

- (7) a. *dusaru* 'necklace' ~ *dus-dusaru* 'PL' (8) a. *mag-gukud* 'measures' ~
 b. *bossot* 'pot-bellied' ~ *bos-bossot* 'AUG' *mag-guku-gukud* 'PROG'
 b. *bossot* 'pot-bellied' ~ *boso-bossot*,
 bosso-bossot 'AUG'
- (9) a. *na-dalut* 'clean' ~ *na-dala-dalut* 'AUG' b. *mak-kappil* 'folds clothes' ~
 mak-kapa-kappil 'PROG'

Monosyllabic bases exceptionally include any prefix attached to the base in their reduplicant, which is then affixed outside of the prefix (10a,b).

- (10) a. *na-ta* 'unripe' ~ *nat-na-ta* 'AUG',
 **na-ta-ta* b. *ma-ŋan* 'eats' ~ *maŋ-ma-ŋan* 'PROG',
 **ma-ŋan-ŋan*

3. Reduplication and Consonant Contact

The two heavy-syllable templates (CV+gem and CVC) are not equally productive among roots of different shapes. Specifically, CVCV bases strongly prefer CVC reduplicants (11) while CVC₁C₂V bases strongly prefer CV+gem reduplicants (12). CVC₁C₁V bases accept both reduplicants (13). There thus appears to be a tendency to avoid destruction of the consonant contact in CVC₁C₂V bases, which is satisfied by avoiding the template that would take the first medial consonant but not the one adjacent to it. Instead, the CV+gem template, which takes neither medial consonant, is preferred. This constraint enforcing consonant contact preservation is presumably not operative in CVC₁C₁V bases, whose two medial consonants are actually one set of consonant features spread over two slots, meaning that consonant contact is irrelevant; this explains the acceptability of the CVC template in such forms.

- (11) *dana* 'old' ~ *dan-dana* 'AUG', **dad-dana*
 (12) *na-kasta* 'good' ~ *na-kak-kasta* 'AUG', **na-kas-kasta*
 (13) *na-bannag* 'tired' ~ *na-ban-bannag*, *na-bab-bannag* 'AUG'

The bisyllabic (CVCV) template patterns like the CVC template: namely, it is almost categorically allowed by CVCV bases (14) and strongly dispreferred by CVC₁C₂V bases (15). Like the CVC template, it is also acceptable with CVC₁C₁V bases (16). Once again, this appears to reflect a constraint against separating two adjacent consonants in the base, a constraint that affects CVC₁C₂V bases but not CVC₁C₁V (or CVCV) bases.

- (14) *dana* 'old' ~ *dana-dana* 'AUG' (15) *na-kasta* 'good' ~ **na-kasa-kasta*
 (16) *na-bannag* 'tired' ~ *na-bana-bannag* 'AUG'

Note, however, that onset clusters (in Spanish borrowings) are invariably simplified to conform to CV (17), CV+gem (18), CVC (19), and CVCa (20) templates. This provides evidence that what is exemplified in (11–16) is specifically a need to preserve *syllable*, and not simply consonant contact in reduplication. Onset clusters, belonging to a single syllable, are thus not implicated and may be simplified, while clusters formed by consonants in adjacent syllables may not be.

(17) *mag-graduar* ‘graduates’ ~ *ka-ga-graduar* ‘RECENT PAST’ (18) *freska* ‘fresh’ ~ *fef-freska* ‘AUG’

(19) *gwapa* ‘cute’ ~ *gap-gwapa* ‘AUG’ (20) *gwapa* ‘cute’ ~ *gapa-gwapa* ‘AUG’

Constraints on syllable contact in other languages typically refer to the sonority of the segments in the adjacent syllables in question (see, for instance, Bat-El (1996) and other work cited therein); Itawes, instead, constrains syllable contact on a more macro scale: regardless of consonant sonority, a syllable should not be taken as a reduplicant if the syllable it contacts in the base cannot be taken too.

4. Reduplication and Vowel-Changing Processes

Two allophonic processes interact differently with reduplication. One is a process laxing back vowels in closed syllables (21); the other reduces /a/ in unstressed syllables (22).

(21) Vowel Laxing: /o, u/ → [ɔ, ʊ] / __C]_σ (22) Vowel Reduction: /a/ → [ə] / ǝ

When Vowel Laxing applies to a base, its reduplicant matches it in vowel quality, regardless of the fact that this may result in a reduplicant with lax vowels in open syllables (23a) or tense vowels in closed syllables (23b,c). In other words, reduplicants match their bases in tenseness of /o/ and /u/, despite the fact that this tenseness may be opaque on the surface.

By contrast, where Vowel Reduction is concerned, reduplicants display the vowel quality expected on the surface, rather than that of their base. Thus, an unstressed syllable in a reduplicant whose corresponding base vowel was stressed will not match it in vowel quality (24a,b).

(23) a. [bɔssɔt] ‘potbellied’ ~ [bɔsɔ-bɔssɔt] ‘AUG’ (24) a. [danə] ‘old’ ~ [dənə-danə] ‘AUG’
b. [bobo] ‘dumb’ ~ [bob-bobo] ‘AUG’ b. [nə-bə'sa] ‘wet’ ~ [nə-bəsə-bə'sa] ‘AUG’
c. [nə-lutu] ‘ripe’ ~ [nə-lut-lutu] ‘AUG’

(23) and (24) illustrate that Vowel Laxing and Vowel Reduction differ crucially as far as base faithfulness is concerned. This could be accounted for in a serial theory by ordering Vowel Laxing before reduplication and Vowel Reduction afterward, or, in a constraint-based theory, by proposing an IDENT-BR constraint (McCarthy and Prince, 1995) that enforces faithfulness to tenseness only.

5. Reduplication and Glottal Stop Insertion

A third phonological rule inserts a glottal stop before a word-initial vowel (25).

(25) Glottal Stop Insertion: ∅ → ʔ / #__V

A small class of adjectives shows an interaction between this rule and reduplication. The adjectives in this class are all /a/-initial; the majority are native words that describe physical properties: e.g. *ababba* ‘short’, *aliʔnak* ‘short’, *ataʔnaŋ* ‘tall’, *asillat* ‘narrow’. Each word in this class has two acceptable reduplicated forms with the CVC template:

One in which the base is preceded by a glottal stop:

- (26) /ababba/ [ʔəbəb'ba] 'short' ~
/ab-ababba/ [ʔabʔəbəb'ba] 'AUG'

One in which the base is not preceded by a glottal stop:

- (27) /ababba/ [ʔəbəb'ba] 'short' ~
/ab-ababba/ [ʔəba:bəb'ba] 'AUG'

Syllabification and lengthening under stress apply subsequently, to result in the different prosodic structures indicated in the transcriptions.

These facts lend themselves well to an analysis in which reduplication interacts with phonological rules at different levels, such as that of Inkelas and Zoll (2005). Under such an analysis, Glottal Stop Insertion applies variably at the stem level (to produce forms such as (26), where the glottal stop precedes the base) or the word level (to produce forms such as (27), where the glottal stop precedes only the reduplicant). Alternatively, it could be that the glottal stops before these vowel-initial bases are in fact phonemic, as they are in Hawaiian (Elbert and Pukui, 1979), and the variation observed in these reduplicative forms is the result of a change in these lexical items from initial phonemic glottal stops (which would reduplicate to forms such as (26)) to glottal stops that are inserted by rule word-initially (which would reduplicate to forms such as (27)).

6. Conclusion

This paper has provided the first overview and analysis of reduplication in Itawes and has documented the following phenomena:

- A resistance to destroying syllable contact when reduplicating
- Base–reduplicant identity that is dependent on the nature of the vowel-changing process (identity is preserved in cases of laxing but not in cases of reduction)
- A rule of Glottal Stop Insertion that variably applies at different levels, or, alternatively, evidence for a change in the underlying forms of words in a certain class

References

- Bat-El, Outi. 1996. Selecting the best of the worst: the grammar of Hebrew blends. *Phonology* 13:283–328.
- Elbert, Samuel H., and Mary Kawena Pukui. 1979. *Hawaiian Grammar*. The University Press of Hawaii.
- Hayes, Bruce, and May Abad. 1989. Reduplication and syllabification in Ilokano. *Lingua* 77:331–374.
- Inkelas, Sharon, and Cheryl Zoll. 2005. *Reduplication: Doubling in Morphology*. Cambridge University Press.
- Lewis, M. Paul, ed. 2009. *Ethnologue: Languages of the World, sixteenth edition*. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>.
- McCarthy, John, and Alan Prince. 1995. Faithfulness and reduplicative identity. Rutgers Optimality Archive 60-0000. <http://roa.rutgers.edu/view.php?id=568>.