The split margin in Mina loanwords and reduplication

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Section 1. Introduction

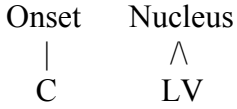
Mina, a Gbe language spoken in southern Togo and Benin, allows complex onsets but lacks coda consonants. According to Kaye and Lowenstamm (1981), Kaye (1985), Baertsch (2002), and Baertsch and Davis (2009), such a system is predicted not to occur and thus poses problems for analysis. This paper examines the following two claims (one claiming these are actually CV languages and the other that they are CCVC languages) using data from Mina reduplication and loanwords using an Optimality Theoretic framework (Kaye and Lowenstamm, 1981).

Kaye (1985)

Mina and other CCV maximal syllable languages allow only liquids and glides as the second member of a cluster.

Claim 1: In CLV syllables, liquids are part of the nucleus rather than the onset.

CLV sequences:



Problem: Mina reduplication treats Consonant-Glide-Vowel (CGV) and Consonant-Liquid Vowel sequences (CLV) differently.

Baertsch and Davis (2009)

The split margin approach to the syllable predicts a language that allows CLV syllables should also allow CVL syllables.

Claim 2: CCV maximal syllable languages are covert CCVC languages that lack codas in input forms.

Problem: Mina loanwords use epenthesis to avoid coda liquids.

Section 2. The split margin approach to the syllable.

The split margin approach to the syllable splits onset and coda consonants into two margins based on the observation that onsets prefer a sonority rise and codas prefer a sonority fall.

(1) Split margin syllable types
   a. CV: M_1V
   b. CVC: M_1VM_2
   c. CCV: M_1M_2V
   d. CCVC: $M_1M_2VM_2$
   e. CCVCC: $M_1M_2VM_2M_1$

(2) M_1 Hierarchy (simplified for Mina)
   $*M_1/i>>*M_1/l>>*M_1/n>>*M_1/t$

(3) M_2 Hierarchy (simplified for Mina)
   $*M_2/t>>*M_2/n>>*M_2/l>>*M_2/i$

Complex Onsets in Mina allow CGV and CLV but not Consonant-Nasal-Vowel sequences, which can be explained by situating faithfulness constraints (generalized here as FAITH) between $*M_2/n$ and $*M_2/l$ as represented in (4).

(4) $*M_2/t>>*M_2/n>>$FAITH$>>*M_2/l>>*M_2/i$

This ranking explains Mina complex onsets without explaining the lack of codas. The split margin approach obviates the constraint *COMPLEX, but I argue it cannot obviate NOCODA.

Section 3. Loanword and reduplication data

Mina has no coda consonants and allows only liquids (5a-c) and glides (5d-e) as the second member of an onset cluster, as in (5).

(5) Mina consonant clusters

	Example	**Gloss**	**Cluster Type**
a)	klŏ	to fade	Obstruent-Liquid
b)	ŋlɔ̆̆	to fold	Nasal-Liquid
c)	wlă	to hide	Glide-Liquid
d)	bjŏ	to ask	Obstruent-Glide
e)	ŋwɛ̆̆	good/well	Nasal-Glide
f)	ljă	to climb	Liquid-Glide

Obstruents (6a), nasals (6b), and glides (6c) can all precede liquids and obstruents (6d), nasals (6e) and liquids (6f) can precede glides. Disallowed clusters and coda consonants are systematically avoided, as evidenced by the loanwords in (7). The lack of Liquid-Liquid sequences is explained by a ban on initial geminates.

(6) Loanwords in Mina

	Gloss	**Word**
a)	bus	bɔ́sù
b)	bic (pen)	bǐkì
c)	school	sùkúlù
d)	milk	mílíkì

Differential treatment of M_2 glides and liquids can be found in reduplication. Mina uses reduplication to derive adjectives and nouns from verbs as in (8).

(7) CV and CGV stem reduplication[1]

	Verb Stem	**Gloss**	**Reduplicated Form**	**Gloss**
a)	kù	to uproot	kù.kù or kù.kŭ	uprooting, uprooted
b)	nu̍	to drink	nu̍.nu̍ or nu̍.nu̍	drinking, drank
c)	lè	to hold	lè.lè or lè.lĕ	holding, held
d)	jì	to go	jì.jì or jì.jĭ	going, gone
e)	bjɔ̆	to ask	bjɔ̆.bjɔ́	asking, asked
f)	ljă	to climb	ljă.ljá	climbing, climbed
g)	ɦwɛ̆	to stink	ɦwɛ̆.ɦwɛ́	stinking, stinky

While CV and CGV stems fully reduplicate, CLV stems reduplicate as CV.CLV.

(8) CLV stem reduplication

	Example	**Gloss**	**Reduplicated Form**	**Gloss**
a)	blè	to decieve	bè.blè or bè.blĕ	deception, deceived
b)	ɸlè	to buy	ɸè.ɸlè or ɸè.ɸlĕ	buying, bought
c)	klŏ	to fade	kŏ.kló	fading, faded
d)	tɾɔ̆	to turn	tɔ̆.tɾɔ́	turning, turned
e)	sɾɔ̆̃	to study	sɔ̆̃.sɾɔ́̃	studying, studied
f)	mlı̍̃	to roll in	mı̍̃.mlı̍̃ or mı̍̃.mlı̍̆̃	rolling (in), rolled (in)
g)	ɲɾɛ̆̃	to sharpen	ɲɛ̆̃.ɲɾɛ́̃	sharpening, sharpened
h)	wlă	to hide	wă.wlá	hiding, hidden
i)	jɾă	to bless	jă.jɾá	blessing, blessed

[1] Variant forms are tonal and thus irrelevant to this analysis.

Section 4. Optimality Theoretic Analysis

In addition to the M_2 hierarchy in (3). The following constraints will be considered:

*COMPLEX- Assign a constraint violation for any complex onset.

MAXIO- Assign a constraint violation for any segment in the input that does not have a correspondent in the output.

DEPIO- Assign a constraint violation for any segment in the output that does not have a correspondent in the input.

MAXBR- Assign a constraint violation for any segment in the base that does not have a correspondent in the reduplicant.

If all onset clusters are considered equally marked, which is reflected in the constraint *COMPLEX, the /sk/ cluster in (9) should be treated identically to the /kl/ cluster in (10).

(9)

/skul/		*COMPLEX	DEPIO
a)	[skulu]	*!	*
☞b)	[sukulu]		**

The ranking *COMPLEX>>DEPIO incorrectly predicts that no initial clusters will surface in Mina, as is the case with the incorrectly predicted candidate (10).

(10)

/klo/		*COMPLEX	DEPIO
a)	[klo]	*!	
💣b)	[kolo]		*

The constraints in the second margin hierarchy in (3) are in the form *M_2/x, which can be understood as, "Assign a constraint violation for any x occurring in the second margin." By situating DEPIO/MAXIO between *M_2/t and *M_2/l, we can account for the epenthesis in (11), while still allowing for CL clusters to surface as in (12).

(11)

/skul/		*M_2/t	MAXIO	DEPIO	*M_2/l
a)	[skulu]	*!		*	
☞b)	[sukulu]			**	
c)	[sulu]		*!	*	

(12)

/klo/		*M_2/t	MAXIO	DEPIO	*M_2/l
☞a)	[klo]				*
b)	[kolo]			*!	
c)	[ko]		*!		

Since the M_2 hierarchy gives us the ranking *M_2/l>>*M_2/i, transitivity gives us the ranking of MAXIO/DEPIO>>*M_2/i, which is confirmed by the presence of CG clusters, as in (13).

(13)

/bjɔ/		*M_2/t	MAXIO	DEPIO	*M_2/l	*M_2/i
☞a)	[bjɔ]					*
b)	[bɔ]		*!			
c)	[bɔjɔ]			*!		

The differential treatment of onset clusters in reduplication, requires a similar ranking of FAITH constraints within the hierarchy, in this case MAXBR, which militates against deletion of segments in a reduplicant with correspondents in a base. Verbs stems with CG onsets surface faithfully, as in (14).

(14)

/bjɔ/		*M_2/l	MAXBR	*M_2/i
☞a)	[bjɔ.bjɔ]			*
b)	[bɔ.bjɔ]		*!	

CL clusters, on the other hand, are simplified in reduplication, which can be explained by the ranking of MAXBR below *M_2/l, as in (15).

(15)

/klo/		*M_2/l	MAXBR	*M_2/i
a)	[klo.klo]		*	
☞b)	[ko.klo]	*!		

(16) *M_2/t>>MAXIO/DEPIO>>*M_2/l>>MAXBR >>*M_2/i

This ranking allows both CL and CG to be complex onsets despite their differential treatment and shows an 'emergence of the unmarked' effect in allowing glides but not liquids to surface in reduplication. This ranking can explain the lack of coda obstruents, as in (17), but it incorrectly predicts the winner in (18).

(17)

/bik/		*M_2/t	DEPIO
a)	[bik]	*!	
☞b)	[biki]		*

(18)

/skul/		*M_2/t	DEPIO	*M_2l
💣a)	[sukul]		*	*
b)	[sukulu]		**!	

A high ranking NOCODA constraint must still be present to rule out all coda consonants.

Section 5. Analysis and Conclusion

The solution presented by Kaye (1985) of placing the liquid within the nucleus does not address the differential treatment of CL and CG segments in reduplication. If syllable final liquids can also be nuclear (VL), there is no reason to avoid them in loanwords such as *sukulu* 'school'.

The split margin approach the syllables allows the ranking in (16) which accounts for the similar treatment of CG and CL clusters in stems as well as the differential treatment of those same clusters in reduplicants. However, it fails to account for the avoidance of coda liquids. I propose the constraint NOCODA must be used. In other words, the split margin approach to the syllable adds a more accurate account of the data than *COMPLEX, but cannot obviate NOCODA.

References

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