

PHARYNX SIZE IN NEMBE SOUND SYMBOLISM

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0. Abstract. Sound symbolism as a phenomenon of language implies a lack of arbitrariness between phonic items and the semantic values that they carry. The significant linkages between phonic and semantic entities have been found to have their bases in the productive mechanisms implicated in sound production. This paper considers the phenomenon of pharynx size for vowels and the strategic use made of this by Nembe for encoding or distinguishing between symbolic meanings. It establishes an identity between expanded pharynx in vowels and the following meanings: large(r) size, loose contact, loud(er) noise, great(er) force, emphasis, among others.

1. Introduction. The phenomena of pharynx size in phonetics/phonology and of sound symbolism have elicited great interest in studies in African languages. Sound symbolism manifests itself basically, though not always, in the form of what are conventionally known as ideophones. The study of ideophones has witnessed renewed and re-invigorated interest for several reasons. First, it is discovered that ideophones in African languages play a much more significant role than they do in other languages that have for centuries been subjected to systematic analysis. They are more numerous in these languages, for instance, and they perform a variety of syntactic and semantic roles. Second, the foundation principle of the arbitrariness of the linguistic sign, considered one of the 'design features' of human language (Hockett, 1963), has been found to be over promoted

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as evidence emerges that most linguistic signs are iconically coded.

Pharynx size, on the other hand, has generated interest for other reasons. For instance, it is invariably the basis for processes such as vowel harmony in African languages. Pharynx size has to do with the amount of space in the pharyngeal cavity. Large pharynx size, for instance, can be achieved in several ways: by raising the tongue root or by lowering the larynx, or both (Lindau, 1975, 1979, etc.).

Pharynx size would naturally be expected to serve a functional purpose in sound symbolism. For instance, in Hausa, implosion (which invariably involves pharyngeal expansion) is associated with largeness in ideophonic words ending in open syllables (see Maduka, 1988a). In Igbo, vowels produced with expanded pharynx suggest largeness in general as well as emptiness, looseness, among others (see Maduka, 1988b).

Markell & Hamp (1960-61) used the term 'psychomorph' for significant sound units in symbolic words that can be seen to have autonomous meanings even when they cannot exist in isolation as morphemes. We wish to extend this term to include both units and characteristic features of families of sounds that make autonomous semantic suggestions in situations of sound symbolism. Thus, we may consider pharynx size a psychomorph in the languages that use it to convey sound symbolic meanings.

2. A Note on the Nembe Vowel System. Nembe is a vowel harmony language, with nine oral vowels made up of two sets harmonizing in terms of pharynx size. Vowels are also occasionally nasalized. The following are the standard feature specifications for vowels in the language (those involving pharynx expansion are marked [+wide]):

	i	ɪ (= I) e	ɛ (= E) a	ɔ (= O) o	u (= U) u
high	+	+	-	-	-
low	-	-	-	+	-
back	-	-	-	+	+
wide	+	-	+	-	+

In Nembe, wide vowels normally co-occur with other wide vowels, while narrow vowels co-occur with other narrow vowels. The only exception to this rule is [a], which may occur with either set.

3. Symbolic Values of Pharynx Size.

3.1 Size. Size description may be relative or absolute depending on whether it is comparative or categorical. In comparative size description, two objects might be considered absolutely small, yet one is seen as smaller; or one object might be considered bigger than another with the understanding that both are big. In categorical size description, on the other hand, two objects in opposition with respect to size will have to be considered either absolutely large or absolutely small.

In Nembe, as in other languages, ideophones encode meanings from different perceptual areas simultaneously. That is, a single ideophone may at the same time offer descriptions in shape and size; speed and direction; speed, direction and weight; motion and tactile constitution of object executing motion, etc. In all cases, however, one perceptual area is the principal descriptive focus with others functioning only supplementively. It appears that when symbolic description of size is only supplementive in the sense indicated, it can only be comparative; while it would be absolute when size is the focus.

3.1.1 Relative Size. Consider the following ideophones. The principal focus of description is other than size, such as 'crooked', 'twisted', 'straight' and 'action', among

others: ¹	
kagulú [́] kagulu	'crooked'
kagulú [́] kagulu	'crooked'(but less emphatic or of an object smaller in size than that which is kagulú [́] kagulu)
kágulú [́]	'twisted, rugged'
kágulú [́]	'twisted, rugged'(of smaller object(s))
gbalagigbalagi	'coiling, winding, twisting'
gbalagigbalagi	'coiling, winding, twisting'(of smaller object(s))
dégerée	'not too low(house)'
dégerée	'low(house)'
garakii	'(standing) strong and erect'
garakii	'(standing) strong and erect'(but smaller)
gororóo	'straight and wide'
gororóo	'straight and narrow'

Once again, these ideophones are strictly speaking not size ideophones. They make basic reference to other perceptual areas but happen incidentally to encode information concerning size.

3.1.2 Absolute Size. A look at the following ideophones will show that their principal focus is size:

A. kporokpoko [́]	'bold, well-marked(numerous objects)'
kpotokpoto [́]	'bold, well-marked'
gbodogbodo [́]	'bold(figures)'
gbódogóo	'extraordinarily large'
gbódoróo	'bold(writing), well-marked'
gbogolóo	'noticeably large'
gbógboróo	'thick, muscular'
gódogbóo	'huge, very large'
boloboló	'large and rounded(eyes)'
bogolobogolo	'bold, big, large(of grains)'
bulebulé	'bulgy(eyes)'
kétukétu	'dwarfish'

kelukelu [́]	'dwarfish; stunted(esp. mangroves)'
kutekute [́]	'tiny'
gorogoro [́]	'skinny, thin'
duredure [́]	'unexpectedly small'
mógolomógolo	'willowy, thin'
nikoniko [́]	'thin, slender, emaciated'
purupuru [́]	'fine, small(grains)'
petepete [́]	'tiny, very small'
ŷégíŷégí	'very fine and small(writing)'
B. yegeyege [́]	'very large'
buruburu [́]	'dusty; finely powdered like dust'
gbokogbokó	'very tall or long'

It can easily be seen from 3.1.1 and 3.1.2 that vowels marked [+wide] suggest larger sizes in the relative cases than those marked [-wide]; and suggest largeness absolutely as opposed to smallness in the ideophones whose main function is the designation of size.

However, the (B) part of 3.1.2 appears to disrupt this neat pattern. The ideophones identified in this particular section have vowels in opposition to their expected value. Forms such as these that break the expected patterns are relatively rare(3 out of 50 collected - or 6%) but they also obey a pattern of their own. Those with a velar stop in the medial-consonant position in a half-section(yege, for instance) suggest largeness, while those that have an alveolar stop in the same position suggest smallness -- provided the conflict ensuing between consonant and vowel suggestions does not involve the vowels [ɪ] and [o] which are so powerful in their suggestiveness that they cannot be affected by the medial consonant(cf. sorosoro 'bulgy, swollen' and ŷégíŷégí 'very fine and small'). The patterns of such interactions are treated in Maduka, 1988c and more extensively in Maduka(1989).

If we formalize meaning values in terms of semantic features such as follows:

tall, long, large, huge, ... = [+LARGE]

short, thin, small, ... = [-LARGE]

and ignoring the qualitative difference between relative and absolute size designation, we may represent the facts in terms of the following pair of phonosemantic rules --

(1) and (2), with V actually representing the vowel melody:

(1) V → [+LARGE]

[+wide]

(2) V → [-LARGE]

[-wide]

which can easily be collapsed into (3) using the alpha-motation:

(3) V → [αLARGE]

[αwide]

3.2 Fullness of Space. When it becomes necessary to describe the notion of fullness of space -- or lack of it --, Nembe uses wide vowels for emptiness of enclosed spaces and narrow vowels for fullness. There appear to be no ideophones in Nembe whose principal focus is the description of fullness and as such we have taken our examples from the field of noise description:

kpúkukpúku	'dull rattle by solid deep in closed, (almost) empty vessel'
kpúkukpúku	'light rattle by solid deep in closed, full vessel'
kpókokpóko	'rattle by solid in closed, (almost) empty vessel'
kpókokpóko	'rattle by solid in closed, full vessel'
wokowoko	'"rattle" by liquid in closed, (almost) empty, hard vessel'
wókowóko	'"rattle" by liquid in closed, full, hard vessel'
sakasaka	'"rattle" by liquid in empty, hard vessel'
sokosoko	'"rattle" by liquid in closed, full, hard vessel'

But for the disruption apparently created by sakasaka, which contains a vowel produced with narrow pharynx but does not refer to fullness of space, the case is very well established. The vowel [a] in any case has an ambiguous status in Nembe as it harmonizes with vowels in either the wide or narrow set. Rule (4) formalizes the situation just described, again using the alpha notation for brevity:

(4) V → [αEMPTY]
[αwide]

3.3 Contact Pressure. In ideophones that describe intensity of contact pressure, wide vowels suggest looseness, slackness, laxness, etc., while narrow vowels suggest compactness, tautness, firmness, etc.:

fófórofofóro	'slack, not tight, loose'
kpekpe	'wide apart, not compact'
kúukúu	'loose, hanging free'
kulakula	'not compact, scattered'
wuwuwu	'loose, soft, porous'
wosowoso	'loose and foamy'
wasawasa	'loose and foamy'
gidigidi	'firm, steady'
kimukimu	'tense, tight, taut'
kirikiri	'tight, closely fastened'
kitikiti	'compact, closely woven'
kpimukpimu	'very tight or taut'
kpikpi	'very tight'
ligiligi	'strict, tense, not lax'

Rule (5) captures the points inherent in this list and stated earlier:

(5) V → [αLOOSE]
[αwide]

3.4 Strength of Action. With respect to the magnitude of force associated with an action, wide vowels suggest great force, while narrow vowels suggest weak or little force. Values in this area appear to be relative.

fopúu	'with great force(cork of bottle coming out)'
fopúu	'with little force(hand being removed)'
gapíi	'with great force(harpoon into body of fish)'
gapíi	'with little force(harpoon into body of fish)'
dubée	'with force(something coming out when pressed)'
dubée	'with only a little force(something coming out)'
garagíi	'with great force(canoe coming against mangrove)'
garagíi	'with some force(canoe coming against mangrove)'

Rule (6) is the appropriate representation of the facts contained in the list above:

(6) V → [XFORCE]
[Xwide]

3.5 Noise. Wide vowels refer to loud noises while narrow vowels refer to soft or not so loud noises. Noise values again appear to be relative:

gbáduu	'boil with loud noise'
gbáduu	'boil with soft noise'
gbábúu	'great noise(of something breaking)'
gbábúu	'soft noise(of something breaking)'
gbáí	'sound of heavy fall(stone on zinc roof)'
gbáí	'sound of soft fall(stone on zinc roof)'
gbáú	'very loud noise(bell ringing)'
gbáú	'soft noise(bell ringing)'
báu	'noise of heavy fall(man)'
báu	'noise of light fall(mango)'
búú	'loud noise'
búú	'soft noise'

gíríríi	'loud noise(from big chair being dragged)'
gíríríi	'soft noise(from small chair being dragged)'
fakúrufakúru	'noise(in box)'
fakurúfakurú	'very little noise(on top of roof)'

As in the previous cases, rule (7) formally represents facts inherent in the list above:

(7) V → [XLOUD]
[Xwide]

3.6 Weight. Wide vowels refer to heavy(or heavier) weight while narrow vowels refer to light(or lighter) weight):

déregúu	'very heavy(stone)'
déregúu	'heavy(bag)'
feketee	'very light(basket)'
feketee	'extremely light(hat)'

This list is affected by the relative number of ideophones in Nembe (and indeed all languages) that refer exclusively to weight. But it still speaks eloquently enough to warrant the conclusion reached which is represented formally below as rule (8):

(8) V → [XHEAVY]
[Xwide]

3.7 Light Intensity. Wide vowels refer to brightness (or relative brightness) while narrow vowels refer to dullness(or relative dullness). These facts are formally represented by rule (9):

balúu	'twinkle'
balúu	'little twinkle'
buláabuláa	'burning tremendously'
bunáabunáa	'burning slightly'

(9) V → [XBRIGHT]
[Xwide]

3.8 Emphasis. Wide vowels do occasionally emphasize while narrow vowels do not:

kagulúkagulu 'crooked'

kagulú_ukagulu 'crooked'(but less emphatic than kagulúkagulu)

Even though this is the only pair explicitly shown in the data, it does serve to prove the point. Again, (10) below is the appropriate formal rule representation:

(10) $V \longrightarrow [\alpha \text{EMPH}]$
 $[\alpha \text{wide}]$

4. Conclusion. We may use one rule-complex -- (11) below -- to capture the whole rules outlined in this paper:

(11) $V \longrightarrow \left\{ \begin{array}{l} [\alpha \text{LARGE}] / \text{SIZE} \\ [\alpha \text{LOOSE}] / \text{CONTACT} \\ [\alpha \text{EMPTY}] / \text{FULLNESS} \\ [\alpha \text{FORCE}] / \text{STRENGTH} \\ [\alpha \text{BRIGHT}] / \text{LIGHT INTENSITY} \\ [\alpha \text{HEAVY}] / \text{WEIGHT} \\ [\alpha \text{LOUD}] / \text{NOISE} \\ [\alpha \text{EMPH}] / \text{EMPHASIS} \end{array} \right.$
 $[\alpha \text{wide}]$

Apart from LOOSE and EMPTY, all the other phonosemantic features appear to be related precisely because their values are either all with positive polarity(when $\alpha = +$) or all with negative polarity(when $\alpha = -$) in consonance with pharynx size values.

Perhaps the best way to look at the matter is not in terms of polarity but of the inherent connections between the different perceptual areas represented by the features. My speculation is that LARGE is the most basic of all the features above, being directly correlated physically to pharynx size. Others are then transfers or translations of sorts of this basic feature. Value for value, FORCE, BRIGHT, and HEAVY, for instance, are synaesthetic transfers

or translations of LARGE, while LOOSE, EMPTY, and LOUD appear to be metonymic, with LOUD also appearing to be synaesthetic. EMPH on the other hand would in comparison be said to be purely metaphorical in the nature of the translation involving it.

The speculation above would appear to be borne out by the relative number of ideophones exemplified in each category in our data(the corpus from which our data was chosen is considered representative -- see note at end). Thus, size ideophones are greatest in number(36) and least those clearly describing emphasis(2). If in general relative numbers are inversely proportional to the perceptual or cognitive distance that needs to be covered to accomplish a translation or transfer, then metaphorical transfers are most demanding followed(in that order) by synaesthetic and metonymic transfers, the last being least involving in terms of the psychic processes needed to effect a change.

At a more practical level, the connections can easily be seen to be simple; thus, it is so well known that empty vessels make the loudest noise that it has been consolidated formally in many languages in the form of idiomatic expressions. Furthermore, heavier objects are known to possess greater force and to be larger in size -- at least most of the time. Such common connections can easily be made in all cases concerning the values represented by pharynx size in Neme.

Notes

1. The data used in this work come from Kalai(1964/66) and from a rich list of ideophones used in context provided by Professor Kay Williamson of the University of Port Harcourt, Nigeria, to whom I express my profound gratitude. Only high tones are marked, thus ' ' '.

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ASPECTS OF YORUBA TONE: The interaction of Pitch, Amplitude and Time.

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INTRODUCTION

The most usual definitions of tone languages recognize pitch as the single most important characteristic of these languages. For instance, Pike's (1948) masterpiece defines a tone language as one "...having lexically significant, contrastive, but relative *pitch* on each syllable". Wehner's "more adequate" definition runs thus: "A tone language is a language in which both *pitch* phonemes and segmental phonemes enter into the composition of at least some morphemes". (Emphases mine, BRB).

The preponderant role ascribed to pitch (in tone languages), is still apparent in more recent works. Both LaVelle (1974) and Hombert (1976, 1978), refer to pitch (particularly with reference to Yoruba), as the "principal acoustic correlate of tones". In commenting on Hombert's (1976) classic tests (in which he used both natural and synthetic stimuli), Gandour (1978:49), says:

Results of listening tests... indicate that an increase in duration or amplitude does not cause a shift in identification judgments. This confirms the overriding importance of fundamental frequency as the principal acoustic correlate of Yoruba Tones.

However, there is a disagreement as to how pitch is used as a perceptual cue in certain environments. For instance, LaVelle assumes that in word-final position, it is the lowered pitch level of low tone that is the principal perceptual cue distinguishing it from a mid tone, whereas Hombert (1976:49), on the other hand, suggests that the falling contour is a more important perceptual cue than the fundamental frequency level (see Badejo, 1986).

This paper aims at re-assessing the parameters of tone in Yoruba, with a view to determining the interactions among them. We agree with our predecessors that pitch, amplitude and time (duration) enter into the paradigm of tone

