Input-Reduplicant correspondences in Leti

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1. Introduction: Correspondence in reduplication

In this paper, we show that Input-Reduplicant correspondence is a necessary ingredient of a full analysis of Leti reduplication. IR correspondence accounts for reduplication patterns that fail to be explained by Base-Reduplicant correspondence and also by earlier accounts in linear phonology (van Engelenhoven 2004; van der Hulst & Klamer 1996). Input-Reduplicant correspondence was introduced in McCarthy & Prince (1995), in order to explain Klamath reduplication of full vowels, which are reduced to schwa in the 'base', but which surface as full vowels in the reduplicant. Subsequently, some other languages have been reported that show IR correspondence. For instance Kwakwala (Struijke 1998) and Palauan (Zuraw 2005), which is related to Leti, have a pattern that highly resembles Klamath. In Kirundi (Brassil 2003) vowel length and tone in the reduplicant are more faithful to the underlying form than to the base. However, when we assume IR correspondence is a necessary set of constraints, we predict that not only Faith is a relevant constraint, but in fact that the whole family of correspondence constraints exists. Whereas Ident-IR constraints have frequently been invoked, Max-IR, Anchor-BR, Contiguity-BR and Dep-IR, have, to the best of our knowledge, not yet been reported. These constraints, we argue, play a role in Leti reduplication.

This paper is organized as follows: Section 2 provides some background information on Leti. In Section 3 the complex set of reduplication patterns are outlined. Section 4 illustrates TETU effects, and shows where a BR-correspondence account fails. Subsequently, in Section 5, it is shown that IR-correspondence provides a complete analysis. Section 6 contains the conclusion.

2. Leti phonological and morphological background

Leti, or Letinese, is an Austronesian language spoken by about 7000 speakers on the Leti Island, one of the islands in Maluku province in Indonesia. In this section,

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some phonological background is provided; the phoneme inventory (Section 2.1), the existence of alternating word forms (Section 2.2) and finally, metathesis and apocope (Section 2.3).

2.1 Phoneme inventory

Leti has five vowels {a i u e o} and a small consonant inventory {p t d k m n β s l n}, of which the bilabial fricative β is relatively fairly rare. All consonants have geminated counterparts, except for β (Hume, Muller & van Engelenhoven 1997). For instance, in the compound nariβa 'he keeps on his lap' and βali 'too', we would expect *nariββali but the attested form is nariβali. The mid vowels are restricted in their distribution and occur only in strong syllables.

2.2 Alternating word forms

Most lexemes are at most disyllabic, i.e. trochees, and lexical morphemes have penultimate primary stress. Interestingly, words usually have a vowel-final and a consonant-final form. Phrase-finally, and in their citation form (which can be regarded as a minimal phrase), any word ends in a vowel. In any other position, most words surface as consonant final.

(1) llarna 'fly' mota 'be blue/green'
llaranmota 'housefly'

Van der Hulst & van Engelenhoven (1995) argue that there is no fixed underlying form. However, some lexical morphemes only have vowel final forms, such as *keku* 'to sharpen' and *mnina* 'to be calm (of the weather)'; but there are no words which have only a C-final form. Therefore, we argue, that C-final alternants must be underlying, that there is a requirement for vowel final words, and the V-final alternant is derived by metathesis. Some words have two adjacent vowels (which are not diphthongs, since both have a syllable peak; see Hume 1998: 150), in which the V-final alternant undergoes compensatory lengthening.

(2) taut ~ taatu 'to be afraid'
ruin ~ ruuni 'dugong'

2.3 Phrase medial metathesis and apocope

Metathesis is a pervasive process in Leti. It is not the aim of this paper to discuss metathesis at length, but to provide as much information as is necessary to understand reduplication. The interested reader is referred to van der Hulst & van

Engelenhoven (1995), Hume (1997) and Bonthuis (2001) for an extensive and solid analysis about Leti metathesis in an OT framework. In addition to alternating word forms, as described above, metathesis is applied in concatenation. In morphologically complex words, when the preceding morpheme has a final high vowel, this vowel is realized as secondary articulation on the following consonant.

(3) asu 'dog' + davdavra 'greedy' →
asd^{w}avdavra 'praying mantis (kind of insect)'
pipi 'goat' + nama 'tongue' →
pipn^{y}ama 'goat's tongue'

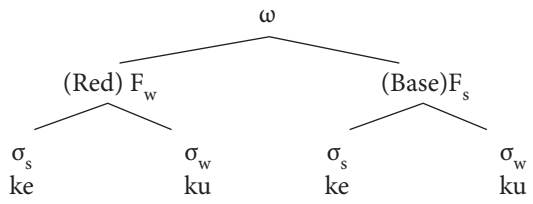
When the final vowel is low, however, it cannot be metathesized, but it is subject to apocope.

(4) kusa 'cat' + nisa 'nose' →
kus-nisa 'cat's snout'

Mid vowels do not occur in this position. (Van Engelenhoven & Williams-van Klinken (2005: 738) point out that mid vowels are confined to the penultimate syllable of the free form. As described just below, this position is a stressed vowel.)

Phrasal medial apocope, metathesis and secondary articulation basically show the same pattern; the morpheme final vowel cannot be maintained in its original place. What is the driving force behind these processes? In Leti, words are in general disyllabic, forming a trochaic foot. If, in concatenation or in reduplication, a word is formed by two feet, stress is assigned to the final foot, resulting in penultimate stress. The second foot therefore is strong, whereas the initial foot is weak.

(5)



The second syllable of the first foot is thus the weakest syllable of the complex word and this is, in our viewpoint, the reason why the vowel disappears. In Optimality Theory, this could be expressed by a constraint that avoids full vowels in a weak position.

(6) *σ$_w$]$_{Fw}$: Assign a violation mark to any weak syllable of a weak foot.

Hume (1997) mentions another driving force for metathesis, namely the avoidance of tautosyllabic complex consonant clusters, e.g. the consonant cluster in *llarna* 'fly' is broken in the metathesized form *llaran*. Although the examples in

(2) can be analyzed in this way, it cannot capture apocope in (4), since apocope occurs without a tautosyllabic consonant cluster in the input. We think a unified account of secondary articulation, metathesis and apocope is superior, since with respect to vowel height the processes are complementary and thus suggest one single motivation.

3. Leti reduplication patterns

Leti has two different reduplication patterns; in object relativization, the reduplicant always has the CV form. However, we are concerned with another, more complex and also very productive reduplication process, which is used to derive denominal adjectives, instrumental nouns, deverbal adjectives, deverbal adverbs and atelic verbs (van Engelenhoven 2004). In this section the basic patterns of Leti reduplication are outlined, focusing on the form, size and location of the reduplicant and the underlying form.

Let us first consider the form of the reduplicant: the following examples suggest that the reduplicant (which is underlined) has a CVC form.

(7)	lèpa	'to carry (on poles)'		lèp-lèpa	'carrying-pole'
	lir-ne	'his voice'		lir-lira	'sound'
	sun-ne	'its end'		sun-suna	'endpoint, ultimately'

However, the following examples suggest that reduplication is full. Apparently in (7), the final vowel, which shows up in the reduplicated forms in word final position, is subject to apocope in the base.

(8)	a.	soru	'to finish'	sor-s^{w}oru	'all'
	b.	seki	'game'	seks^{y}eki	'toy'
	c.	paasi	'to ladle'	pap^{y}aasi	'laddle'

However, reduplication in trisyllabic words shows that the reduplicant is actually not full, but rather a trochaic foot. Besides, example (9b) shows that that the placement of the reduplicant is exactly left adjacent to the base, since the reduplicant is slightly different from the base.

(9)	a.	kapansa	'to be feverish, difficult'	kapam-pansa	'feverish, to be difficult'
	b.	kalleda	'to be neat'	kale-lleda	'neat'

Is the input of the reduplicant the V-final or the underlying C-final alternant? If we take the V-final alternant as the input, for example (8c) *paasi-pais* 'to ladle', we have to derive *pa-p^{y}aasi* as the reduplicant. In fact, what is reduplicated is *paasi*, which

eventually surfaces as *pai* (in which the /i/ surfaces as secondary articulation). If the final vowel would be subject to metathesis, the consonant /s/ could be deleted in order to avoid a coda and the long vowel is shortened due to a general TETU effect (see Section 4). If, on the other hand, the C-final form is selected as the input, the /s/ would again be deleted by avoiding a coda, and the final vowel is metathesized. In this stage, we cannot decide which is better, but more complex examples will show that the latter is the preferred account, and besides, the final consonant is not reduplicated at all. It is extrametrical, which has a historical reason: final consonants can be traced back to original suffixes (van Engelenhoven 2004: 69). We assume that they are still dimorphemic words, and the final consonant thus is not part of the base for reduplication.

Thus far, we see that reduplication basically follows the grammatical rules of secondary articulation and apocope as outlined in Section 2. But there is a certain number of reduplication specific patterns, as illustrated in (10).

(10)	a.	luuβu	'rest, remnant'	lu-luuβu	'remaining, rest. ADV'
	b.	mmerna	'to become swift'	me-mmerna	'swift(ly)'
	c.	keku	'to sharpen'	ke-keku	'sharpening'
				*kek^{w}eku	
	d.	ppèrta	'to become heavy'	pè-ppèrta	'heavy'
				*ppe-pperta/*per-pperta	
	e.	mnina	'to be calm (weather)'	m-ni -nina	'calm'
	f.	laβna	'to become big'	la-laβna	'big'
	g.	km^{y}arta	'to become narrow'	km^{y}ar-marta	'narrow'
	h.	kaati	'to hook (on)'	ka-k^{y}aati	'hook'

Examples (10a–f) show TETU effects, which are discussed in the following section. Examples (10g–h) are complex patterns which form the core of our argumentation that the reduplicant is in a correspondence relation with the underlying form.

In this section we introduced the basic pattern of reduplication: the reduplicant is a trochaic foot, aligned left adjacent to the base. Furthermore, reduplication, like other morphological concatenations, is subject to secondary articulation and apocope. We now turn towards the TETU effects.

4. The Emergence of The Unmarked (TETU)

It has often been observed that in reduplication and epenthesis universally unmarked structures are preferred over more complex structures, although these more complex structures regularly occur in the language. McCarthy & Prince (1994) introduced this concept in a Optimality Theoretical framework, Correspondence

Theory, and named it The Emergence of The Unmarked (TETU). Such effects typically arise when Base-Reduplicant (BR) correspondence constraints are dominated by Markedness Constraints, which are in turn dominated by Input-Output constraints. This model has been proven very useful in the analysis of reduplication patterns of many languages.

Leti shows a number of TETU effects. For example, initial consonant clusters are avoided in the reduplicant.

(11)

mlilu	'to be sour'	ml<u>i</u>-lilu	'sour'
mtaatu	'to be afraid'	<u>mta</u>-t^{w}aatu	'afraid'
kpau	'to thicken'	k<u>pa</u>-p^{w}au	'thick'

The relevant constraint is *Complex.

(12) *Complex : Add a violation mark for each complex consonant cluster

In (11) is shown that consonant clusters cannot be reduplicated. In such a case either the first or the second consonant is reduplicated, Leti adopts the latter alternative and therefore the reduplicant appears to be infixed. Why is *m-li-lilu* preferred over *mi-mlilu*? Apparently, in a string of input segments, no medial segment may be left out, a constraint that is known as Contiguity-BR.

(13) Contiguity-BR: Any medial segment in the base should have a correspondent segment in the reduplicant

Further, **li-mlilu* is not an option. Apparently, the reduplicant must be aligned immediately to the left of its base.

(14) Align(Ft,L): Align a foot at the immediate to the left edge of its base

Finally, since segments can be deleted, Max-BR is ranked very low.

(15) Max-BR: Any segment in the base should correspond to a segment in the reduplicant (no deletion).

(16)

RED-mlilu	*$\sigma_{w}]_{Fw}$	Align(Ft,L)	Contiguity-BR	*CC	Max-BR
mlilu-mlilu	*!			**	
mli-mlilu				**!	**
li-mlilu		*!		*	***
☞ m-li-lilu				*	***
mi-mlilu			*!	*	***

Notice that the exact ranking cannot be determined at this point, although Max-BR should be relatively low ranked (in order to derive the TETU effects).

Interestingly, geminates differ from consonant clusters, in that they are avoided in two ways; they are not only disallowed in the reduplicant itself, as is shown in (17a), but geminates that would be created by reduplication because the final segment of the reduplicant is identical to the initial consonant of the base, are also not allowed (17b).

(17)	a.	mmerna	'to become swift'	me-mmerna	'swift, swiftly'
		kkusla	'to be small'	ku-kkusla	'small'
		ppeela	'to become diligent'	pe-ppeela	'diligent'
	b.	keku	'to sharpen'	ke-keku	'sharpening'
		mamu	'waste, fallow'	ma-mamu	'empty'

Full reduplication with secondary articulation would yield **kek-k^{w}eku* cq. **mamm^{w}-amu*, which contains a geminate. Theoretically, it would be plausible that there is another reason why the examples in (17b) are avoided, namely geminates with secondary articulation have a heavily marked structure. Indeed, geminates with secondary articulation do not appear in the Leti word list (van Engelenhoven 2004: 409–484) in word initial position. However, in word medial position they do occur (18).

(18) dudd^{w}andi 'now'

Notice that in (17a), the expected forms would be **mer-mmerna* and **kus-kkusla*: a consonant before a geminate is avoided. In lexical items, too, consonant clusters of more than a geminate or two different consonants do not occur.

(19) *CC: Add a violation mark for each consonant cluster

(20) *CC: Add a violation mark if a consonant is followed by a geminate

If, in concatenation, a final consonant and an initial geminate are adjacent, metathesis breaks up the cluster (21). (Examples are from Hume 1997).

(21)	ukar	'finger'	ppalu	'bachelor'
	ukrappalu	'index finger'		
	maun	'bird'	ppuna	'nest'
	ma:nuppuna	'nest'		

So the avoidance of medial geminates is in fact not a TETU effect: the constraint *CC: must dominate Max-BR. Further, notice that apocope leads to violation by Anchor-BR, which requires edges to be respected.

(22) Anchor-BR(R): The rightmost segment of the base should have a correspondent segment in the reduplicant.

(23)

RED-mmerna	*$\sigma_w]_{Fw}$	*CC:	C:	*CC	Anchor-BR(R)	Max-BR
mmerna-mmerna	*!	**	**	**		
mern-mmerna		*	*	**!	*	**
mer-mmerna		*	*	*	*	***
☞ me-mmerna			*	*	*	****
mme-mmerna			**!	*	*	***

Another TETU effect is attested for long vowels: in the reduplicant, the vowel is always short.

(24) miina 'to become fat' mi-miina 'fat'
luuβu 'rest, remnant' lu-luuβu 'remaining, rest. Adv'

If, however, the final vowel of the base is a high vowel, and the first is a non-high vowel, the final, high, vowel is reduplicated as well and metathesized (25).

(25) taali 'to weigh' ta-t^{y}aali 'weighing-beam'
kaati 'to hook on' ka-k^{y}aati 'hook.Nom'

These forms provide a considerable problem for the analysis. Apparently, they are violated by Contiguity-BR, which we assumed to be crucial in (15), so this seems to provide a ranking argument: Contiguity-BR must be dominated by another constraint, which prefers the forms in (25). But which constraint outranks Contiguity-BR? A nearly identical candidate is **kat-k^{y}aati*, which is evaluated identically by Max-BR but unfortunately even as better by Contiguity-BR, since the *t* is deleted, where as the following *i* is reduplicated. The only difference between this candidate and the winner is that **kat-k^{y}aati* has a coda and the winner has an open syllable in the reduplicant. This is independent of whether the input is the V-final or the C-final alternant (26a). Crucially, this leads to a ranking paradox; *Coda cannot outrank Max-BR, since in general the reduplicant has a coda. Example (26b) illustrates this ranking paradox.

(26) a. Tableau for *ka-kiaati*

/RED-ka:ti/	*$\sigma_w]_{Fw}$	*V:	*Cd	Max-BR	Anchor-BR	Cont-BR
ka:t-k^{y}a:ti		**!	*		* (-^{y})	
kat-ka:ti		*	*!	*	* (-^{y})	
☞ ka-k^{y}a:ti				*		*
kat-k^{y}a:ti			*!			
/RED-kai(t)/	*$\sigma_w]_{Fw}$	*V:	*Cd	Max-BR	Anchor-BR	Cont-BR
kat-k^{y}a:ti		*	*!	*	* (+t)	*
☞ ka-k^{y}a:ti		*		**		

b. Tableau for lep-lepa

RED-lepa	*$\sigma_w]_{Fw}$	*V:	*Cd	Max-BR	Anchor-BR	Cont-BR
lepa-lepa	*!					
lep-lepa			*!	*	*	
☹ le-lepa				**	**	

So using BR-correspondence, the forms in (25) cannot be accounted for. We will return to this issue in Section 5.

We might expect TETU effects to occur in sequences of two adjacent vowels. However, as exemplified in (27), such forms are fully reduplicated, and the second vowel is metathesized, following the normal grammatical rules of the language. Hence, reduplicants do not have VV sequences because of TETU effects, but due to regular secondary articulation.

(27)	mou	'to disappear, be gone'	mo-m^{w}ou	'clean, all'
	koir	'bake'	kok^{y}oir	'baked (adj)'
	dous	'suck'	dod^{w}ous	'kind of bamboo pipette'

Finally, we also find a TETU effect on the segmental level: syllable final /β/ (but no other segment) is generally avoided.

(28)	laβna	'to become big'	la-laβna	'big'
	plaβsa	'to become long'	pla-laβsa	'long'
	pruβta	'to be fine'	pru-ruβta	'fine'
	^{w}aβra	'to ripen'	^{w}a-^{w}aβra	'ripe'

Analogous to examples (24)–(25), we argue that the syllable final β as in *laβna la-laβna* is disallowed because of markedness. It is the most marked segment in the Leti phoneme inventory. Moreover, /β/ behaves differently from other consonants; it is the only sound that cannot be geminated, which also suggests its relative markedness.

In this section we considered the following TETU effects: long vowels, initial consonant clusters, geminates and bilabial fricative are not allowed in reduplicants, but elsewhere are fully accepted. We encountered a ranking paradox for forms such as *ka-kiaati* 'hook', which led us to the conclusion that a BR-correspondence analysis is not adequate for Leti reduplication. We now turn towards other puzzling forms, and solve both problems in the next section.

5. Input-Reduplicant correspondence

In this section we will show that there are two classes of words which provide evidence for the fact that the reduplicant is built on the input or underlying form and not on the metathesized base.

(29)	kl^{y}etna	~	kl^{y}etan	kl^{y}eletna	~	kl^{y}eletna	‘narrow’
	km^{y}arta	~	km^{y}arat	km^{y}armarta	~	km^{y}armarta	‘narrow’
	sn^{y}ara			sn^{y}arnara	~	sn^{y}arnara	‘song’
	ma-kr^{y}arni	~	makr^{y}arin	makr^{y}ararni	~	makr^{y}ararni	‘reluctant’
	tm^{w}ela			tm^{w}elmela	~	tm^{w}elmela	‘dark’

Under the current analysis, we would expect that the reduplicant of *kl^{y}etna* to be *kl^{y}etna*: with apocope of the final vowel, deletion of the initial consonant and simplification of the final consonant cluster: **k-l^{y}et-l^{y}etna*. Conversely, taking *kl^{y}etan* as the base, the final consonant would not be reduplicated at all, due to its extrametricality (see Section 3), but cluster simplification and apocope occur, and result in the same form **k-l^{y}et-l^{y}etna*. However, as formulated in van Engelenhoven & Williams-van Klinken (2005): “glides are assumed not to be copied, but they are shifted into the reduplicant”; the actual output is *k-l^{y}et-letna*. Since we cannot find a phonological motivation for a shift of a segment from the base to an otherwise unmarked reduplicant, we will consider an alternative analysis. In fact, the words in (29) historically had other surface forms, in which the present-day glides were part of a prefix.

(30)	*V-final*		*C-final*	*historical form*	*gloss*
	kl^{y}etna	~	kl^{y}etan	kiletan	‘narrow’
	km^{y}arta	~	km^{y}arat	kimarat	‘narrow’
	sn^{y}ara			sinara	‘song’
	ma-kr^{y}arni	~	makr^{y}arin	makirarin	‘reluctant’
	tm^{w}ela			tumela	‘dark’

Since a shift of morpheme final vowel into secondary articulation is still a productive process in Leti, it is plausible that the ‘historical’ forms are in fact underlying forms. When these underlying forms, which have penultimate stress, are the basis for reduplication, then the reduplicant of *kiletan* is *leta*, leading to *ki-let-letan* and due to metathesis *k-l^{y}et-letan*, which indeed corresponds to the actual surface form. In other words: the input of these words correspond to the historical form. Where BR-correspondence fails, IR-correspondence, with the historical form as input, elegantly accounts for the facts. Notice that metathesis violates the linearity constraint.

(31) Lin-IO: The order of the segments in the input corresponds to the order of the segments in the output

(32)

Input: /RED-kileta/ (n)	*$\sigma_w]_{Fw}$	Lin-IO	Max-IR	Cont-IR	Anchor-IR	Max-BR
k-l^{y}eta-l^{y}etan	*!	**		*		
k-l^{y}et-l^{y}etan		*!		*	*	
☞ kl^{y}et-letan		*		*	*	* (^{y})
kl^{y}e-letan		*	*! (t)	*	*	* (^{y})
kiletaleta	**!*				*	

No [^{y}] is part of the reduplicant and therefore any [^{y}] violates Lin-IO. But *k-l^{y}et-l^{y}etan* violates Lin-IO twice. Secondary articulation leads to violation of correspondence in the ordering of the segments in the input and the reduplicant (Contiguity-IR). The candidate *k-l^{y}e-letan* has no [t] in the reduplicant, so violates Max-IR. Apocope leads to violation of Anchor-IR, since the edge is deleted. What (32) also shows is that it is the C-final form is the input. To obtain the V-final form, we additionally must assume a constraint that violates any C-final candidate in a phrase-final position, and which dominates Lin-IO.

We now turn to the forms with a long stressed vowel and a final high vowel, discussed in Section 4. On the basis of a base *kaati*, it turned out to be impossible to derive the winner *ka-kiaati*. However, now we know that we have to use the C-final form as the input, which in this case is *kait.* Recall that the final C itself is extrametrical and not reduplicated. The crucial constraint is Dep-IR, which does not allow for epenthesis and thus violates any candidate with a [t], and which must dominate Lin-IO, since *ka-k^{y}aati* is more faithful than *kat-kaati*.

(33)

Input: /kai/(t)	*$\sigma_w]_{Fw}$	Dep-IR	Max-IR	*V:	Lin-IO	Anchor-IR
ka-ka:ti			*!			*
kat-ka:ti		*!				*
☞ ka-k^{y}a:ti					*	
ka:-k^{y}a:ti				*!	*	
kat-k^{y}a:ti		*!			*	*

It is easy to see that this analysis also accounts for the reduplication patterns discussed in Sections 3 and 4. Since the underlying form is exactly the same as that of the 'base', the analysis is the same. The BR-correspondence constraints Anchor-BR, Contiguity-BR and Max-BR have to be changed into Anchor-IR, Contiguity-IR and Max-IR, respectively. This does not mean that BR correspondence constraints do not exist at all: according to classic OT all constraints are universal and thus present in the language, but they do not play a crucial role in Leti.

Summarizing, in this section we showed that IR-correspondence, i.e. Anchor-IR, Contiguity-IR, Max-IR and Dep-IR straightforwardly accounts for the facts where BR-correspondence fails.

6. Conclusion

In this paper we offered an OT-analysis of Leti reduplication. We showed that BR-correspondence leads to a ranking paradox, which we solved by using IR-correspondence constraints instead. Since IO- and BR-correspondence constraints consist of families of constraints, it is expected that IR-correspondence constraints constitute a similar family. We showed that in Leti reduplication Max-IR and Dep-IR play an active role and Anchor-IR and Contiguity-IR must be passive.

References

Brassil, Dan. 2003. "Patterns in Kirundi reduplication". *San Diego Linguistic Papers* 1.43–82.

Bonthuis, Fiorieneke. 2001. "Metathesis in Letinese". *Surface syllable structure and segment sequencing.* ed. by Elizabeth. V. Hume, Norval. S. H. Smith and Jeroen. M.van de Weijer, 26–52. Leiden, HIL.

McCarthy, John & Alan Prince. 1994. "The emergence of the unmarked: Optimality in prosodic morphology". *Proceedings of the North East Linguistic Society* 24, ed. by M. González, 333–379. Amherst, MA: GLSA.

McCarthy, John & Alan Prince. 1995. "Faithfulness and reduplicative identity". *University of Massachusetts Occasional Papers in Linguistics 18: Papers in Optimality Theory* ed. By Jill Beckman, Laura Dickey and Suzanne Urbanczyk, 249–384. Amherst: GLSA, University of Massachusetts.

van Engelenhoven, Aone. 2004. *Leti. A language of Southwest Maluku.* Leiden: KITLV Press.

van Engelenhoven, Aone & Catharina Williams-van Klinken. 2005. "Tetun and Leti". *The Austronesian languages of Asia and Madagascar*, ed. by Alexander Adelaar and Nikolaus. P. Himmelmann, 735–768. London: Curzon.

van der Hulst, Harry & Aone van Engelenhoven. 1995. "Metathesis effects in Tutukeian-Letinese". *Leiden in last* ed. by Harry G. van der Hulst and Jeroen M. van de Weijer, 243–267. The Hague: Holland Academic Graphics.

van der Hulst, Harry & Marian Klamer. 1996. "Reduplication in Leti". *Linguistics in the Netherlands*, ed. by Crit Cremers and Marcel den Dikken, 109–120. Amsterdam: Benjamins.

Hume, Elizabeth. 1998. "Metathesis in phonological theory: The case of Leti". *Lingua* 104.147–186.

Hume, Elisabeth, Jennifer Muller & Aone van Engelenhoven. 1997. "Non-moraic geminates in Leti". *Phonology* 14.371–402.

Struijke, Caro. 1998. "Reduplicant and output TETU in Kwakwala". *University of Maryland Working Papers in Linguistics 7* ed. by Haruka Fukazawa, Frida Morelli, Caro Struijke and Yi-Ching Su, 150–178. Department of Linguistics, University of Maryland.

Zuraw, Kie. 2003. "Vowel reduction in Palauan reduplicants". *Proceedings of AFLA 8: The Eighth Meeting of the Austronesian Formal Linguistics Association. MIT Working Papers in Linguistics* 44, ed. by Andrea Rakowski and Norvin Richards, 385–398. Cambridge, MA: MIT Linguistics Dept.

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