# An Automodular Approach to Noun Classifiers in Piratapuya (E. Tukanoan)

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# 0. Background

Piratapuya is a language of the Eastern Tukanoan sub-family spoken in the Vaupés region of Colombia and Brazil. Piratapuya, like other E. Tukanoan languages, has an inanimate classifier system characterized by the use of shape and arrangement classifiers that appear only with inanimate nouns. These are mostly bimoraic morphemes.<sup>1</sup>

- (1) /~bisí doto/ (2) /~baá yudi/ (3) [misí dohto] [mã'á yuri] vine CL.bundle road CL.curved. 'a bundle of vine' 'a curved road'
  - (3) /ohó ~too/ [ohó tõ'õ] banana CL.bunch 'a bunch of bananas'

Piratapuya also shares with other E. Tukanoan languages gender marking on animate nouns with a masculine / feminine distinction in the singular, and not in the plural. This is marked with monomoraic suffixes. The animate (monomoraic) "classifiers" have completely suffixal properties at all levels, and appear to be restricted to a coding function on a closed lexical set of nouns.

- (4) imi nõ ikã ki ro one MASC- ANIM. 'one man'
- (5) numi nõ ikã ko ro woman - ANIM. one - FEM- ANIM. 'one woman'
- (6) imi ã puya ro man - ANIM.PL. two- ANIM. 'two men'

(7) numi - **ã** puya - ro woman - **ANIM.PL**. two -ANIM. 'two women'

<sup>&</sup>lt;sup>1</sup> Nasalization in Piratapuya is morphemic. The representation of a nasal consonant (e.g., n, m) or a nasalized vowel (e.g.,  $\tilde{a}$ ,  $\tilde{o}$ ) in any word implies the concurrent nasalization of all voiced segments in that word for all examples presented in this paper.

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Semantically, the bimoraic inanimate shape classifiers contribute to the basic characterization of referents in combination with different nouns (Gomez-Imbert 1996). The semantic independence of these inanimate shape classifiers is consistent with what Lucy (2000) has identified as classifiers of experience. This paper exclusively deals with the bimoraic inanimate shape classifiers in Piratapuya.

#### 1. Problem

There are differing views in the literature on the lexical versus grammatical status of the domain of nominal morphology traditionally called classifiers found in the closely related languages of the E. Tukanoan sub-family. We may characterize these positions as the "all are suffixes" view, the "some are suffixes" view, and the "(almost) none are suffixes" view.

Barnes articulates the "all are suffixes" view:

Classifiers in Tuyuca always occur as suffixes. When a classifier is suffixed to a root or stem, the result is a single phonological word. (The phonological word in Tuyuca is defined as an utterance containing two or more syllables and having one and only one syllable with high pitch.) The classifiers presented in this paper never occur as phonological words: they are always suffixes. (Barnes 1990:273-274)

In relation to Barasana, Gomez-Imbert and Kenstowicz present the "some are suffixes" view:

Nominal words display suffixes traditionally called classifiers, which constitute a concordial system appearing in all nominal constituents. The classifiers lie at the boundary between grammatical and lexical categories: segmental and tonal processes are sensitive to their moraic weight such that the bimoraic ones behave like roots while the monomoraic ones behave like suffixes. (Gomez-Imbert and Kenstowicz 2000)

Ramirez states the "(almost) none are suffixes" view for Tukano:

The morphemes that we call 'dependent nouns' have generally been considered – under the name 'classifiers' – as nominal suffixes... Like nominal suffixes, the dependent nouns are phonologically atonal and preceded by a noun. However, we argue that there is a fundamental difference between dependent nouns and nominal suffixes. (Ramirez 1997:97-98, 235).

Note that in part at least, the argument of Barnes that the classifiers are suffixes is based on a definition of a phonological word as a tonal unit. Ramirez, on the other hand, while recognizing that the classifiers form a tonal unity with a nominal complement, states that this is not the definition of the phonological word in Tukano. Ramirez instead uses the domain of nasal spreading as the definition of the phonological word. He labels the domain defined by tonal unity the "phonological locution" (Ramirez 1997:107). Ramirez asserts that we need not use tonal unity as a criterion "fallen from heaven" for the phonological word.

What is at stake here? Must these classifiers be categorically defined as either suffixes or words? Can they possibly have properties commonly associated with both categories? What would an analysis that attempts to show this look like?

# 2. Important Points

In this paper I analyze data from my own fieldwork on Piratapuya. While I state conclusions for Piratapuya only, I assume as a hypothesis here that this problem applies at a basic enough grammatical level to be debatable across the languages of the E. Tukanoan sub-family in general terms. Specific languages can later be compared as to the details.

I argue in the spirit of Autolexical Grammar (Sadock 1991) that there are two foci at extremes of a lexical continuum, one characterized by full and independent lexical words, and the other by totally dependent affixal morphology. Following automodular principles, I invoke several tests of word-hood involving the different "levels" of segmental, nasal, and tonal phonology as well as morphology to show a difference in the domains of prosody and morphophonology (see also Inkelas 1993).

I utilize comparative representations of the constituency of the bimoraic classifiers to show that the shape classifiers in Piratapuya defy categorical definition as either suffixes or independent words and fall somewhere in the middle of the lexical continuum. This is what has led to the confusion in the literature presented above.

#### 3. Tests for Word-hood

The tests I employ are adapted from Ramirez (1997), where he uses them to argue against the suffix status of classifiers in Tukano. Three phonological tests (two suprasegmental, one segmental) and one morphological test are used.

## 3.1. Segmental Phonology

In Piratapuya  $/d/ \rightarrow [r]$  / word internally. The segments [d] and [r] are in complementary distribution in Piratapuya; [r] occurs word internally, [d] word initially / elsewhere. Flapping applies across morpheme boundaries in suffixation, and flapping does not occur across word boundaries, i.e., [d] is always word initial.

(8) /dié-do/ (9) dié-ro wa'í-ré kanɨ yahké-ri [dié -ro] dog-ANIM. fish-OBJ. yesterday steal-PERF.3sg. 'The dog stole the fish yesterday' 'the dog'

However, in noun plus classifier combinations, flapping does not apply.<sup>2</sup>

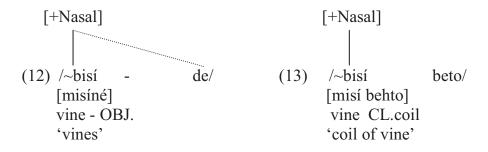
- (10) /~bisí doto/ [misí dohto] vine CL.bundle 'a bundle of vine'
- (11) misí **d**ohto-re **d**ú'u vine CL.bundle-OBJ. buy.PERF.1sg. 'I bought the bundle of vines'

These examples show that flapping is sensitive to the boundary between nouns and classifiers, while it is not sensitive to the boundary between roots and suffixes.

#### 3.2. Nasalization

Nasality is a property of the morpheme in E. Tukanoan languages. The feature [+Nasal] spreads left to right. Most V and N roots are marked as inherently [+/-Nasal]. These are robust in terms of nasality. A subset of morphemes is unspecified for nasality. These are all suffixes (although not all suffixes are unspecified, e.g., Tukano /~aka/, Piratapuya /~ka/ diminutive). Such nasal weaklings are targets of nasal spread (12) (Gomez-Imbert and Kenstowicz 2000). There are two pieces of relevant evidence for classifiers in Piratapuya. First, classifiers are not contaminated by nasalization when adjacent to a [+Nasal] root (13). Second, some classifiers, such as /~too/, are specified as [+Nasal] (14).

In (12) we see that nasality spreads from nasal roots to suffixes, and in (13) we see that classifiers are not contaminated by nasalization when adjacent to a [+Nasal] root.



In (14) we see that the classifier /~too/ 'bunch' is specified as [+Nasal] and itself triggers spread to a following suffix.

<sup>2</sup> Kristine Stenzel (personal communication) notes that the same pattern holds in Wanano, Piratapuya's closest relative in E. Tukanoan, and she concludes that "the morphological status of a classifier suffix is different from that of other types of inflectional or derivational suffixes."

# Noun Classifiers in Piratapuya (E. Tukanoan)



(14) /oho too - di pari/
[ohó tõ'õ ni pári]
banana CL.bunch-pl. many
'many bunches of banana'

These data show that nasal spread is sensitive to the boundary between nouns and classifiers while it is not sensitive to the boundary between stems and suffixes.

## 3.3. Morphology

Morphologically, classifiers take regular nominal suffixes such as augmentative -doho, diminutive  $-k\tilde{a}$ , referential -de, plural -di, etc. They don't close the word as we might expect gender inflection to do. Classifiers seem to inflect like nouns, and noun plus classifier combinations seem to be made up of a series of morphological words.

Mass nouns as in (15-17) cannot form the plural without a classifier. Mass nouns such as  $oh\acute{o}$  'banana' in combination with a classifier take the plural -di (15-17).

- (15) /ohó ~too -di/ [ohó tõ'õni] banana CL.bunch - pl. 'bunches of bananas'
- (16) \*ohó -ri tõ'õ

  'a bunch of bananas'

  (17) \*ohó -ri tõ'õ ni
- (17) \*ohó -ri tõ'õ-ni 'bunches of bananas'

Nouns with count semantics may take plural /-di/ and in addition a classifier which may then also take /-di/. Examples include plural 'twisty roads' in Piratapuya (18–20). The difference between the acceptability of plural inflection on mass and count nouns is a semantic, not a morphological, constraint on word formation.

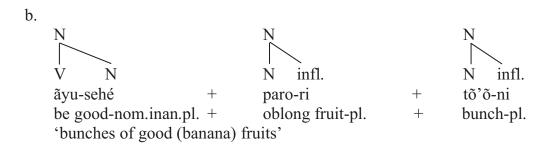
- (18) /~baá yudi/ [mã'á yuri] road CL.curved 'a curved road'
- (19) /~baá yudi -di/
  [mã'á yuriri]
  road CL.curved-pl.
  'a road with many
  curves' or 'curved
  roads'
- (20) /~baá -di yudi di/ [mã'áni yuriri] road-pl. CL.curved-pl. 'roads with many curves'

Morphologically, the nominal plus classifier constructions are separable by intervening inflection. The following Tukano example (21a) has a nominalized verb followed by two classifiers (the noun for 'banana' is elided), each with plural inflection. A suffixal analysis would have three plural markers in one

morphological noun in this form. The right morphology should probably be as in (21b) with three morphological nouns.

## (21) Tukano (from Ramirez 1997):

a. ãyu-sehé + paro-ri + tõ'o-ri be good-nom.inan.pl. + oblong fruit-pl. + bunch-pl. 'bunches of good (banana) fruits'



These data show that classifiers inflect like nouns, and noun plus classifier combinations seem to be made up of a series of morphological words.

We have seen up to this point that the domains of segmental phonology, nasal phonology, and morphology coincide such that the boundaries between nominal and classifier constructions are the same as the boundaries between independent words and different from the boundaries between roots and suffixes. However, we will see below that the domain of pitch accent draws different boundaries.

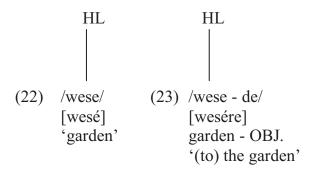
#### 3.4. Pitch Accent

The Tukanoan languages show some variability in the particulars of tonal phonology. These differences relate to which contours trigger spread, as in e.g. Wanano, Piratapuya, Barasana, and Karapana, where H tone spreads rightward from roots to suffixes, or e.g. Tukano, Desana, Tuyuka, and Bara, where H tones jump or are dislocated rightward (Ramirez 1997). The languages do not seem to differ in the domain of tonal processes. As a model for Piratapuya I follow Gomez-Imbert and Kenstowicz (2000) as regards the basic characterization of the Barasana pitch accent system. On their analysis, the two possible melodies for bimoraic roots are H and HL. Almost all noun and verb roots also have an extrametrical, left-most mora. Thus, in isolation, both underlyingly H and HL marked roots surface with a rising LH contour. Only with the addition of (suffixal, atonal) morphology do the underlying patterns become visible, with underlying H roots contaminating suffixes with their H tone and underlying HL roots not contaminating the suffixal morphology.

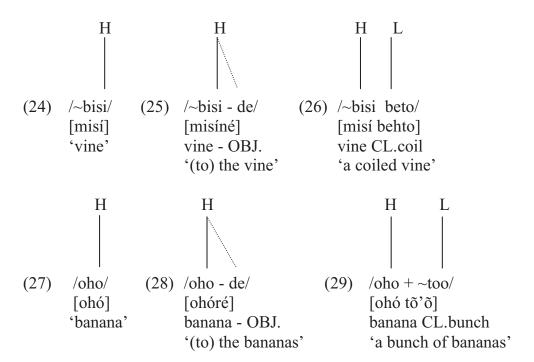
For our purposes here, using this as a test of one domain of word-hood, it is enough to note that there is one peak per tonal / accentual word and that stems with underlying H will contaminate following atonal suffixes with H tone. Contamination does not occur with HL root-suffix combinations, nor does H spread to adjacent roots in Piratapuya. Classifiers do not form their own separate

tonal unit marked by an independent peak when they co-occur with an immediately adjacent nominal. Overall, they are tonally weak. It is important to note that although they do not contribute their own pitch contour / peak to nominal root plus classifier constructions, in my Piratapuya data they appear with low tone after +H roots, making them unlike either suffixes or independent roots.

H tone spreading does not occur with HL root-suffix combinations (23).



Stems with underlying H contaminate following atonal suffixes with H tone (25, 28). Classifiers do not accept H tone spread in Piratapuya. They may be marked L, but this is very tentative (26, 29).



These data show that classifiers form a tonal unit marked by an independent peak when they co-occur with an immediately adjacent nominal. This unit we may call the tonal or accentual word.

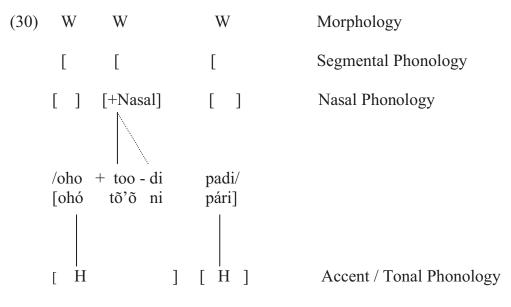
## 3.5. Summary of Tests

We may summarize the results of the tests for word-hood as follows:

Domain	nominal plus suffix	nominal plus classifier
pitch accent	+	+
segmental phonology	+	_
nasalization	+	_
morphology	+	_

### 4. Analysis

I have tried to present a relatively simple account of the phonological and morphological constituencies of Piratapuya inanimate classifiers. The description of noun plus classifier constructions in Piratapuya in terms of constituencies in different domains allows us to see the root of the confusion over the lexical versus grammatical status of these classifiers in the Tukanoan family. In an automodular account of any grammatical phenomenon, there is no problem with the kind of discordant representations we have seen for the classifiers here. In (30) we see that the domains of segmental phonological and nasal processes line up with morphological word-hood, mapping onto three constituents. At the same time, in the domain of accentual / tonal phonology, only two accentual constituents are delimited.



banana CL.bunch-pl. many 'many bunches of banana'

Although the nominal plus classifier combinations do form a tonal unity, they also seem to consist of morphophonological words. We can collapse the results of our inquiry in a representation of a difference between the domain of phonology

that assigns accent and tone and the domain of morphology that builds words and determines certain morphophonological subsystems such as boundaries for segmental and nasal processes.

#### 5. Conclusion

I have argued for an automodular analysis of these classifiers, whereby different representations of structure in different domains each contribute simultaneously to insightfully describe the composite nature of these grammatical forms. The comparative representation of the constituency of the bimoraic classifiers in the domains of segmental, nasal, and tonal phonology as well as in morphology allows us to see that the bimoraic classifiers are neither fully suffixal nor fully lexical. The bimoraic classifiers in Piratapuya in fact don't appear to have any of the positive characteristics of the undeniable suffixes, rather they simply form a tonal word with their complement and have some but not all of the characteristics of full lexical words. I suggest in this case that the association of inflectional / classifying function with affixal form is simply unexplanatory. A view to the composite nature of word-hood allows us to see more easily that at least some of the formal / functional concordances we expect in grammar are not one-to-one mappings.

We can insightfully observe that an account of such differences is necessary for an adequate description of the bimoraic classifiers in Piratapuya. In a sense, we have only shown that supporters of both the "all are suffixes" view and the "none are suffixes" view are both right in their analyses, and that there is not only no need to decide between the two, but that any such decision forces us to miss the fundamentally composite nature of the phenomenon.

### 6. Further Research

Larger questions remain regarding the role of syntax, semantics, and discourse in the description of the classifiers. A comparison of these forms with nominal compounds in Piratapuya would be instructive. I have some evidence that the classifiers can occur independently of nominals in certain contexts, but it remains to be seen if this is anomalous, a result of elicitation, or if actually occurring, how it is conditioned by syntactic or discourse factors. Also, it is important to determine what sort of syntactic constituent classifiers form when appended to a nominal. I briefly mentioned the relative semantic robustness of the bimoraic inanimate classifiers. It would be fruitful to more fully investigate the formal properties of the semantics of constructions like those presented in this paper in order to determine relations of dominance and scope. A complete study of the

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function of classifiers would require an account of their use in discourse, specifically as regards their role in contributing to textual cohesion and also their potential creativity in characterizing referents in different contexts of use. Lastly, we would need to look at the diachronic situation. It is possible that the classifiers are points on a cline of grammaticalization such that they are developing into suffixes from full words. All of these important lines of investigation are open for future work.

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