

# REPEATED MORPHS IN MUNDURUKU

Marjorie Crofts

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## 0. Introduction.

The features of repeated morphs described in this paper are pervasive throughout three levels of the grammatical structure of Munduruku<sup>1</sup>--word, sentence and paragraph. This repetition has considerable variety of function and must be translated in different ways. Repeated morphs within the word are described as the process of stem reduplication, which affects several classes of words.

Repeated morphs within the sentence are described as a process of affixation of that subclass of nouns described as classifiers. The classifiers are affixed in structures other than nouns to constitute a system of agreement. Categories of nouns determined by the occurrence of some forty classifiers appear to reflect groupings of natural phenomena which, to the Munduruku, have similar physical characteristics.

Repeated morphs within the paragraph are described as a system of pro forms. This system differentiates paragraph-initial structure from non-initial structure. Classified nouns occur in their full form paragraph-initially and thereafter in either pro forms or amplified pro forms.

## 1. Repeated morphs within the word.

The reduplication of noun, color and numeral stems, relationals, verb stems and a few particles is described as repeated morphs within the word.

### 1.1 Reduplication of noun stems.

1.1.1. A noun stem may be reduplicated to form the predicate of a possessive clause. The reduplication in this instance is best translated by the verb 'to have'. The last syllable of the noun stem is reduplicated, and an obligatory possessive pronoun is prefixed to the stem. The prefixation indicates the possessor, while the reduplication indicates possessive predication in a possession clause type, c.f.

a <sup>2</sup> ko <sup>3</sup> ba <sup>4</sup> <u>banana</u> ,	we <sup>3</sup> a <sup>2</sup> ko <sup>3</sup> ba <sup>4</sup> <u>my banana</u> ,	we <sup>3</sup> a <sup>2</sup> ko <sup>3</sup> ba <sup>4</sup> ba <sup>4</sup> <u>I have a banana</u>
a <sup>3</sup> xi <sup>3</sup> ma <sup>2</sup> <u>fish</u> ,	we <sup>3</sup> a <sup>3</sup> xi <sup>3</sup> ma <sup>2</sup> <u>my fish</u> ,	we <sup>3</sup> a <sup>3</sup> xi <sup>3</sup> ma <sup>2</sup> ma <sup>2</sup> <u>I have fish</u> . <sup>2</sup>



Reduplication type iii) intensifies the denotation of the stem:

i<sup>3</sup>rem<sup>3</sup>rɪst<sup>1</sup> very blue,

i<sup>3</sup>pak<sup>3</sup>pɪst<sup>1</sup> very red.

### 1.3 Reduplication of numeral stems.

The number pɪñ<sup>3</sup> one is reduplicated to indicate multiplicity: pɪñ<sup>3</sup>pɪñ<sup>2</sup> some. The numbers xep<sup>3</sup>xep<sup>2</sup> two and e<sup>3</sup>ba<sup>3</sup>dip<sup>3</sup>dip<sup>2</sup> four are inherently reduplicated. In the first, the stem is reduplicated while in the second only the final syllable of the stem is reduplicated. In these cases, no meaning has been found for the reduplication. The only other number in the language is e<sup>3</sup>ba<sup>2</sup>pɪñ<sup>3</sup> three, which does not reduplicate.

### 1.4 Reduplication of relationals.

Relationals are reduplicated when their referent is plural. c.f.

ce<sup>3</sup>ko<sup>3</sup>be<sup>2</sup>kɪñ<sup>2</sup> he has a canoe (his-canoe with),

ce<sup>3</sup>ko<sup>3</sup>be<sup>2</sup>kɪ<sup>2</sup>kɪñ<sup>2</sup>ip<sup>2</sup> they have a canoe (his-canoe with-reduplicated they),

ɪk<sup>3</sup>ʔa<sup>2</sup> house,

ɪk<sup>3</sup>ʔa<sup>2</sup>wat<sup>3</sup> resident of a house,

ɪk<sup>3</sup>ʔa<sup>2</sup>wat<sup>3</sup>wat<sup>3</sup> residents of a house.

Some relationals are inherently reduplicated:

-je<sup>3</sup>je<sup>2</sup> on top of,

-ko<sup>2</sup>ren<sup>3</sup>ren<sup>3</sup> encircling.

### 1.5 Reduplication of particles.

Some particles are inherently reduplicated:

-ʔit<sup>2</sup>ʔit<sup>2</sup> diminutive,

xi<sup>2</sup>xi<sup>2</sup> collective. c.f.

a<sup>3</sup>ya<sup>3</sup>cat<sup>2</sup> woman,

a<sup>3</sup>ya<sup>3</sup>cat<sup>2</sup>ʔit<sup>2</sup>ʔit<sup>2</sup> girl;

da<sup>3</sup>je<sup>2</sup> pig,

da<sup>3</sup>je<sup>3</sup>xi<sup>2</sup>xi<sup>2</sup> herd of pigs.

### 1.6 Reduplication of verbs.

1.6.1. Intransitive and transitive verbs have four forms, two of which involve reduplication. The two types of reduplication indicate durative state or repeated event. In the durative state form of the verb, the reduplicated form is as follows: If the final syllable of the stem ends in a nasal or semi-vowel, the entire stem is reduplicated, e.g.,

i<sup>3</sup>mɪ<sup>3</sup>di<sup>2</sup>rem<sup>2</sup>rem<sup>2</sup> is wetting it,

i<sup>3</sup>wɪy<sup>3</sup>wɪy<sup>3</sup> is washing it,

i<sup>3</sup>mɪ<sup>3</sup>ka<sup>2</sup>raw<sup>3</sup>ka<sup>2</sup>raw<sup>3</sup> is toasting it.

If the final syllable of the stem ends in a voiceless stop, the final syllable of the reduplicated stem ends in a nasal which is homorganic to this stop, e.g.

i<sup>3</sup>sɪp<sup>2</sup>sɪm<sup>2</sup> is cleaning it,

je<sup>3</sup>xi<sup>2</sup>ri<sup>2</sup>rik<sup>2</sup>xi<sup>2</sup>ri<sup>2</sup>riñ<sup>2</sup> is lightning.

If the verb stem consists of a single V syllable, the reduplicated form is -hVm, V being the same V as that of the verb stem, e.g.

i<sup>3</sup>ya<sup>4</sup>i<sup>2</sup>him<sup>2</sup> is squeezing it out,

je<sup>3</sup>ɪ<sup>2</sup>hɪm<sup>2</sup> is climbing up.

If a single V syllable verb stem is prefixed with the causative prefix  $i^3m\dot{\epsilon}^3/i^3m\dot{\epsilon}y^3$ , the reduplicated stem is preceded by  $-i^3$ . e.g.

$i^3m\dot{\epsilon}^3dip^2\dot{\epsilon}^3dim^2$  is making it pretty,       $i^3m\dot{\epsilon}^3c\dot{\epsilon}k^4\dot{\epsilon}^3c\dot{\epsilon}\dot{\eta}^4$  is hardening it.

If the verb stem consists of a single CV syllable, the reduplicated form is CVN, in which N is a nasal consonant. It is not possible to predict phonologically which nasal will occur, e.g.

$i^3biy^3wat^2wan^3$  is helping him,       $ay^3pa^3pan^3$  is growing old (male),  
 $je^3a^3ka^2ka\dot{n}^2$  is staring.

In the repeated event form of the verb, the stem is reduplicated without phonological changes, e.g.

$-?at^2?at^2$  was falling,       $-je^3bok^4bok^4$  was floating.

**1.6.2. Positional intransitive verb stems reduplicate to indicate plurality:**

$xik^2?i^3$  seated (singular) (verb stem-position marker),

$ka^3xik^2xik^2?i^3$  seated (plural) (marker-verb stem-reduplicated verb stem-position marker),

$po^2?i^3$  lying down (singular) (verb stem-position marker),

$ka^3po^2po^2?i^3$  lying down (plural) (marker-verb stem-reduplicated verb stem-position marker).

**1.6.3. Some descriptive verbs have a reduplicated form in which the reduplication indicates intensification of the quality described:**

$i^3ka^3?i^2$  wild,       $i^3ka^3?i^2?i^2$  very wild.

Descriptive verbs also have a reduplicated form when they occur as adverbs in a modified verb phrase. This reduplication occurs when the subject of the verb is plural, c.f.

$o^3e^2xe^3 i^3re^3$  he arrived hungry (he-arrived he-hungry),

$o^3e^2xe^3xe^3ip^2 i^3re^3re^3$  they arrived hungry (he-arrived-plural-they-he-hungry-plural).

**2. Repeated morphs within the sentence.**

Noun roots may be divided into two categories -- classifier and non-classifier. Classifiers are inalienably possessed noun roots which function to classify objects which have similar physical characteristics, e.g.

$-ba^4$  arm-like objects.

Noun stems may also be divided into two categories -- classified and unclassified. Classified nouns are those which contain one or more classifiers. Simple classified nouns consist of a single classifier root, e.g.

$-ba^4$  arm.

Complex classified nouns consist of a base manifested by either a classifier or a non-classifier root, plus one or more further classifiers, e.g.

a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> banana,                      ce<sup>3</sup>ñe<sup>3</sup>ba<sup>4</sup> wing,  
wa<sup>2</sup>je<sup>3</sup>ba<sup>4</sup> cocoa fruit.

When a classified noun occurs in a sentence, the classifier(s) is (are) repeated in other words in the sentence.

Types of complex classified nouns are described in 2.1.; classifier morphemes are listed in 2.2.; the rules for repetition in other words, and the allomorphic variations which occur are described in 2.3.

## 2.1. Types of complex classified nouns.

The most common type consists of a base manifested by a classifier plus up to four classifier morphs juxtaposed in genitive relationship:

tɿn<sup>3</sup>pɿ<sup>2</sup> intestines (dung-finger),                      yɿk<sup>3</sup>pi<sup>3</sup>di<sup>2</sup> dysentery (belly-pain-liquid),  
yɿk<sup>3</sup>pi<sup>3</sup>da<sup>2</sup>sẽñ<sup>2</sup>pɿ<sup>3</sup> intestinal worms (belly-interior-seed-worm-finger).

A second type consists of a Base manifested by a non-classifier noun plus one or more classifiers. This combination of noun and classifier also indicates possession, e.g.

kak<sup>3</sup>tɿy<sup>2</sup> fox's tooth (fox tooth),    kak<sup>2</sup>tap<sup>3</sup> fox's hair (fox hair).

A third type like type 2 above, consists of a Base manifested by a non-classifier noun plus a classifier, and may be translated as a descriptive statement, e.g.

o<sup>3</sup>xat<sup>2</sup>pa<sup>4</sup> my arm-shaped food (my-food-arm-shaped-thing),  
o<sup>3</sup>xat<sup>2</sup>'a<sup>3</sup> my round food (my-food-round-shaped thing).

A fourth type consists of a Base manifested by a bound non-classifier stem plus one classifier from a list of possible classifiers, e.g. a<sup>2</sup>ko<sup>3</sup>- banana species occurs with the following classifiers:

a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> banana fruit,    a<sup>2</sup>ko<sup>3</sup>dɿp<sup>2</sup> banana leaf,    a<sup>2</sup>ko<sup>3</sup>'ip<sup>2</sup> banana tree,  
a<sup>2</sup>ko<sup>3</sup>dip<sup>2</sup> banana field, and    a<sup>2</sup>ko<sup>3</sup>dot<sup>2</sup> stalk of bananas.

This group of nouns seems to be limited to plants or trees.

A fifth type consists of a Base manifested by a bound non-classifier stem plus only one special classifier, e.g.

ka<sup>4</sup>sop<sup>2</sup>ta<sup>3</sup> star.

These appear to be frozen forms, all of which are terms for celestial bodies and related phenomena.

## 2.2. Classifiers.

About forty classifiers have been found to date. The majority of these are monosyllabic, a few are dissyllabic, and one is trisyllabic. The classifiers are divided into three groups on the basis of the allomorph which occurs when prefixed to verb forms (see 2.3.).

**Group 1** classifier stems begin with /d/ (preceding oral vowel) or /n/ (preceding nasalized vowel). When occurring following any consonant, t- occurs. This group includes:

- a. -da<sup>3</sup> seed or eye. mɨ<sup>3</sup>ra<sup>2</sup>da<sup>3</sup> corn seed, ka<sup>4</sup>sop<sup>2</sup>ta<sup>3</sup> star,  
ce<sup>3</sup>kĩ<sup>2</sup>rĩ<sup>3</sup>rĩk<sup>2</sup>ta<sup>3</sup> kidney.
- b. -nã<sup>3</sup>bĩ<sup>2</sup> nose. kak<sup>3</sup>tã<sup>3</sup>bĩ<sup>2</sup> fox's nose.
- c. -dap<sup>2</sup> hair or feather wã<sup>2</sup>sĩ<sup>3</sup>dap<sup>2</sup> bird feather, kak<sup>2</sup>tap<sup>3</sup> fox's hair.
- d. -daw<sup>2</sup> bone. wɨy<sup>3</sup>daw<sup>2</sup> spine, bi<sup>2</sup>o<sup>3</sup>daw<sup>2</sup> tapir's bone.
- e. -nĩy<sup>2</sup> tooth. kak<sup>3</sup>tĩy<sup>2</sup> fox's tooth, pa<sup>2</sup>ra<sup>2</sup>wa<sup>2</sup>nĩy<sup>3</sup> monkey's tooth.
- f. -nĩn<sup>2</sup> dung. bi<sup>2</sup>o<sup>3</sup>nĩn<sup>2</sup> tapir's dung, kak<sup>3</sup>tĩn<sup>2</sup> fox's dung.
- g. -di<sup>2</sup> liquid (except blood). ka<sup>3</sup>pe<sup>2</sup>di<sup>3</sup> coffee (Portuguese café),  
po<sup>3</sup>sĩñ<sup>2</sup>ti<sup>3</sup> liquid medicine.  
This classifier may be suffixed to the name of any fruit to indicate its juice.
- h. -dip<sup>2</sup> field (cultivated or wild vegetation). a<sup>3</sup>way<sup>3</sup>dip<sup>2</sup> jungle, wa<sup>2</sup>je<sup>3</sup>dip<sup>2</sup> field of cocoa trees, a<sup>2</sup>ko<sup>3</sup>dip<sup>2</sup> field of banana trees.
- i. -diñ<sup>2</sup> smoke. ka<sup>4</sup>bi<sup>2</sup>diñ<sup>2</sup> fog, ka<sup>4</sup>wi<sup>2</sup>diñ<sup>2</sup> dust, da<sup>3</sup>xa<sup>2</sup>diñ<sup>2</sup> fire smoke,  
ka<sup>4</sup>bi<sup>2</sup>do<sup>3</sup>diñ<sup>2</sup> cloud.
- j- -dit<sup>2</sup> flower or blossom. a<sup>2</sup>ko<sup>3</sup>dit<sup>2</sup> banana tree blossom,  
mɨ<sup>3</sup>sĩk<sup>2</sup>tĩt<sup>3</sup> manioc flower.
- k. -dɨp<sup>2</sup> leaf. i<sup>3</sup>wãp<sup>3</sup>tɨp<sup>2</sup> sting ray, mɨ<sup>3</sup>re<sup>2</sup>o<sup>2</sup>dɨp<sup>3</sup> bat,  
wa<sup>2</sup>kĩ<sup>3</sup>rĩ<sup>3</sup>ma<sup>3</sup>dɨp<sup>3</sup> piranha fish, pa<sup>3</sup>pe<sup>2</sup>ra<sup>3</sup>dɨp<sup>3</sup> paper (Portuguese papel).
- l -nõm<sup>4</sup> meal. mɨ<sup>3</sup>sĩk<sup>2</sup>tõm<sup>4</sup> manioc meal, tõm<sup>4</sup>tõm<sup>4</sup> sawdust.
- m. -dot<sup>2</sup> stalk. a<sup>2</sup>ko<sup>3</sup>dot<sup>2</sup> stalk of bananas, tɨ<sup>3</sup>ri<sup>2</sup>ko<sup>3</sup>dot<sup>2</sup> bale of harvested wheat  
(Portuguese trigo).
- n. -doy<sup>2</sup> blood. bi<sup>2</sup>o<sup>3</sup>doy<sup>2</sup> tapir's blood, kak<sup>2</sup>toy<sup>3</sup> fox's blood.
- o. -do<sup>2</sup>pa<sup>3</sup> face. bi<sup>2</sup>o<sup>3</sup>do<sup>2</sup>pa<sup>3</sup> tapir's face.
- p. -do<sup>3</sup>ay<sup>3</sup>bɨ<sup>2</sup> tail. kak<sup>3</sup>to<sup>3</sup>ay<sup>3</sup>bɨ<sup>2</sup> fox's tail.

The following three members of this class have unidentified morphemes, as underlined:

-dop<sup>3</sup>sa<sup>4</sup> egg, -dop<sup>3</sup>sa<sup>4</sup>bi<sup>2</sup>di<sup>2</sup> egg white, -di<sup>3</sup>ko<sup>3</sup>pek<sup>2</sup> wave of water.

The other morphemes are listed in their respective classes, e.g. -bi<sup>2</sup> mouth or aperture is in Class 3, -di<sup>3</sup> liquid is in Class 1.

**Group 2** classifier stems begin with a central vowel or a glottal stop plus a central vowel. This group includes:

- a. -'a<sup>2</sup> head. tok<sup>2</sup>tok<sup>2</sup>'a<sup>3</sup> an owl, we<sup>3</sup>xik<sup>2</sup>'a<sup>3</sup> potato, mɨ<sup>2</sup>ka<sup>3</sup>'a<sup>2</sup> mango  
(Portuguese manga).

- b. -a<sup>3</sup>'ō<sup>2</sup> voice or speech. pa<sup>3</sup>ri<sup>3</sup>wat<sup>2</sup>a<sup>3</sup>'ō<sup>2</sup> stranger's speech.
- c. -a<sup>3</sup>'ō<sup>2</sup> upper trunk. ya<sup>3</sup>'o<sup>2</sup>pi<sup>3</sup>'a<sup>2</sup> shoulder (upper trunk-interior-round thing).
- d. -ĩñ<sup>2</sup> joint. dap<sup>2</sup>sem<sup>2</sup>ĩñ<sup>3</sup> deer's joint.
- e. -'ɪk<sup>2</sup> belly or gut (includes all hollow objects). sĩñ<sup>3</sup>'ɪk<sup>2</sup> timbo poison, i<sup>3</sup>bɪ<sup>3</sup>bɪt<sup>2</sup>'ɪk<sup>3</sup> hunting horn.
- f. -ĩ<sup>2</sup>rĩ<sup>2</sup> nail or claw. hi<sup>2</sup>hi<sup>3</sup>ĩ<sup>2</sup>rĩ<sup>2</sup> monkey's claw.

This class also includes an exception to the above phonological condition:

- g. -'ip<sup>2</sup> wood or tree. a<sup>2</sup>ko<sup>3</sup>'ip<sup>2</sup> banana tree, pi<sup>3</sup>ñã<sup>2</sup>'ip<sup>3</sup> fishing pole, ra<sup>2</sup>pi<sup>3</sup>'ip<sup>2</sup> pencil (Portuguese lapis).

The following three members of this Group have unidentified morphemes, as underlined:

-ip<sup>3</sup>sa<sup>4</sup> liver, -ak<sup>3</sup>pi<sup>2</sup>da<sup>3</sup> back of neck, and -a<sup>2</sup>ñĩy<sup>4</sup>bɪ<sup>2</sup> ear.

**Group 3** includes all other classifier stems:

- a. -ba<sup>4</sup> arm.<sup>5</sup> ce<sup>3</sup>ñe<sup>3</sup>ba<sup>4</sup> wing, wa<sup>2</sup>je<sup>3</sup>ba<sup>4</sup> cocoa fruit, a<sup>3</sup>ya<sup>3</sup>cat<sup>2</sup>pa<sup>4</sup> woman's arm.
- b. -bi<sup>2</sup> mouth or aperture. bi<sup>2</sup>o<sup>3</sup>bi<sup>2</sup> tapir's mouth.
- c. -bɪ<sup>2</sup> finger. piy<sup>3</sup>bɪ<sup>2</sup> snake, ce<sup>3</sup>kĩ<sup>3</sup>rĩ<sup>3</sup>rɪk<sup>2</sup>pi<sup>3</sup> vein, a<sup>3</sup>ra<sup>2</sup>mi<sup>3</sup>bɪ<sup>2</sup> wire (Portuguese arame).
- d. -ẽn<sup>2</sup> meat or flesh. dap<sup>2</sup>sem<sup>2</sup>ẽn<sup>3</sup> deer meat.
- e. -i<sup>2</sup> foot. bi<sup>2</sup>o<sup>3</sup>i<sup>2</sup> tapir's foot.
- f. -i<sup>3</sup> capsule. ta<sup>2</sup>i<sup>3</sup> seed's capsule.
- g. -ĩ<sup>2</sup> nut. we<sup>3</sup>na<sup>2</sup>ĩ<sup>2</sup> Brazil nut.
- h. -kĩm<sup>2</sup> breast. dap<sup>2</sup>sem<sup>2</sup>kĩm<sup>3</sup> deer's breast.
- i. -kĩy<sup>4</sup> cavity. i<sup>3</sup>pi<sup>2</sup>kĩy<sup>4</sup> earth-hole, tĩy<sup>2</sup>kĩy<sup>4</sup> tooth's cavity.
- j. -kõ<sup>3</sup> tongue. bi<sup>2</sup>o<sup>3</sup>kõ<sup>3</sup> tapir's tongue.
- k. -pi<sup>2</sup> interior or pain. yɪk<sup>3</sup>pi<sup>3</sup> belly-pain, ya<sup>4</sup>pi<sup>2</sup> headache, yɪk<sup>3</sup>pi<sup>3</sup>di<sup>2</sup> dysentery (belly-pain-liquid).
- l. -xe<sup>3</sup>'e<sup>2</sup> skin or hide. bi<sup>2</sup>o<sup>3</sup>xe<sup>3</sup>'e<sup>2</sup> tapir's hide.
- m. i<sup>3</sup>pi<sup>2</sup> earth or ground.<sup>6</sup>
- n. -i<sup>3</sup>pi<sup>2</sup>k<sup>2</sup> shaft or ear. mɪ<sup>3</sup>ra<sup>2</sup>i<sup>3</sup>pi<sup>2</sup>k<sup>2</sup> ear of corn.

The following three members of this Group have unidentified morphemes, as underlined:

xĩn<sup>3</sup>e<sup>2</sup>tã<sup>3</sup>'ẽ<sup>2</sup> manioc tapioca, xĩn<sup>3</sup>tõm<sup>3</sup> manioc gruel.

### 2.3. Affixation of classifiers.

The classifiers are repeated within the sentence as follows: prefixed to verb stems (transitive, intransitive, descriptive, and subject-referent), and suffixed to numerals and to demonstrative-locative stems.

2.3.1. When a classifier noun occurs as head of a noun phrase modified by a numeral, the classifier is optionally suffixed to the numeral. A vowel-initial classifier is preceded by a glottal stop, e.g.

xep<sup>3</sup>xep<sup>3</sup>'a<sup>3</sup> we<sup>3</sup>xik<sup>2</sup>'a<sup>3</sup> two potatoes,  
xep<sup>3</sup>xep<sup>3</sup>ta<sup>3</sup> ka<sup>4</sup>sop<sup>2</sup>ta<sup>3</sup> two stars,  
xep<sup>3</sup>xep<sup>3</sup>pa<sup>4</sup> a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> two bananas.<sup>7</sup>

2.3.2. When a classifier noun occurs as subject of an intransitive, subject referent or descriptive verb, or as object of a transitive verb, the classifier is prefixed to the verb stem.<sup>8</sup> Prefixed to transitive, intransitive, and descriptive verbs, the initial d-/n- of group 1 classifiers is replaced by t-; and the initial vowel or initial glottal stop of group 2 classifiers is preceded or replaced by y-. Prefixed to transitive and intransitive verbs, group 3 classifiers are preceded by sɿ-; prefixed to descriptive verbs by i-. Prefixed to subject-referent verbs, group 3 classifiers are followed by -e-. Examples:

wa<sup>3</sup>re<sup>2</sup>pɿ<sup>2</sup>pɿ<sup>2</sup>dɿp<sup>3</sup> o'<sup>3</sup>tɿp<sup>2</sup>a<sup>2</sup>bik<sup>3</sup> the butterfly alighted (butterfly it-classifier-  
alighted)

ka<sup>3</sup>pe<sup>2</sup>di<sup>3</sup> ti<sup>3</sup>da<sup>3</sup>xip<sup>2</sup> the coffee is hot (coffee-classifier classifier-hot)

we<sup>3</sup>xik<sup>2</sup>'a<sup>3</sup> o'<sup>3</sup>ya<sup>2</sup>'at<sup>3</sup> the potato fell down (potato-classifier it-classifier-fell)

xep<sup>3</sup>xep<sup>3</sup>pa<sup>3</sup> a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> o'<sup>3</sup>sɿ<sup>2</sup>ba<sup>2</sup>'o<sup>3</sup> he ate two bananas (two-classifier banana-  
classifier he-classifier-ate)

ɿk<sup>3</sup>tɿp<sup>2</sup> o'<sup>3</sup>je<sup>2</sup>dɿp<sup>3</sup>e<sup>2</sup>bok<sup>4</sup> the palm leaf floated (palm-leaf it-subject-referent-  
classifier-floated).

2.3.3. Classifiers are suffixed to demonstrative-locative constructions<sup>9</sup>, e.g.

i<sup>3</sup>ja<sup>3</sup>ba<sup>2</sup> a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> that banana

ja<sup>3</sup>ba<sup>2</sup>kɿ<sup>3</sup> the banana over there

ja<sup>3</sup>dɿp<sup>2</sup>ti<sup>3</sup> 'ot<sup>2</sup>pe<sup>3</sup>kɿ<sup>3</sup> below that leaf-like object

ja<sup>3</sup>di<sup>2</sup>kɿ<sup>3</sup> ka<sup>3</sup>pe<sup>2</sup>di<sup>3</sup> that is coffee.

## 3. Repeated morphs within the paragraph.

3.1. The first time a complex classified noun occurs in a paragraph the full form of the noun occurs, e.g. a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> banana. Whenever reference is made within the same paragraph to this entity a pro form of the noun occurs.<sup>10</sup> This generally consists of a prefixed person marker and the final classifier of the full form in question, e. g.

i<sup>3</sup>ba<sup>4</sup> arm-shaped thing, ya<sup>4</sup> round thing, ta<sup>2</sup> seed-shaped thing.

In other cases the pro form may consist of the same classifier modified or amplified so as to give additional information regarding the entity. This is described as an amplified pro form

and consists of a person marker and a classifier (the one in question), a descriptive verb stem, a nominalizer, and the same classifier suffixed, e.g.

i<sup>3</sup>ba<sup>4</sup>be<sup>2</sup>ren<sup>2</sup>at<sup>2</sup>pa<sup>4</sup> a long banana. (i<sup>-3</sup> 3rd person possessive marker, -ba<sup>4</sup> arm-shaped thing, -be<sup>2</sup>ren<sup>2</sup> tall, -at<sup>2</sup> nominalizer, -pa<sup>4</sup> classifier).

The chart below indicates the forms of the pro forms for the three groups of classifiers.

	<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>
pro form/prefix of amplified pro form	init. d/n→t	prefix y-	prefix i-
suffix of amplified pro form	init. d/n→t	init v→'v	no change

The following examples illustrate the use of these pro forms:

a<sup>2</sup>ko<sup>3</sup>ba<sup>4</sup> o' <sup>3</sup>sɪ<sup>2</sup>ba<sup>2</sup>'ɪk<sup>3</sup> / i<sup>3</sup>ba<sup>4</sup> o' <sup>3</sup>sɪ<sup>2</sup>ba<sup>2</sup>'o<sup>3</sup> (banana he-arm-shaped-thing-took/ pro-form-of-arm-shaped-items he-arm-shaped-thing-ate)

ɪk<sup>3</sup>'a<sup>2</sup> o' <sup>3</sup>ya<sup>2</sup>jo<sup>2</sup>jo<sup>2</sup> / ya<sup>3</sup>be<sup>2</sup>ren<sup>2</sup>at<sup>2</sup>'a<sup>3</sup> o' <sup>3</sup>ya<sup>2</sup>jo<sup>2</sup>jo<sup>2</sup> (house he-round-thing-saw/ amplified pro form (round-thing-tall-nominalizer-round-thing) he-round-thing-saw)

mɪ<sup>3</sup>sɪ<sup>2</sup>da<sup>3</sup> o' <sup>3</sup>ta<sup>2</sup>'ɪk<sup>3</sup> / ta<sup>3</sup> o' <sup>3</sup>ta<sup>2</sup>mõñ<sup>3</sup> i<sup>3</sup>kɪ<sup>3</sup> be<sup>2</sup> (corn-seed-shaped-thing he-seed-took/ seed-shaped-thing (pro form) he-seed-placed his-field in).

3.2. The following hypothetical data illustrates the various constructions described in this paper. The numbered items illustrate the following:

- 1, 12: a full form of the noun banana;
- 2, 4: affixation of a classifier morph to a numeral;
- 3: affixation to a descriptive verb;
- 5, 13, 14: affixation to a transitive verb;
- 6, 8: affixation to an intransitive verb;
- 7: a pro form;
- 9: an amplified pro form;
- 10: affixation to a subject-referent verb;
- 11: affixation to a demonstrative-locative.

1	2
o' <sup>3</sup> ji <sup>2</sup> a <sup>2</sup> ko <sup>3</sup> <u>ba</u> <sup>4</sup> bɪm <sup>2</sup>	xep <sup>3</sup> xep <sup>2</sup> <u>pa</u> <sup>4</sup> kay <sup>2</sup> o <sup>3</sup> 'e <sup>2</sup>
he-went banana to-get	two-class want past
He went to get bananas.	He wanted two bananas.

3	4	5
<u>i</u> <sup>3</sup> ba <sup>4</sup> rɪm <sup>2</sup> o <sup>3</sup> 'e <sup>2</sup> ip <sup>2</sup>	xep <sup>3</sup> xep <sup>2</sup> <u>pa</u> <sup>4</sup> o' <sup>3</sup> sɪ <sup>2</sup> ba <sup>2</sup> 'ɪk <sup>3</sup>	
cl. ripe past they	two cl. he-class took	
The bananas were ripe.	He took two bananas.	



heights: high front /i/, high central /ɨ/, high back /o/, low front /e/, low central /a/. Each syllable occurs with one of four accents: 1 high tone, 2 mid tone, 3 low tone, and 4 laryngealization.

3. Word-final /t/ is always lost preceding the plural suffix  $-y\tilde{i}^3$ .
4. Tone 2 is given as the basic tone of  $-n\tilde{i}y$ . However, when a suffix with tone 2 occurs following a stem-final syllable with tone 2, the second perturbs to tone 3, except where the suffix is vowel-initial, e.g.  $pa^2ra^2wa^2$  plus  $-n\tilde{i}y^2$  becomes  $pa^2ra^2wa^2n\tilde{i}y^3$ .
5. /b/ becomes /p/ following consonants and semi-vowels .
6. Earth occurs only as a free noun  $i^1\text{ }^3p i^2$ , but is included in the list of classifiers because it affixes to numbers, demonstrative-locatives and verbs.
7. The allomorphs of stop-initial classifier stems are phonologically conditioned. A voiced stop occurs following vowels; a voiceless stop following consonants. Group 2 classifiers have no allomorphic variations. All numbers are consonant-final.
8. The classifiers replace certain morphemes which differ according to verb types. The description of Munduruku verbs is dealt with more fully in an as yet unpublished grammar paper. Affixation occurs only when the verb is in the single event or the repeated event form (see 1.6.1.).
9. Demonstrative-locative stems function as demonstratives with the demonstrative-orienter prefix  $i-$  (e.g.  $i^3ja^3$  that) and as locatives with the locative-orienter suffix  $-k\tilde{i}$  (e.g.  $ja^3k\tilde{i}^2$  over there).
10. This does not apply if there are two classifier nouns belonging to the same class within one paragraph. In fact, however, this seldom, if ever, happens.