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Distributed Reduplication in Kankanaey

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Introduction

This paper investigates the prosodic and segmental properties of Kankanaey (Austronesian; Philippines) progressive and diminutive heavy syllable reduplication in the derivational framework Distributed Reduplication (henceforth, DR; Frampton 2004). Under the umbrella of Distributed Morphology (Halle and Marantz 1993), DR augments Raimy's (2000) formal reduplicative mechanisms with additional formal mechanisms to account for prosodic patterns of reduplication that go unexplained in Raimy (2000). DR employs the derivational notion of cyclicity to account for prosodic forms of reduplication that were said to be impossible in a derivational framework (cf. McCarthy and Prince 1995).

Kankanaey presents two such prosodic patterns in progressive and diminutive reduplication. Progressive reduplication exhibits a simplex pattern of heavy syllable reduplication, but yields unexpected surface forms when glides or glottal stops are present in the reduplicant; the analysis shows that certain of these surface through cyclic rule application. Diminutive reduplication evinces a more phonologically complex pattern whereby heavy syllable reduplication is accompanied by a glottal infix in some but not all lexical items, yielding a variety of surface forms. Allen (1980) analyzed this as a discontinuous morpheme; I argue that the glottal infix is a result of the prosodic requirements of diminutive reduplication. The analysis demonstrates how DR can account for prosodic forms of reduplication through prosodic adjustment and cyclicity.

1 Distributed Reduplication

DR claims that reduplication is accounted for by the interaction of several simple processes distributed throughout the morphology and the phonology. Frampton (2004) divides the duplicating processes into two main stages: 1) transcription junctures (henceforth, t-junctures) are inserted into the timing tier by the morphology via readjustment rules -- rules triggered by lexical insertion, see Halle and Marantz (1993); 2) transcription (autosegmental doubling) then operates in the phonology. Following Frampton, the present paper formally represents t-junctures by [and]. The introduction of t-junctures in the morphological operation and their adjustment in the phonological component is further articulated in the three processes in (1).

(1) a. **Domain Selection** - morphological operation to locate the initial t-juncture insertion location.
b. **Juncture Insertion** - morphological operation that actually inserts the t-junctures into the timing tier.
c. **Prosodic Adjustment** - morphologically conditioned phonological operation to adjust the t-juncture to a prosodic desideratum before transcription. Frampton (2004:5)

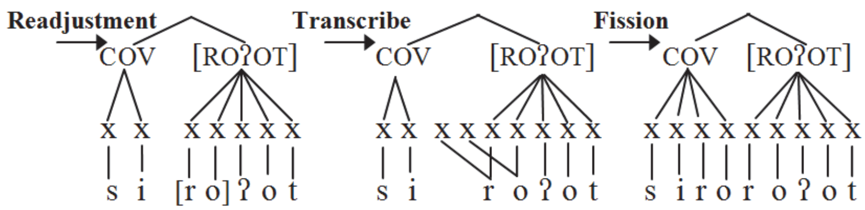
Both *domain selection* and *juncture insertion* occur in all examples of reduplication and take place in the morphology. These are exemplified in this section with an Ilokano example from Frampton (2004:36-39), originally presented in Hayes and Abad (1989). *Prosodic adjustment*, on the other hand, occurs in only a subset of reduplicative forms and takes place in the phonology. Prosodic adjustment is discussed in §1.1 using examples from Mokilese progressive reduplication.

In Ilokano light syllable reduplication, the first CV segment of a root, such as /roʔot/ 'leaves, litter,' duplicates upon the affixation of *si*- 'covered with,' yielding the surface form /siroroʔot/ 'covered with litter.' The first step in the duplicating process is lexical insertion, by which morphosyntactic features are exchanged for phonological features at each terminal node. Lexical insertion begins with the root /roʔot/ and works its way out. Once the prefix *si*- is inserted, the readjustment rule in (2) is triggered, which carries out domain selection (1a) and juncture insertion (1b).

(2) a. ø →] / V___ ; leftmost in stem
b. ø → [/ ___ x; leftmost in stem Frampton (2004:38)

Rule (2) consists of two parts: the *juncture insertion rule* (left of the semicolon) and the *rule domain* (right of the semicolon). The juncture insertion rule specifies the placement of the t-junctures in the root. (2a) specifies that a]-juncture is inserted after the leftmost vowel in the stem (as specified by the rule domain). Subsequently, (2b) specifies that the [-juncture is inserted before the leftmost timing slot in the stem. The readjustment rule is demonstrated in the first step in (3). Once the t-junctures are inserted into the timing tier via the readjustment rule in (2), phoneme association lines are autosegmentally transcribed to the left, producing a crossed structure, erasing t-junctures in the representation, as is shown in the second step in (3). In order to satisfy the No Crossing Constraint (NCC; Goldsmith 1976), the crossed structure is repaired via *fission* at the phonology-phonetics interface shown in the final step in (3). For the sake of simplicity, the examples hereafter are represented in the format of (4). The readjustment rules that insert t-junctures in (2) are conflated and represented as C*V following Frampton (2004).

(3) **Autosegmental Representation of Reduplication**



(4) Lexical Insertion C*V Transcribe

roʔot → siroʔot → si[ro]ʔot → si**ro**roʔot

1.1 Prosodic Adjustment

The basic tenets of prosodic adjustment are the notions *prosodic desideratum* and *defect driven rule* (DDR) that repair prosodic defects to meet the desideratum (Frampton 2001). The basic mechanisms are introduced in (5) with Frampton's (2004:93-97) description of heavy syllable reduplication in Mokilese. In (5a), the initial heavy syllable in the root is copied into the reduplicant. In (5b), the contiguous vowels trigger initial vowel lengthening in the reduplicant.

(5) **Progressive Reduplication in Mokilese**

a. kasɔ → **kas**kasɔ 'is throwing'

b. wia → wi:wia 'is doing'

To account for these patterns, Frampton proposes the DDR in (6) that applies iteratively to repair a prosodic defect. The DDR consists of the *derivational constraint*, *adjustment rule list*, and *desideratum*. The desideratum, in turn, is expressed in a bipartite structure: the *substructure* and *condition*. The desideratum is defined as a governing prosodic target that is roughly the equivalent to the prosodic template in Prosodic Morphology (McCarthy and Prince 1986). In effect, the DDR is the driving force behind heavy syllable reduplication in DR.

(6) **Annotated Defect Driven Rule for Mokilese Progressive Reduplication**

$$\overbrace{\underbrace{\text{reduplicant;}}_{\textit{substructure}}\ \underbrace{\text{bimoraic syllable}}_{\textit{condition}}}^{\textit{desideratum}}\ ::\ \underbrace{\text{]-Right, \textit{otherwise} FCVL;}}_{\textit{adjustment rule list}}\quad \underbrace{\text{*Diphthong}}_{\textit{derivational constraint}}$$

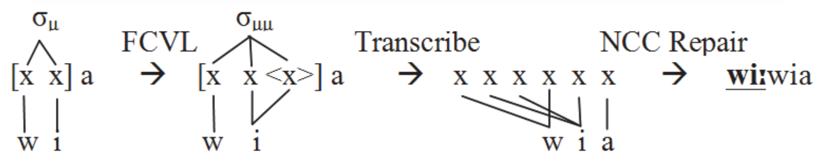
The substructure defines the domain of the desideratum, which, in (6), is the reduplicant, while the condition defines the prosodic requirement of the desideratum in the substructure domain. In (6), this is a bimoraic syllable. To the right of the double colon, the adjustment rule list provides an ordered list of possible repair rules, by which a rule will apply if it can. There are two rules in the adjustment rule list in (6) that account for Mokilese reduplication. The first rule,]-Right, is defined as an adjustment mechanism that shifts the t-juncture one segment to the right in the environment of _C (Frampton 2004: 93). The second rule, First Conjunct Vowel Lengthening (FCVL) only applies if]-Right is barred by the derivational constraint. FCVL meets the desideratum by exploiting truncated timing slot epenthesis. That is, a timing slot with truncation junctures (i.e., < and >) is epenthesized to spread a singly linked vowel in the root to two timing slots in the reduplicant, creating a long vowel in the reduplicant, but not in the root (Frampton 2004: 65). The application of the adjustment rules is constrained by the derivational constraint. In (6), this is *Diphthong, which prohibits a diphthong in the reduplicant. In (7), I apply the DDR in (6) to the example in (5a). First, C*V inserts t-junctures around the first CV segment by the readjustment rule in the morphology. To satisfy the desideratum,]-Right applies, as it is the first rule in the adjustment rule list. Then, the t-junctures undergo transcription and fission. Essentially, this process alters the reduplicant from a light to heavy syllable to meet the prosodic desideratum.

(7)

	C*V		]-Right		Transcribe	
kasɔ	→	[ka]sɔ	→	[kas]ɔ	→	<u>kas</u>kasɔ

FCVL, however, requires truncation junctures, which are defined as “bookkeeping symbols” that are “inserted by the transcription rules and are used for keeping track of the progress of the computation (Frampton 2004: 54).” That is, truncation junctures track segments (or the timing slots linked to segments) within the t-junctures that have already been copied, until all segments enclosed therein have been copied. Truncation junctures are a part of every computation and thus are present in all examples of reduplication (see Frampton 2004: ch.4; Halle 2005 for discussion). In FCVL, a segment linked to a timing slot is inserted already enclosed within t-junctures, which then copies to the reduplicant, but does not remain in the root. The Mokilese example in (5b) is articulated in (8), by which a timing slot enclosed in truncation junctures is inserted by FCVL and then transcribed into the reduplicant. Henceforth, FCVL is represented as it is in (9).

(8) **Application of FCVL in Mokilese Progressive Reduplication**



(9)

	C*V		FCVL		Transcribe	
wia	→	[wi]a	→	[wi<i>]a	→	<u>wi:</u>wia

This concludes the overview of the mechanisms of DR; the following sections apply the principles outlined above in a study of Kankanaey reduplication.

3 Kankanaey

Kankanaey, a Western Malayo-Polynesian language, is spoken in the northern Philippines. The data in this paper is primarily taken from Allen (1980).[1]

3.1 Phonotactics, Glides, and the Glottal Stop

The syllable in Kankaney is minimally CV and maximally CVC with no complex onsets and no onsetless syllables; codas are restricted to underlying segments. Reduplicative forms display two unexpected patterns: 1) long vowels occur in the reduplicant in progressive reduplication, and 2) glottal stops occur in a coda position in diminutive reduplication. Glides /w/ and /y/ are predictable onsets following the vowels /o/ and /i/, respectively. This is shown in (10).

(10)

a.	/ʔowas/	'wash'	(owa)	b.	/kiyap/	'chicks'	(iya)
	/mantowili/	'look back'	(owi)		/nabiyogan/	'dirty'	(iyo)
					/masiyek/	'laugh'	(iye)

Allen (1980) maintains that /w/ is melodically identical to /o/ and /y/ is melodically identical to /i/ and that there are no homorganic vowel-glide adjacencies. That is, there are no examples of **iyi* or **owo*. The examples in (11) exhibit unpredictable glides in non-nuclear positions.

[1] Some data come from Larry and Jan Allen who have extensive knowledge of Kankanaey.

(11)	a.	/yamoyam/	‘smooth over’	(word-initial onset)
		/mankedyat/	‘to raise eyebrows’	(word-medial onset)
		/layʔos/	‘folk song’	(word-medial coda)
		/kompay/	‘tooth’	(word-final coda)
	b.	/wanes/	‘g-string’	(word-initial onset)
		/tigwi/	‘species of bird’	(word-medial onset)
		/saliwʔa/	‘divert’	(word-medial coda)
		/ʔagew/	‘sun’	(word-final coda)

Like glides, glottal stops surface to repair instances of vowel hiatus or to act as an onset for a word-initial vowel and are generally predictable in intervocalic positions between /a/ and high vowels or between two homorganic vowels as in (12).

(12)	a.	/saʔon/	‘canine tooth’	(aʔo)	b.	/palsiʔit/	‘shoot’	(iʔi)
		/laʔem/	‘inside’	(aʔe)		/seʔed/	‘wait for’	(eʔe)
		/taʔi/	‘feces’	(aʔi)		/boʔok/	‘hair’	(oʔo)
						/kaʔag/	‘monkey’	(aʔa)

There are other instances where a glottal stop emerges in an unpredictable environment, such as CʔV, which form minimal (or near minimal) pairs with CV segments as in (13).

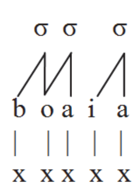
(13)	<u>CV</u>		<u>CʔV</u>	
	/baba/	‘below’	/babʔa/	‘tooth’
	/bosoŋ/	‘protuberant navel’	/bosʔoŋ/	‘live by oneself’
	/taked/	‘rope’	/takʔep/	‘outer clothing’

In §3.1.1, I outline an explanation of the syllabification in Kankanaey that explains predictable and unpredictable glides, but I leave discussion of unpredictable glottal stops aside and only treat predictable glottal stops here.

3.1.1 Syllabification, Glides and the Glottal Stop

The analysis in §3.1 shows that glides forming between contiguous vowels to resolve vowel hiatus (as in (10)) are not linked to a timing slot. Conversely, glides that are not formed predictably are underlying vowels and therefore linked to a timing slot. This is exemplified in the root /bowaya/ ‘crocodile’ in (14).

(14) ***UR*** *syllabification* ***SR***

/b o a i a/ → 

→ [bo.wa.ya]

In (14), the /w/ is not linked to a timing slot, while the /y/ is underlying /i/ and linked to a timing slot. Further motivation for this comes from reduplication in §4.

3.2 Glottal Stops, Glides, and Cyclicity

The proposed analysis closely follows that of Hayes and Abad (1989) for Ilokano. Two operations, *glide formation* and *glottal epenthesis*, crucially apply in a cyclic rule block, glide formation>glottal epenthesis, ordered according to the Elsewhere Condition. Evidence favoring a cyclic rule analysis comes from the affixation of -*an* and *-en.* Upon suffixation, a glottal stop is epenthesized in vowel-final roots, even if a glide is expected to arise between a contiguous vowel pair. Roots that end in a consonant, however, do not epenthesize a glottal stop. This is exemplified in (15) with both expected and actual surface forms.

(15)	**Root**	**Actual (Suffixed)**	**Expected (Suffixed)**	**Gloss**
	a. dan	danen	danen	‘walk’
	b. kalopti	kaloptiʔan	*kaloptiyan	‘roll up’
	c. lako	lakoʔan	*lakowan	‘buy’

The examples in (15) demonstrate that glide formation does not occur across a morpheme boundary. This, in turn, supports the notion of cyclicity adopted here from Frampton (2004), by which a cyclic rule block applies at lexical insertion at each terminal node. This means that when /dan/ is inserted, the cyclic rule block applies once. When it is affixed, the cyclic rule block applies once again as demonstrated in (16).

(16)	**Cycle**	**Rule**	***UR:***	/dan/	/lako/	/kalopti/
	1	syllabification		dan	la.ko	ka.lop.ti
		glide formation		-----	-------	-----------
		glottal epenthesis		-----	-------	-----------
		AFFIXATION		dan-en	la.ko-an	ka.lop.ti-an
	2	syllabfication		da.nen	la.ko.an	ka.lop.ti.an
		glide formation		---------	-----------	---------------
		glottal epenthesis		---------	la.ko.ʔan	ka.lop.ti.ʔan
			SR:	[danen]	[lakoʔan]	[kaloptiʔan]

4 Reduplication

This section details progressive and diminutive reduplication.

4.1 Progressive Reduplication

Progressive reduplication is heavy syllable reduplication that indicates either "a progressive action or an action in progress (Allen 1980:34)." The examples in (17) represent three phonological shapes of progressive reduplication.

(17) **Kankanaey Progressive Reduplication**

a. kapi	→	man-kapkapi	'drinking coffee'
b. ʔayam	→	man-ʔayʔayam	'playing'
c. taʔoli	→	man-tattaʔoli	'returning'
d. baʔon	→	ʔi-babbaʔon	'taking a lunch'
e. ʔiyan	→	man-ʔiːʔiyan	'staying overnight'
f. towili	→	man-toːtowili	'turning head'
g. ʔowas	→	man-ʔoːʔowas	'washing'

The first shape is the canonical form, by which the first three segments of the root (henceforth, the *remnant*) are simply copied and remain unaltered in the reduplicant in (17a-b). In (17c-d), the second reduplicant shape includes a glottal stop in the third segment of the root, which then surfaces as a geminate across the reduplicant-remnant boundary. The third reduplicant shape, in (17e-g), contains a predictable glide segment as the third segment in the root, which, in the end, surfaces as a long vowel in the reduplicant.

4.1.1. An Analysis of Progressive Reduplication

Since heavy syllable reduplication is dependant on prosodic adjustment, I use the DDR in (18). The only difference between this DDR and the Mokilese DDR in (6) is the $*VV_{NUCLEI}$ as the derivational constraint, which prohibits two contiguous vowel nuclei, a basic prohibition in Kankanaey.

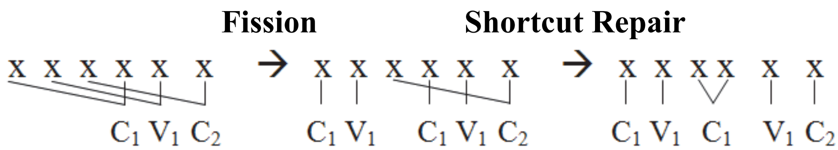
(18) reduplicant; bimoraic syllable ::]-Right, *otherwise* FCVL; **$*VV_{NUCLEI}$**

In the canonical shape, the first three segments of the root are simply copied by the operation C*V and further repaired by]-Right. This is exemplified in (19).

(19) kapi $\xrightarrow{\text{C*V}}$ [ka]pi $\xrightarrow{\text{]-Right}}$ [kap]i $\xrightarrow{\text{Transcribe}}$ kapkapi $\xrightarrow{\text{affixation}}$ man-kapkapi

This canonical shape is as expected. However, due to the restricted distribution of the glottal stop as discussed in §§3.1-3.2, the second pattern does not follow the canonical form by copying the glottal stop into the reduplicant. Rather, the second shape occurs as follows: if a glottal stop is to be the coda of a heavy syllable reduplicant, the reduplicant will form a geminate consonant (instead of a glottal stop) with the following onset of the remnant. Since glottal stops are disallowed in a coda, there needs to be an additional mechanism for repair. Frampton (2004) offers such a repair mechanism called *Shortcut Repair* (SR) in his analyses of Hausa and Korean reduplication. SR operates at the phonology-phonetics interface upon NCC Repair. When NCC repair reaches the final segment during the fission process, the final segment is repaired as a geminate. That is, the glottal is indeed copied but altered during NCC repair. This is demonstrated in (20).

(20)



Evidence for a SR analysis is quite clear considering the root /ʔiyan/ 'stay overnight' from (17e), in which the glottal stop in a word-initial position canonically copies into the reduplicant. This shows 1) glottal stops arise cyclically at lexical insertion, and 2) there is no restriction on copying glottal stops in onsets. Thus, this supports that, in the second reduplicative form, the glottal stop is indeed epenthesized and copied, but repairs upon NCC repair. This is illustrated with the root /taʔoli/ 'return' in (21).

(21)

	C*V	]-Right	Transcribe	SR
taʔoli	→ [ta]ʔoli	→ [taʔ]oli	→ taʔtaʔoli	→ tattaʔoli

The restriction on homorganic vowel-glide adjacencies prevents the expected output of the third pattern in (17d-f). Hence, the third (glide) form is summarized as follows: if a glide is to be the coda of a heavy syllable reduplicant, the reduplicant will form a long vowel (instead of a glide). In the third reduplicative shape, the predicable glide is not associated to a timing slot as argued in §3.1. Since t-junctures are inserted into the timing tier, it is impossible to copy predictable glide segments or contiguous vowel nuclei. Consequently, FCVL applies as a repair rule, exemplified with the root /ʔiyan/ 'stay overnight' in (22).

(22)

	C*V	FCVL	Transcribe
ʔiyan	→ [ʔi]yan	→ [ʔi<i>]yan	→ ʔi:ʔiyan

In the doubling of unpredictable glides, such as /ʔayam/ 'play' in (17b), the glide is copied because each segment is attached to a timing slot. This contrasts with (22) to yield the most plausible explanation for the disparity between predictable and unpredictable glides. In §4.2, I build on the analysis thus far to explain the complex forms of diminutive reduplication.

4.2 Diminutive Reduplication

Diminutive reduplication construes an interpretation of "pretend" or "make-believe" in verbs and nouns, and "only" when used with numerals (Allen

1980:34). The examples in (23) exhibit three phonological shapes, which I claim are based on the weight of the initial syllable of the root.

(23) **Kankanaey Diminutive Reduplication**

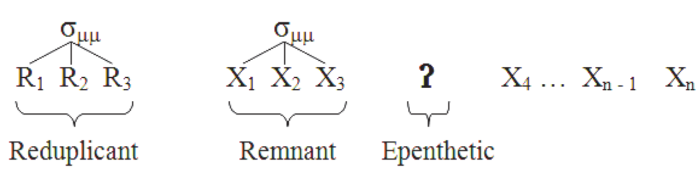
a. ʔaklat	→	ʔakʔaklat	'tattered old jacket'
b. kantina	→	mankankantina	'to play at keeping store'
c. kabayo	→	mankabkabʔayo	'pretend to ride horseback'
d. kapi	→	kapkapʔi	'few old coffee beans'
e. waʔo	→	wawwaʔʔo	'only eight'
f. kiyap	→	kikkiʔʔap	'toy chicks'
g. bowaya	→	bobbaʔʔaya	'toy crocodile'

The first shape in (23a-b) exhibits forms where the initial syllable of the root is heavy. Upon doubling, the first three segments are canonically copied. In the second shape in (23c-d), the initial syllable is light, and the copying of the first three segments is accompanied by an epenthetic glottal stop immediately following the remnant. The third form in (23e-g) exhibits the most complex of all reduplicative shapes. In these forms, the initial syllable of the root is light and is followed by an epenthetic onset in the second syllable (i.e., a glottal stop or a glide). Upon reduplication, the reduplicant forms a geminate consonant across the reduplicant-remnant boundary and the epenthetic glottal stop forms a geminate across the remnant-root boundary.

4.2.1 An Analysis for Diminutive Reduplication

Allen (1980) described diminutive reduplication as a type of discontinuous morpheme triggering CVC reduplication and a glottal infix. However, there is clear motivation from the distribution of the glottal stop in (23) and glottal epenthesis in §3.1 to claim that this pattern is, in fact, prosodic. That is, diminutive reduplication demonstrates moraic weight restrictions that hold that the reduplicant and remnant must be bimoraic syllables, as in the schema in (24).

(24) **Moriac Weight Requirements for Diminutive Reduplication**



The diminutive shape results from prosodic adjustment, made explicit by the DDR in (25).

(25) reduplicant, **remnant**; bimoraic syllable ::]-Right; $*VV_{NUCLEI}$

The DDR in (25) provides an additional domain to the substructure in the desideratum. This means that when]-Right applies, it shifts the syllable weight for both the reduplicant and the remnant. I call this operation]-Right(DIM). Once]-Right(DIM) adjusts a light syllable in the substructure domain to a heavy syllable, the cyclic rule ʔ-epenthesis applies to onsetless syllables. Essentially,]-Right(DIM) applies to make light syllables in the reduplicant and remannt heavy, as shown in the root /kapi/ 'coffee' in (26), where ʔ-epenthesis applies as a cyclic phonological rule. If the first syllable of the root is heavy, as in (23a-b),]-Right(DIM) is not activated in the remnant because it already meets the desideratum. Further, ʔ-epenthesis need not apply because there are no onsetless syllables, as the prosodic structure of the root remains intact.

(26)		C*V		]-Right(DIM)		ʔ-Epenthesis		Transcribe
	kapi	→	[ka]pi	→	[kap]i	→	[kap]ʔi	→ kapkapʔi

In the third form, epenthetic segments are root internal, which affect the doubling as shown in §4.1 for progressive reduplication. When an epenthetic glottal stop occurs within the root, the same analysis for (26) falls out quite naturally. The only difference is that the additional operation SR from §4.1.1 occurs at transcription. In these cases, ʔ-epenthesis applies twice; first it applies inside the root in the first cycle and then again after]-Right(DIM). Upon transcription, the glottal stop repairs via SR at the phonology-phonetics interface. However, if there is a root internal epenthetic glide, an additional prosodic adjustment rule is required. Since epenthetic glides are not linked to timing slots, the DDR specified in (25) does not provide any adjustment rules that are able to apply to these roots. FCVL cannot apply because it does not meet domains of the substructure in the desideratum, as it is not possible to have a long vowel in the remnant.]-Right(DIM) cannot apply because of the derivational constraint that prohibits $^*VV_{\text{NUCLEI}}$. Because of this, I introduce *x*-epenthesis, which specifies that the DDR inserts a bare (unassociated) timing slot in the timing tier as an intermediary step that allows]-Right(DIM) to apply on a second pass through the DDR, so that the desideratum is met. This means that *x*-epenthesis applies first as]-Right cannot. The revised DDR is in (27).

(27) reduplicant, remnant; bimoraic syllable ::]-Right, ***x*-epenthesis**; $^*VV_{\text{NUCLEI}}$

Upon *x*-epenthesis, the epenthetic glide loses its status in the phonological representation. That is, when the intervening timing slot is epenthesized, the glide no longer acts as an onset and is either delinked from the timing tier or conflated with the preceding vowel. Once the additional timing slot is available in the timing tier,]-Right is able to apply. I collectively call these two adjustment rules *x*]-Right(DIM) for simplicity. Subsequently, ʔ-epenthesis applies. The unassociated timing slot is then associated to the glottal stop, creating a geminate glottal stop as in the derivation of the root /kiyap/ 'chicks' in (28).

(28) C*V *x*]-Right(DIM) ʔ-Epenthesis/Association Transcribe/SR

kiyap → [ki]yap → [ki*x*]ap → [kiʔ]ʔap → <u>kik</u>kiʔʔap

The processes of glottal epenthesis and association appear to be two processes and distinct from the reduplicative processes. Due to the geminate across the reduplicant-remnant boundary, I conclude that ʔ-epenthesis and association apply before transcription, as this is the pattern in progressive reduplication. All reduplicative and cyclic operations are summarized in the derivation in (29).

(29) **Derivation of Diminutive and Progressive Reduplication**

Cycle	**Rule**	**Diminutive**			**Progressive**
1	***UR***	/kapi/	/ kiap /	/oao/	/ian/
	syllabification	ka.pi	ki.ap	oa.o	i.an
	glide formation	---------	ki.yap	wa.o	i.yan
	glottal epenthesis	-----------	--------	wa.ʔo	ʔi.yan
2			/ki.yap/	/wa.ʔo/	/ʔiyan/
	C*V	[ka]pi	[ki]yap	[wa]ʔo	[ʔi]yan
	]-Right(DIM)	[kap]i	-----------	[waʔ]o	----------
	FCVL	----------	-----------	-----------	[ʔiː]yan
	x]-Right(DIM)	-----------	[ki*x*]ap	-----------	----------
	glide formation	-----------	--------	----------	----------
	ʔ-epenthesis	[kap]ʔi	[ki*x*]ʔap	[waʔ]ʔo	----------
	x-association	-----------	[kiʔ]ʔap	----------	----------
	transcribe	kapkapʔi	kiʔkiʔʔap	waʔwaʔʔo	ʔiːʔiyan
	short-cut repair	-----------	kikkiʔʔap	wawwaʔʔo	----------
	SR	kapkapʔi	kikkiʔʔap	wawwaʔʔo	ʔiːʔiyan

5. Conclusion

In this study of Kankanaey reduplication, I presented a novel account of the complex patterns of heavy syllable reduplication utilizing a derivational framework. In doing so, I provided further empirical support for current derivational theories such as DR (Frampton 2004). I also showed how cyclicity and prosodic adjustment are crucial for this analysis of reduplication.

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