Dogon nasalized sonorants and nasalization-spreading

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phonemic nasalized sonorants

Several eastern Dogon languages (Jamsay, Toro Tegu, Ben Tey, Bankan Tey, Nanga) have a set of nasalized sonorants {*w*^{n} *y*^{n} *r*^{n}} that are phonemically distinct from oral counterparts {*w y r*}. Consonants from either series may occur in intervocalic position and/or syllable-final position in the absence of any other nasal or nasalized consonant, i.e. in environments like *Tv_v* and *Tv_Kv* where *T* and *K* are nonnasal consonants. Nasalized tap *r*^{n} does not occur initially (oral tap *r* is also disallowed here) or syllable-finally. {*w*^{n} *y*^{n}} are (rarely) allowed word-initially. In (1), "x" indicates the presence of these phonemes in the position indicated: [word-]init[ial], int[er]v[ocalic, [syllable-]fin[al]. Subphonemic partial nasalization of initial semivowels under the influence of a later nasal is disregarded.

(1)

language	*w*^{n}			*y*^{n}			*r*^{n}
	init	intv	fin	init	intv	fin	intv
eastern							
Toro Tegu	x	x	x	x	x	x	x
Bankan Tey							
Ben Tey	rare	x	x	—	x	x	x
Nanga	—	—	rare	—	x	x	x
Jamsay	—	x	x	—	x	x	x
Togo Kan	—	x	x	—	rare	x	x
Tommo So	—	—	—	—	—	—	—
Donno So	—	—	—	—	—	—	—
Yorno So	—	x	x	—	x	x	x
Tomo Kan	—	??	x	—	??	x	x
northwestern							
Najamba	—	—	—	—	x	x	—
Tiranige	—	—	x	—	—	x	—
Dogul Dom	??						
Tebul Ure	—	—	x [1]	—	x	x	x
Yanda Dom	—	—	—	—	x	x	x

[1] Only in 2Sg pronominal-subject suffix *-w*^{n}.

southwestern							
Bunoge	—	—	x	—	x [2]	x	—
Mombo [3]	x	x	x	—	x	x	—
Ampari	x	x	x	—	??	x	—
Penange	—	—	x	—	x	x	—

sources of nasalized sonorants

There are two historical processes that have resulted in Dogon nasalized sonorants. The first is intervocalic lenition (2).

(2) *m → *w*^{n}
*n → *r*^{n}
*ɲ → *y*^{n}

The first two of these lenitions are the main sources of phonemically nasalized intervocalic sonorants. The third one is comparatively minor. Languages that lack intervocalic nasalized sonorants simply did not undergo the lenitions. In languages that did undergo them, the nasalized sonorants may be completely autonomous, Or they may still alternate with the related nasal consonant, for example {*w*^{n} *r*^{n}} intervocalically alternating with {m n} syllable-finally after syncope of /CvNv-Cv/ to *CvN-Cv*. See below for examples and discussion.

The other source is secondary nasalization of an originally oral sonorant {*w y r*} under the influence of a neighboring nasal/nasalized consonant or nasalized vowel. The usual direction of nasalization-spreading is forward (rightward), but there are also some cases of backward (leftward) spreading. Using *s* for sonorant {*w y r*} and *N* for any nasal or nasalized consonant, the processes are schematized in (3). The processes are most obvious in stem-suffix combinations where s remains oral in the absence of a nearly nasal.

(3) a. forward nasalization-spreading /Nv-sv/ → *Nv-s*^{n}*v*
/Cv(:)^{n}-sv/ → *Cv(:)*^{n}*-s*^{n}*v*

b. backward nasalization-spreading /sv-Nv/ → *s*^{n}*v-Nv*

[2] In 3Pl pronoun *à-y*^{n}*á*, compare 1Pl *mì-yá*.

[3] Mombo *w*^{n} and *y*^{n} also in initial clusters *Cw*^{n}*v* and *Cy*^{n}*v*.

forward nasalization-spreading

This process is productive in Jamsay. The phonological conditions for it are met in verbal derivation, where suffixes such as causative *-wɣ́* (*-mɔ́), reversive *-rɣ́*, and transitive *-rɣ́* provide abundant grist for its mill. The process is recursive. In (4), the verb first adds a reversive suffix *-rɣ́* then a causative suffix *-wɣ́*.

(4)	*píné*	'shut (door)'
	píné-r^{n}é	'open (door)' (lit. "un-shut")
	píné-r^{n}é-w^{n}é	'cause (sb) to open (door)'

Contrast *sɔ́gɔ́-rɔ́-wɔ́* 'cause (sb) to unlock (sth)' with oral *r* and *w*.

lexical exceptions to nasalization-spreading after medial *ND →N

In several Dogon languages, intervocalic *{mb nd nj ŋg} have lenited to {*m d j g*}. In some languages this was part of the larger lenition shift that converted *{*m n ɲ*) to nasalized semivowels and rhotic.

Bisyllabic verb stems make the clearest examples, though the process is not limited to them. The lenition of *CvNDv stems to *CvNv* had an impact on the operation of forward nasalization spreading. Consider, for example, *CvNDv stems that had derivatives with suffixes of the shapes **-rv*, **-yv*, or **-wv* (abbreviation **-sv* with "s" for sonorant). Before lenition, the suffixal sonorants were not nasalized, since the oral voiced stop *D stood as a buffer between the nasal of the stem and the suffix-initial sonorant: *CvNDv-sv. The lenition **ND →N* initially produced *CvNv-sv. Speakers then had to decide whether to allow forward nasalization to apply to the suffixal sonorant, producing *CvNv-s^{n}v, or to preserve the oral sonorant, hence *CvNv-s^{n}v. The latter choice would mean that original *CvNDv stems were now lexical exceptions to forward nasalization-spreading. The same choice arose in original stems of the shape *CvNDvs with syllable-final oral sonorant: *CvNvs^{n} or *CvNvs ?

Jamsay and closely related Togo Kan made different choices. In Jamsay, all *CvNv* stems are treated as licensors of forward nasalization-spreading, which therefore has no lexical exceptions. Togo Kan preserved the original form of the suffixal sonorants, so it has two lexical classes of *CvNv* stems, one of which licenses forward nasalization-spreading while the other does not. For example, togo Kan reversive *-rv* has its rhotic nasalized in *óŋù-r^{n}ù* 'uncrumple', but not in *téŋì-rì* 'un-hobble (animal)'. The latter reflects *téŋgì-rì.

Togo Kan also allows forward nasalization-spreading to convert imperfective suffix *-jú* to *-ɲú*. Forward nasalization is therefore highly conspicuous in inflectional as well as derivational morphology in this language. Again, original *CvNDv stems do not

license the nasalization. So we get nasalization in imperfective *gŭŋɔ́-ɲú* 'will take out' but not in *dùŋó-jú* 'will stop up (hole)' from *dùŋgó.

backward nasalization (Toro Tegu)

Nasalization-Spreading works from left to right (i.e. forward) in most of the languages, as illustrated above. Backward nasalization is generally subphonemic and partial. For example, in Nanga *yă-ŋ* 'woman', the vowel *a* is phonetically nasalized, especially toward the syllable coda. The initial y is slightly nasalized but should not be transcribed as y^n, which would entail heavier nasalization.

Toro Tegu is the Dogon languages that does have meaningful backward nasalization. It has applied historically to word-initial *w and *y in stems like y^n*à:ŋá* 'night' and w^n*àŋá* 'reduce (price)', which have fully nasalized onsets. In cases like this, the nasalization is baked into the lexical representation, so no spreading process need be posited. However, in other cases a stem alternates between oral and nasal semivowels depending on suffixation. For example, 'woman' as a simple noun is singular y^n*à-r^{n}ú* (< *yà-nú) and plural y^n*à-mú*. However, the related compound initial is *yà-*, as in *yà-gùrɔ̌-n* 'adolescent girl', and the corresponding adjective is *yá* 'female (e.g. animal)'.

Backward nasalization is more conspicuous in verbal morphology, and specifically in the imperfective negative, with suffix *-r^{n}v*, and in the hortative, with suffix *-y^{n}ɛ́*. Monosyllabic stems of the shape *wv-* and *yv-* have their initial semivowels nasalized. Initial *l* in monosyllabics is also nasalized to *n* (5), though in such cases the *n* is actually historically primary.

(5) Toro Tegu backward nasalization

stem	gloss	ImpfNeg	Hort
yɛ́	'weep'	*y^{n}ì-r^{n}á-*	*y^{n}í-y^{n}ɛ́*
wɔ́	'see'	*w^{n}ɔ̀-r^{n}ɔ́-*	*w^{n}ɔ̀-y^{n}ɛ́*
ló	'enter'	*nù-r^{n}ó-*	*nú-y^{n}ɛ́*

Backward nasalization is not fully productive even in Toro Tegu. It does not, for example, apply to *Cv-nv* sequences that are due to syncope from /Cvrv-nv/, as in *yè-nó* 'does not come' from *yèrí* 'come'.

alternations of nasalized sonorant and nasal stop

As noted above, an important source for {*w^n r^n y^n*} consonants is lenition from *{*m n ɲ*}. Consider an original **CvNv* stem that has undergone this lenition intervocalically to

Cvs^{n}v (s = sonorant), but that also occurs in syncopated suffixal forms like *CvN-Cv* and/or in apocopated *CvN*. It is possible in such cases for the original nasal stop to survive syllable-finally, while *s^{n}* occurs intervocalically.

This is the case in Toro Tegu, which has alternations of *w^{n}* with *m* (and a few of *l* with *n*, and *g* with *ŋ*). The obvious analytical question is whether the synchronic lexical representation should have *w^{n}* or *m*. In Toro Tegu, the answer is *w^{n}*. This is because sylable-final Cvm- can correspond either to *Cvw^{n}v* or *Cvmv* (depending on the verb), while all cases of intervocalic *Cvw^{n}v* become *Cvm-* after syncope or apocope. This is brought out by the two verbs in (6), which are homophonous in the *CvC* form but distinct in the bisyllabic form.

(6)	*CvC* form	*CvCv* form	gloss
	sám	*sáw^{n}á*	'fence (sth) in'
	sám	*sámá*	'pick out, select'