

## Intonation is a better diagnostic for syllable structure than speaker judgments: evidence from Budai Rukai

**Introduction.** Unlike many other patterns in language, the chunking of the segmental string into syllables is relatively accessible to speakers. Syllable structure has been elicited in a number of ways that rely on this accessibility: participants may be asked to ‘clap’ while producing words, align words with musical melodies, or even be asked directly for syllabicity judgments if they are already aware of the syllable as a concept or are made aware through training. These speaker-internal approaches elicit judgments of a domain that is labeled the ‘syllable’ and assumed to be referenced elsewhere in the language’s phonology. This paper presents data from a recent study on prosodic/intonational structures in the endangered Formosan languages of Taiwan, challenging existing speaker judgment-based accounts of the syllable, and instead uses patterns in intonation as a diagnostic to find the definition of ‘syllable’ most meaningful elsewhere in the phonology.

**Budai Rukai.** Existing accounts of Budai Rukai (BR) [1,2] allow for syllables with multiple vocoids, including syllable types such as GV, (C)VG, and (C)VV, or CGVG in the case of loanword [ɲjaw] ‘cat’. (Where ‘G’ marks a glide and V a vowel.) Some vocoid sequences but not others are allowed tautosyllabically: e.g. monosyllable [v<sup>ai</sup>] ‘sun’ vs. disyllable [da<sup>a</sup>] ‘earth’ [1]. The current study revisits these forms in BR based on syllabicity judgment tasks as via acoustic analysis of the language’s intonational phonology, and finds a smaller maximal syllable of CV, shared with other nearby languages surveyed including Mantauran Rukai, Kanakanavu, and Saaroa.

**Intonational evidence for glides vs. vowels.** Many segments described as glides in the BR literature behave like full vowels in the intonational phonology. Notably, many of them bear pitch accents. Unlike other Formosan languages surveyed (incl. Kavalan/Bunun/Pazeh), CVVC sequences in BR surface with one of two F0 contours depending on if the pitch accent is anchored to the first or second V. Importantly, both V’s in CVVC sequences are tone-bearing units. For example, Figs.1-2 show pitch tracks of words transcribed *laymay* and *laymay=li* in the literature. In both figures, the pitch accent is aligned in a sequence described as [ay], however in *laymay* the pitch accent is realized late, on the supposed glide [y]. When the enclitic =*li* is added, stress is shifted one syllable rightward, appearing early within another supposed [ay] sequence. I reanalyze these words as [la.i.ma.i(.li)], where all vocoids are vowels, the maximal syllable is CV, and an explanation for two different F0 contours on stressed syllables is no longer required.

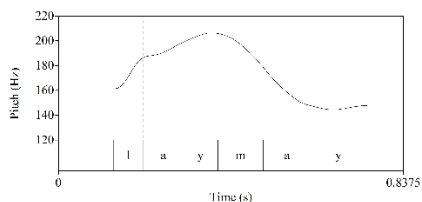


Fig.1 Pitch track of [laɪmai] ‘clothes’ in BR

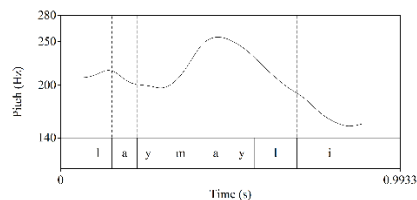


Fig.2 Pitch track of [laɪmaɪli] ‘my clothes’ in BR

**Speaker judgments and interference.** Existing analyses of BR having large syllables like CGVG may reflect that these judgments were elicited through the dominant language Chinese, which allows these syllable types (e.g. Mandarin [ʃwâŋ] ‘handsome’; [ɕjəw] ‘small’), and in which syllables are accessible to speakers via their association with graphemes and being the domain of lexical tone. In the current study, direct requests for syllable judgments were answered with variants: both [tai] and [ta.i] for ‘sweet potato’ from the same speaker. The described [ai] vs. [a.ə] split also reflects Chinese phonotactics. I conclude that CV is the maximal syllable in BR, and that larger syllable types are an artifact of the elicitation process.

**Selected references:** [1] Chen, C.-M. (2006). *A comparative study on Formosan phonology: Paiwan and Budai Rukai*. PhD dissertation, U. of Texas at Austin. [2] Huang, T.-C., & Lai, A.-Z. (2013). *A dictionary of Budai Rukai*. <http://e-dictionary.apc.gov.tw/dru/search.htm>.