

## DAHL'S LAW AND G-DELETION IN TIANIA: A DIALECT OF KIMERU (BANTU, KENYA)

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**Abstract:** In this paper we take a close look at the voicing dissimilation process known as Dahl's Law (DL) in Tiania, an understudied variety of the Central Kenya Bantu Kimeru dialect cluster. While there is considerable variation in how this process applies in different Bantu languages, Tiania adds an additional dimension, the deletion of *g*, including non-post-nasal [g]'s which derive from /k/ by DL. Although other Bantu languages and even other dialects of Kimeru allow multiple applications of prefixal /k/'s dissimilation to *g*, usually pronounced [ɣ] (Davy & Nurse 1982), Tiania not only limits DL to /k/, but also restricts DL from applying to subject and (most) object prefixes. We consider the possibility that *g*-deletion contributed to these restrictions as well as to some unexpected realizations of the "pre-final" habitual suffix \*-*ag*.

**Key words:** voicing dissimilation, consonant deletion, hiatus avoidance, allomorphy

### 1. Introduction

In this paper we survey the application of DAHL'S LAW (DL), a well-known Northeastern Bantu voicing dissimilation process which affects /k/ in Tiania [etianíá], an understudied variety of the dialect cluster known as Kimeru [keméero] [ISO: mer], E53 in the Guthrie referential classification (Maho 2009: 40). Spoken in the Nyambene Hills, northeast of Mount Kenya, and known by others as Tigania, Tiania has innovated *g*-deletion, a sound change not shared by the standard Imenti dialect.

Thus, the realization of Proto-Bantu (PB) *\*-kùtà* ‘oil’ as *ma-guta* in Imenti (Mboroki 2012: 135) shows the anticipatory dissimilation effect of DL (*\*k > g*, pronounced [ɣ] except after a nasal), while Tiania *mà-útà* results from subsequent *g*-deletion.<sup>1</sup> The dual purpose of this paper is to document DL and its interaction with *g*-deletion in Tiania. Since DL only applies to /k/ in Tiania, the two processes are inseparable. In the following sections we first document DL and *g*-deletion in roots (§2) and then survey the *k*-initial prefixes which DL targets on nouns and noun modifiers (§3) and verbs (§4). In §5 we show that DL is much less able to apply to successive *kV-kV*- prefix sequences than in Imenti and certain other Kenyan Bantu languages (Davy & Nurse 1982). In §6 we discuss *g*-deletion, allomorphy, and placement of the “pre-final” habitual suffix *\*-ag* which may appear to be motivated by hiatus avoidance, and consider in §7 whether hiatus avoidance or something else accounts for the failure of DL + *g*-deletion to apply to SPs and most OPs.

## 2. Dahl's Law and *g*-deletion in roots

The consonant and vowel systems of Tiania are presented in Table 1.

Table 1

<b>Tiania consonants and vowels</b>							
(m)p	t	(tʃ)	k	i	u	i:	u:
b	(n)d	(n)dʒ	(ŋ)g	e	o	e:	o:
	s			ɛ	ɔ	ɛ:	ɔ:
w	ð	r	l	r	y	ɣ	a
m	n		ɲ				a:

<sup>1</sup> The Tiania forms cited in this study are based on the speech of the second author from Ming'ong'ine village located near Kianjai township, in Tiania West. Our study of Tiania originally began in a Fall 2021 undergraduate field methods course, which we have followed up with further documentation supported by an Oswalt Endangered Language Grant, U.C. Berkeley. We would like to thank two anonymous reviewers for helpful comments on the original submission. For previous comparative work on DL, see Meinhof (1903) Bennett (1967), Davy & Nurse (1982), Herbert (1995), and Good (1998).

The parentheses indicate that that [tʃ] is in variation with [s] and [p, d, dʒ, g] only occur after a nasal. (All obstruents can occur in an NC complex.) As also seen, Tiania is rich in (oral) sonorant consonants, where [ð] is the reflex of PB \*c (realized [s] in most Bantu languages). Like other Central Kenyan Bantu languages, the Kimeru cluster of dialects has undergone a significant loss of PB consonants (Hinnebusch 1976). In Tiania \*p and \*g have been lost when occurring non-post-nasally, as have many instances of \*b. This produces numerous cases of vowel hiatus, e.g. trisyllabic *ko-a-a* ‘to divide up’ (< \*gàb-, with *ko-* infinitive prefix and *-a* default inflectional final suffix). Further examples of *g*-deletion are seen in (1).<sup>2</sup>

(1)	Tiania		Imenti		Proto form
a.	<i>mw-ɛni</i>	‘guest’	<i>mo-geɲi</i>	<	*gèni
	<i>ko-oro</i>	‘leg’	<i>ko-goro</i>	<	*gòdò
	<i>e-eyɔ</i>	‘tooth’	<i>e-ego</i>	<	*gègò
	<i>n-jɔu</i>	‘elephant’	<i>n-jɔgu</i>	<	*jògù
b.	<i>kw-ɔn-a</i>	‘to snore’	<i>gɔn-a</i>	<	*gòn
	<i>ko-or-a</i>	‘to buy’	<i>gor-a</i>	<	*gòd
	<i>ko-rú-a</i>	‘to cook’	<i>rug-a</i>	<	*rúg
	<i>o-tí-a</i>	‘to leave behind’	<i>tig-a</i>	<	*tíg

As seen, *g*-deletion affects both nouns (1a) and verbs (1b). For discussion of noun class prefixes and agreement see §3.

<sup>2</sup> The Tiania forms here and elsewhere are as pronounced by the second author. H(igh) tone is marked by an acute accent (´) and L(ow) tone is unmarked. A raised H tone is marked with a double acute accent (¨), while the symbol ° indicates that a prepausal L is realized with a level pitch rather than the default prepausal low fall (cf. Ford 1976). The (non-tone-marked) Imenti forms are taken from Mboroki (2012), where we have replaced orthographic *ĩ, ú, é, o,* with *e, o, ε, ɔ,* respectively. Except in an *ɲg* cluster, *g* stands for [ɣ] in Imenti. Proto-Bantu (PB), regional, and other proposed reconstructions are cited from Bastin et al. (2002). While hiatus is common, sometimes the loss of \*g (or other consonants) results in a glide transition between the vowels, e.g. *e-woro* ‘sky’ (Imenti *e-goro*) < \*gòdò.

While the examples in (1) show \*g being deleted after a vowel, the following examples show that g-deletion also applies word-initially (2a), but not after a homorganic nasal (2b), where ° stands for a L tone that is pronounced with level pitch before pause.

- |       |                    |                 |   |      |
|-------|--------------------|-----------------|---|------|
| (2) a | <i>ɔn-á</i>        | ‘snore!’        | < | *gòn |
|       | <i>or-á</i>        | ‘buy!’          | < | *gòd |
| b.    | <i>ká ɰ-gón-ε°</i> | ‘let me snore!’ | < | *gòn |
|       | <i>ká ɰ-gór-ε°</i> | ‘let me buy!’   | < | *gòd |

In other words, g-deletion occurs where \*g would have been realized [ɣ], as in Imenti.

We now turn to Dahl's Law in Tiania, where voicing dissimilation only affects PB \*k. As seen in (3), g-deletion also applies to the output of DL.

- |     |                  |            |                 |   |               |
|-----|------------------|------------|-----------------|---|---------------|
| (3) | Tiania           |            | Imenti          |   | Proto form    |
| a.  | <i>mo-óta</i>    | ‘hide’     | <i>mo-gota</i>  | < | *kótà         |
|     | <i>ma-úta</i>    | ‘oil’      | <i>ma-guta</i>  | < | *kúta         |
| b.  | <i>ko-wáat-a</i> | ‘to catch’ | <i>ko-gwata</i> | < | *kóat ‘seize’ |

As with \*g, the [g] from DL does not delete after a nasal: *n-gókó* ‘chicken’ (Imenti *ngoko*) < \*kókó. As a result of DL, kV(V)CV stems are rare with /t/, /tʃ/, /s/ or /k/ as the second consonant. Instead the V(V)CV stems that result from DL and g-deletion are synchronically indistinguishable from those deriving from \*gV(V)CV.

Although longer stems are possible, particularly in verbs, DL appears restricted to the initial root consonant (and left edges of morphemes in general). Thus, as seen in (4a), DL does not apply when a k-final verb root is followed by the anterior past suffix /-eete/, nor does the latter trigger DL on a preceding suffix with /k/, e.g. the /-ok/ intransitive separative suffix in (4b).

- |     |            |         |   |
|-----|------------|---------|---|
| (4) | Root/base  |         | Remote Anterior Past                    |
| a.  | <i>ðík</i> | ‘bury’  | <i>í-tw-a-ðík-éééé</i> ‘we had buried’  |
|     | <i>ðek</i> | ‘laugh’ | <i>í-tw-a-ðek-éééé</i> ‘we had laughed’ |

- b. *kúnd-ok* ‘untie (intr.)’ *i-bi-a-kúnd-ók-éété* ‘they had become untied’  
*tamb-ok* ‘tear (intr.)’ *i-bi-a-tamb-ók-éété* ‘they had torn (intr.)’  
 FOC-SP-TAM-ROOT-SEP-INFL  
 (cf. *kúnd-or* ‘untie (tr.)’, *tamb-or* ‘tear (tr.)’)

While suffixes neither trigger nor undergo DL and *g*-deletion, we will now see that prefixes are capable of both.

### 3. Dahl’s Law and *g*-deletion in noun class prefixes

In this section we will see that DL and *g*-deletion affect those nouns and noun modifiers which begin with /k/. As seen in Table 2, this includes classes 7, 12 and 15. (Verb prefixes will be treated in §4.)

Table 2

#### Noun class prefixes in Tiania

Class	Noun	Gloss	Noun Modifier Verb prefixes			
			Prefix	Prefix	Subject	Object
1	<i>mo-sɔɔré</i>	‘friend’	<i>mo-</i>	<i>o-</i>	<i>a-</i>	<i>mo-</i>
2	<i>a-sɔɔré</i>	‘friends’	<i>a-</i>	<i>bá-</i>	<i>bá-</i>	<i>bá-</i>
3	<i>mo-bukɔ</i>	‘bag’	<i>mo-</i>	<i>yó-</i>	<i>yó-</i>	<i>yó-</i>
4	<i>me-bukɔ</i>	‘bags’	<i>me-</i>	<i>e-</i>	<i>e-</i>	<i>me-</i>
5	<i>e-túndá</i>	‘fruit’	<i>e-, ri-</i>	<i>ré-</i>	<i>ré-</i>	<i>ré-</i>
6	<i>ma-túndá</i>	‘fruits’	<i>ma-</i>	<i>yá-</i>	<i>yá-</i>	<i>yá-</i>
7	<b><i>ke-ðatí</i></b>	‘basket’	<b><i>ke-</i></b>	<b><i>ké-</i></b>	<b><i>ké-</i></b>	<b><i>ké-</i></b>
8	<i>i-ðatí</i>	‘baskets’	<i>i-, sí-</i>	<i>bí-</i>	<i>bí-</i>	<i>bí-</i>
9	<i>m-bóri</i>	‘goat’	<i>N-</i>	<i>e-</i>	<i>e-</i>	<i>me-</i>
10	<i>m-bóri</i>	‘goats’	<i>N-</i>	<i>í-, sí-</i>	<i>í-</i>	<i>sí-</i>
11	<i>ro-kó</i>	‘firewood’	<i>ro-</i>	<i>ró-</i>	<i>ró-</i>	<i>ró-</i>
12	<b><i>ka-lio</i></b> <sup>o</sup>	‘banana (dim.)’	<b><i>ka-</i></b>	<b><i>ká-</i></b>	<b><i>ká-</i></b>	<b><i>ká-</i></b>
13	<i>to-lio</i> <sup>o</sup>	‘bananas (dim.)’	<i>to-</i>	<i>tó-</i>	<i>tó-</i>	<i>tó-</i>
14	<i>o-tá</i>	‘bow’	<i>o-</i>	<i>bó-</i>	<i>bó-</i>	<i>bó-</i>
15	<b><i>ko-oro</i></b>	‘leg’	<b><i>ko-</i></b>	<b><i>kó-</i></b>	<b><i>kó-</i></b>	<b><i>kó-</i></b>

Tiania does not have locative classes 16-18, although reflexes of PB class 17 *\*ko-* are found in several locative adverbial expressions such as *kó* 'where', *koná* 'a certain place', *korayá* 'far', and *kóngé* 'elsewhere'. Where two prefixes are shown, the second occurs before vowel-initial roots, e.g. class 5 *ri-íðo* 'eye', class 8 *si-ára* 'fingers'. (In some cases the vowel-initial root acts as if it has a "ghost consonant" and takes the first prefix, e.g. the borrowed class 5 noun *e-úkú* 'book'.) The modifier column includes the prefixes on numerals, possessive pronouns, and demonstratives.

As also seen in Table 2, the [b] of the class 2 *\*ba-* and class 14 *\*bo-* noun prefixes has been lost, as well as class 8 *\*bi-* with consonant-initial roots. Interestingly, the [b] is always present on both consonant- and vowel-initial modifiers: *a-sɔɔré bá-tháto* 'three friends', *a-sɔɔré bá-ákwá* 'my friends'. Not shown in Table 2 are the effects of DL and g-deletion. Table 3 shows the prefix realizations in the relevant noun classes with voiced and voiceless initial consonant roots.

Table 3

### Dahl's Law and g-deletion on noun prefixes

Class	Voiced Initial C		Voiceless Initial C	
7	<i>ke-rema</i>	'mountain'	<i>e-kómbé</i>	'cup'
	<i>ke-bari</i>	'hill'	<i>e-sémbé</i>	'hoe'
12	<i>ka-buri</i>	'grave'	<i>a-kómbé</i>	'small cup'
	<i>ka-bari</i>	'hill' (dim.)	<i>a-sémbé</i>	'small hoe'
15	<i>ko-oro</i>	'leg'	<i>o-tó</i>	'ear'
	<i>kw-arɔa</i> <sup>o</sup>	'diarrhea'	<i>o-ókɔ</i>	'arm' ( <i>*-bóko</i> )

As seen in Table 4, the same *k* ~ Ø alternation occurs in noun modifiers. Since the only numeral that can be used with singular classes 7, 12, and 15 is /mwě/ 'one, some', the [k] will always be present. The independent possessive pronouns 'mine', 'yours sg.' etc. reveal a different story: The [k] is present with /-enú/ 'our' and /-ó/ 'their', but absent with /-akwá/ 'my', /-akúu/ 'your sg.', /-akíé/ 'his/her', and /-etó/ 'our' which all contain a voiceless consonant. It is clear, therefore,

Table 4

## Numeral ‘one/some’ and possessive pronoun agreement

Class	‘one, some’	1sg	2sg	3sg	1pl	2pl	3pl
1	o-mwě	ɔɔkwá	ɔɔkúu	ɔɔkié	εεtó	εεnú	ɔɔ
2	bá-mwε°	báákwá	báákúu	báákié	béétó	béénú	bóó
3	yó-mwε°	yóókwá	yóókúu	yóókié	ywéétó	ywéénú	ywóó
4	e-mwě	yεekwá	yεekúu	yεekié	yεεtó	yεεnú	yɔɔ
5	ré-mwε°	riákwá	riákúu	riákié	réétó	réénú	réóó
6	yá-mwε°	yáákwá	yáákúu	yáákié	yéétó	yéénú	yóó
7	ké-mwε°	éákwá	éákúu	éákié	éétó	kéénú	kéóó
8	bí-mwε°	biákwá	biákúu	biákié	biétó	biénú	bióó
9	e-mwě	yεekwá	yεekúu	yεekié	yεεtó	yεεnú	yɔɔ
10	í-mwε°	siákwá	siákúu	siákié	siétó	siénú	sióó
11	ró-mwε°	róókwá	róókúu	róókié	rwéétó	rwéénú	rwóó
12	ká-mwε°	áákwá	áákúu	áákié	éétó	kéénú	kóó
13	tó-mwε°	tóókwá	tóókúu	tóókié	twéétó	twéénú	twóó
14	bó-mwε°	bóókwá	bóókúu	bóókié	bwéétó	bwéénú	bwóó
15	kó-mwε°	óókwá	óókúu	óókié	wéétó	kwéénú	kwóó

that noun class markers on nouns and adnominal modifiers all show the effects of DL and g-deletion.<sup>3</sup> A different story emerges when we turn to verb prefixes.

<sup>3</sup> An exception is adjectives, which take double prefixes, the first being the Bantu “augment”, e.g. *e-úkú rě-e-néne* ‘big book’, *ma-úkú yá-ma-néne* ‘big books’. While an identical /CV-CV-/ prefix sequence is simplified to CV-V- when the adjective stem is consonant-initial, e.g. *e-kómbé kě-e-néne* ‘big cup’, the full CV-CV- sequence is realized when the stem is vowel initial: *e-úkú rě-re-éyá* ‘good book’. In the case of class 7 /kě-ke-/, the initial /k/ is usually deleted on an adnominal adjective, e.g. *e-kómbé ě-ke-éyá* [e-kómbé” ke-éyá] ‘good cup’, but is required after the focus marker /i-/, thereby creating an exception to DL: *e-kómbě í kě-ke-éyá* ‘the cup is good’.

#### 4. Dahl's Law and g-deletion in verb prefixes

As is the case for most other Bantu languages, the verb stem (root + suffixes) can be preceded by a number of prefixes organized templatically in Tiania as in (5). All of the above "slots" have potential filler morphs with /k/ that in principle meet the conditions for DL and g-deletion.

(5) SUBJECT -	NEGATIVE -	tense/aspect/mood -	OBJECT -	[ STEM ]
(SP)	(NEG)	(TAM)	(OP)	
cl. 7 ke-	ka-	ko-	cl. 7 ké-	
cl. 12 ka-	SBJV,	ká-	cl. 12 ká-	
cl. 15 ko-	IMP	ka-	cl. 15 kó-	
		ké-	2sg. ko-	

As seen in the last two columns in Table 2 above, the relevant subject and object prefixes (SP, OP) are class 7 /ké-/ , class 12 /ká-/ , and class 15 /kó-/ . In addition, the second person singular OP is /ko-/ . The general negative prefix /té-/ cannot undergo DL which is restricted to /k/ vs. the negative imperative and subjunctive marker /ka-/ , which can. The tense/aspect/mood (TAM) prefixes which contain /k/ are /ko-/ 'infinitive, present, perfect', /ká-/ 'future', /ka-/ 'anterior consecutive' and /ké-/ 'simultaneous action' (all of which are exemplified below). What this means is that there are the following nine potential target + trigger combinations of morphemes in Table 5. (The tenth logical combination, NEG + TAM, does not arise since the negative imperative and subjunctive prefix /ka-/ cannot be followed by a TAM prefix.)

Table 5

##### Potential target + trigger inputs for DL

1. SP + NEG
2. SP + TAM
3. SP + OP
4. SP + Root
5. NEG + OP
6. NEG + Root
7. TAM + OP
8. TAM + Root
9. OP + Root

Starting with the leftmost potential target, the examples in (6) show that the class 7 SP /ke-/ cannot undergo DL. (Since we are only interested in prefixes, in most examples we do not separate the inflectional final vowel /-a/ or /-ε/ with a hyphen.)

- (6) 1. SP + NEG *ke-ka-rómá* ‘may it not bite!’ (negative subjunctive)  
 2. SP + TAM *ké-ko-róma* ‘it has bitten’ (perfect)  
 3. SP + OP (*kǎ*) *ke-ko-rómé* ‘may it bite you!’ (subjunctive)  
 4. SP +Root (*kǎ*) *ké-táúne°* ‘may it chew!’ (subjunctive)

While the SP is in class 7 referring, for instance, to *ke-olá* ‘frog’, the same failure to undergo DL + g-deletion is observed when the SP is class 12 /ká-/ or class 15 /kó/, referring, for instance, to *ka-ána* ‘small child’ and *ko-oro* ‘leg’.<sup>4</sup>

Turning to the imperative and subjunctive negative prefix /ka-/, we see in (7) that it does undergo DL + g-deletion.

- (7) 5. NEG + OP *w-aa-ké-rómá* ‘don’t bite it!’ (negative imperative)  
 6. NEG + Root *w-aa-táúná* ‘don’t chew!’  
 cf. *o-ka-rómá* ‘don’t bite!’

As also seen, when the /k/ of /ka-/ deletes, the second person singular SP /o-/ glides to [w] with compensatory lengthening of the following /a/.

In (8) we see that the /k/ of the infinitive prefix /ko-/, historically frozen in the perfect TAM, also undergoes DL and g-deletion.

- (8) 7. TAM + OP *to-o-ko-róma* ‘we have bitten you sg.’ (perfect)  
 8. TAM + Root *to-o-táuna* ‘we have chewed’  
 cf. *to-ko-róma* ‘we have bitten’

<sup>4</sup> As seen in the examples in (6), the tone of the SP is determined by morphological operations.

The same facts are seen with future /ká-/ , anterior consecutive /ka-/ and simultaneous action /ké-/ , all of which undergo DL + g-deletion in (9)–(11).<sup>5</sup>

- (9) 7. TAM + OP *tɔ-á-ko-róma* ‘we will bite you sg.’  
 8. TAM + Root *tɔ-á-táuna* ‘we will chew’  
 cf. *to-ká-róma* ‘we will bite’
- (10) 7. TAM + OP *(na) tɔ-a-ko-róma* ‘(and) we had bitten you sg.’  
 8. TAM + Root *(na) tɔ-a-táuna* ‘(and) we had chewed’  
 cf. *(na) to-ka-róma* ‘(and) we had bitten’
- (11) 7. TAM + OP *to-é-ko-rómaa* ‘while we bit(e) you sg.’ *-aa < \*-ag-a*  
 8. TAM + Root *to-é-táunaa* ‘while we chew(ed)’  
 cf. *to-ké-rómaa* ‘while we bit(e)’

As seen in the comparison of the second and third rows of (8)–(11), it is clear that the initial voiceless /t/ of the root /táun/ ‘chew’ conditions DL and g-deletion on all five TAM prefixes, while the voiced /r/ of /róm/ ‘bite’ does not. The examples in (12) show that DL will apply without g-deletion when the TAM prefixes are preceded by the nasal first person singular SP:

<sup>5</sup> We have indicated the output of forms like /to-ká-ko-róma/ ‘we will bite you (sg.)’ as *tɔ-á-ko-róma*, where /o/ becomes [ɔ] before [a]. Since the [ɔ] is very short, it is not always clear if this shouldn’t alternatively be transcribed *tw-ǎ-ko-róma*. It definitely does not begin [to-á-] nor is the [a] long. With a few exceptions, prepenultimate long vowels are shortened in Tiania: *o-tó-saal-a* ‘to choose us’ vs. *o-tó-sal-er-a* ‘to choose for us’. In addition, a vowel followed by a nasal+consonant (NC) complex lengthens in penultimate position, but not prepenultimately. Hence /tɔng/ ‘touch’ *o-tɔɔnga* ‘to touch’, *o-tɔng-an-a* ‘to touch each other’.

- (12) 5. *n-ga-táúná* ‘let me not chew!’ /ka-/ ‘negative subjunctive’  
 7. *n-go-táuna* ‘I have chewed’ /ko-/ ‘infinitive’ (used in perfect)  
 7. *n-gá-táuna* ‘I will chew’ /ká-/ ‘future’  
 7. *(na) n-ga-táuna* ‘(and) I had chewed’ /ka-/ ‘anterior consecutive’  
 7. *n-gé-táunaa* ‘while I chew(ed)’ /ké-/ ‘simultaneous action’  
 cf. *n-ké-rómaa* ‘while I bit(e)’

While (8)-(11) also show the OPs /ké-/ ‘it (class 7)’ and /kó-/ ‘you sg.’ triggering DL and *g*-deletion, it turns out that the /k/ of all five TAMPs will also be deleted if there is any following OP. This is seen with class 1 *mo-* ‘him/her’ in (13).

- (13) 5. *w-aa-mo-rómá* ‘don’t bite him/her!’ (negative imperative *ka-*)  
 7. *to-o-mo-róma* ‘we have bitten him/her’ (perfect *ko-*)  
 7. *tɔ-á-mo-róma* ‘we will bite him/her’ (future *ká-*)  
 7. *(na) tɔ-a-mo-róma* ‘(and) we had bitten him/her’ (anterior consecutive *ka-*)  
 7. *to-é-mo-rómaa* ‘while we bit(e) him/her’ (simultaneous action *ké-*)

Although it is conceivable that *k*-deletion went through a *g* [ɣ] stage intervocally, this is not due to DL + *g*-deletion, rather is the result of an independent rule of *k*-deletion that only affects negative /ka-/ and TAM markers followed by an OP and not preceded by a nasal. Thus, the underlying /k/ surfaces as [k] in (14), where the TAM prefix is preceded by the first person singular SP /n-/:

- (14) 5. *η-ka-ré-táúná* ‘let me not chew it!’ (negative subjunctive *ka-*)  
 7. *η-ko-ré-táuna* ‘I have chewed it’ (perfect *ko-*)

7. *η-ká-ré-táuna* 'I will chew it' (future *ká-*)  
 7. (*na*) *η-ka-ré-táuna* '(and) I had chewed it' (anterior  
 consecutive *ka-*)  
 7. *η-kě-ré-táunaa* 'while I chew(ed) it' (simultaneous  
 consecutive *ké-*)

On the other hand, if the OP also begins with a voiceless consonant, e.g. class 7 *ké-* 'it', DL produces post-nasal [g], as expected.<sup>6</sup>

- (15) 5. *n-ga-ké-táúná* 'let me not chew it!' (negative  
 subjunctive)  
 7. *n-go-ké-táuna* 'I have chewed it' (perfect)  
 7. *n-gá-ké-táuna* 'I will chew it' (future)  
 7. (*na*) *n-ga-ké-táuna* '(and) I had chewed it' (anterior  
 consecutive)  
 7. *n-gě-ké-táunaa* 'while I chew(ed) it' (simultaneous  
 consecutive)

The final potential target concerns the OP.<sup>7</sup> First, as seen in (16), the [k] of the class 7, 12 and 15 OPs is realized even when the root begins with a voiceless consonant.

- (16) 9. OP + Root (kǎ) *tó-ké-táúné* 'let us chew it! (subjunctive)  
 (class 7)'  
 (kǎ) *tó-ká-táúné* 'let us chew it!  
 (class 12)'  
 (kǎ) *tó-kó-táúné* 'let us chew it!  
 (class 15)'

<sup>6</sup> Davy & Nurse (1982: 157) point out that in some Bantu languages post-nasal /k/ is however exempt from DL. In Tiania DL applies without g-deletion post-nasally.

<sup>7</sup> Unlike certain other Bantu languages, Tiania does not allow more than one OP in sequence.



(19)	SUBJECT -	NEGATIVE -	tense/aspect/mood -	OBJECT -	[FIRST STEM C]
	NO	YES	YES	only 2sg.	YES
	cl. 7 ke-	ka-	ko-	cl. 7 ké-	
	cl. 12 ka-	sbjv,	ká-	cl. 12 ká-	
	cl. 15 ko-	imp	ka-	cl. 15 kó-	
			ké-	2sg. ko-	

In this section we first consider the one situation where two prefixes in a row can be affected and then raise the question of how far the target and trigger consonants can be separated from each other.

Although the summary in (19) shows the potential for more than one prefix undergoing DL + g-deletion on the same verb, two facts seriously limit this possibility: (i) negative /ka-/ does not co-occur with any TAM marker; (ii) SPs and all OPs except second person singular /ko-/ are exempt. In fact, it is only this /ko-/ prefix that can both trigger and undergo DL + g-deletion, as seen in (20).

(20)	5. <i>tɔ-a-o-tɔ́ngá</i>	‘let’s not touch you’	(negative subjunctive)
	7. <i>to-o-o-tɔ́nga</i>	‘we have touched you’	(perfect)
	7. <i>tɔ-á-o-tɔ́nga</i>	‘we will touch you’	(future)
	7. <i>(na) tɔ-a-o-tɔ́nga</i>	‘(and) we had touched you’	(anterior consecutive)
	7. <i>to-é-o-tɔ́ngaa</i>	‘while we touch(ed) you’	(simultaneous action)
	SP-TAM-2SG-STEM		

As seen, negative /ka-, perfect/infinitive /ko-, future /ká-, anterior consecutive /ka-, and simultaneous action /ké- all lose their initial /k/, as does the following second person singular OP /ko-, hence two applications of DL + g-deletion. Recall from (13), however, that *k*-initial negative and TAM prefixes lose their /k/ whenever any OP follows (for which we proposed a separate rule of *k*-deletion). It is when a nasal precedes, as in (21), that we see that the /k/ is subject to voicing by DL.

- |                                       |                           |                        |
|---------------------------------------|---------------------------|------------------------|
| (21) 5. <i>η-ga-o-tɔ́ngá</i>          | ‘let me not touch you’    | (negative subjunctive) |
| 7. <i>η-go-o-tɔ́nga</i>               | ‘I have touched you’      | (perfect)              |
| 7. <i>η-gá-o-tɔ́nga</i>               | ‘I will touch you’        | (future)               |
| 7. ( <i>na</i> ) <i>η-ga-o-tɔ́nga</i> | ‘(and) I had touched you’ | (anterior consecutive) |
| 7. <i>η-gé-o-tɔ́ngaa</i>              | ‘while I touch(ed) you’   | (simultaneous action)  |

The derivation of forms such as in (20) thus involve two applications of DL + g-deletion, with intermediate forms such as *to-ga-go-tɔ́ngá*, *to-go-go-tɔ́nga* etc. This is not surprising, since multiple application of DL occurs in closely related languages, including Imenti dialect of Kimeru, for which Nurse & Davy (1982: 185) provide the following, where the forms in parentheses are accepted by only some speakers (22).

- |      |                              |                         |
|------|------------------------------|-------------------------|
| (22) | <i>/ka-kaa-ko-roma/</i>      | <i>/ka-kaa-ko-eta/</i>  |
| a.   | <i>ya-yaa-ko-roma</i>        | <i>ya-yaa-ɣw-eeta</i>   |
| b.   | <i>(ka-yaa-ko-roma)</i>      | <i>(ya-kaa-ɣw-eeta)</i> |
| c.   | <i>(ka-yaa-ɣw-eeta)</i>      |                         |
|      | ‘s/he (cl.12) will bite you’ | ‘s/he will call you’    |

The SP is diminutive class 12 */ka-/*, followed by the future prefix */káa-/*, the second person singular OP */ko-/* and the verb stems with */róm/* ‘bite’ and */ét/* ‘call’.<sup>8</sup> Several points are worth noting in Imenti. First, unlike Tania, the SP */ká-/* can undergo DL. Second, there can be a sequence of two or three prefixes undergoing DL. The variants

<sup>8</sup> Although tone is not marked in Davy & Nurse, we have indicated the likely /H/ tones in the underlying forms. While Davy and Nurse show the future prefix with a long vowel, Tania future */ká-/*, negative */ka-/* and OPs lengthen their vowel only when the stem is monosyllabic: *to-káa-wa*° ‘we will fall’, *to-kaa-waá* ‘let’s not fall’, *tɔ-á-kée-tá* ‘we will pick it (class 7)’ (e.g. *ke-rio*° ‘banana’). Other prefixes remain short, e.g. *na tó-ka-wa*° ‘and we had fallen’, *to-ké-réyàà* ‘while we were eating’.

in (22a) were accepted by all of Davy & Nurse's consultants and can be derived in one of two ways. The first is by a left-to-right iterative application of DL, as in (23a), where we have replaced Davy & Nurse's gamma with *g* (23).

- (23) a. /*ka-kaa-ko-roma*/ → *ga-kaa-ko-roma* → *ga-gaa-ko-roma*  
       /*ka-kaa-ko-eta*/ → *ga-kaa-ko-eta* → *ga-gaa-ko-eta* → *ga-gaa-go-eta*  
 b. /*ka-kaa-ko-roma*/ → *ka-gaa-ko-roma*  
       /*ka-kaa-ko-eta*/ → *ka-kaa-go-eta* → *ga-kaa-go-eta*  
 c. /*ka-kaa-ko-eta*/ → *ka-gaa-ko-eta* → *ka-gaa-go-eta*

A second interpretation is that DL applies simultaneously to all instances of /*k*/ in the input that are followed by a voiceless consonant. The less widely accepted variants in (22b) show an alternating pattern, suggesting a right-to-left derivation, as in (23b). Finally, the realization in (22c) appears to require a left-to-right or simultaneous derivation as in (23c), with the SP being exempt (as in Tiania).

From the above examples, it is clear that DL applies more generally in Imenti than in Tiania. Interestingly, in the one case where multiple application is possible involving the second person singular OP, (20) and (21) show the same left-to-right/simultaneous application of DL as in the most widely acceptable Imenti variants in (22a). The following shows the derivation of the Tiania forms in (20).

- | (24)                      | DL 1                     | DL 2                     | <i>g</i> -deletion      |
|---------------------------|--------------------------|--------------------------|-------------------------|
| a. <i>to-ka-ko-tɔ́ngá</i> | → <i>to-ga-ko-tɔ́ngá</i> | → <i>to-ga-go-tɔ́ngá</i> | → <i>tɔ́-a-o-tɔ́ngá</i> |
| b. <i>to-ko-ko-tɔ́ngá</i> | → <i>to-go-ko-tɔ́ngá</i> | → <i>to-go-go-tɔ́ngá</i> | → <i>to-o-o-tɔ́ngá</i>  |
| c. <i>to-ká-ko-tɔ́ngá</i> | → <i>to-gá-ko-tɔ́ngá</i> | → <i>to-gá-go-tɔ́ngá</i> | → <i>to-á-o-tɔ́ngá</i>  |
| d. <i>to-ka-ko-tɔ́ngá</i> | → <i>to-ga-ko-tɔ́ngá</i> | → <i>to-ga-go-tɔ́ngá</i> | → <i>tɔ́-a-o-tɔ́ngá</i> |
| e. <i>to-ké-ko-tɔ́ngá</i> | → <i>to-gé-ko-tɔ́ngá</i> | → <i>to-gé-go-tɔ́ngá</i> | → <i>to-é-o-tɔ́ngá</i>  |

This still doesn't answer the question of why DL cannot apply to SPs or OPs other than the second person singular. We will return to this question in §7.

Besides the multiple application of DL, a second issue concerns how far the target and trigger can be from each other. As in the Imenti examples with *-eta* ‘call’ in (22), Tiania also applies DL (and *g*-deletion) when the target and trigger consonants are separated by more than one vowel. This is seen in the examples in (25) involving the use of the infinitive prefix /*ko-*/ in the perfect TAM.

- (25) a. /*to-ko-íkua*°/ → *to-o-íkua*° ‘we have heard’  
 b. /*to-ko-áka*/ → *to-o-áka* ‘we have built’  
 c. /*to-ko-ónka*/ → *to-o-ónka* ‘we have suckled’  
 d. /*to-ko-í-tóngá*/ → *to-w-í-tóngá* ‘we have touched ourselves’  
 e. /*n-ko-í-tóngá*/ → *n-gu-í-tóngá* ‘I have touched myself’

In (25a) we see that the future prefix /*ká-*/ undergoes DL and *g*-deletion triggered by the non-adjacent [k] of the verb *-íkua*° ‘hear’. The next two examples show that perfect /*ko-*/ is targeted by a /*k*/ that is separated from it by a long vowel (25b) and by a vowel + the NC complex nasal [ŋk] (25c). Finally, (25d) shows that DL and *g*-deletion apply through the reflexive prefix /*i-*/. That DL is involved in this last derivation is seen in (25e), where the [g] deriving from /*k*/ is preserved after the nasal first person singular SP.<sup>9</sup> While the examples in (25) show that DL can apply across vowels in hiatus, DL is blocked by any voiced consonant that intervenes, even a glide: *to-o-ko-wáata* ‘we have caught you’, *to-o-ko-yokia*° ‘we have taken you away’.

## 6. Pre-final \*-ag-a

In the preceding sections we have seen that Tiania tolerates numerous cases of vowel hiatus. The examples in (25) have included up to three vowels in a row produced by two applications of DL + *g*-deletion. In

<sup>9</sup> Unfortunately, we cannot construct a sequence of four prefixal vowels in a row, since the allomorph of the reflexive is *-isi-* before a vowel-initial verb: /*n-ko-í-ák-er-a*/ → *n-gu-í-í-ák-er-a* ‘I have built for myself’.

this section we consider an interesting case where *g*-deletion looks as if it is blocked if a succession of three vowels would otherwise surface. If correct, this could raise the question of whether hiatus avoidance is responsible for DL failing to apply to SPs and most OPs.

As seen in (26), the habitual TAM terminates in a bisyllabic *-a.á* final ending, derived from the Bantu “prefinal” \**ag* plus the default *-a* final vowel (Sebasoni 1967).

- (26) a. *í-tó-róm-a.á* ‘we bite’ /róm/ ‘bite’  
 b. *í-tó-táun-a.á* ‘we chew’ /táun/ ‘chew’  
 c. *í-tó-tǝng-a.á* ‘we touch’ /tǝng/ ‘touch’  
 d. *í-tó-sal-a.á* ‘we choose’ /saal/ ‘choose’

Since the preceding roots are in prepenultimate position, the long vowel of /saal/ ‘choose’ shortens and the underlying short vowel of the vowel of /tǝng/ ‘touch’ fails to lengthen before an NC complex nasal (cf. note 5).

However, just in case the verb base ends in a vowel, e.g. causative *-i-*, a different outcome is observed:

- (27) a. *í-tó-mo-róm-ak-i-á* ‘we feed him’ /róm-i/ ‘feed, give a bite to’  
 b. *í-tó-mo-ǝamb-ak-i-á* ‘we bathe him’ /ǝamb-i/ ‘bathe (tr.)’  
 c. *í-tó-mo-réth-ak-i-á* ‘we look after him’ /réth-i/ ‘look after’  
 d. *í-tó-mo-kar-ak-i-á* ‘we protect him’ /kar-i/ ‘protect’

Although the verb roots /róm/ ‘bite’ and /ǝamb/ ‘bathe (intr.)’ are identifiable in (27a,b), there are no non-causative verb roots corresponding to /réth-i/ ‘look after’ and /kar-i/ in (27c,d). In all cases, the historical input \**ag-i-a* is realized with devoicing of \**g* rather than by *g*-deletion, which would have produced an *-a-i-a* sequence. This is quite surprising since the historical input \**ag-ǝ-a* with passive \**ǝ* is realized *a-w-ǎ* via *g*-deletion, as in (28), rather than *-ak-w-ǎ*.

(28) a.	<i>í-tó-rúm-a-w-ǎ</i>	‘we are cursed’	/rúm-o/	/rúm/
			‘be cursed’	‘curse’
b.	<i>í-tó-íð-a-w-ǎ</i>	‘we are hidden’	/íð-o/	/íð/
			‘be hidden’	‘hide’
c.	<i>í-tó-tǝng-a-w-ǎ</i>	‘we are touched’	/tǝng-o/	/tǝng/
			‘be touched’	‘touch’
d.	<i>í-tó-sal-a-w-ǎ</i>	‘we are chosen’	/saal-o/	/saal/
			‘be chosen’	‘choose’

However, both passivized causative verbs and lexicalized verb bases that end in [u] also take *-ak*, as in the case of /ðamb-i/ ‘bathe (tr.)’ and /róm-i/ ‘feed’ in the sense of ‘give a bite to’:

(29) a.	<i>í-tó-róm-ak-u-á</i>	‘we are fed’	<i>róm-u</i>
			‘be fed, given a bite’
b.	<i>í-tó-ðamb-ak-u-á</i>	‘we are bathed’	<i>ðamb-u</i>
			‘be bathed’
c.	<i>í-tó-as-ak-u-a</i>	‘we are sick’	/ásu/ ‘be sick’
d.	<i>í-tó-ík-ak-u-a</i>	‘we are heard’	/íku/ ‘hear’

As seen to the right in (29a,b) the expected causative-passive sequence *-i-o* has fused as *-u-*: *róm-u* ‘be fed’, *ðamb-u* ‘be bathed’. The verb roots in (29c,d) end in an underlying /u/ which *-ak-* splits from the preceding VC of the root, presumably analogized on the basis of causative-passive *-u*. The fact that /íku/ ‘hear’ reconstructs as \**jígu* in Proto-Bantu shows another (rare) example where \**g* has been devoiced rather than deleted. As in the devoicing of \**-ag* to *-ak*, the blocking of *g*-deletion has the effect of avoiding a vowel sequence (\**-íu*).<sup>10</sup>

<sup>10</sup> There also are *-ak* and *-ang* variants of the prefinal in different Bantu languages (Sebasoni 1967: 127). The cases Sebasoni reports for *-ak* are geographically distant from Tiana, generally found in Western and Southern Bantu languages where \**g* > *k* (Sebasoni 1967: 134), while *-ang* appears in a number of areas including nearby Kikuyu and Kikamba (Sebasoni 1967: 130) (cf. Nurse 2008: 262-4). However, the only other possible case we have found where \**ng*

There is, however, cause to wonder if hiatus avoidance is really what is going on, since *\*-ag-a* has another peculiarity in Tiania. Both lexicalized and productive applicative *-er* splits *\*-ag-a* in an unexpected way. While *\*ag-* is generally followed only by causative *\*-i-* and passive *\*-o-* in Bantu, when /rú-/ ‘cook’ is applicativized as *-rú-er-* ‘cook for’, the habitual comes out as *í-tó-mo-rú-a-er-á* ‘we cook for him/her’ rather than the expected *\*í-tó-mo-rú-er-a.á*. Applicative *-er* has split *\*-ag-a!* A similar result obtains with a verb base that ends in unanalyzable [er], e.g. /ðuuter/ ‘to become warm’, whose habitual is *í-tó-ðuut-a-er-á* ‘we become warm’,<sup>11</sup> rather than *\*í-tó-ðuter-a.á*.<sup>12</sup> However, when we consider the corresponding causative verb /ðuut-i/ ‘to heat (sth.)’ in (30a), *-ak* now appears following [er] (30).

- (30) a. *í-tó-ké-ðuuter-ak-i-á* ‘we heat it (class 7)’  
 b. *\*í-tó-ké-ðuut-a-er-i-á*  
 c. *í-tó-bá-ðuut-a-eerr-i-á* ‘we heat (sth.) for them’  
 d. *\*í-tó-bá-ðuuteer-r-ak-i-á*

has undergone deletion in Tiania is *mo-a.a* ‘healer, native doctor’, for which Bastin et al. (2002) provide the reconstruction *\*gàngà* ‘medicine-man’. Although we agree with Sebasoni’s *\*-ag* reconstruction, we suspect that there were two independent suffixes with different morphotactics: *\*-ang* ‘pluractional’ and *\*-ag* ‘imperfective’. Nurse (2008: 37) cites the following example of the two suffixes cooccurring in Bena (Tanzania) with the above indicated meanings: *ndi-laa-gul-ang-ag-a* ‘I’ll be buying in quantities’. Although differing in their shape, meaning, position, combinatorics, and productivity, the two suffixes would have fully or partially lost their distinction in most Bantu languages.

<sup>11</sup> Curiously, when a short *-a* (< *\*-ag*) immediately follows, a CVVC- root does not undergo prepenultimate vowel shortening. This would suggest that *ðuut-a* is treated a unit or domain within which the root syllable is penultimate, perhaps an analogy with the default inflectional final vowel *-a*.

<sup>12</sup> It is not likely that the three examples Sebasoni (1967: 133) cites with the applicative following *-ak* or *-ang* involve the durative/habitual prefinal rather than being lexicalized suffix compounds or “suffixal phrasemes” (Bostoen & Guérois, in press).

If the causative verb /*ðuuter-i/* is productively applicativized, as in (30c), *-a* (< \**-ag*) again precedes applicative *-er-*. (The sequence *-er-er-* is realized *-eerr-*, where *rr* = a trilled *r*). As indicated, the alternative realizations (30b) and (30d) are not acceptable. Returning to whether the observed allomorphy is phonologically motivated, while (30a) has one fewer case of hiatus than ungrammatical (30b), (30c) has one more case of hiatus compared to ungrammatical (30d). We conclude, therefore, that more than hiatus avoidance is involved in determining the affix ordering and spell-out of the habitual suffix.<sup>13</sup> The question is whether hiatus avoidance is involved in blocking DL and *g*-deletion on SPs and all but the second person singular OP. We take this up in our final section.

## 7. Conclusion

In the preceding sections we have seen that Tiania has a regular process of Dahl's Law which, affecting only /*k/*, naturally feeds into *g*-deletion. While all noun class prefixes on nouns and adnominal modifiers are subject to DL + *g*-deletion, Tiania differs from other Bantu languages in restricting DL on verbal prefixes: Although negative and TAM prefixes undergo DL, SPs and OPs other than second person singular do not. The question is why? In the above discussion we have considered the possibility that it has to do with hiatus avoidance: If DL were to apply to all *kV-* prefixes, *g*-deletion would produce more hiatus contexts than other Bantu languages, including dialectal Imenti, which maintains [ɣ] as the output of DL. If DL were to apply to all verb prefixes, as in Imenti, an input such as /*ká-ko-ké-ák-a/* 's/he (class 12) has built it (class 7)' would be realized \**á-o-é-ák-a* with four vowels in a row versus the actual output *ká-o-ké-ák-a*, with only one

<sup>13</sup> The generalization is that the outermost bracket in the morphological structure of the verb determines the form of the habitual, thus the causative in (30a) [ [ root ] CAUS ] vs. the applicative in (30c) [ [ root ] CAUS ] APPL ]. We need however to add that verb bases with lexicalized affixes or look-alikes (e.g. /*ðuuter/* 'become warm', /*íku*°/ 'hear') follow the same spell-outs.

hiatus. Whether hiatus avoidance plays any rôle at all, this cannot be the full story (cf. §6). First, four vowels in a row would be only one more than the three we saw in examples such as in (20).<sup>14</sup> As we pointed out in §2, besides \*g, Tiania has also deleted non-post-nasal \*p and many cases of \*b, and seems to have little fear of hiatus.

There is in fact one intriguing piece of evidence that suggests that hiatus avoidance does play a limited role. Recall that OPs other than the second person singular do not undergo DL + g-deletion. What we haven't seen are examples such as in (31) where the targeted OPs are preceded by the first person singular nasal prefix /n-/.

- (31) a. *í-ŋ-gé-tɔŋga.á* 'I touch it (class 7)'  
 b. *í-ŋ-gá-tɔŋga.á* 'I touch it (class 12)'  
 c. *í-ŋ-gó-tɔŋga.á* 'I touch it (class 15)'  
 d. *í-ŋ-go-tɔŋga.á* 'I touch you (sg.)'

If the class 7, 12 and 15 kV- OPs were truly exempt from DL, they would have been realized with voiceless [k] even after a nasal. Instead, as seen, they undergo DL, but not g-deletion. This suggests that DL + g-deletion is blocked in non-post-nasal contexts such as (16) because this would produce three vowels in a row.<sup>15</sup> (Unfortunately, consonant-initial SPs are never preceded by a nasal prefix to see if they would also undergo DL.)

In any case, even if hiatus avoidance is involved, we still need to ask why SPs and most OPs were specifically exempted rather than negative and TAM prefixes. In fact, this is an a priori surprising fact, since unlike negative and TAM prefixes, SPs and OPs share the property of noun class marking with prefixes on nouns and adnominal modifiers

<sup>14</sup> Elsewhere it is possible to get four vowels in a row. Thus, the corresponding causative of /ko-óo-a/ 'to jest' is *ko-ó-i-a*° 'to tease, not take someone seriously'.

<sup>15</sup> It is tempting to interpret (31) as "phonological teamwork" (Lionnet 2016) between DL and the widespread process of postnasal voicing (see Hyman 2001 and references cited therein).

which do undergo DL and *g*-deletion. It is hard to see what negative, TAM, and these latter prefixes could have in common that only they would undergo DL and *g*-deletion. Instead, it must be something about SPs and OPs.

Starting with the SP, we note that unlike other prefixes, SPs are required of all verb forms except the affirmative imperative (*ḍaámhá* ‘bathe!’). They also are always initial in the verbal complex in Tiania. Unlike many other Bantu languages, the general negative prefix /té-/ follows the SP: *to-té-ko-ḍaamba* ‘we are not bathing’. Although negative and TAM prefixes cannot occur word-initially, the OP appears initially in the affirmative imperative: *ké-saálé* ‘choose it! (class 7)’. Thus it is only those prefixes that can be initial in the verb that are exempt from DL. This observation also applies to the second person singular OP which does undergo DL but cannot occur initially, since a reflexive prefix would instead be required in the imperative. As a result, DL will never apply initially in a verb. However, we are unaware of any other Bantu language that exempts DL from applying to a word-initial prefix. In addition, as we saw in Table 3 and elsewhere, DL and *g*-deletion clearly apply word-initially on nouns and adnominal modifiers: *e-kómbé* ‘cup’ (class 7 /ke-/), *o-saal-a* ‘to choose’ (infinitive class 15 /ko-/), *a-kómbé* ‘small cup’ (diminutive class 12 /ka-/). Therefore initiality cannot fully account for the non-application of DL.

Turning to OPs, their exemption from DL is even more surprising as they occupy the position closest to the verb root. In certain other Bantu languages such as Kirundi (Meeussen 1959: 42), only the root can trigger DL and hence only the pre-root prefix will be affected (*tú-ta-gumá* ‘without our staying’ vs. *tú-da-seká* ‘without our laughing’). Since the pre-root prefix will very often be the OP, it should be more prone to the effects of DL than other prefixes which can be separated from the root, specifically negative and TAM prefixes which are undergoers. Of course we have seen that the second person singular OP /ko-/ undergoes DL. There are two possible explanations for this. The first is that it has to do with the difference between second vs. third person: the second person is a participant and will occur more

prominently and frequently in discourse than any third person OP. (The first person and second person plural OPs do not have a /k/ to undergo DL.) The second factor might be that /ko-/ is L tone vs. class 7 /ké-/ , class 12 /ká-/ and class 15 /kó-/ , all of which are underlyingly H. We did, however, see that the negative and TAM undergoers can be either H or L tone. We therefore do not think tone is a factor.

The final hypothesis we need to consider, but also ultimately reject, is that SPs and OPs are exempt because DL would make them merge with other classes. This is an issue that Davy & Nurse (1982: 175) point out for Kikuria, another Kenyan Bantu language which allows DL to apply to OPs. As seen in Table 6, Kikuria has the same class 7, 12, and 15 OPs as Tiania. (Davy & Nurse do not mark the Kikuria OP tones, which are expected to be H except for the second person singular and class 4.)

Table 6

### Object prefixes in Kikuria and Tiania

	Kikuria	Tiania		Kikuria	Tiania
Class 7	ke-	ké-	Class 4	ge-	me-
Class 12	ka-	ká-	Class 6	ga-	yá-
Class 15	ko-	kó-	Class 3	go-	yó-
2 <sup>nd</sup> person	ko-	ko-			

When DL applies to the above OPs in Kikuria, voicing of /k/ to g [ɣ], classes 7, 12 and 15 merge with classes 4, 6 and 3. Davy & Nurse report that although “this is tolerable in the redundant conditions normal to connected speech”, their speakers preferred non-application of DL on OP in words in isolation which they justified “on the grounds that the corresponding rule-application forms would be ambiguous,” adding: “This preference was strongest for /-ko-/ ‘you’, and this was attributed to the greater intrinsic semantic content of this prefix” (Davy & Nurse 1982: 175).

As can be seen in Table 6, this problem does not arise in Tiania, where the OPs of classes 4, 6 and 3 are all quite distinct: Class 4 has

the same *me-* shape as the noun prefix, while the \**g* of classes 3 and 6 has become [y] instead of undergoing *g*-deletion. Thus, the Tania class 7, 12, and 15 OPs could have become *é-*, *á-* and *ó-* by DL + *g*-deletion without any mergers. If these classes were to undergo DL + *g*-deletion as SPs, the *yá-* and *yó-* of classes 6 and 3 would still be distinct, as can be seen in Table 2 above. While class 7 *ké-* would become *é-*, it would still be tonally distinct from the class 4 and class 9 SP *e-*. Similarly, if class 15 *kó-* became *ó-*, it would still be tonally distinct from the second person singular SP *o-* seen, for example, in examples like *o-ka-rómá* ‘don’t bite!’ in (7). Thus, there would be no risk of ambiguity in Tania if SPs or OPs had been allowed to undergo DL + *g*-deletion.

In our discussion we have seen evidence that DL and *g*-deletion are two separate historical processes which can be mirrored synchronically as /*k*/ → *g* when the next consonant is voiceless followed by *g*-deletion except after a nasal. Although ad hoc, /*H*/ tone SPs and OPs could be said to carry a diacritic accent that exempts them from DL + *g*-deletion. Alternatively, the *k* ~ *g* ~ Ø alternations could be implemented as allomorphy, as in Table 7.

Table 7

<b>/kV-/ prefix allomorphs</b>			
	Underlying / default	V <u>  </u> V [-voice]	N <u>  </u> V [-voice]
Cl. 7, 12, 15 SP	kV-		
NEG, TAM, 2sg. OP	kV-	V-	gV-
Cl. 7, 12, 15 OP	kV-		gV-

As indicated, negative, TAM and second person object /kV-/ prefixes would have both V- and gV- allomorphs, appearing after a vowel or nasal, respectively, while classes 7, 12, and 15 OPs would only have the gV- allomorph. SPs would have neither allomorph, hence realized always as kV-. Whatever the preferred “solution”, we find the distinction puzzling, if not mysterious. While it is not hard to encode the undergoers vs. non-undergoers of DL and *g*-deletion, the unresolved question

remains: What is different about being a SP or OP that would cause them to have an accent or to not have DL allomorphs? Other ideas that we have considered strike us as even less compelling. For example, we might attribute the DL-blocking effect to the prominent agentive function of the subject which is true of canonical transitive clauses, but not most intransitive and passive constructions. Or we might allude to an abstract syntactic structure that somehow places SPs and OPs out of reach from other elements in the verb. At this point we feel equally comfortable (or uncomfortable) just stating the obvious descriptive generalization: Excepting the second person singular OP, the Tiania language does not allow DL + g-deletion to apply to argument markers on the verb.

### Abbreviations

SP – subject prefix	NEG – negative	TAM – tense–aspect–mood
OP – object prefix	APPL – applicative	CAUS – causative
FOC –focus marker	INFL – inflectional suffix	SEP – separative

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