

THE N-PREFIX IN SWAHILI

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In Goyvaerts 1972 an analysis was presented in terms of generative phonology of the Swahili N-prefix. The purpose of this note is to amend this analysis and to point out an interesting relationship between the rules for the N-prefix and some conditions on Swahili phonetic representations. As in Goyvaerts the data to be considered here are exclusively 'native' forms, for 'non-native' forms (e.g. loans from Arabic or English) a) do not take the N-prefix, and b) often violate phonetic conditions.

The N-prefix is a class prefix for nouns and adjectives which undergoes a quite complicated phonological conditioning which depends on the initial segment of the stem to which it is prefixed, as well as the number of syllables contained in the stem. In some cases the initial segment of the stem is also changed. The number of alternants - or 'allophones' - of the N-prefix is set out below:¹ (using Swahili orthography except where this is unclear)

- | | | | |
|----|---|------------------------------|--------------|
| 1. | n (= [n]) as in: | <u>n</u> -dege | 'bird' |
| | | <u>n</u> -zuri | 'good' |
| 2. | ny,n (= [ñ]) as in: | <u>ny</u> -umba | 'house' |
| | | <u>n</u> -jia | 'road' |
| | | (j is an alveo-palatal stop) | |
| 3. | m (= [m]) as in: | <u>m</u> -boga | 'vegetables' |
| 4. | n (= [ŋ]) as in: | <u>n</u> -goma | 'drum' |
| 5. | ∅ as in: | ∅-tembo | 'elephant' |
| | | ∅-kubwa | 'big' |
| | | ∅-nyani | 'baboon' |
| | | ∅-mamba | 'crocodile' |
| 6. | <u>n</u> (= [n̩] where '̩' indicates syllabicity) | <u>n</u> -ta | 'wax' |
| 7. | m (= [m]) as in: | <u>m</u> -pya | 'new' |
| 8. | n (= [ñ]) as in: | <u>n</u> -chi | 'country' |
| 9. | n (= [ŋ]) as in: | <u>n</u> -ge | 'scorpion' |

Where the stem begins with l, r or w, the addition of the nasal prefix changes these to d, d and b respectively (or rather changes the phonological equivalents of the former to [d] [d] and [b]). The nasal is still assimilated so one gets the following:-

	<u>n̄</u> -boga	<u>n̄</u> -umba	<u>n̄</u> -tembo	<u>n̄</u> -tji	<u>n̄</u> -limi	<u>n̄</u> -mamba
1.	n̄boga	n̄umba	n̄tembo	n̄tji	n̄limi	n̄mamba
2.	n̄boga	n̄umba	n̄tembo	n̄tji	n̄dimi	n̄mamba
3.	mboga	n̄umba	ntembo	n̄tji	ndimi	nmamba
4.	mboga	n̄umba	ntembo	n̄ṭji	ndimi	nmamba
5.	mboga	n̄umba	tembo	n̄ṭji	ndimi	mamba
	<u>mboga</u>	<u>nyumba</u>	<u>tembo</u>	<u>nchi</u>	<u>ndimi</u>	<u>mamba</u>

(A fairly broad transcription is used here - in fact voiced stops not preceded by nasals are implosive, so the underlying form for mboga could very well be /n̄-boga/ and a rule is required to change the /b/ to [b].)

It is interesting to note that the rules are general - with the exception of rule 1 - in that they do not have to mention the N-prefix (as such) in their environments.

Indeed for the rules to produce the right results, their order of application only matters in two cases: it has already been mentioned that the deletion rule (R.5) must follow the syllabification rule (R.4), and the assimilation rule (R.3) must also precede R.4 for all syllabic N-prefixes must be assimilated as well - R.3 only applies to non-syllabic nasals because there are syllabic nasals which fit its environment which are not assimilated - as in -amka 'to wake'. The ordering from 1 - 5 is therefore only given as a matter of convenience.

The reason for the generality of these rules is that the combinations of nasals and consonants which are eliminated are not permissible clusters anyway in Swahili phonetic representations. For example, [ntembo] and [nmamba] (where the initial nasals are non-syllabic) are not allowed as phonetic forms, so therefore the rule eliminating these (R.5) need not specify that it applies to the N-prefix.

In fact, conditions on consonant clusters and syllable structure in general are quite strict. Syllables must be open and may start with a maximum of two consonants plus a glide provided that the syllabic nucleus is a vowel (and not a nasal). This can be expressed formally thus:

$$. \langle C^2(G) \rangle \left[\begin{array}{l} + \text{syll} \\ \langle - \text{cons} \rangle \end{array} \right] .^{2,3}$$

(G = Glide, and . = syllable boundary)

Furthermore consonant clusters must consist of a nasal followed by a homorganic voiced obstruent. This can be put in formal terms by the following If-Then condition:

$$\begin{array}{l}
 \text{(If)} \\
 \text{(Then)}
 \end{array}
 \begin{array}{c}
 \text{CC} \\
 \downarrow \\
 \left[\begin{array}{l} + \text{ nas} \\ \alpha \text{ cor} \\ \beta \text{ ant} \end{array} \right]
 \end{array}
 \left[\begin{array}{l} + \text{ obstr} \\ + \text{ voi} \\ \alpha \text{ cor} \\ \beta \text{ ant} \end{array} \right]
 \begin{array}{l}
 \\
 \\
 \\
 \\
 \end{array}
 \begin{array}{l}
 \\
 \\
 \\
 \\
 3,4
 \end{array}$$

It should be noted that there are (probably) equivalent Morpheme Structure Conditions, although these may not be exactly equivalent to the Phonetic Conditions, in that the syllabic nasals not produced by rule 4 all seem to be [m̩] and could all be derived from /mu/ (although the first nasal in, say, ninata 'I want' is often syllabified with the i being elided).

It can be seen that there are no one to one formal correspondences between these phonetic conditions and the rules needed for the N-prefix, although they are functionally related. The rules interact to eliminate potential violations of the conditions (- although some unnecessary frills are added, for rule 3 has to apply before rule 4 to produce the assimilated syllabic nasals which are the correct surface forms, even though non-assimilated syllabic nasals are allowed by the conditions). This group of rules - which obviously cannot be collapsed into one super rule - can therefore be said to form a functional unit - or, in other terms, a 'conspiracy' (in the sense of Kisseberth 1970) to produce forms acceptable to phonetic conditions. Only rule 1 is the odd one out in that the cluster nyw- is perfectly acceptable (e.g. nywale and -nywa). However, it should be noted that Goyvaerts' glide introduction rule is also an exception, in that syllables (and words for that matter) can consist of (or begin with) [nV] e.g. neno 'word'. At least that particular nuisance is eliminated by the present analysis.

NOTES

1. The data given here is to be found in Ashton 1971 (although some of the actual examples are not used as examples for the N-prefix by Ashton).
2. Phonetic Conditions (or SPC's = Surface Phonetic Conditions) are discussed in Shibatani 1971 (although he prefers to talk about constraints), and the form of such conditions is the same as that of Morpheme Structure Conditions, which were introduced in Stanley 1967 (but see note 3).

3. Actually these formulations are not, strictly speaking, correct, in that features in phonetic representation are normally assumed to have numeral coefficients which are not necessarily binary - which means of course that the plusses and minusses should be replaced by '1,2...n' and the alpha variable notation must be dispensed with altogether, as this only works with binary coefficients.
4. These conditions lead to the following typical syllabifications:-

.m.chu.ngwa. (= orange tree) [n = [ɲ]]
 .ki.ba.nda. (= hut)
 .m.mo.ja. (= 'one' with a prefix)
 .nde.ge. (= bird)

REFERENCES

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Supplementary Reading:-

- Ramsay, A. 1973 'Jinsi tulivyoshindwa katika mashindano ya Kombe la Dunia' FIFA publications. Berne.