

EMERGENT SYLLABLE COMPLEXITY IN COLLOQUIAL BAMANA[&]

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Data from two varieties of Bamanankan, or Bambara, a Mande language spoken in Mali and surrounding nations, illustrate differences in permissible syllable shapes between the variants. A comparison of the Classic variety of the language spoken in Ségou and that spoken by a younger cohort of individuals in the Malian capital reveals that the latter variety is synchronically developing complex CCV and CVC syllable shapes primarily through vocalic syncope, whereas the classical variety permits only maximal CV syllables. Data presented in this study show that this complexification of syllables in Bamako Bamana is one manifestation of the overall drive towards word minimization in this variety of the language. These data illustrate that this variety of Bamana has preferential patterns of deletion that are largely dependent on phonotactic constraints and permissible syllable contact that results from syncope. Additionally, other processes that interact with syncope or prevent it from occurring are explored.

Les données de deux variétés du bamanankan, ou le bambara, une langue mandingue qui se parle au Mali et dans d'autres pays voisins, illustrent les différences des formes de syllabe acceptables entre les variantes. Une comparaison de la variété Classique de la langue parlée à Ségou et celle qui se parle parmi d'individus plus jeunes à la capitale Malienne révèle que celle-ci se développe synchroniquement des formes de syllabe complexes en CCV et en CVC essentiellement par la syncope vocalique, tandis que la variété classique ne permet qu'une syllabe maximale en CV. Les données présentées dans cette étude montrent que cette complexification de syllabe dans le Bamako bamana est une manifestation de la forte tendance vers la minimisation de mots dans cette variété de la langue. Ces données illustrent que cette variété de bamana a des modèles préférentielles d'effacement qui dépendent largement sur des contraintes phonotactiques et sur le contact entre syllabes qui est le résultat de la syncope. De plus, on explore d'autres processus et leur interaction avec la syncope ou leur empêchement de celle-ci.

0. INTRODUCTION

Recent work by Diakite (2006), Baertsch and Davis (to appear), Davis and Baertsch (2005, 2008), and Green et al. (2008, 2009) has brought to light data from an emerging variety of Bamana, termed Colloquial Bamana, spoken by a young cohort of individuals in the Malian capital, Bamako. These works have illustrated that Colloquial Bamana (henceforth CB) is derived from a Standard form of the language and is synchronically developing syllables with complex onsets of rising sonority (CCV) where the second consonant is a sonorant or conversely with singleton codas (CVC) where the coda is a sonorant via vocalic syncope. This represents a significant change to the phonology of the language, given that Bamana has long been described as a language with a maximal CV syllable shape, setting aside exceptions that include syllabic nasal-initial words, vowel-initial borrowings, and emergent nasal codas resulting from the juxtaposition of phonemic nasal vowels and voiced plosives. This study provides a characterization of this syncope machinery and suggests that it is one manifestation of an overall drive towards word

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minimization in CB. The nature of individual vowels and their role in driving particular deletion patterns in the language is explored. In addition to vocalic syncope, the study explores other processes underway that facilitate or contribute to the drive toward word minimization in CB, as well as those that interact with the syncope machinery and prevent it from overapplying.

1. SYNCOPE PREFERENCES

Bamana, better known as Bambara or Bamanankan, is a language of the Mande branch of the Niger-Congo language family spoken as the first language of approximately 3 million people, according to the latest Ethnologue estimate (Gordan 2005). This number includes speakers of eight major dialects, including the phonologically conservative and Classic (Vydrine, 1999) maximal CV variety spoken in Ségou, the former capital of the Bamana Empire, as well as that spoken in Bamako. Vydrine (1999) describes Bamako Bamana as the Standard form of the language. The data presented in this study showcase a more phonologically complex variety of the language, also spoken in Bamako, by a younger cohort of individuals. It is within this Colloquial variety of the language that we observe the development of syllable complexity explored below. The data presented in this study have been collected from the second author, a 32 year old male mother-tongue speaker of Bamana who grew up in Bamako.

Bamana utilizes a seven-vowel system that contains contrastive tense and lax counterparts of the front and back mid vowels, as well as contrastive nasal vowels and long vowels. We observe that, when undergoing syncope, CB prefers to delete vowels with a [+hi] specification, i.e. [i] and [u]. This is readily visible in words containing vowels of multiple heights, where one observes syncope of these [+hi] vowels when permitted by the overall phonotactics of the language. Representative data are in (1). The true preference for [+hi] vowel deletion is illustrated in those words in which it would appear phonotactically possible to delete either vowel (e.g. 1 b, e-f). In these instances, the [+hi] vowel is still that chosen for deletion. Thus, we find that a [-hi] vowel will never be chosen for deletion if an acceptable [+hi] deletion target is available.

(1) High Vowel Deletion¹

	<i>Standard (SB)</i>	<i>Colloquial (CB)</i>		<i>Gloss</i>
a.	[ka.bi.la]	[ka.bla]	*kbi.la	tribute
b.	[si.la.mɛ]	[sla.mɛ]	*sil.mɛ	Muslim
c.	[sa.fi.nɛ]	[sa.fnɛ]	*sfa.nɛ	soap
d.	[mo.ri.ba]	[mor.ba]	*mri.ba	man's name
e.	[ba.ri.ka]	[bar.ka]	*bri.ka	strength
f.	[fa.rí.mã]	[far.mã]	*frí.mã	hotness
g.	[sa.nu.ma]	[san.ma]	*snu.ma	holy
h.	[mà.ri.fa]	[mar.fa]	*mri.fa	gun

¹ Syllable boundaries are indicated, as conventional, by a ‘.’. Words with Low tone contours are marked with a grave accent on their first syllable, while those with High tone contours are left unmarked.

i.	[de.li.ko]	[del.ko]	*dli.ko	habit
j.	[fa.ri.mã]	[far.mã]	*fri.mã	brave
k.	[dù.lo.ki]	[dlo.ki]	*dul.ki	shirt
l.	[ba.li.ku]	[bal.ku]	*bli.ku	adult

While it is the case that syncopation of [+hi] vowels is preferred, we find that in instances when a [+hi] deletion target is not available, speakers are able to delete mid and low (i.e. [-hi]) vowels, provided, once again, that the overall phonotactics of the language remain satisfied. Furthermore, words in which ‘like’ vowels (i.e. both [+hi] or [-hi]) are found in adjacent syllables, and the deletion of one or the other of these vowels does not create impermissible onset clusters or rising sonority over a syllable boundary, variation exists in attested permissible outputs. In these instances, the syncopated word has either an onset cluster of rising sonority or a singleton sonorant coda, thus supporting our position that CB is exhibiting a synchronic emergence of permissible complex syllables. Examples of [-hi] vowel deletion, as well as the aforementioned variation, are illustrated in (2 a-m). Instances of ‘like’-vowel deletion where phonotactics do not permit variation and yield only a single possible syncopated form are illustrated in (2 n-r).

(2) ‘Like’ Vowel Deletion and Variation

	<i>Standard (SB)</i>	<i>Colloquial (CB)</i>	<i>Gloss</i>
a.	[sa.ra.ma]	[sra.ma]/[sar.ma]	famous
b.	[mɛ̃.lɛ.kɛ]	[mɛl.kɛ]/[mlɛ.kɛ]	angel
c.	[kè.le.ku]	[kel.ku]/[kle.ku]	to stumble
d.	[ga.la.ma]	[gal.ma]/[gla.ma]	spoon
e.	[du.ru.ki]	[dur.ki]/[dru.ki]	shirt
f.	[ba.ra.ka]	[bar.ka]/[bra.ka]	blessing
g.	[kɔ̃.lɔ̃.si]	[kɔl.si]/[klɔ̃.si]	carefulness
h.	[ka.la.bã]	[kal.bã]/[kla.bã]	a neighborhood
i.	[bɔ̃.rɔ̃.tɔ̃]	[bɔr.tɔ̃]/[brɔ̃.tɔ̃]	to tear apart
j.	[sa.ra.ti]	[sar.ti]/[sra.ti]	condition
k.	[su.ru.ku]	[sur.ku]/[sru.ku]	hyena
l.	[bù.lu.ku]	[bul.ku]/[blu.ku]	to plow
m.	[kù.lu.si]	[kul.si]/[klu.si]	pants
n.	[ca.pa.lo] ²	[ca.plo]	millet beer
o.	[jà.la.ki] ³	[jal.ki]	blame
p.	[ka.ma.lɛ̃]	[ka.mlɛ̃]	boyfriend
q.	[mi.si.ri]	[mi.sri]	mosque
r.	[sa.ba.li]	[sa.bli]	to calm

² c is utilized in the Bamana orthography to denote the voiceless affricate [tʃ].

³ j is utilized in the Bamana orthography to denote the voiced affricate [dʒ].

Thus far, we have illustrated emergent syllable complexity only in three-syllable words where the phonological process of vocalic syncopation appears to have a domain of application within a two-syllable ‘foot-like’ prosodic unit. Further discussion of apparent metrical phenomena and other phonological processes in Bamana that support such a position follows in Section 3.

Considering syncopated outputs from two-syllable words allows us to make further observations about the overall syncope machinery and constraints on syllable markedness in Bamana that drive particular deletion patterns. The two-syllable word data in (3 a-d), once again, illustrate the preference for [+hi] deletion and the subsequent formation of complex syllables with branching onsets of rising sonority. (3e) illustrates, similarly, that deletion yielding CCV syllables is also possible in two-syllable words with identical [-hi] vowels. These words illustrate that complex syllables with branching onsets are preferred over those with singleton sonorant consonant codas that would otherwise be permissible in longer words, as was illustrated in (1) and (2) above. Exceptions to this generalization are words, such as those in (3 f-i), where preferential syncopation a [+hi] vowel yields an acceptable complex CVC syllable with a singleton [l] coda. Similarly, words of the form Obs.V[l]V, such as those in (3 l-m) with identical [+hi] vowels, yield permissible CB CCV or CVC shapes.

The absence of other singleton sonorant codas (e.g. [n] and [r]) may be accounted for by appealing to sonority. Given that [r], in Bamana, is always an alveolar flap [ɾ], it is therefore less sonorous than [l]. This permits us to posit a sonority scale for Bamana wherein [l] is the most sonority of the three sonorant categories in the language (see 5). Although all three of these sounds are permitted in word-internal syllable codas, as we have seen in (1) and (2), there exists a further positional constraint that allows only the most sonorous consonants (i.e. liquids) in word-final codas. (3 j-k) illustrate the ability of the low vowel [a] to block syncope in two-syllable words that one would otherwise expect to syncopate, either forming a complex onset or a coda [l].

(3) Syncope in Two-Syllable Words

	<i>Standard (SB)</i>	<i>Colloquial (CB)</i>		<i>Gloss</i>
a.	[bu.ru]	[bru]	*bur	bread
b.	[si.rā]	[srā]	*sir	to scar
c.	[fi.nɛ]	[fnɛ]	*fin	caste name
d.	[fi.nī]	[fnī]	*fīn	caste name
e.	[tɛ.nɛ]	[tnɛ]	*tɛn	taboo
f.	[bò.li]	[bol]	*bli	to run
g.	[se.li]	[sel]	*sli	prayer
h.	[fò.li]	[fol]	*fli	greeting
i.	[sò.li]	[sol]	*sli	to wake early
j.	[ka.li]	[ka.li]	*kli/*kal	to swear
k.	[fà.ri]	[fa.ri]	*fri	body
l.	[bi.li]	[bli]/[bil]		roof
m.	[bu.lu]	[blu]/[bul]		leaf

2. BLOCKING SYNCOPE

We have illustrated just above that syncope can be blocked or prevented in words containing certain constituents. We now turn to words in which syncope is similarly blocked where phonotactics do not permit it to occur. The role of phonotactics in these instances differs from that described above in (1) and (2) in which these constraints were active in driving the particular syncope patterns. The data in (4) illustrate that the stringency of phonotactic constraints in Bamana have the ability to override the drive towards word minimization in the language and, thus, to block syncope (and therefore minimization) altogether.

(4) Syncope Blocking

	<i>Standard</i>	<i>Colloquial</i>		<i>Gloss</i>
a.	[sà.ba]	[sa.ba]	*sba	three
b.	[ka.si]	[ka.si]	*ksi	to break
c.	[ba.na]	[ba.na]	*bna	to get sick
d.	[di.bi]	[di.bi]	*dbi	darkness
e.	[ki.ti]	[ki.ti]	*kti	trial
f.	[ka.ba.no]	[ka.ba.no]	*ka.bno/*kba.no	asylum
g.	[fa.sa.da]	[fa.sa.da]	*fsa.da/*fas.da	to praise
h.	[sa.ba.ti]	[sa.ba.ti]	*sba.ti/*sab.ti	stable
i.	[ki.ba.ru]	[ki.ba.ru]	*kib.ru/*ki.bru	news
j.	[du.kɛ.nɛ]	[du.kɛ.nɛ]	*du.knɛ/*dkɛ.nɛ	courtyard
k.	[dù.su.ka.si]	[du.su.ka.si]	*dus.ka.si	heartbreak
l.	[mu.sa.ka]	[mu.sa.ka]	*mu.ska/*mus.ka	expense

The permissibility of particular complex onsets in CB is driven largely by sonority and its relationship to syllable margins as has been explored preliminarily in previous work (e.g. Baertsch and Davis, to appear; Davis and Baertsch, 2005, 2008; Diakite, 2006; Green et al., 2008, 2009). We observe, in CB, that the only permissible complex onsets are those formed by an obstruent (stop or fricative) and a sonorant (nasal or liquid), leaving the behavior of glides for later discussion. Thus, permissible complex onsets, as combinations of an obstruent plus a sonorant, are necessarily rising in sonority. Similarly, we find that permissible singleton codas in CB must be sonorants, while obstruents are not permitted in syllable codas in any instances. We observe in words such as (4 a-b, d-e), for example, the Standard form is attested when syncopation would yield impermissible obstruent + obstruent onset clusters that do not rise in sonority. (4 g-i, k) are several examples illustrating the impermissibility of singleton obstruent codas in CB. Finally, we observe in (4 c), for example, that voiced obstruent + nasal onset clusters are impermissible in CB. Words, such as the Standard Bamana [safinɛ] ‘soap’ and [tɛnɛ] ‘taboo’, containing syncope targets that would create a voiceless obstruent + nasal cluster, emerge as [safnɛ] and [tnɛ], respectively, in the language. This allows us to better understand the sonority hierarchy of Bamana as one that distinguishes between voiced and voiceless obstruents, rather than between stops and fricatives, as the minimum sonority

difference between sounds necessary for the creation of permissible onset clusters would not be met in such impermissible voiced obstruent + nasal clusters. The proposed sonority hierarchy for Bamana is in (5).

(5) Bamana Sonority Hierarchy

voiceless obs. >> voiced obs. >> nasals >> [r] >> [l] >> glides >> vowels

3. MINIMIZATION BEYOND SYNCOPE

In addition to the processes of vocalic syncope discussed thus far, there remain further processes that serve to facilitate the overall drive toward word minimization in CB. These processes interact with the syncope machinery, and, in some instances, prevent it from occurring or from overapplying. One such process that occurs readily in both Standard and Colloquial Bamana is the deletion of velar consonants flanked by identical vowels (i.e. $C_1V_1C_2V_1$), where the velar consonant is C_2 . Green et al (2008, 2009) have, in an Optimality Theoretic framework (Prince and Smolensky 1994/2003), proposed that a high-ranking constraint on markedness in Bamana drives the deletion of these consonants. This constraint, they suggest, is motivated typologically given that the diachronic progression of velar consonant lenition between identical vowels (e.g. $k \rightarrow g \rightarrow h \rightarrow \emptyset$) has resulted in segmental loss leading to the presence of a derived long vowel. This process applies only to velar consonants flanked by identical vowels, as a ban against diphthongs in the language rules out segment deletions that would result in the formation of such impermissible vowel sequences. As the data in (6) illustrate, there is no restriction on the nature of the vowels involved in the process, as velar consonant deletion in these instances is possible between high, mid, and low vowels in CB. This process has further applications cross-linguistically, for example in Turkish (Sezer, 1981) and Kranichfeld German (Glover, 2009).

(6) Velar Consonant Deletion

	<i>Standard</i>	<i>Colloquial</i>	<i>Gloss</i>
a.	[si.gi]	[sii]	to sit
b.	[mɔ.kɔ]	[mɔɔ]	person
c.	[tɔ.gɔ]	[tɔɔ]	name
d.	[sa.ga]	[saa]	sheep
e.	[du.ku]	[duu]	village
f.	[co.go]	[coo]	manner
g.	[fa.ga]	[faa]	to kill
h.	[dɔ.gɔ.ya]	[dɔɔ.ya]	to make small
i.	[sɔ.gɔ.ma]	[sɔɔ.ma]	morning

While the mechanism and application of velar consonant deletion appears transparent in the above examples of words with both two and three syllables, we have observed that the process is blocked in certain instances in words longer than two

syllables, for example those in (7). We observe, in these words, that velar consonant deletion fails to apply in two particular instances. The first instance is when the velar consonant is underlyingly the onset to the third syllable in the word (e.g. 7 a-b, f-h), the second is when the velar consonant is at a word-internal morpheme boundary (e.g. 7 d). (7 c) and (7 e) are instances where velar consonants are both the onset of the third syllable of the word and at word-internal morpheme boundaries.

(7) Blocking Velar Consonant Deletion⁴

	<i>Standard</i>	<i>Colloquial</i>		<i>Gloss</i>
a.	[ɲa.ma.ka#la]	[ɲa.ma.ka.la]	* ɲa.maa.la	caste
b.	[ba.ra.ka]	[bar.ka]/[bra.ka]	* ba.raa	blessing
c.	[ko.lo#ko.wo]	[klo.ko.wo]/ [kol.ko.wo]	* ko.loo.wo	window
d.	[la#ka.li#ta]	[la.kal.ta]	* laa.li.ta	news
e.	[bo.lo#ko]	[blo.ko]/[bol.ko]	* bo.loo	to circumcise
f.	[mɛ.lɛ.kɛ]	[mlɛ.kɛ]/[mɛl.kɛ]	* mɛ.lɛɛ	angel
g.	[su.ru.ku]	[sru.ku]/[sur.ku]	* su.ruu	hyena
h.	[bu.lu.ku]	[blu.ku]/[bul.ku]	* bu.luu	to plow

We posit, preliminarily, that these particular instances where velar deletion fails to apply may shed some light on two characteristics of Bamana that have yet to be explored in detail. This first of these characteristics is the potential presence of a rhythmic or metrical effect in the language wherein certain phonological processes occur only in binary ‘foot’-like trochees. If one posits the domain of application of velar consonant deletion to be within this prosodic unit, so defined, and given the failure of its application when the velar consonant is the onset to the third syllable in the word, and therefore at the left edge of a ‘foot’, we can say that velar consonant deletion occurs only ‘foot’-internally. The presence of phonological processes occurring within ‘foot’-like units in Bamana has also been posited specifically in reference to *tonale compacité*, or tonal compactness (Courtenay, 1974; Creissels, 1992; Dezeew, 1979; Riailand and Badjimé, 1989), a phenomenon reported only in compound nouns. In these compounds, if the first vowel of the first morpheme begins with H tone, the entirety of the compound will contain vowels with H tones. If the first vowel of the initial morpheme carries L tone, however, the vowels of the compound will carry H tones up until the final morpheme, whose vowels will carry L tones. While Riailand and Badjimé (1989) posit ‘edge-in’ tonal effects, Weidman and Rose (2006) propose an alternate analysis which they explain these ‘edge-in’ effects in terms of the presence of tonal feet in Bamana. Weidman and Rose’s study is an extension of earlier work on proposed connections between tone and metrical structure in Mande and other languages (e.g. Bickmore, 2003; Leben, 2003; Sietsema, 1989; Zoll, 2003).

⁴ Morpheme boundaries are indicated by a ‘#’.

4. AVOIDING MULTIPLE DELETIONS

Widespread nominal compounding and the intricate derivation of longer polymorphemic words in Bamana allow us to observe the ways in which vocalic syncope, the phonotactic constraints that drive particular deletion patterns, and additional phonological processes (e.g. velar consonant deletion) interact with one another. While we observe that the drive towards word minimization still exists in these longer words, we find that the application of minimization, either via syncope or consonant deletion, is limited to a single occurrence within a word. In all instances, when a given compound or polymorphemic word would appear to permit multiple deletions, only a single deletion is possible. (8) illustrates several representative examples where deletion is limited to a single occurrence.

(8) Compounds and Polymorphemic Words

	<i>Standard</i>	<i>Colloquial</i>		<i>Gloss</i>
a.	[se.li#sa.ga]	[se.li.saa]	* sli.saa * sel.saa	sacrificial sheep
b.	[nɛ.rɛ#mu.gu]	[nɛ.rɛ.mu]	* nɛr.mu * nɛ.rɛm.gu	yellow
c.	[ko.lo#ko.wo]	[klo.ko.wo]/ [kol.ko.wo]	* ko.loo.wo * klo.kwo * kol.kwo	window
d.	[me.le.ku#ya]	[mel.ku.ya]/ [mle.ku.ya]	* mel.kya * mle.kya * me.le.kya	blessedness

We observe, for example, in (8 a) the Standard Bamana compound **selisaga** ‘sacrificial sheep’ emerges as **selisaa** in CB. It was noted above in (3 g) that the first morpheme **seli** ‘to pray’ emerges in CB as [**sel**], and similar to the examples presented in (6), the second morpheme **saga** ‘sheep’ emerges in CB as [**saa**]. One expects the possibility that, because both words are permitted to undergo their respective deletions in isolation, that upon their combination, both deletions would remain viable. We find, however, that only a single deletion is possible - intervocalic velar consonant deletion in the second morpheme. The choice of velar consonant deletion rather than vocalic syncope in the first morpheme has been motivated elsewhere in an Optimality Theoretic framework (Green et al. 2008) as the result of the language-specific competition between constraints on markedness in Bamana where the presence of [+hi] syllable peaks are preferred to the retention of intervocalic velar consonants. This competition thus favors velar consonant deletion and motivates the attested CB word in (8 a). The result is analogous in (8 b), where one would otherwise expect that deletion of the second vowel in **nɛrɛ** to generate a syllable contact sequence of [**r.m**], as permitted elsewhere (e.g. 2 a), would thus permit the emergence of a double deletion in the word when combined with velar consonant deletion. Once again, given the specifics of constraints on markedness in the language, a single deletion occurs via the application of velar deletion.

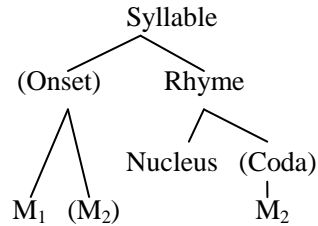
The resultant CB words in (8 c-d) are somewhat different, as they do not present a potential interaction between competing types of markedness, rather they both present

instances where one might expect two instances of syncope to be possible. Looking first at (8 c), one would expect the first morpheme **kolo** to emerge in CB as [kol], as was illustrated in (3 f-i). Likewise, one would expect the second morpheme **kowo** to emerge in CB as [kwo]. Variation between the two attested forms, [kol.ko.wo] and [klo.ko.wo], illustrates the tendency in CB for the emergence of complexity at the left edge of the word. This allows us to posit, therefore, the tendency for syncope to apply, in these instances, left to right in the word. (8 d) permits further comment, as, once again, it appears that two possible deletions are possible. Given the general preference for [+hi] vowel deletion motivated above in (1), one might expect the form *[me.le.kya] in CB from the Standard **melekuya**, rather than the attested variants [mel.ku.ya] and [mle.ku.ya], both of which exhibit [-hi] vowel syncope. The presence of a morpheme boundary between the third and fourth syllables, however, blocks the application of [+hi] vowel syncope in favor of the alternative deletion of either the first or second [-hi] vowel in the word. The deletion patterns attested in these four words, thus, provide insight into the interaction of syncope with other phonological processes underway in CB. These examples illustrate that, in relevant instances, morphology or the application of processes resolving other types of markedness (e.g. velar consonant deletion) interact with the syncope machinery of the language and affect its ability to apply transparently.

5. DISCUSSION AND IMPLICATIONS

The illustration of emerging syllable complexity and the deletion patterns that create this complexity has raised interesting possibilities and implications for future research concerning both the diachronic and synchronic phonology of Bamana and other Mande languages. With respect to theories of syllable structure and syllable markedness, the synchronic development of complex onsets of rising sonority and singleton sonorant codas in Colloquial Bamana provides compelling evidence in support of the recent development of a Split-Margin Approach to the Syllable (Baertsch, 2002). This model of the syllable offers a formal characterization of the relationship between components in syllable margins (i.e. onsets and codas). Consider the illustration of a Split Margin syllable below in (9). This model proposes a distinction between margin positions favoring consonants of low-sonority (i.e. M_1 positions) versus those favoring consonants of high-sonority (i.e. M_2 positions). As we have illustrated above, sonority, as well as and the nature and permissible combinations of margin constituents in Bamana, play an important role in driving particular syncope patterns in the language. Additionally, we find that CB militates against the presence of more than one complex syllable in a word. While it is not the intent of this paper to present or to explore the theoretical machinery underlying the Split-Margin Approach, we refer the reader to other work that has begun to probe its application to the development of Colloquial Bamana from its Standard Bamana counterpart (Green et al., 2008, 2009; Green, Davis, Diakite, and Baertsch, forthcoming) and the support that it offers to implications for syllable typology and markedness.

(9) Split Margin Syllable



Given the particularities of consonant deletion and syncope patterns and their ability to interact with other features of Bamana phonology, one can question the potential role that the presence of lexical and grammatical tone in the language has on these processes. Three distinct possibilities exist pertaining to this topic, those being that tone (its presence at either the underlying or surface levels, or its association) may potentially facilitate, prevent, or have no effect on minimization in the language. In order to address the potential of such interactions, we have taken care to include words with both High and Low tone contours throughout this study. While the principles of tone assignment and association in Bamana are quite complex, as evidenced by the lacking consensus about many tonal characteristics of the language, many of which have been reported in over fifty years of published and unpublished scholarship on the topic (e.g. Bird, 1966; Courtenay, 1974; Creissels, 1978, 1992; Diarra, 1976; Dumestre, 1984; Rialland, 2008; Rialland and Badjimié, 1989; Weidman and Rose, 2006), most of these scholars agree that two tonal classes of nouns, one High and one Low, exist in Bamana. We have adopted this basic principle throughout our study. It is clear from the application of each of the minimization processes discussed that tone does not appear to prevent or hinder them from occurring.

While the tonal contours of words do not appear to affect the application of minimization, further exploration into the tonology of Bamana in hopes of arriving at some further transparency, consensus, and resolution to the competing characterizations and analyses of the system is merited. Preliminary discussions of the tonal outcomes of vowel hiatus and elision (Creissels, 1978; Creissels and Grégoire, 1993) have pointed toward the need for further detailed study of this subject, given the potential for the presence of tonal remnants and/or derived tonal contours to allow linguists to characterize better the processes of tonal association, spreading, and stability in the language, as well as a better understanding of floating tonal morphemes that have been described in earlier work (e.g. Bird, 1966; Bird, Hutchison, and Kanté, 1977; Creissels and Grégoire, 1993; Rialland and Badjimié, 1989). The minimization processes described in this study (i.e. syncope and velar consonant deletion) offer another opportunity to explore the outcomes of vowel juxtaposition (rather than hiatus) and the deletion of vowels, and therefore, of potential tone-bearing units.

It was discussed above, in Section 5, that both proposed metrical structure and morphology play an important role in either facilitating or blocking minimization in Colloquial Bamana. Concerning morphology, a study complementing accepted work (Dumestre, 1981) on properties of both nominal and verbal morphology in Bamana (Hantgan, 2009) is currently underway. Examples given above have illustrated the ability of boundaries between certain morphemes to block syncope or to drive the choice of an

alternative deletion target. A more systematic and comprehensive analysis of this potential morphophonemic interaction is needed.

Perhaps the most compelling implication for future research concerns the potential presence of metrical or rhythmic structure in Bamana, as this possibility has not been explored in previous research. Data presented in this study, as well as that cited above in reference to the presence of tonal feet, suggest that certain phonological processes exist in Bamana that have a domain of application in the prosodic hierarchy that is above the syllable but below the word. The continued study of minimization patterns and other phonological properties of larger polymorphemic words and nominal compounds may reveal further evidence in support of this hypothesis.

6. CONCLUSION

What we have done in this paper is to provide a characterization of emerging syllable complexity via processes of word minimization, primarily via syncope but also through consonant deletion, in a variety of Bamana spoken in Bamako. We have shown that, although high vowel deletion is preferred, deletion of non-high vowels is also possible, and, in both instances, the phonotactics of the language, particularly those related to sonority and permissible syllable margins, play an important role in driving attested deletion patterns. We have also illustrated that minimization is limited to a single instance within a given word. The patterns of deletion observed in Colloquial Bamana reveal that the language is synchronically developing complex CVC and CCV syllables from a standard variety where the maximal syllable shape is CV. While further investigation is needed to explore the potential roles of tone, metrical, and morphology and their interaction with the overall drive toward word minimization in Bamana, the data presented provides new data on this emerging variety of Bamana, the processes involved in its development from the Standard variety of the language, and the interactions of these processes with other properties of the language.

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