Antepenultimate mora effects – typology and representation
René Kager & Violeta Martínez-Paricio

In many accentual systems, a high tone is placed on (the syllable that contains) the antepenultimate (=APU) mora. Three well-known cases are Attic Greek recessive accent (Steriade 1988, Golston 1990, Kiparsky 2003), Tokyo Japanese loanword accentuation (McCawley 1978, Kubozono 2006), and Gilbertese high pitch placement (Blevins & Harrison 1999).

(1) a. Attic Greek   b. Tokyo Japanese

...LLL	phi.ló.so.phos	'lover of wisdom' (nom.sg.)		...LLL	su.tó.re.su	'stress'
...HL	sóo.ma	'body' (nom.sg.)		...HL	páa.ku	'park'
...HLH	soo.má.toon	'bodies' (gen.pl.)		...HLH	baa.bé.kyuu	'barbecue'
...HLL	soó.ma.ta	'bodies' (nom.pl.)		...HLL	bóo.na.su	'bonus'
...LHH	anth.roó.poon	'persons' (gen.pl.)		...LHH	su.níi.kaa	'sneaker'
...LHL	ánth.roo.pos	'person' (nom.sg.)		...LHL	gu.rúu.pu	'group'
...HHL	deé.mee.ter	'Demeter' (nom.sg)		...HHL	noi.róo.ze	'Neurose'

c. Gilbertese

...HLL	ŋkeé.ma.tuú.na.ko	'when he fell asleep'
...LHH	máa.ki.bá.na.ko.ní.ka.kaá.ea	'and they flew off in search of him'
...LLH	á.i.ka.kám.βʷo.ŋó.raa	'those of you who are listening'

Similar APU mora high tone placement rules occur in Bantu languages, such as Kinga (Schadeberg 1973, Hyman 2006), Safwa (Voorhoeve 1973, Odden 1988), and Malila (Kutsch Lojenga 2007).

(2) a. Safwa   b. Kinga

...LLL	inhayí-bala	'I will not go'		ʊkóvala	'to count'
...HL	ama-páanga	'swords'		ʊkʊgéenda	'to go'
...HLL	uha-jeéndile	'you walked'		ʊkʊhwaánana	'to become similar'

In its purest form (e.g. Gilbertese), APU mora accentuation shows two properties: (a) *mora-accenting*: the high tone is located on either the first or second mora of a bimoraic syllable, whichever happens to be in APU position; (b) *mora-counting*: it totally disrespects syllable boundaries. These two properties are logically independent, yet tend to cluster cross-linguistically. For example, the properties co-occur in Gilbertese, where the syllable seems to play no role at all in APU high tone placement. The reverse situation (syllable-accenting and -counting) is found in many quantity-sensitive APU stress languages (e.g. Latin, many varieties of Arabic), as well as in Tokyo Japanese loanword accentuation (younger speakers; Shinohara 2000, Kubozono 2006). Yet interestingly, the two properties can be dissociated in accentual systems in two ways, suggesting that there is no absolute boundary between mora-based and syllable-based languages.

For example, mora-counting and syllable-based accentuation co-occur in Tokyo Japanese loanword accentuation (older speakers; McCawley 1978, Kubozono 2006). Tokyo Japanese is mora-counting, as shown by the contrast between ...ˈLLL# (/su.tó.re.su/ 'stress') vs. ...LˈLH# (/baa.bé.kyuu/ 'barbecue'). In case an APU mora is the second mora of a bimoraic syllable, high tone is retracted to the pre-APU mora, e.g. ˈHLL# /bóo.na.su/ 'bonus'; LˈHH# /su.níi.kaa/ 'sneaker'. Interestingly, at least one stress language shows a similar pattern: Dihovo Macedonian (Groen 1977, Crosswhite 2001).

The mirror image case is mora-accenting yet the counting process respects syllable boundaries to some extent. This occurs in Attic Greek, where the accent is freely located on the second mora of a bimoraic vowel in APU position (/soó.ma.ta/ 'bodies, nom.pl.'; /anth.roó.poon/ 'persons, gen.pl.'), yet accent is retracted to the pre-APU mora in forms ending in LHL# (/ánth.roo.pos/ 'person, nom.sg.') or HHL#; /deé.mee.ter/ 'Demeter, nom.sg'.). In a foot-based analysis (Sauzet 1989; Golston 1990), high tone is associated immediately to the left of a bimoraic foot [LL] or [H], targeting the APU mora (...L[LL]#, ...H[LL]#, ...LL[H]#,...H[H]#); yet a final sequence ...HL# cannot be parsed into a bimoraic trochee, and consequently, the H tone appears one mora further to the left (...L[H]L#, ...H[H]L#). (There is a problem with Golston's analysis, however, which we will discuss.)

In sum, two factors seem to govern the typology of APU mora systems: (i) Heavy syllables may refuse accentual marking of their second ('weak') mora. (E.g. high-tone-to-head-mora attraction); (ii) Heavy syllables may refuse being split between feet (Syllable Integrity).

A typological continuum emerges ranging from (a) purely mora-based (Gilbertese) to (b) mora-based but syllable-integrity-respecting (Ancient Greek) to (c) mora-counting but syllable-accenting (Tokyo Japanese, Dohovo Macedonian) to (d) syllable-integrity-respecting and syllable-stressing (Latin).

	Respects syllable-integrity	Disrespects syllable-integrity
Allows accent on the second mora of a bimoraic syllable	Attic Greek recessive accent	Gilbertese high pitch
Disallows accent on the second mora of a bimoraic syllable	Latin stress Tokyo Japanese (innovative)	Tokyo Japanese (conservative) Dihovo Macedonian

In this talk we will explore the moraic-to-syllabic continuum in tone languages, 'accentual' and 'non-accentual', as well as in stress languages. Interestingly, similar moraic effects emerge at the left edge of prosodic words. For example, high tone placement in Winnebago (Miner 1979, Hale & White Eagle 1980), Aguaruna (Payne 1990, Alderete 2001, Overall 2006) and Llogoori (Leung 1986, Goldsmith 1992) is bounded by a trimoraic domain at the left edge of the word.

Our analysis of APU and post-peninitial mora effects will draw on the Internally Layered (IL) foot, a minimally recursive prosodic constituent proposed by Martínez-Paricio & Kager (2012, in progress), originally proposed for (binary and ternary) stress languages, which unifies the phenomena to a large extent, and which also allows for an insightful typology. The representational importance of our study resides in the prosodic representation of syllable integrity violations: we will show that under duress of foot well-formedness constraints, metrical feet can immediately dominate moras.