

Vowel lowering in reduplication in Tjuvetsekadan Paiwan

Paiwan is an Austronesian language spoken in the mountainous regions of southern Taiwan. The variety spoken in Tjuvetsekadan village is the only Paiwan dialect that has lost Proto-Paiwan *r, which is assumed to be a uvular fricative (Cheng 2016). Although the segment has disappeared, its phonological influence on adjacent vowels remains in certain prosodic environments. In particular, high vowels are lowered when the preceded *r within the same syllable or when identical vowels surrounded *r. As shown in (1a), high vowels /i/ and /u/ lower to mid [e] and [o] when followed by the lost *r, while forms with true vowel endings do not undergo lowering, as shown in (1b). In the context preceding a coda *r, high vowels lower. By contrast, when *r occurs in onset position, it does not affect vowel quality, as shown in (2).

Focusing on stems ending in *r, this study investigates the behavior of vowel lowering in reduplication. Paiwan has a reduplication process that copies two moras from the right edge of a root, excluding the final consonant if present, and expresses meanings such as continuation, plurality, facsimile, or gradual action (Tseng 2003), as shown in (3). The data show that when *r-final stems undergo reduplication, vowel lowering frequently overapplies. While the final high vowels are lowered due to the uvular trigger, the corresponding vowels preceding the reduplicant are also lowered even though the conditioning environment is absent, as shown in (4).

The overapplication suggests that vowel quality is influenced by the requirement for identity between the base and the reduplicant. Within an Optimality-Theoretic framework (McCarthy & Prince 1995, Prince & Smolensky 1993/2004), the preference for base-reduplicant correspondence override the phonological environment for vowel lowering. This interaction can be captured by the ranking IDENT-BR(hi), *V_{hi}UVULAR » IDENT-IO(hi), in which constraints preferring BR identity and phonological well-formedness dominate input-output correspondence, as shown in (5). In addition, occasional underapplication or both over- and underapplication are also observed. These variations in reduplicated forms suggest that the lowering pattern in Tjuvetsekadan has not yet become fully unstable in the synchronic grammar of the language.

(1) *r-induced lowering in V*r (□ stands for the lost *r, and < > represents infix)

	<u>Tjuvetsekadan</u>	<u>Gloss</u>	<u>Other dialect with *r</u>
a.	japi□ [ja.pe]	‘to slap in the face’	japiɾ
	pa-tudu□ [pa.tu.do]	‘to design, to progress’	pa-tuduɾ
b.	kapi [ka.pi]	‘male name’	kapi
	ʎ<əm>uku [ʎə.mu.ku]	‘to stoop’	ʎ<əm>uku

(2) Influence of the lost *r in coda and onset positions

a.	b<ən>ətsi□ [bə.nə.tse]	‘to spring shot’
	b<in>ətsi□-an [bi.nə.tsi.an]	‘be shot’
b.	patudu□ [pa.tu.do]	‘to design, to progress’
	p<in>atudu□-an [pi.na.tu.du.an]	‘designed product’

(3) Suffixal reduplication in Paiwan (reduplicants are underlined)

qacuvi	‘snake’	qacuvi- <u>cuvi</u>	‘worm’
t<əm>əkəl	‘drink (AV)’	t<əm>əkə- <u>təkə</u> -l	‘be drinking’

(4) Overapplication of vowel lowering in reduplication

- a.i. b<ən>ətsi□ [bə.nə.tse] ‘to spring shot’
a.ii. b<ən>ətsi-bətsi-□ [bə.nə.tse.-bə.tse] ‘be good in spring shot’
b.i. zaziu□ [za.zi.ɔ] ‘wave a torch’
b.ii. zaziu-ziu-□ [za.zi.ɔ.-zi.ɔ] ‘keep on waving a torch’

(5) Constraint ranking of overapplication of lowering

Input: /RED+ b<ən>ətsi□/		IDENT-BR(hi)	*V _{hi} UVULAR	IDENT-IO (hi)
a.	bənətsi- <u>bətse</u>	*!		
b. ☞	bənətse- <u>bətse</u>			*!
c.	bənətsi- <u>bətsi</u>		*!	

References

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