

The prosody of Kadiwéu verbs

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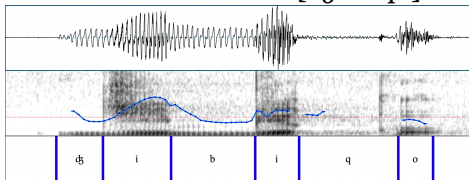
We report the results of fieldwork on the Kadiwéu verbal system (Guaikurúan, ~1,300 speakers, south-west Brazil), with focus on prosody. Main stress is lexical within an initial two-syllable window, with a strong preference for root-initial stress. Stress falls *before* heavy syllables within the window. Women of noble lineage augment root initial vowels, categorically in monomoraic roots and sporadically in longer roots.

The verb database: An existing SIL dictionary (Griffiths 2002) was used to create an electronic database of 921 verbal paradigms, of which a random sample of 535 verbs was chosen for recording. We recorded the pronunciation of a couple of speakers, a man and his noble wife in their fifties. For most verbs, only the 1SG and 2SG forms were recorded, since the rest of the paradigm is predictable from these two forms.

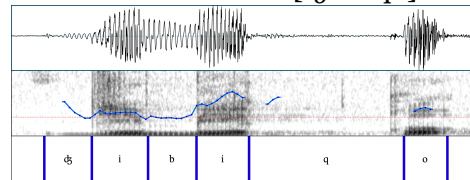
Primary stress: Content words in the language have a high tone pronounced on the first or second vowel, and following consonants are doubled in duration, e.g. long posttonic [b] in (1a) vs. short [b] in (1b); we interpret this as primary stress, limited to an initial two-syllable window. Voiceless consonants are always long (inherent geminates, Sandalo 1997b), as in 1a), and are even further lengthened posttonically (1b). The high tone is consistently realized late in the stressed syllable, particularly on long vowels.

In consonant-initial roots, stress falls unpredictably on the word-initial or root-initial vowel, as shown in the minimal pair in (1) with the 1SG prefix [ɖʒi-]. The stress difference is diachronically, and possibly also synchronically, due to segmental differences: a plain [b] in (1a) vs. stress-attracting laryngealized [b] in (1b). In consonant-initial verbs, the distribution of stress is approximately even: word-initial in 70 verbs (46%) and root-initial in 83 verbs (54%).

(1) a. Word-initial stress: [ʔɖʒi-biqo] ‘toast’



b. Root-initial stress: [ʔɖʒi-ʔbiqo] ‘think’



In vowel-initial roots, due to the reduction of the 1SG prefix [ɖʒi] to [ɖʒ], the root-initial and the word-initial vowels coincide, e.g. [ʔɖʒ-aqamagadi] ‘to leave alone’. Stress almost always falls on this initial vowel (332 of 340 verbs, 98%).

Weight sensitivity: Initial heavy syllables are almost always stressed, e.g. [ʔɖʒ-eemite-ta] ‘notice’ (17 of 18 verbs), but non-initial heavy syllables categorically require stress to immediately precede them, e.g. [ʔɖʒi-naago-tedio] ‘to reap’ (45 verbs). The same is true in #L'LH, e.g. [ʔɖʒi-bekeeqe] ‘insert into a hole’ (11 verbs) — cf. the admissibility of both #LLL and #L'LL in (1). Heavy syllables may not attract stress out of the initial two-syllable window, e.g. [ʔɖʒ-ikogoteetikogi] ‘bring from over there’, *#LL'LH (15 verbs).

Root minimality and other gender effects: Women from noble matrilineal lineage disallow monomoraic roots (Sandalo 1997a), and also prefer root-initial heavy syllables in polymoraic roots. Our corpus lists 15 monomoraic roots in male speech, 100% of which are augmented by women, as seen in (2). All of the monomoraic roots have initial stress in male speech, suggesting a ban on stressed word-final light syllables. Among polymoraic verbs, only 15% (64 out of 431) are augmented. Main stress invariably falls on the augmented syllable, creating a word-initial #L'H pattern that is never observed in male speech.

Note that the domain of augmentation does not include prefixes or suffixes (such as [-tineki] INESSIVE), making the pattern non-surface-apparent.

(2) Monomoraic roots (n=15) are all augmented:

Male: [ʤi-wi]	Female: [ʤi-'wii]	“to look, notice”
[ʤi-bo]	[ʤi-'boo]	“to have enough”
[ʤi-bo-tineki]	[ʤi-'boo-tineki]	“to fit inside”

Women also augment root-initial syllables, unpredictably, in 52 of 396 (13%) light-initial polymoraic verbs, as in (3). Stress again invariably falls on the augmented syllable. Mysteriously, augmentation also applies to 12 of 35 (34%) heavy-initial verbs, as in (4); our duration measurements suggest a long vowel followed by a short copy, rather than two long vowels. The position of the high tone is as expected, late in the initial long vowel.

(3) Augmentation of initial light syllables in polymoraic roots:

Male: [ʤi-baqe]	Female: [ʤi-'baáqe]	‘to use’
[ʤ-e'mátaqa]	[ʤ-e'émataqa]	‘to butcher’

(4) Augmentation of root-initial heavy syllables to three moras:

Male: [ʤi-naaliti]	Female: [ʤi-'naáaliti]	‘to laugh’
[ʤ-oóla]	[ʤ-oóola]	‘to cook’

The augmentation of root-initial syllables, and in particular monomoraic ones, is typologically unsurprising, but the hyper-augmentation of heavy syllables is mysterious. It is typologically surprising to find gender differences in such a non-surface-apparent area of the grammar.

Weighted constraint-based analysis: Two constraints are decisive in the language, NONFIN ($w = 15.1$), banning stress on final light syllables, and INITIALWINDOW ($w = 10.1$), limiting stress to the first two syllables. Stress is word-initial by default (WORDINITIAL, $w = 13.6$), unless attracted to an underlyingly marked peninitial syllable due to IDENT (either to a high tone or to a laryngealized consonant, $w = 15.2$). When the word-initial and root-initial vowels coincide, stress is only very rarely peninitial (2%), which we implement in a MaxEnt grammar as a gang-up of WORDINITIAL ($w = 13.6$) + ROOTINITIAL ($w = 5.5$) on IDENT ($w = 15.2$).

In male speech, heavy syllables requires stress to precede them, i.e. #LH, #L'LH. To capture this unusual pattern, we stipulate the constraint ALIGN(heavy,L,'σ,R). Women stress augmented root-initial vowels, creating the typologically expected #L'H, which we attribute to WSP.

Women augment root-initial vowels in some lexical items, which we implement with the positional anti-faithfulness constraint BEFEMININE ($w = 10.6$), but they are faithful in most lexical items due to IDENT(length) ($w = 12.3$). Augmentation applies to all monomoraic roots, where BEFEMININE gangs up with *MONOMORAICROOT ($w = 12.7$). Our analysis predicts the same rate of augmentation for all polymoraic roots; in our corpus, surprisingly, the rate of augmentation is higher in heavy-initial roots than in light-initial roots (34% vs. 13%).

Conclusions: We present our findings on main stress in Kadiwéu, which we model with a MaxEnt grammar, using different constraint weights for men and women. Women show a greater preference for heavy root-initial syllables, and ban monomoraic roots completely.

Selected references: Griffiths, Glyn (2002). *Dicionário da língua Kadiwéu*. Cuaibá, Brazil: Sociedade Internacional de Lingüística. • Sandalo, Filomena (1997a). A grammar of Kadiwéu with special reference to the polysynthesis parameter, vol. 11 of MIT Occasional Papers in Linguistics. MIT Press. • Sandalo, Filomena (1997b). Stress in Kadiwéu and the maximality constraint. In MIT Working Papers in Linguistics 30, MIT Press. 209–227.