Vowel alternations in Matu'uwal Atayal

Matu'uwal (Mayrinax) is an Atayal dialect spoken in Miaoli county, Taiwan. In this talk, I will present the different synchronic and diachronic vowel alternations in Matu'uwal, as well as their interactions, using both rule-based (Chomsky and Halle 1968) and constraint-based phonology (Prince and Smolensky 1993). The interactions between the different vowel alternating processes are complex, and have not been previously discussed.

Matu'uwal has two main synchronic vowel changes: rhythmic vowel weakening (Huang 2017), and hiatus resolution. Rhythmic vowel weakening applies to the leftmost vowel in all feet except the rightmost (head) foot, changing it to a schwa or fully deleting it in the environment VC_CV. Hiatus resolution coalesces the hiatuses /a.a/, /u.u/, and /i.i/ into single vowels /a/, /u/, and /i/ outside the head foot: e.g. /ka.al/ + -un > *kalun* 'to speak (PV)'. These vowel changes can interact with each other in ways that are opaque when looking at the surface form, as shown in Table 1, where vowel weakening occurs before hiatus resolution in a counterbleeding relationship. (Stress in Matu'uwal is always word-final.)

Table 1: The derivations of *bəhagun* 'to chase (PV)' and *qaqpatan* 'spear'.

UR	/ba.ha.ag/ + -un	Ca- + /qa.pa.at/ + -an
Vowel weakening	(bə.ha)(a.gun)	(qaq.pa)(a.tan)
Hiatus resolution	bə(ha.gun)	qaq(pa.tan)

The third type of vowel alternations is diachronic, and is related to reflexes of historical *ə in the language. It surfaces as /u/ in the final syllable (Li 1981), but becomes either ∅ or /a/ in other positions, as shown in Table 2.

Table 2: Behaviour of historical *ə in different positions.

UR	/tahək/	/kələh/
-um- infixation	tu.ma.huk	kum.luh
-un suffixation	tah.kun	kal.hun

Matu'uwal vowel alternations present a conundrum, as they exhibit both counterbleeding opacity and also surface-oriented behaviour limitations. Rule-based phonology can account for opacity, but not surface-oriented behaviour. On the other hand, constraint-based phonology is helpful with surface-oriented phenomena, but may struggle with opacity. I will argue for a combined approach to account for the patterns seen in Matu'uwal vowels.

References:

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