^{H}. (thr^{L}iks) 'balding'
ka. te^{H}(e^{L}. lips) 'terrace'

We propose that, in principle, in this language a foot must be binary at the level of its daughters (the syllable level). A syllable with two consonants is heavy, so, with W-to-S being high ranked, it must occupy a foot's head position. However, that implies that the foot is monosyllabic. Now, we propose that in order to satisfy the bisyllabicity requirement, the dominance relations are switched from trochaic to iambic. Furthermore, in function of this requirement, a *long vowel is parsed as two (light) syllables*. It cannot be parsed as one heavy syllable, because then the dominance switch would create a violation of W-to-S. This explains why we get an iamb in *kateelips* in (3) and (4c). We also propose that the dominance switch is blocked if it would create an iamb in which the dependent syllable has an onset, as in (4d). The blocking of the dominance switch is a case where onset adds to weight (Topintzi 2010); in Ancient Greek it means that a syllable with an onset cannot occupy a weak position in an iamb. Obviously, this constraint must be higher ranked than the bisyllabicity requirement. The crucial representations we have discussed are given in (4).

(4) a. b. c. d. e.



Franconian

Franconian dialects have 'tonal accents' the distribution of which is largely determined by vowel quality; long high vowels have the so called Accent2, whereas mid and low vowels have Accent1 (Köhnlein 2011). Examples are given in (5).

(5) li:^{2}tər 'litre' pre:^{1}stər 'priest'
bu:^{2}tə 'outside' wɔ:^{1}pə 'weapon'

The Franconian accents have traditionally been analyzed in terms of lexical tones, as in Gussenhoven (2000). This is wrong, as it is well known that in 'real' tone languages the distribution of lexical tone is never determined by vowel quality (Fromkin 1968).

The central characteristic of the Franconian 'tonal accents' is that in Accent1 two tones of the intonational melody are assigned to one and the same 'phonetic' syllable, whereas in Accent2 only one tone of the intonational melody is assigned to a phonetic syllable. We propose that high long vowels are parsed into one phonological syllable, whereas mid and low long vowels are parsed into two phonological syllables. This, we claim, is a type of 'vowel reduction effect': a highly sonorous vowel does not like to be parsed in a weak (dependent) mora. It must therefore be parsed as a head mora, creating an independent syllable. This explains the anchoring of the intonational melody; a weak mora (the second half of a long, high vowel), does not accept a separate tone, so that the tone must be assigned to the next syllable. On the other hand, a strong (head) mora (the second half of a long mid or low vowel) does accept a separate tone. We show this in (6), with the declarative melody HL.

(6)