

Tone splits from vowel height in the Austronesian language of Raja Ampat

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Tone is very rare in Austronesian languages: of the 1,200 or so languages in the family, only around two dozen are described as tonal (Blust 2013: 657–659; Himmelmann & Kaufmann 2020: 371–372). Austronesian languages are thus rarely included in typological overviews of and theoretical discussions about tone. In this contribution to the workshop, I seek to boost the mainstream visibility of the diachrony of tone in the Austronesian family, by discussing a cross-linguistically rare sound change that has occurred in multiple Austronesian languages spoken in the Raja Ampat archipelago: splits in tone systems conditioned by vowel height.

Raja Ampat lies just off the northwest tip of the island of New Guinea. It is home to six Austronesian languages, all of which belong to the understudied South Halmahera-West New Guinea subbranch of the family. All six languages are tonal. The tone systems are typologically diverse: from Ambel, which has a single underlying tone contrasting with toneless syllables in a system that is culminative but not obligatory (Arnold 2018a); through languages which distinguish two (Ma'ya, Salawati, Biga) or three (Batta) underlying tones on word final syllables (van der Leeden 1993; Remijsen 2001; Arnold 2021); to Matbat, with six tones that can occur anywhere in the word (Remijsen 2001, 2007).

Tone splits conditioned by vowel height have occurred at least twice in Raja Ampat, in the ancestors of Ma'ya and Ambel. In an ancestor of Ma'ya, reconstructed *High tone split: it remained High on syllables with close vowel nuclei, and merged with Rise elsewhere (Arnold 2018b). In proto-Ambel, toneless syllables remained toneless if the vowel was close, otherwise merged with High tone (Arnold 2020). Preliminary investigations suggest that similar splits may have occurred several more times in the Raja Ampat languages.

In this talk, I will exemplify the Ma'ya and Ambel splits, and touch on two points of theoretical significance. First, only a handful of other tone changes conditioned by vowel quality have so far been attested worldwide (Kingston 2011; Köhnlein & van Oostendorp 2017; Michaud & Sands 2020). The Ma'ya and Ambel splits thus contribute to the growing body of evidence demonstrating that, contrary to what some have claimed (e.g. Hombert 1977; Hombert et al. 1979), vowel height can and does condition diachronic tonal developments. Second, in all attested cases thus far, syllables with close vowel nuclei develop higher tones; the Ambel split, in which non-close vowel nuclei developed High tone, has not previously been attested.

I conclude this talk by discussing a phonetic mechanism that may explain the unusually frequent tone changes conditioned by vowel height in Raja Ampat: the phonologisation of differences in the intrinsic fundamental frequency (IF0) of vowels in these languages. IF0 is a near-universal phenomenon in which, all else being equal, close vowels are produced with a higher F0 than open vowels; cross-linguistically, the mean difference in IF0 between close and open vowels is 1.65 semitones (Whalen & Levitt 1995). Recent production data, however, suggests that IF0 differences in the Raja Ampat languages are much larger than average: in Salawati and Biga, the mean difference is as large as 2.8 semitones in some contexts (Arnold et al. submitted). As

well as describing the phonological environments that condition tone changes in these understudied languages, this talk will therefore also provide a potential articulatory explanation for these changes, thus deepening our theoretical understanding of tonal diachrony more generally.

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