Elucidating Dogon prosodic structure: The case of liquid ‘flip-frops’ in Beni (Dogon)

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Abstract

Beni (also called Ben Tey) is a Dogon language spoken in Mali. It has been only preliminarily described by Heath (2009) and has not been discussed in the theoretical literature.

In Beni, liquid consonants are subject to a strict linear condition in adjacent syllables across certain base-suffix boundaries. The result of this condition is that all combinations of liquids collapse onto [l...r], causing a ‘flip-frop’: /ɔru-li/ → [ɔli-ri] ‘moist-INCH’

We analyze this convergence as arising due to an interaction between two processes: i) Lateralization and ii) Lateral Dissimilation. As seen below, Lateralization feeds Lateral Dissimilation.

The behavior and interaction between these processes point towards several interesting characteristics of the language, of which we focus on two in this paper.

i) Lateralization and Lateral Dissimilation have different domains of application. The former is triggered only by derivational operations while the latter occurs as the result of both derivational and inflectional operations.
ii) Lateralization, alongside other phenomena in Beni, suggests metrical weakness in 2nd syllable onsets. This corroborates proposals of trochaicity elsewhere in Dogon.

Behavior of Beni liquids

Liquid consonants in Beni, namely [l] and [r], share some similarities but also several differences

Both can occur intervocalically; Neither occurs in base-internal clusters in words of native origin

Root internal [l…l] sequences are permitted: [liːli] ‘accompany’; there are no such sequences involving [r]

[r] patterns more closely with semi-vowels

- Semi-vowels and [r] are subject to progressive nasalization: [narⁿa] ‘mother,’ [mujⁿi] ‘dislocated,’ [nɛwⁿɛ] ‘taste’
- Semi-vowels and [r] are deleted word-finally: /bari/ → [bar] ‘help,’ /daji/ → [daj] ‘encounter,’ /dɛwu/ → [dɛw] ‘cover’

Liquid Alternations

- Non-liquid bases take an [l]-initial allomorph of the Inchoative (1a); a lateral base instead exhibits an [r]-initial allomorph of the same suffix (1b)
- Rhotic bases, however, are more complex; they exhibit an [r]-initial allomorph, but there is also an [r ~ l] alternation in the base itself (1c)
- Similar outcomes are observed for the Reversive, though this suffix is always [r]-initial; importantly, an [r~l] alternation still occurs in rhotic bases (1f)

(1) Behavior of liquids under derivation

	base	*suffixed*	*gloss*
a.	[dugu]	[dugu-lo]	‘fat-INCH’
b.	[pilɛ]	[pile-re]	‘white-INCH’
c.	[ɔru]	[ɔli-ri]	‘moist-INCH’
d.	[kumdʒo]	[kumdʒo-ro]	‘crumple-REV’
e.	[kɔli]	[kɔli-ri]	‘hang.up-REV’
f.	[irɛ]	[ili-ri]	‘forget-REV’

- (1b) illustrates that syllable-adjacent laterals are not permitted across a morpheme boundary; we attribute this to **Lateral Dissimilation (LD)**
- (1f) shows that the addition of a liquid suffix independently triggers an [r~l] alternation in the base; we attribute this to **Lateralization (LZ)**
- The independence of **LZ** allows us to motivate the outcome in (1c); **LZ** triggers an /r/ → [l] alternation in the first of the two adjacent liquids, and the newly created adjacent lateral sequence in turn triggers **LD** of [l] → [r] in the suffix. Thus, **LZ** feeds **LD**.

(2) Behavior of liquids under inflection

	stem	*suffixed*	*gloss*
a.	[jaɣa]	[jaɣa-ri]	‘fall-Perf.NEG’
b.	[tʃeːle]	[tʃeːleː-rɛ]	‘be.good-Perf.3SG’
c.	[tali]	[tali-ri]	‘transform-Perf.NEG’
d.	[irɛ]	[irɛ-rɛ-j]	‘forget-Perf-1SG’
e.	[birɛ]	[birɛː-ra-j]	‘work-IMPF-1SG’

- The data in (2) show that i) the ban on syllable-adjacent laterals still holds (2b-c); and ii) **LZ** is not triggered by inflection (2d-e)
- Other data, however, show that **LD** can be triggered by inflection

Consider the behavior of **NEG** in:

[so] ‘have’ [so-**lo**-j] ‘have-**NEG**-1SG’ versus

[lo-m] ‘go-IMPF-3SG’ [lo-**rɛ**] ‘go-**NEG**’ [lo-ta-**li**-j] ‘go-EXP.PF-**NEG**-1SG

Analysis

Lateral Dissimilation (LD)
- Occurs across the board, affecting both derivational and inflectional affixes (See 1 and 2)
- It is base-driven, affecting suffixes; this supports a derivational analysis in which LD is fed by another process that alters the segmental structure of the base, namely LZ.

Lateralization (LZ)
- Occurs only as the result of derivational affixation, rather than across the board (See 1)
- Despite its dissimilatory outcome, the process cannot be attributed to dissimilation proper, as it results in a change to the root and is dependent on the nature and type of suffix (Suzuki 1988)
- It is affix-driven, and its outcomes feeds LD

	/pilɛ-lo/	/irɛ-ri/	/ɔru-lo/
LZ	——	ili-ri	ɔlu-li
LD	pile-re	——	ɔli-ri
	[pile-re]	[ili-ri]	[ɔli-ri]

What does Lateralization reveal about Beni?

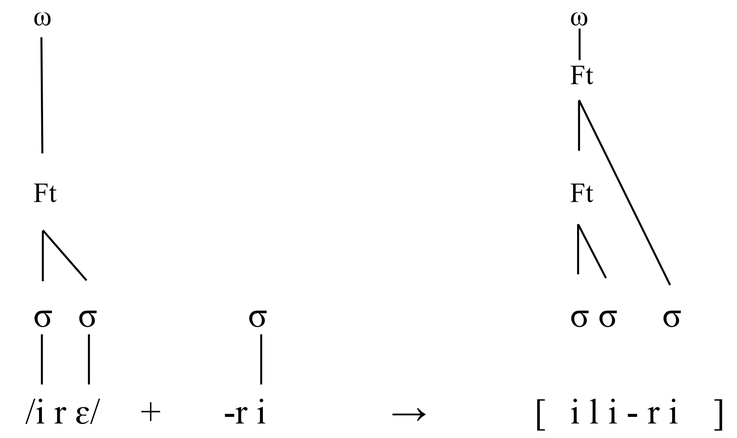
- Alongside other segmental and metrical phenomena, LZ suggests *weakness* of 2nd syllables in Beni and is in line with other evidence for some degree of trochaic (strong + weak) structure in Dogon (Heath 2009; McPherson 2013)
- 2nd syllable onsets are the locus of an array of alternations (Lateralization, Sonorization, Spirantization, Nasalization)
- 2nd syllable vowels are subject to reduction and/or devoicing in trisyllabic words and deletion word-finally

Lateralization as fortition

- Despite the fact that Beni 2nd syllables appear metrically weak, Lateralization (/r/ → [l]) could be viewed as a type of fortition (strengthening)
  - [l]’s distribution is more aligned with consonants other than [r, w, j]
  - [l] is less sonorous and therefore more consonant-like than [r]

How does fortition arise in a *weak* 2nd syllable onset?

- Recall that Lateralization occurs only as the result of suffixation, and thus in trisyllabic words
- The behavior and prosodification of trisyllabic words is sometimes exceptional due to their odd-parity status (e.g., Hyde 2011)
- Third syllables may be extrametrical, or they may be incorporated into a trisyllabic, recursive superfoot via adjunction (McCarthy 1982; Davis 2005; Martínez-Paricio 2013, among a number of others)
- The creation of superfeet results in a variety of ‘derived’ strengthening processes in 2nd syllables of trisyllabic words that are otherwise absent in disyllabic words
- In this way, we suggest that the prosodification of a superfoot in Beni, ‘fortifies’ the 2nd syllable position



Future Directions

- Exploring other interactions in Beni and their counterparts elsewhere in Dogon:
  For example, in some instances, **LZ** and **LD** are affected by **Nasal Spreading** downstream
  /ɲeru-li/ → ɲelu-li → ɲelu-ri → [ɲeni-rⁿi]
- Vowel reduction induces **LZ**-like alternations in certain inflectional forms:
  [bɛrɛ] 'get' vs. [bɛrɛ-ri] OR [bɛl-li] 'get-PERF.NEG'
  This might be explained by the restriction against geminate [r.r] in native words, but we would like to explore the motivation for these effects
- Inchoative data from another Dogon language (Tabi-Serinyere; Heath 2008) show **LZ** occurring in the absence of a suffix (cf. [dusu] ‘heavy,’ [dusu-rɔ] ‘heavy-INCH,’ and [zɔrɛ] ‘easy,’ [zɔlɔ] ‘easy-INCH’). The feeding interaction in Beni may therefore be a case of double morphemic exponence (Kurisu 2001).

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