

THE VELAR NASAL IN NYOLE (E. 35)

RESUME

Le nyole (E. 35) est une langue bantu parlée en Uganda (voir carte 1). Il fait partie d'un groupe de dialectes appelé le « Grand Luyia ». En nyole, il y a une règle productive disant qu'un [n] prénasalisé est représenté par [p.] Cette alternance, dans une perspective historique, est le résultat d'une mutation de [p] en [n] et de [mp] en [p]. L'auteur défend l'hypothèse que le bantu [p] est devenu [h] par le stade intermédiaire [0], et qu'en nyole, le [h], en voie de disparition, est devenu [n] par un processus de «nasalisation spontanée» qui est conditionné par des raisons acoustiques, articulatoires et structurelles.

Das Nyole (E. 35) ist eine Bantusprache aus Uganda (s. Karte 1) und gehört zur Gruppe der Sprachen/Dialekte, die unter dem Namen « Greater Luyia » bekannt sind. Im Nyole gibt es eine produktive, synchrone Regel, die besagt, dass ein pränasalierter velarer Nasal [n] zu [p] wirdt. Diese Alternanz ist historisch gesehen das Resultat einer Lautverschiebung von [p] zu [n] und von [mp] zu [p]. Die Hypothese wird verteidigt, dass Bantu [p] sich zuerst via [0] zu einem [h] entwickelt habe, und dass im Nyole das schwindende [h] durch akustisch, artikulatorisch und strukturell bedingte «spontane Nasalisierung » zu [n] geworden sei.

Because of technical problems the hypothetical reconstruction is marked.

O. ACKNOWLEDGMENTS

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1. NYOLE AND GREATER LUYIA

(O) LoNyole is a Bantu language spoken in Uganda, south-east of Mbale, near the shores of Lake Kyoga (cf. map 1). It appears as "Nyuli E.35" in Guthrie's referential classification. It seems to me that Nyole belongs to the Greater Luyia cluster of the 20 dialects and/or languages, that has emerged from the comparative work by Williams (1973), Mould (1976, 1981), Angogo Kanyoro (1983) and Möhlig (1985). The relevant linguistic units are listed here together with their addresses in Guthrie's (1970:11-115) classification.

Gisu N.	E.31a Masaba: Gisu
Gisu S.	E.31b Masaba: Kisu
Bukusu	E.31c Masaba: Bukusu
Saamia	E.34 Saamia
Nyala W.	E.18 Nyala
Songa	
Khayo	
Marachi	
Wanga	E.32a Luhya: Hanga
Marama	
Tsotso	E.32b Luhya: Tsotso
Kisa	
Tachon	
Kabras	
Nyala E.	
Nyore	E.33 Nyore
Isukha	
Idakho	
Tiriki	
Logooli	E.41 Logooli

Two further languages that may or may not belong to this group are mentioned by Williams (1973:2) : Rusinga - spoken on Rusinga island in the Kavirondo gulf, and LuKonde - spoken on the west and north-west slopes of Mt. Elgon. Likewise, I have not seen any data from LuGwere (E.17), and I have not formed any opinion about the OruSyan material published by Huntingtonford (1965).

On the other hand, Greater Luyia appears to be **neatly** distinct from Soga (E.16) etc. to the west, and also from Gusi (E.42) etc. to the south.

The geographical position of these languages is indicated on Map 1, adapted from Heine and Köhler 1978 and from Mould 1981.

While it may be justified to call Nyole a Luyia dialect, there is no reason to view it as being identical with or even particularly close to Nyore (E.33) spoken in Kenya.

There are, as far as I am aware, only two published sources on Nyole, both rather short articles : Morris 1963 and Eastman 1972. (Both sources are misidentified as representing Nyore J/E.33 by Bastin 1975 and 1978)

2. PRENASALIZATION IN NYOLE

Nyole has the following phonological inventory :

p	ɕ	b	β	m	mb
t	s	d	l/r	n	nd
c		j		ɲ	nj
k	x	g		ŋ	ng
y			w		
i	e	a	o	u	

Morris (1963 : 128), describing "sound changes" occurring in the context of prenasalization, notes the following synchronic rule :

$n + \eta \rightarrow p$

This rule is quite regular and productive, occurring, e.g., when the 1st person sg. subject concord is added to a verb stem :

oxu- <u>n</u> uliira	to hear	puliira	I hear
oxu- <u>n</u> umula	to rest	pumula	I rest

cf. oxu-lya to eat ndya I eat

We are facing here a phonological rule that is undoubtedly "unnatural" or "crazy". There does not seem to be any phonetic plausibility in the feature changes involved, nor seems the blame to lie with the assumed feature system since this rule has certainly very few - if any - equivalents in other languages.

On the other hand, it would also be very costly to account for this change by some kind of suppletion, thus assuming that no phonological rule is involved. Prenasalization is a very general process in Nyole that should and can be described by a set of inter-related and phonetically plausible rules - with this one exception. The available data show the following changes :

n + p →	n + ɸ → ɸ	n + b →	n + β → mb
n + t → t	n + s → s	n + d → nd	n + l → nd
n + c → c		n + j →	
n + k →	n + x → k	n + g → ng	
n + m → m			
n + n → n			
n + ɲ → ɲ			
n + ŋ → p			

It is data of this that make me believe in unnatural, crazy synchronic rules.

3. THE ORIGIN OF NYOLE [p] AND [ɲ]

Such unnatural rules often - maybe always - arise through a series of sound changes, each of which may be natural enough when taken by itself. This is also true in our case : Nyole p is historically derived from °mp. The normal, unconditioned Nyole reflexes of the Bantu consonants are given below :

°p > ɲ	°b > β	°m > m	°mp > p	°mb > mb
°t > t	°d > l/r	°n > n	°nt > t	°nd > nd
°c > s	°j > j	°ɲ > ɲ	°nc > s	°nj > nj
°k > x	°g > g		°nk > k	°ng > ng

This table does not show the sound changes occurring before the close Bantu vowels °ɨ and °y which may be subsumed under the label "spirantization", often accompanied by devoicing and leading to s and ɸ. The table also fails to show the effect of Dahl's Law

(i.e., the voicing of the first of two voiceless consonants in a sequence CVC), leading to b, d, j, and g.

In showing that the synchronically crazy rule $n+\eta \rightarrow p$ is quite natural in historical terms, we have uncovered an even more puzzling historical change: how could the voiceless bilabial plosive change into a voiced velar nasal? Before turning to this question, I shall present the available comparative evidence for the development $^{\circ}p > \eta$. Where no reconstructions are available, I cite cognate items from Ganda (E.15) or Masaba (E.31). The **unconditioned** reflexes of $^{\circ}p$ are w in Ganda and h in Masaba. The Bantu reconstructions are taken from Meeussen 1967 and 1980, the Ganda **cognates** from Mulira and Ndawula 1952, and the Masaba cognates from Siertsema 1981.

NPx cl. 16 η a-	< $^{\circ}$ pa-
verbal suffix - η -	< $^{\circ}$ -p-
e.g. -lulu η a be bitter	< $^{\circ}$ -dud-u-p-
enclitic - η e where?	
e.g. oli η e where are you?	< cf. M uli he(e)na
-a η ula cut, split	< $^{\circ}$ -(j) áp-ud- tear
-da η a draw water	< $^{\circ}$ -táp-
- η a give	< $^{\circ}$ -pá-
- η aka burn (of food)	cf. G -aka ?
- η alaana hate	< $^{\circ}$ -páad- quarrel
- η amba hold	cf. M -hamba
- η ambia light (a fire)	< $^{\circ}$ -pamb- put cross-wise
- η andixa write	< $^{\circ}$ -pand- scratch soil
- η anga be able	< $^{\circ}$ -páng- make
- η anixa hang up	< $^{\circ}$ -pan-ik-
- η era breathe	cf. M -heela
- η eresa send	cf. G -weereza
- η ima hunt	cf. M -hi(i)ma look for
- η ona get well	< $^{\circ}$ -pón- be saved
- η olera be silent	< $^{\circ}$ -pód- become cool
- η ulira hear	< $^{\circ}$ -púd-(ik-)
- η umula rest	< $^{\circ}$ -púm-ud-
-la η i good	cf. M -lahi
-le η i long	cf. M -lehi
olu-ba η a wing	< $^{\circ}$ -papá
embe η o cold	< $^{\circ}$ -pépo
omu- η ofu blind person	< $^{\circ}$ -poku
otu-na η e few groundnuts	cf. G empande

also true for South Gisu (Brown 1972:139), and there are isolated instances of it elsewhere; e.g., Bukusu (which dialect?) and (West or East?) Nyala -wa 'give' <°-pá-. Therefore, it seems reasonable to assume that the proto-Luyia reflex of °p had preserved some labial articulation.

Returning to our question of Nyole ŋ, we may ask, which of the sounds h/w/∅ is the most likely - or least unlikely - source of the velar nasal ŋ?

One could argue that w is the most likely candidate since it is the only one of these consonants that involves the raising of the back of the tongue and thus shares at least one feature with n. Of course, this does not explain why a perfectly normal oral approximant should become nasal. A shift from w to ŋ is also doubtful because Nyole does have a glide w which is certainly older than the shift w > ŋ; e.g., ewe 'you' weeta (*o-ita) 'you kill'. Also, Eastman 1972 usually notes w before rounded vowels where Morris 1963 has β; e.g., Eastman -wona 'see' vs. Morris -Bonexa 'appear'. I think, we have to rule out w as the historical source for Nyole ŋ.

The development of ŋ ex nihilo is even less likely. Suppose °pa-had changed to a-, then how could the speakers re-introduce the new consonant exactly in the right positions e.g., a- > ŋa- in class 16, but not replacing the locative prefix e- by ŋe-.

This leaves us with the hypothesis h > ŋ. In order to understand this assumed sound change, we have to recall some details about the phonetic nature of these two sounds.

5. THE PHONETICS OF [h] and [ŋ]

Following Peterson and Shoup 1966 we assume that h is not just air passing through the glottis which is held open in the position that is characteristic for the production of voiceless sounds. Rather, the vocal cords are initially held together or narrowed except between the arytenoid cartilages. The sound that is characteristic for h is then heard during the transition from the whisper position to the following vowel. This transition can be either directly to the voiced vowel position, or first to a voiceless

position. This is presumably the difference between the Dutch and the English h, the latter being "noisier" and less "soft" than the former.

We may assume that it is the "soft" h (the direct transition to the voiced state of the glottis) that is particularly prone to be lost, or to develop w and y as allophones in the environment of a following round or front vowel. It may also be this kind of h that can develop into a velar nasal.

Ohala (1975) gives three reasons why this may happen. The first two apply to all glottal and pharyngeal consonants and merely explain why nasalization COULD occur; the third argument applies specifically to h and shows why it WOULD occur.

"An open velopharyngeal port would not prevent the build-up of air pressure behind the glottal or pharyngeal constrictions since it is in front of those constrictions" (pp. 300-301).

"The noise produced by voiceless glottal and pharyngeal obstruents is so diffuse, so low in intensity, and with higher frequencies dominating in the spectrum that oral-nasal coupling would have little acoustic effect on it" (p. 301).

"[h] may produce an effect on vowels that "mocks" that of nasalization... The spectrum of the vowel will be changed in the following ways: there will be upward shifting of formants, especially F1 ..., increased bandwidth of the formants, presence of anti-resonances in the spectrum and an over-all lowering of the amplitude of the vowel... This is identical to the effect of nasalization on vowels" (p. 303).

Spontaneous nasalization of h can therefore be seen as having an acoustic rather than an articulatory motivation. It has been observed to occur sporadically in far-apart linguistic areas of the world though not - as far as I am aware - from Luyia. An East-African example is Digo (E.73) where h is optionally nasalized and this nasalization may extend over neighbouring vowels. (This has been pointed out to me by D. Nurse, pers. comm., and it can be verified by comparing different sources on Digo in the

literature, some of which use the spelling \tilde{h} where others simply have h.) I suggest that Nyole η developed from h through the intermediate stage of a nasalized \tilde{h} .

The only remaining question is, why the newly introduced nasal consonant is velar rather than some other point of articulation. There are good reasons for this, both language specific and general phonetic ones. In Nyole, as in many other Bantu languages, the velar nasal has a rather marginal status. Prior to its introduction as a replacement for h, the velar nasal occurred in Nyole only (?) as the result of Meinhof's Rule, e.g. in *nombe* 'cow'. Its low functional load left it free to take on new tasks without creating ambiguous words. Phonetically speaking, its acoustic properties make the velar nasal less perceptible than other nasals. Ohala (1975:297) therefore expects " [η] to be most prone to change or deletion" and - we might add - also to be created.

The Nyole sound change $h > \eta$ is certainly rare, but probably not unique. Matisoff (1975) describes a variety of cases exhibiting something which he calls "rhinoglottophilia", i.e., the affinity between nasality and the "glottal" sounds $ʔ$ and h. He lists such correspondences as Thai 'snake', which is *nuu* in Bangkok and *huu* in Southern Thailand. He also deals with the letter "a-chung" in . This letter occurs either in word-initial position representing a CV syllable, or as a purely consonantal prefix before root-initial voiceless aspirated and voiced obstruents. Its prevocalic pronunciation is zero in Central (Lhasa), $ʔ$ in Western, and y in Eastern Tibetan. However, before a voiced consonant, the a-chung is realized as a homorganic nasal.

written Tibetan:	...V + hC ...	example: <i>k'a-hdon</i>
pronunciation:	...VN $\$$ C...	<i>k^h a^h $\\$ d^h oⁿ</i>
		written
		prayer'

According to Matisoff, the sound represented by a-chung has changed from an original glottal sound to a nasal. Unfortunately for me, Matisoff favours $ʔ$ as the proto-a-chung. While certainly not qualified to

challenge his reconstruction, I think that h (the "soft", Dutch type, that is immediately followed by voice) should be reconsidered as an alternative: In Tibetan, (1a) there is a ʔ that is distinct from both h (the "strong", English type?) and a-chung, and (1b) the reflex ɣ is probably more easily derived from h than from ʔ. Also, more generally, (2a) Matisoff's case for a glotto-nasal link is stronger for h than for ʔ, and (2b) the change h > N is phonetically more plausible than ʔ > N.

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