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NASALIZATION IN KAIWÁ

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The purpose of this paper is to describe the feature of nasalization as it occurs in Kaiwá, a Tupi-Guarani language of Brazil.

An early tentative analysis of the language which posited an oral and nasal series of vowels with resulting oral and nasal syllables did not account for all of the complexities perceived. It was also noted that the question of the phonemic status of pure versus postoccluded nasals was related to the question of nasalization. Although at first it appeared that one could simply consider the pairs m-m^b, n-n^d, ñ-d^y, ŋ-$ŋ^g$, and $ŋ^w$-g^w as allophones (the first member of each pair occurring in nasal syllables, the second in oral syllables), subsequent research revealed further interesting relationships among the nasalized parts of words, and consequently the picture became less clear.

It was soon discovered that in many cases the nasal allophones of such consonants occurred occasionally with oral vowels, and vice-versa. In the words tũpãŋ^{w}asu 'important gods' and kɨ̃?ɨ̃ŋ^{w}asu 'large peppers', the vowel a which follows ŋ^w is unambiguously oral. This is in spite of the fact that, according to the analysis referred to above, this vowel should have been nasal, and so account for the selection of the allophone ŋ^w (since ŋ^w was to occur with nasal vowels and g^w with oral). In the example õmãnõm^{b}a-mã 'they all died', it is impossible to decide which of the last two vowels, in actual fact, is the more nasalized, though the aforementioned analysis would call for the prejunctural a to be clearly oral. Sometimes, in a given instance, it is quite difficult to label a particular syllable of a form as definitely either nasal or oral, as for example in:

tupã ~ tũpa ~ tũpã 'gods, spirits'

okẽ ~ õke ~ õkẽ 'opening'

õrõĩkõtẽve ~ õrõĩkõtẽvẽ ~ oroikõtẽvẽ 'we (exclusive) are in need'

Yet we can make the generalization that at least one of the

syllables of (certain parts of) the words will be nasalized in a given instance. This leads us to the conclusion that nasalization needs to be described in terms of something other than the syllable. A hypothesis which attributes intrinsic nasality to certain whole morphemes in the language turns out to be the most fruitful, although certain other qualifications must be added in order to develop a truly comprehensive descriptive system for nasalization in Kaiwá. Throughout the rest of this paper, underlining will indicate intrinsically nasal morphemes. A til over a vowel is used to mark nasalization which results from the application of certain rules about combinations of morphemes at least one of which is nasal, as well as to mark nasalization caused by other factors. The examples cited above could then be written tupa, oke, and õrõ ikoteve (with space marking the morpheme boundary). In the last case õrõ ikoteve would indicate that oro has become nasalized by association with ikoteve.

Certain other definitions are necessary before the rules can be given. A STRESS GROUP is a group of syllables which can occur immediately before and after a syllable which has primary stress. PRIMARY STRESS is primary intensity with concomitant features of length of the whole syllable and rising pitch. A stress group has a nucleus and a margin (separated by a hyphen in this paper). We define NUCLEUS to be the syllable with primary stress and all syllables that precede it in a stress group. The MARGIN consists of any syllables that may follow the syllable which has primary stress. The division between stress groups, that is the point at which the margin leaves off and another nucleus begins, is determined by a combination of the following: potential pause; an audible rhythm change in which there is a relative speeding up of the first part of the nucleus in relation to the last part of the preceding margin; and syntactical divisions (the description of which is beyond the scope of this paper).

Positing the two units of nucleus and margin greatly facilitates the description of certain differences of effect of the nasality of one morpheme on that of another. It also helps in describing the limits to the operations of some but not all of the rules, whereas stress-group boundaries form the limit of all rules described here. Nasality, that is intrinsic nasalization, may occur on the nucleus, or the margin, or both, or neither. A margin is either completely nasal or completely oral. By contrast, a nucleus may be completely nasal, completely oral, or partly oral

and nasal.

Rule 1

Within the nucleus, if an intrinsically nasal morpheme occurs, it will potentially nasalize morphemes that precede it within the limits of the stress group boundary.

šẽ apɨj gʷa-rupi

my nose cavity in 'in my nostril'

Note that e of še becomes nasalized.

õ ñẽ no-ta

he reflexive lay desiderative 'he intends to lie down'

Note that if the reflexive were not followed by a nasal morpheme, it would have the form dʸe.

õ mano 'he died'

Qualification 1a

The occurrence of a glottal stop will tend to inhibit the nasalization effect of intrinsically nasal morphemes on successive syllables preceding it in the nucleus. Thus, although all the morphemes preceding an intrinsically nasal morpheme may become nasalized in normal speech, in careful (slower) speech syllables preceding a glottal stop will be oral (subject to Qualification 2a below).

base form: dʸuʔi ŋʷe 'frog (classifier)'

normal speech: ñũʔĩ ŋʷe

slow speech: dʸuʔĩ ŋʷe

Qualification 1b

If the last morpheme of a nucleus is intrinsically nasal, and if it is not followed by a margin, the last syllable(s) of that morpheme will generally be oral. If fol-

lowed by a margin, it (they) will be nasal.

base form: oro ikoteve

with margin: õrõ ĩkõtẽvẽ-vaʔe 'we (exclusive) are the ones who are in need'

without margin: õrõ ĩkõtẽve 'we (exclusive) are in need'

Rule 2

The postoccluded nasals m^b, n^d, $ŋ^g$ (which occur only in nuclei) will nasalize all syllables which precede them in a nucleus in normal speech and often in slow speech as well.

tẽm^biʔu 'food'

õ mõ ñẽ m^bo asɨ 'he makes him sorry for himself'

Qualification 2a

In careful speech, nasalization will be inhibited before a glottal stop as in Qualification 1a. However, any nasal morpheme or postoccluded nasal which precedes the glottal stop will reinitiate the nasalization of preceding syllables according to Rules 1 and 2.

base form: še rem^{b}iʔu ra 'my food in the making'

slow speech: šẽ rẽm^{b}iʔũ ra (Rules 1 and 2; Qualification 2a)

normal speech: šẽ rẽmĩʔũ ra (Rule 1)

Rule 3

A nasal margin does not affect an oral nucleus apart from a possible slight nasalization of the final vowel of the nucleus.

õ mano m^bã-ma 'they all died' (Rules 1 and 3)

Rule 4

Certain margins manifest nasal allomorphs if the last morpheme of the nucleus is nasal.

o ke-pɨ

his sleep in 'in his sleep'

oke-mɨ̃ 'in the doorway' (Rule 4)

Examples are here given to illustrate various combinations of nasal and oral morphemes in nuclei and margins. Nasalization (written as before with a til) will be referred to one of the rules in each case. Some additional comments are made where relevant.

ñãn^{d}e 'we (inclusive)' (Rule 2)

ñãnẽ apeku 'our (inclusive) tongue' (Rule 1)

Note that full nasalization of ñãn^{d}e forces the choice of the pure nasal as over against the postoccluded variant.

o ñẽ mõ n^{d}ɨj-ma 'he got a scare' (Rule 2)

hasɨ-maramo 'the moment they got sore'

There is no effect of margin nasalization on the nucleus.

õ mano-tama 'he is at the point of dying' (Rule 1)

o ke-ta 'he intends to sleep'

o me?e 'he gave' (base form)

one variant: o mẽ?ẽ is less common.

another: õ mẽ?e is more common (Qualification 1b).

another extreme variant: õ me?e occurs, and in such cases a slight postocclusion is sometimes heard on the nasal consonant: õ m(^{b})e?e.

ama 'rain'

tupa	'gods, spirits'
tupa	'lying place'
oke	'opening'
o ke	'he slept'
õ haʔaro	'he waits' (Rule 1)
taj	'teeth'
õmᵇo poši	'he makes angry' (Rule 2)
õrõ ŋʷahe-vɨ	'as we (exclusive) arrive' (Rule 1)

In the example above, the syllable he is nasalized (Qualification 1b).

õrõ ŋʷahe	'we (exclusive) arrive'

In this case the syllable he is often oral (Qualification 1b).

õrẽ rẽmᵇiʔu	'our (exclusive) food' (Rule 2)
tẽmᵇiʔu	'food' (Rule 2)

Notes

[1]The Kaiwá analyzed here is that spoken at the Francisco Horta Post, Dourados, Mato Grosso, Brazil. Field work for this paper was done during 1961 and 1962 under the auspices of the Summer Institute of Linguistics in cooperation with the Museu Nacional do Rio de Janeiro.

The segmental types of Kaiwá are: p, t, k, kʷ, ʔ, m, mᵇ, n, nᵈ, ñ, dʸ, j, ŋ, ŋg, ŋʷ, gʷ, r, v, s, š, h, i, e, a, o, u, ɨ. The segments kʷ, mᵇ, nᵈ, dʸ, ŋg, ŋʷ, and gʷ are interpreted to be simple unit phones on the basis of non-suspect syllable patterns. The question of the taxonomic phonemic status of such pairs as m-mᵇ and n-nᵈ is not considered in this paper.