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BEE, Darlene LaVerne, 1932–
USARUFA: A DESCRIPTIVE GRAMMAR.

Indiana University, Ph.D., 1965
Language and Literature, linguistics

University Microfilms, Inc., Ann Arbor, Michigan

USARUFA: A DESCRIPTIVE GRAMMAR

BY

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Submitted to the faculty of the Graduate School
of Indiana University in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Linguistics
June, 1965

Accepted by the faculty of the Graduate School of Indiana Univeristy in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics. ,

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INTRODUCTION

The study of New Guinea languages although progressing rapidly is still in its infancy and there is need for descriptive statements to be made available for comparative study and critical examination. This grammar of Usarufa is written with the hope that it will help meet that need. The material for this study was collected during a period of residence in the Usarufa village of Orona totalling approximately two years over a four year period from September, 1958 to May, 1962. During that time the data upon which this analysis is based were checked with numerous native speakers, however, no informant was available at the time of writing so the author's own competence in the language had to be utilized.

The general theoretical orientation behind the analysis presented here is tagmemics as developed by Kenneth L. Pike and his associates of the Summer Institute of Linguistics. However, both analysis and presentation depart from tagmemic tradition. Most noticeable of the points of departure are the incorporation of rewrite rules and the rejection of the level oriented tagmeme. Other points of difference will be observed throughout the text which presents the central core of patterns and rules needed to generate an infinite number of Usarufa utterances and to give the non-Usarufa speaker a functional introduction to the language.

Usarufa is a language of the East New Guinea Highland Stock spoken by eight to nine hundred persons living south and east of Kainantu. The phonological system which is described more fully in Bee, Usarufa Distinctive Features and Phonemes and Bee and Glasgow, "Usarufa Tone and Segmental Phonemes" is summarized below:

Five vowels, i, e, a, o, and u; one liquid r; one glide ?; seven simple consonants, p, t, k, m, n, w, and y; and nine complex phonemic units ?p, ?t, ?k, ?m, m:, ?n, n:, ?w, and ?y.

Three tones, high, low and falling; and six primary distinctive features, consonantal, vocalic, grave, compact, nasal and sharp-flat plus two features distinctive in complex units, tense and checked.

The following orthographic symbols and devices will be used throughout the text: (Further symbols are given with the morpho-phonemic rules in chapter 8 and a list of frequently used abbreviations is given in the appendix.)

q = ?	qt = ?t	mm = m:
p = initial p;	qm = ?m	nn = n:
medial ?p	qn = ?n	/ = high tone
b = medial p	qw = ?w	∧ = falling tone
k = initial k;	qy = ?y	low tone unmarked
medial ?k	g = medial k	

( ) = an optional item   N = nasal class

( )$_{mx}$ = mutually exclusive   V = vowel class

[ ] = phrase unit   Q = glottal class

{ } = alternative choices   R = reduced stem class

∅ = zero morpheme   + = concatenation

→ = agreement with following subject

← = agreement with preceding subject

↔ = agreement with both following and

preceding subjects

x = any grammatically permitted morpheme or

morpheme sequence

y = any other grammatically permitted morpheme

or morpheme sequence

x^n = unit may be repeated indefinitely

Chapter 1

STEM FORMATION

Those morphemes which have a potential for occurrence as complete, grammatically well-formed utterances when occurring in isolation with a mood marking suffix are classed as STEMS. Verbal stems are those stems which may occur with the negative prefix (íV) and which usually require a person-subject suffix. Nominal stems are those stems which do not occur with either the negative prefix or the person-subject suffixes. Co-occurrence restrictions with nominal affixes divide the nominal stems into noun, locative and pronoun stems.

Stems may also be classified as either simple or complex. Simple stems are monomorphemic roots. Complex stems are those polymorphemic forms which consist of either two or more simple stems or a simple stem and specified obligatory affixes. These constituent elements are inseparable. Complex stems function exactly as simple stems and participate in word and phrase formation as single units. The structure of the complex stem formation of each stem type will be described in the following sections.

1.1 Noun stems (nd) - Those stems which have their primary manifestation in the form: nominal stem plus nominal suffix (ma), and which may occur with the stative suffix (koV) are NOUN STEMS. Noun stems may be either quantifiable or non-quantifiable. Quantifiable noun

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stems (ns_q) are those noun stems which may occur with a number suffix. They may be divided into common noun stems (ns_c), descriptive stems (ns_d) and temporal stems (ns_t) on the basis of co-occurrence potential with possessive and locative suffixes. Non-quantifiable noun stems (ns_{nq}) do not occur with number suffixes. They may be divided into numerals (ns_{nb}) and personal names (ns_{pn}) on the basis of co-occurrence potential with possessive and locative suffixes. The specific co-occurrence potentials which identify the foregoing sub-classes are indicated by the following matrix. Plus indicates a co-occurrence potential and minus indicates a lack of one.[1]

		Number	Possessive	Locative
	Common Noun	+	+	+
Quantifiable:	Temporal	+	-	+
	Descriptive	+	-	-
Non-Quantifiable:	Numeral	-	-	-
	Personal Name	-	+	-

---

[1]. It should be noted that the potential for co-occurrence with either the possessive or locative suffixes might also have been chosen as the basis for the first binary division for noun stems. The reason for choosing the number suffix as the basis for the primary division was that it proves to be productive elsewhere in the grammar and the other choices do not.

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The distribution of noun stems with nominal affixes will be dealt with in greater detail in Chapter 3 on Word Structure. Throughout the grammar the level of sub-classification which is relevant to a given construction will be indicated in the formula for that particular construction. Where sub-classification is not indicated it is to be understood that any noun stem sub-class may occur.

The complex stem constructions which will be described here are:

(1) Delta person prefix plus common noun stem - $\delta + ns_c$

(2) Noun stem plus common noun stem - $ns + ns_c$

(3) Noun or locative stem and verb or verb phrase plus noun formative - $\{ns; loc; [(ns) + vb]\} + nf$

(4) Common noun stem plus collective suffix - $ns_c + \underline{yu}$

(5) Verb plus common noun stem - $vb + ns_c$

(6) Proper name plus delta stem - $ns_{pn} + \delta ns_2$

1.11 Delta stems (δns) - A restricted number of noun stems occur with person prefixes. These prefixes occur only with those stems with which they are obligatory and change for person according to the delta series of person markers. (See section 2.4 for delta series)[1]

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[1]. The treatment of delta person prefixes as a type of stem complex rather than as inflection affixes simplifies the over-all description of word and phrase structure and reflects more adequately the structural proportion involved.

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The semantic relationship between prefix and stem is one of possession. Two semantic categories make up the stems which are included. Historical evidence, however, seems to indicate that a wider semantic universe may have been included at one time.[1] Of the two semantic categories which are synchronically productive the first (δns_1) includes kinship terms and kin oriented categories. The second (δns_2) includes body parts and bodily functions. The δns_1 stems occur in construction with object pronoun stems to form stems of further complexity. The resulting stem complex must occur when the given form occurs in isolation. The formula for this delta one construction is:[2]

$$\overset{\rightarrow}{pro.s_{obj}} + \overset{\leftarrow}{\delta ns_1}$$

The following sections will illustrate each of these delta constructions.

---

[1]. Words such as, ábomma tree trunk, ánnáma vine, anommá sap, áhama leaf, arammá fruit etc. upon comparison with cognates in closely related languages seem to indicate that the third person delta prefix (a) has been petrified in the Usarufa forms. A common semantic category can be abstracted from these forms which can be related to the delta two stems. Further historical-comparative studies promise to be interesting.

[2]. For a description of the formation of object pronoun stems see section 1.215. The arrow heads pointing towards one another in the formula indicate that the object pronoun stem and the delta prefix agree as to person.

1.111 Delta sub-one stems (a selective sample)

δáaniN1	son	δnáaQ1	wife
δbaQ1	younger brother	δnaoV2	maternal uncle*
δbarawaaV1	twin	δnôV1	mother
δboV2	father	δnógaaV1	cross cousin
δmáaQ1	homeland	δráaráV2	grandmother*
δmaaiV2	sister-in-law	δuQ1	little sister
δmaammV2	paternal aunt*	δwaaV2	older brother
δmanaaQ1	sister of a man	δwaiQ2	husband
δnáabuV2	grandfather*	δyaamuN1	daughter
δnaanoV2	older sister	δyóbiV1	brother of a woman

* reciprocal terms

---

1. The English translations given here do not adequately reflect the semantic components of the Usarufa terms. They are merely the nearest translation equivalents in the English kin system. The terms δboV2 father and δnôV1 mother, for example, include father's brother and mother's sister respectively and the sibling terms include parallel cousin categories.

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1.112 Pronoun and delta sub-one stem compounds (a selective sample)

(1) keqtiboV2 my father   (2) enaboV2 your father

keN2 + ti-δboV2   eN2 + a-δboV2

me + my-father   you + your-father

(3) wenaboV2 his father   (4) yeqtiboV2 their father

weN2 + a-δboV2   yeN2 + yi-δboV2

him + his-father   them + their-father

1.113 Delta sub-two stems (a selective sample)

δaaV2	sound	δmaN2	shadow	δuraN1	eye
δáaV1	hunger	δmuQ2	seed	δúwaáyaaN1	forehead
δaáV1	breath	δmúQ1	belly	δwayaaN1	teeth
δaáQ1	ear	δoiQ1	face	δwiV2	urine
δbíN2	buttocks	δóyauQ1	mouth	δwíQ1	name
δbúN1	shoulder	δqnoN2	head	δyaV2	feces
δiQ1	pain	δruN2	liver	δyaN1	anger
δiQ2	nose	δrúQ1	thigh	δyaQ1	intestines
δitauQ1	foot, leg	δuV1	body	δyaáN1	hand, arm

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1.12 Noun stem plus common noun stem (ns-ns) - Two types of
compounds of noun stems occur both manifesting a single fromula:

$$ns + ns_c$$

The two types differ in morphophonemic structure and in the types
of semantic relationships which are manifested. Type one $(ns-ns_1)$
exhibits a unique morphophonemic structuring not found in other
types of constructions while type two $(ns-ns_2)$ exhibits the same
type of morphophonemic structuring as is common to both descrip-
tive phrases and nominal suffixation. The following propositions
will demonstrate the differences in the two types of structure:[1]

$$ns-ns_1 = \begin{cases} \{x1; \ x2\} + y1 \longrightarrow xy1 \\ \{x1; \ x2\} + y2 \longrightarrow xy2 \end{cases}$$

$$ns-ns_2 = \begin{cases} x1 + \{y1; \ y2\} \longrightarrow xy1 \\ x2 + \{y1; \ y2\} \longrightarrow xy2 \end{cases}$$

---

[1] x represents any ns and y represents any ns_c; the numbers
1 and 2 represent morphotonemic classes. (See section 8.2 for
details on the morphotonemic rules which apply.

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The semantic relationships between $\underline{x}$ and $\underline{y}$ in the $ns\text{-}ns_1$ constructions include possession, purpose, material, and co-ordination. The semantic relationships in the $ns\text{-}ns_2$ constructions include purpose, adjectival modification and co-ordination. These relationships are illustrated in the examples which follow as indicated below.[1]

	Example number
$ns\text{-}ns_1$	
Possession	1, 5, 6, 7, 9, and 10
Purpose	3 and 4
Material	8, 10 and 13
Co-ordination	2 and 12
$ns\text{-}ns_2$	
Purpose	1, 3, and 6
Adjectival modification	2 and 5
Co-ordination	4, 7, and 8

A rough semi-literal translation has been included with each of the following examples to highlight these relationships. These translations are only approximations at best.

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[1] The overlap of categories which seems to occur may be due to the non-native speaker of Usarufa's inability to comprehend a significant difference. Both patterns are productive and future investigation may reveal a more clear cut defining distinction of categories.

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1.121 ns-ns₁ (a selected sample)

(1) anabeyúN2 the bottom of a

bamboo tube used as container

anaV2 + abeyúN2

bamboo + bottom of a container

(the bamboo's bottom or the

bottom of the bamboo)

(2) arawaaV2 people

araV2 + waaV2

woman + man

(men and women)

(3) iráámáN1 bark for firewood

iráaN1 + aámaN1

coals + bark

(bark for (making) coals)

(4) iraaqtaV2 fire blowing stick

iráaN1 + yaaV2

coals + tree, wood

(wood for (making) coals)

(5) iyánáárásQ1 puppy

iyáN2 + árásQ1

dog + offspring

(the dog's offspring or

offspring of a dog)

(6) iyánáwayaaN1 a decoration

made from dog's teeth

iyáN2 + a-ówayaaN1

dog + its-teeth

(the dog's teeth or

teeth of a dog)

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(7) kawikinamúQ1 rice

kawikiN1 + a-ómúQ1

ant + its-belly

(the ant's belly or

belly of an ant)

(8) noniyaV2 wave

noN2 + iyaV2

water + waterfall

(a waterfall of water)

(9) naamáruQ1 village

naaN2 + máruQ1

house + ground, land

(the house's land or

land of houses)

(10) powaiV2 a needle made

from the bone of a pig

póV1 + waiV2

pig + needle

(a needle of pig (bone))

(11) póawayaaN1 a pendant of

pig tusks

póV1 + a-ówayaaN1

pig + its-teeth

(pig's teeth or teeth of

a pig)

(12) unáakáqtóV1 clothes

unáaN2 + wáqtóV1

string bag + skirt

(string bag and skirt)

(13) waakaiV2 a needle made from the

bone of a possum

waaN2 + waiV2

possum + needle

(a needle of possum (bone))

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1.122 ns-ns₂ (a selected sample)

(1) abiqtatáN2 chair

a-óbiN2 + yatáV1

his-buttocks + stick, board

(board for one's buttocks or

a buttock board)

(2) ayarekaareV1 trailer

ayareN1 + kaáreV1

rear + car

(rear car)

(3) iyamaiQ2 toilet

yi-óyaN2 + maiQ2

their-dung + hole

(hole for dung or a

dung hole)

(4) póiyaN1 domestic animals

póV1 + iyáN2

pig + dog

(pig and dog)

(5) unoN2 ocean

uV2 + noN2

salt + water

(salt water)

(6) unópikaáreV2 boat

⟨unoN2 + piN⟩ + kaáreV1

ocean + in + car

(car for in the ocean

or an ocean car)

(7) waiwaaN1 wild animals

waiV1 + waaN2

rat + possum

(rat and possum)

(8) aiyayaaN1 twenty

a-óitauQ1 + a-óyaáN2

his-foot + his-hand

(feet and hands)

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1.13 Nominal formatives (nf) - A small class of morphemes functioning as nominal formatives occur as enclitics nominalizing locative and verbal expressions and transforming clause and sentence syntagmas to word and phrase syntagmas. These formatives occur as suffixes with noun and pronoun stems to form complex stems and idiomatic phrases. Morphemes indicating inanimate, human or personal animate, neutral animate and human female have been isolated. Animate categories indicate the performer of a particular action or the possessor of a particular quality. The inanimate indicates the object of a particular action, the instrument for a particular action or a type of something. The following chart lists these morphemes and indicates the semantic categories and sub-categories involved.

NOMINAL FORMATIVES

Animate			Inanimate
Human or Personal		Neutral	
Female	Neutral		
iniN	naQ	waN	yaqtaaQ
	waV		yaN
	naN		
	ganoQ		

1.131 ns + nf (a Selected Sample)

(1) aúbânaQ1   teacher

    aúbâV1 + naQ

    writing + person

(2) ináQ2   policeman

    iV2 + naQ

    bow + person

(3) imaamunáQ2   one who is always angry

    imaamuV2 + naQ

    rage + person

(4) kawaáníníN2   mid-wife

    kawaáN2 + iniN

    watching + female

(5) keqtoginiN2   widow

    keqtoQ2 + iniN

    mourning + female

(6) kiamuginiN2   harlot

    kiamuQ2 + iniN

    semen + female

(7) memewáV2   beggar

    memeV2 + waV

    begging + man

(8) anóniboagnaN1   a giant

    anóN1 + ibóaQ2 + naN

    big + initiated man + being

(9) aúbáganoQ1   native teacher

    aúbáV1 + ganoQ

    writing + one

(10) awáabiqwaN1   an insect which bites or stings

    awábiQ1 + waN

    fighting + creatures

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(11) nûnaraaqwaN   a person with lice or nits

nûN1 + áráaQ1 + waN

lice + offspring + creature

1.132   loc + nf - wíyòkakaN1   caterpillar

wíyoN1 + raN + waN

moon + at + creature

1.133   [(n) + vb] + nf   (a selective sample)

(1) aayúkainiriN1   a divorcee   (one who has been gotten rid of)

aayuwaN1Rb + ra + α-iN + iniN

to get rid of + past + 3rd per + female

(2) naiyaqtaaQ2   edible, something to eat   (things for eating)

naV2b + α-iV + yaqtaaQ

to eat + 3rd per + thing

(3) wiráatiyaqtaaQ1   flowers (things about which to laugh)

[wiráaV1 + ⟨teV2b + α-iV⟩] + yaqtaaQ

laugh + say + 3rd per + things

(4) máaqaayoqiyaqtaaQ1   binoculars (things with which to gaze)

[máaQ1 + aayoQ2 + ⟨oV2b + α-iV⟩] + yaqtaaQ

outside + a gaze + do + 3rd per + thing

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1.14 Collective nouns (ns$_{coll}$) - A class of collective stems
is formed from common noun stems and the collective suffix (yu).
The morphophonemic class of the resulting stem is determined by the
semantic category involved. Stems relating to humans belong to the
N class, locations to the Q class and animate categories to the V
class. The formula for this construction may be stated thus:

$$ns_c + yu + class + (nf)$$

(1) waayúkáV1 man, mankind, person

     waaV2 + yu + N + waV

     man + collective + class + creature

(2) yaayúQ2 woods, forest

     yaaV2 + yu + Q

     tree + collective + class

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1.15 Verb plus common noun (vb-ns_c) - Verb-noun compounds are formed by utilizing the verb stem and the third person subject suffix. Either the α_1 third person suffix (iV) or the α_2 suffix (iN) may be used. The latter occurs with noun stems beginning with i. The semantic relationship between verb and noun is that of an object (noun) for the purpose of a particular action (verb).

(1) wáinaúpaQ2   bedroom (a room for sleeping)

    waeQ2Rb + α-iV + naaN2 + u + paQ

    to sleep + 3rd per + house + inside + loc

(2) waíyáaréV2   bed (a table for sleeping)

    waeQ2Rb + α-iV + yaareV2

    to sleep + 3rd per + table

(3) kúberaiunaN1   shirt (a string bag for putting on)

    kuberaN3R + α-iV + unáaN2

    to put on + 3rd per + string bag

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1.16 Proper name plus delta stem (ns_{pn} + δns_1) - Married men
with children regularly assume the name of their oldest child
compounded with the morpheme meaning 'father'. This construction
can be used with any kin term and is often used to avoid the
name taboo which governs and restricts the use of given names
by individuals who bear a particular kin relationship to one
another. In the case where the term 'father' is used, however,
it substitutes for the individual's given name and is used by
everyone regardless of kin relationships.

    (1) <u>Iqyarénabo</u> the father of Iqyare

        <u>Iqyaré</u> + <u>na</u> + <u>a-δbo</u>

        Iqayare + poss + his-father

    (2) <u>Waaqoaánabo</u> the father of Waaqoaa

        <u>Waaqoáá</u> + <u>na</u> + <u>a-δbo</u>

        Waaqoaa + poss + his-father

    (3) <u>Toqorínabo</u> the father of Toqori

        <u>Toqorí</u> + <u>na</u> + <u>a-δbo</u>

        Toqori + poss + his=father

1.2 Pronoun stems (pro.s) - Pronoun stems are those nominal stems which do not occur with the stative suffix (koV) but which have their primary manifestation in the form: nominal stem plus nominal suffix. They function as nominal substitutes and are of three major types: PERSONAL, LOCATIONAL, and INTERROGATIVE. Most of the pronoun stems are complex with several semantic components interacting. These components will be described along with the complex stem structure in the sections to follow.

1.21 Personal pronoun stems (pro$_p$) - Five personal pronoun stems are simple or monomorphemic. From these are formed some thirty-seven complex stems. Three persons first, second and third, are identified by the simple stems which also distinguish singular versus non-singular. Non-singular may be either dual or plural depending upon the particular number suffix which occurs. Dual stems may indicate either that both persons involved are being referred to equally or that one is the focus of attention. The former will be called the NON-FOCUS stem and the latter will be referred to as the SINGULAR-FOCUS stem. This focus phenomenon occurs with plural pronouns also but as a phrase rather than a stem construction. The plural phrase construction not only distinguishes singular-focus from non-focus but plural-focus from either of these. In the plural-focus construction more than one person is the focus of attention but still more persons are included in the reference of the form. For further details see section 4.33.

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Two other complex stem types are formed from the singular

simple stems. These are the exclusive and reflexive stems.

The exclusive forms distinguish both person (first, second

and third) and number (singular, dual and plural). The reflexive

forms, however, indicate only person. Object pronoun stems

are derived from the non-object stems by a change of morpho-

phonemic class. This change will be dealt with as a type of

stem complexity.

The following five categories of personal pronoun stems

will now be described and examples given of each.

(1) Singular and non-singular simple stems

(2) Dual and plural stems

(3) Exclusive stems

(4) Reflexive stems

(5) Object stems

1.211 Singular and non-singular simple stems - These simple

stems form the nucleus of the personal pronoun system. The

contrast between singular and non-singular is neutralized in

the first person giving five forms rather than the expected

six.

These simple stems are:

	Singular	Non-singular
1st person	keV2$_1$	
2nd person	eV2	keV2$_2$[1]
3rd person	weV2	reV2

The following are the pronouns which result from the combination of these stems and the nominal suffix (ma).

kemá   I   wemá   he, she, it

emá   you   yemá   they

1.212 Dual and plural stems - The general pattern for the construction of dual and plural personal pronoun stems is as follows: pros$_p$ + {num; accom$_{act}$}. That is, a simple

---

[1] This stem is not usually used in isolation except as part of complex stem forms, however, in the context of a sentence it may be so used. First person keV2, and second person non-singular keV2$_2$ have been analyzed as separate stems. The subscripts indicate this homophony. It might be pointed out, however, that second person non-singular and first person fall together in the delta person series (see section 2.41) so that one might be tempted to consider keV2$_1$ and keV2$_2$ a single morpheme. Differences in the constructions in which they occur and clues from comparative-historical studies support the analysis chosen.

personal pronoun stem plus either a number or active
accompaniment suffix constitutes a dual or plural personal
pronoun stem. Non-singular stems occur in the plural and
non-focus dual forms and singular stems occur in dual
focus forms. The singular-focus dual forms are formed
with the accompaniment suffix (karaQ) and non-focus dual
and plural forms with the number suffixes. The general
formula may then be restated as:

$$\text{Plural and dual non-focus} = \text{pro.s}_{p\text{-ns}_9} + \text{num}$$

$$\text{Dual focus} = \text{pro.s}_{p\text{-s}_9} + \text{accom}$$

The specific co-occurrence of morphemes in these
constructions is shown in the following chart.

	Dual		Plural
	Non-focus	Focus	
1	keV2$_1$ + rataV	keV2$_1$	keV2$_1$ + taaV
2	keV2$_2$ + nakaV	eV2 } + karaQ	keV2$_2$ } + rawaQ
3	yeV2 + { rarataV / nakaV }	weV2	yeV2 }

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Examples of dual and plural stems:

keratáma we two   ketaámá we (pl)

kenákamá you two   kerawáqá you (pl)

yenákamá
               they two[1]   yerawáqá they (pl)
yerátamá

kegáráqá we two, but primarily me

egáráqá you two, but primarily you (sg)

wegáráqá they two, but primarily him

1.213 Exclusive personal pronoun stems (pro.s_{p-ex}) - The

formula for this stem type is:

$$pro.s_{p-sg} + \underline{namáa} + (num)^2$$

---

1. Both constructions are acceptable and have the same se-
mantic significance. The yeV2 + nakaV construction is much
more commonly used. The dual morphemes rarataV and nakaV
are nominal and pronominal respectively (see section 2.15).
The latter occurs only with pronoun stems as part of complex
stem formation while the former occurs with noun, locative
stems as an inflectional suffix and with pronoun stems as
part of complex stem formations.

2. The meaning of namaa cannot be specified at the present
stage of analysis. It occurs both in the exclusive and
reflexive constructions.

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The singular simple stems occur with the morpheme <u>namaa</u>

to form the exclusive stem base, and dual and plural forms

add number morphemes.

$$\{\underline{\text{ke}}V2_1; \ \underline{\text{e}}V2; \ \underline{\text{we}}V2\} \quad + \quad \begin{cases} \underline{\text{namaa}} \\ \underline{\text{namaa}} + \underline{\text{rarataV}} \\ \underline{\text{namaa}} + \underline{\text{taaV}} \end{cases}$$

The semantic significance of the exclusive stem

is that of the exclusion of all but the specified person or

persons from consideration.

Examples of exclusive stems:

<u>kenamáa</u>   only me, I alone

<u>enamáarata</u>   only you two, you two alone

<u>wenamáataa</u>   only them, they alone

1.214 Reflexive personal pronoun stems (pro.$s_{\text{p-rx}}$) - The

reflexive construction is similar to the exclusive but does

not indicate number and includes the reflexive morpheme

<u>riQ</u>.

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The reflexive formula is:

$$\text{pro}_{p-sg} + \underline{nam\acute{a}a} + \text{reflexive}$$

$$\{\underline{keV2_1}; \underline{e}V2; \underline{we}V2\} + \underline{nam\acute{a}a} + \text{reflexive}$$

Examples of reflexive stems:

<u>kenam\u00e1ari</u> myself

<u>enam\u00e1ari</u> yourself

<u>wenam\u00e1ari</u> himself

1.215 Object stems - By transforming the simple pronoun stems from the V morphophonemic class to the N class, object pronoun stems are formed. This may be expressed by formula as follows:

$$\text{pro.s}_{sg} + V \longrightarrow N = \text{pro.s}_{obj}$$

The resulting change in the morphophonemic class of the singular stem affects complex stems in conformity with the morphophonemic rules of the class involved. A comparison of object and non-object stems will illustrate the nature of these changes and demonstrate the relevant structure.

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(1) **kemmá** me   (2) **kemá** I

    keN2 + **ma**   **ke**V2 + **ma**

    me + nom   I + nom

    (**ke**V2 + V —→ N)

    I + class change

(3) **keqtáámá** us   (4) **ketáámá** we

    keqtááV2 + **ma**   **ketáá**V2 + **ma**

    us + nom   we + nom

    (**ke**V2 + V —→ N + **taa**V)   (**ke**V2 + **taa**V)

    I + class change + pl   I + pl

1.22 Locational pronoun stems (pro.s_{loc}) - There are three cate-
gories of locational pronoun stems ANIMATE, INANIMATE AND NEUTRAL.
The latter are what are traditionally known as demonstratives.
This label could be applied to all three categories but the
label chosen seems to more adequately describe the Usarufa con-
struction. The locational pronouns are in complementary dis-
tribution with the third person personal pronouns locating the
third person referent with regards to his position in space
relative to the speaker.

Animate and inanimate forms distinguish singular, dual
and plural; neutral forms are either singular or non-singular;
and dual animate forms may be either focus or non-focus. The

formation of these stems is as follows:

$$loc_d + \{\underline{na}V1; nf; num\}$$

$$loc_d + \{\{\underline{na}V1; nf\} + num; \underline{na}V1 + accom_{act}\}$$

Stems formed with $\underline{na}V1$ follow the ns-ns$_1$ pattern of morphotonemic change while all other stems follow the ns-ns$_2$ pattern.

The locational-directional stems which occur in these constructions are:

ə́b̲i̲N2	up there	mema̲N2	down there
ép̲i̲N2	near	mera̲N2	medium far
m̲a̲a̲N2	here	meya̲N2	very far
	m̲i̲N2	there	

For animate pronoun stems the foregoing directional stems undergo the following transformation:

$$loc_d N2 \longrightarrow loc_d V2$$

Noun formatives which occur with these locative stems are: w̲a̲V neutral animate and ya̲qtaaQ inanimate. The number suffixes which occur are n̲a̲kaV and rara̲taV dual, y̲u̲V collective and rawaQ plural.

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The following matrices give the specific co-occurrences
of morphemes as they combine to form specific semantic composites.

	Animate	Inanimate
Singular	$loc_d V$ + waV	loc_d + yaqtaaQ
Dual — Focus	$loc_d V$ + náVl + karaQ	loc_d + náVl + rarataV
Dual — Non-focus	$loc_d V$ + nakaV	
Plural	$loc_d V$ + yuV	loc_d + yaqtaaQ + rawaQ

	Neutral
Singular	loc_d + náVl
Non-singular	loc_d + náVl + rawaQ

Examples of locative pronouns:[1]

maawáma. he   maaqtátáága it

maanákámá they two   maannáratama these two

maanágaraqa they two (focus) maaqtátáákáwáqá these

maayúmá they here   maannáma this

                maannárawaqa these (neutral)

1.
   The locative-directional stem used in the examples given is
maaN2 here. In each translation the location specification and
the categories animate, inanimate and neutral is to be understood.

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1.23 Interrogative stems (pro$_{int}$) - Two interrogative morphemes
combine with nominal affixes and noun formatives to form inter-
rogative stems. These morphemes occur only in larger con-
structions either on the stem level as will be described here
or on the word and phrase level as will be described in
sections 3.21 and 4.34. The two stems are:

náaVl   which

nóeNl   what

They occur in the following stem constructions:

pro$_{int}$ + loc + aQ   (Interrogative stem plus locative)

pro$_{int}$ + nf + aQ   (Interrogative stem plus noun formative)

pro$_{int}$ + ref + aQ   (Interrogative stem plus referent)

pro$_{int}$ + ra + aQ   (Interrogative stem plus ra)

1.231 Locative interrogative stem (pro$_{int-loc}$) - The locative
interrogative stems consist of the náaVl stem and locative
suffixes plus an interrogative suffix (aQ). These stems may
substitute for any locative stem.

náaVl + loc + aQ

(1) náabaraQ where, (what place)

náaVl + paQ + aQ

which + place + interrogative

(2) náakaraQ where (what position or direction)

náaVl + kaQ + aQ

which + loc + interrogative

1.232 Nominal interrogative stems (pro$_{int-n}$) - There are two

nominal interrogative constructions. Inanimate and animate nominal

formatives occur respectively with nóeNl and náaVl to form inter-

rogative noun substitutes.

náa + nf$_{ani}$ + aQ

nóe + (nf$_{inani}$) + interrogative

(1) náawaQ who

náaVl + waV + aQ

which + creature + interrogative

(2) nóenaQ what

nóeN + aQ

what + interrogative

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(3) nóeqtaqtaaQ what

    nóeNl + yaqtaaQ + aQ

    what + thing + inter

1.233 Referent interrogative stem (pro_{int-rf}) - A single referent interrogative formed with the nóeNl stem and the referent suffix (yabaV) covers the semantic area of why or for what reason and what about or concerning what. The referent suffix may be abbreviated to ya.

$$\left\{ \begin{array}{c} \underline{nóeqtabaQ} \\ \underline{nóeqtaQ} \end{array} \right\} \quad \text{why, what about}$$

    nóeNl + yabaV + aQ

    what + referent + interrogative

1.234 Purpose interrogative stem (pro_{int-ra}) - The semantic area covered by this construction is very difficult to define. It seems in general to include manner or means of action and may usually be translated by how.

(1) náaraQ why   (2) nóreQ what, how many

    náa + ra + aQ   nóeN + ra + aQ

    which + ra + inter   what + ra + inter

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1.3 Locative stems (loc.s) - Locative stems are those stems which have their primary manifestation in the form: nominal stem + locative suffix. They are of two semantic types, those which relate to location in space and those which relate to location in time. The former includes place names (loc_{pn}), directionals (loc_d), and positionals (loc_p).

1.31 Location in space (loc_{sp}) - Stems relating to location in space occur in the following forms:

(1) loc_{pn} + paQ (Place names)
(2) loc_d + kaQ (Directionals)
(3) loc_p + paQ (Positionals)

1.311 Place names - The names of all villages, hamlets, gardens, etc. consist of the proper name plus the place marking suffix (paQ). The following are names of places which play a key role in Usarufa culture.

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Examples of place names:

Aiyurábá**Q2** The Usarufa village of Ogura

Aiyurapá**Q2** The Government Agricultural Station at Aiyura

Iraabóbá**Q2** The Usarufa village of Ilafo

Kaagúbá**Q2** The Usarufa village of Orona

Kainaaqtúpá**Q2** Kainantu, the sub-district office

Kemaíyúpá**Q2** Kemiyu, the medical aid-post

Moibeba**Q1** The Usarufa village of Moife

Moképa**Q1** Okapa, the patrol post for the Kainantu sub-district

Naápitípá**Q1** The Coast, from the Neo-Melanesian (Pidgin English)

    nambis 'coast'.

1.312 Directional (loc_d) - Directional stems usually indicate

distance as well as direction and are formed from directional loc-

ative stems and the locational suffix (kaQ).

Examples of directional stems:

aákaQ1 by the fire   ebíkaQ2 up there

aakakáQ2 in the sunshine   epíkáQ2 there near

abákáQ2 over, out of the way   kérakaQ1 there medium near

abarokáQ2 in the open   maakáQ2 here

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Directional stems continued:

memakaQ2   down there   mikaQ2   there

mepikaQ2   to the side   nekaQl   at a distance

merakaQ2   medium far   paakaQ2   shallow

meyakaQ2   very far   tebakaQ   over, remainder

                                      waaqokaQl   very near

1.313 Positionals (loc_p) - Positional stems occur with the place suffix (paQ) and indicate either specific position or position relative to something else.

Examples of positional stems:

aapaQl   in the shade   aupaQ2   hidden, on the inside

aitabaQl   on a hillside   aukaapaQl   in the middle, center

amepaQl   on a hillside   awabaQl   on the edge

amenaapaQ2   underneath   ayaabaQ2   top end of the
                (higher than speaker)   garden

amenaapaQl   underneath (lower   kaapaQ2   horizontal
                than speaker)

amubayaabaQl   on top   kokupaQ2   vertical

amiraapaQl   on top   maapaQl   outside

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Positional stems continued:

naawátúpaQl just outside the house   paábaQl aside

napáQ2 to the left   yanáápaQl next

napáQ2 below   yanaapáQ2 to the right

1.32 Location in time (loc_t) - Stems indicating location in time
are formed from temporal noun stems (ns_t) in combination with the
location and place suffixes (kaQ and paQ respectively). Stems of
the form ns_t + paQ tend to indicate a more specific though indefinite
time than the stems of the form ns_t + kaQ which are usually more
general.

Examples of time location stems:

ns_t + paQ ns_t + kaQ

áupaQl the rainy season   ákaQl last, finally

ayukábaQl day before yesterday   anaaekaQl later

wagaábaQl at noon, before   enaikaQl evening

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1.4 Verb stems (vs) - Verb stems are either transitive (vs_{tr}) or
intransitive (vs_{intr}) on the basis of lexico-syntactic interaction.
Transitive verb stems occur in constructions which have an optional
object tagmeme. These verb stems may be interpreted as having either
definite or indefinite objects as part of their semantic make-up. A
sentence such as íkenaíye, may be translated either 'He is not eating
(he is not feeling well and unable to eat).' with an indefinite
elliptical object, or 'He is not eating his food (He doesn't like
it).' with a definite elliptical object. In such a case the context
of situation would determine which interpretation should be given.
The criterion then for determining whether a verb is transitive or
not is whether in any of its occurrences it may occur with an overt
object tagmeme. In the case of the above example to eat (naV2b)
is classed as transitive on the basis of such constructions as,
kamáama íkenaíye, 'He doesn't eat sweet potato.' Intransitive verb
stems never occur in constructions with an object tagmeme.

On the basis of co-occurrence potential with verbal affixes there
is a distinction between those verb stems which may occur with the
stative suffix (koV), those which never occur with koV and those verb
stems which only occur in the stative form.[1] Although the criteria

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[1] This third distinction may be due to insufficient data.

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for dividing verb stems into three categories cut across the transitive and intransitive classification there is some interaction. The transitive or intransitive status of a verb stem affects the co-occurrence potential of a stative verb with person suffixes. Transitive stative verbs occur with only third person suffixes.

Verb stem complexity is not as extensive as other types of stem complexity and is of such a nature that it could be treated as inflectional. Three types of verbal complexities, however, seem best treated as complex stem formations. These are:

(1) Delta person prefix plus verb stem (δ + vs).

(2) Verb stem plus the verb to put (vs_{tr} + mara).

(3) Verb stem plus the verb to sleep (vs_{intr} + wae).

1.41 Delta verb stems (δvs) - A few verb stems occur with an obligatory person prefix in much the same manner as the delta noun stems (see section 1.11). The same set of person prefixes is used for both the noun and verb stems. The prefixes occur only with those verb stems with which they are obligatory. The semantic relationship between prefix and verb stem is the relationship of object (direct or indirect) to action. The following are the only delta verb stems which have thus far been found.

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δaayaV3	to call	δraateV3	to show
δbugayaQ3	to poke	δukaraN2Rb	to bite as food
δikamoN1Rb	to hit	δupuyoN2Ra	to bite as animal
δmeN1a	to give	δwautoV3	to awaken
δonaV3	to see, look	δyora	to hold for someone.
δkaV2	to put for some-		
	one, to like		

1.42 Transitive verb plus the verb to put (vs-mara) - The verb to put (maraN2Ra) compounded with another verb stem adds a completive or inclusive aspect to the action. It differs from the completive and perfect suffixes in the scope of the action. Not merely the completion of a single action is intended but also the completion of other attending actions. The translations of the following forms are very free but will illustrate the semantic significance of the vs-mara compounds as compared to forms with the completive and perfect suffixes.

(1) agatuwaiye   He is finishing the cooking of it.

agayaQ2Ra + tuwaN + δ-iV + o

to cook + completive + 3rd per + indicative

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(2) agamaráiye He is doing everything that needs to be done for

the preparation and serving of a meal.

agayaQ2Ra + maraN2Ra + δ-iv + e

to cook + to put + 3rd per + indicative

(3) agayemáiye He has prepared the food already and it is at

present prepared.

agáyaQ2Ra + ma + δ-iv + e

to cook + perfect + 3rd per + indicative

1.43 Intransitive verb stem plus verb to sleep (vs-wae) - The verb to

sleep or lie down (waeQ2Rb) adds to an intransitive stem an aspect of

duration. Usually verbs of motion are involved, and a stay of some

time, at least a night, is implied.

Selected examples:

(1) kukaeQ2Ra to go down somewhere and spend a night or more.

kumoN2Ra + waeQ2Rb

to go down + to sleep

(2) ukaeQ2Ra to go up somewhere and spend a night or more.

uyoQ2Ra + waeQ2Rb

to go up + to sleep

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(3) yawaeQ2Ra   to come and spend a night or more.

yeV2a + waeQ2Rb

to come + to sleep

1.44 Reduced verb stems (rvs) - In a number of verbal constructions
verb stems of the R class occur reduced by the loss of their final
syllable.

{vs-cv; vs-vv}R $\longrightarrow$ {vs; vs-v}

Selected examples:

(1) agatáiye   he cooked it

agáyaQ2Ra + ra + δ-iv + e

cook + past + 3rd per + indicative

(2) watáiye   he slept

waeQ2Rb + ra + δ-iv + e

sleep + past + 3rd per + indicative

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Chapter 2

AFFIX INVENTORY

Affixes will be presented under six categories, (1) nominal and pronominal, (2) locational, (3) tense-aspect and voice, (4) person, (5) mood and (6) directional. Some affixes may be considered primarily syntactic markers, however, most are complexes of semantic components which can best be handled as part of the lexical section of the grammar. In order to show the systematic arrangement of semantic components most clearly, chart and/or matrix displays have been chosen. The distribution of these affixes including ordering and co-occurrence restrictions will be dealt with in Chapter 3 on Word Structure.

2.1 Nominal and pronominal affixes - Included in this category are those affixes which occur only with noun or pronoun stems and those affixes which which mark nominal constructions. Specifically included are affixes of accompaniment, instrument, reference, possession and conjunction.

2.11 Accompaniment (accom) - Two suffixes fall into this category.

> karaQ   active accompaniment (accompanied by)
>
> teV   passive accompaniment (accompanying)

The stems with which these suffixes occur are marked as either the active or passive subjects of accompaniment. In the form x + karaQ, x is marked as the active subject of accompaniment and does the accompanying. In contrast, the form x + teV indicates x as the passive subject of accompaniment being the one who is accompanied. Both forms may be translated by 'with x', but the English ambiguity is not present in the Usarufa. The following English sentence will illustrate both Usarufa constructions:

I come with my father.

ketibogárá keune   I come accompanied by my father.

ketiboté keune   I come accompanying my father.

⟨ketiboV2 + {karaQ; teV}⟩ + ⟨kéV + yeV2a + α-uN + e⟩

my-father + accom + pres.con + come + 1st + indic

2.12 Instrument (inst) - A single suffix occurs in this category indicating the instrument by which an action is performed.

napoV   with (instrument)

2.13 Referent (ref) - Included in this category is a semantic area similar to the Indo-European dative, included are: concerning, the reason for, indirect object, and benefactive. This entire area of

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meaning is represented by a single referent suffix:

yabaV concerning, for, etc.

2.14 Possessives (poss) - Possessive suffixes indicate singular or plural possessor and distinguish between real or absolute possession and relative possession.

	Singular	Plural
Relative	ni	ti
Absolute	naV	minaV

2.15 Number (nb) - Number suffixes fall into two categories, those which occur with all nominal stem types and those which occur only with pronoun stems as part of complex stem fromations.[1] The distinctions made by number suffixes are between collective and dual or plural. Singular forms are unmarked but it should be noted that a stem without number suffixes need not be interpreted as singular, it is merely noncommittal as to the number category involved.

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[1] Verb person-subject suffixes may historically be derived from nominal number suffixes. The third person dual or plural of the beta series is taV; the form tarataV may occur for the dual and the first and second person dual forms in the same series is kaV. The first person plural of the beta series is taaV.

Number Matrix

	Dual	Plural	Collective
Nominal	rarataV raV	taaV	yuV
Pronominal	nakaV	rawaQ	

2.16 Conjunction (conj) - Nominal stems may be joined in co-ordinate constructions either by simple juxtaposition or by the conjunctive suffix uyaa and.

2.2 Locational affixes (loc) - Locational suffixes mark general or specific location in time or space or movement away from a specified location. The following suffixes occur:

Location in time or space		Movement away
General	Specific	
paQ place kaQ location	nobaQ inside piN in, on raQ at	keN from

2.3 Tense-aspect and voice affixes (ts; vc) - The Usarufa tense-aspect category is primarily one of aspect rather than time although there is a time component involved. In order to clarify the categories involved a brief definition of terms as used to define the Usarufa

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morphemes will be given.

TENSE-ASPECT

Aorist – A tense-aspect indicating that an action has
either taken place in some past time or that
it must take place prior to some other action.

Recent Past – A tense-aspect indicating an action which
has taken place on the preceding day.

Remote Past – A tense-aspect indicating an action which
has taken place at least two days ago.

Customary – A tense-aspect indicating a past action which
used to occur regularly as part of tradition or
habit.

Frequentive – A tense-aspect indicating a past action
which is or was repeated frequently.

Perfect – A tense-aspect indicating a past action whose
results are still in evidence.

Present Continuous – A tense-aspect indicating a non-
past action which is presently in progress or
which is at the present an habitual action.

Future – A tense-aspect indicating an action which has not
yet taken place or an action which the speaker has
either not observed or is not certain as to the
reality of its occurrence.

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VOICE

Stative — An action or substantive viewed as a state

of being. Note the following examples.

puyo + koV (die + stative) to be dead

no + koV (water + stative) the state of being

water or an action characteristic of

water.

waa + koV (man + stative) the state of being a

man or an action characteristic of mankind.

ano + koV (big + stative) the state of being

big or the nature of bigness.

akate + koV (break + stative) the state of being

broken.

Completive[1] — The subject of an action viewed as perform-

ing and completing it.

Benefactive — An action performed in behalf of, on account

of, instead of, or for the benefit of someone

else.

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[1]. The classification of the completive morpheme with the voice suffixes
rather than with the tense-aspect suffixes may cause some questioning.
The basis for so doing was the fact that the morpheme in question is in
complementary distribution with the voice suffixes and its occurrence
is in the same structural slot with reference to the verb stem and other
verb affixes as is the voice category.

The following matrix gives the tense-aspect and voice morphemes as they reflect various semantic oppositions. The tense-aspect morphemes show contrast in the oppositions of past to non-past and of time oriented to aspect oriented tense-aspects. It will be noted that the benefactive suffix is di-morphemic. It is possible to analyze this morpheme as the delta verb stem meaning to like, or to put something someplace for someone (δkaV2). If such an analysis were to be chosen it would perhaps be more consistent to treat the benefactive category as a type of stem complexity. For the present it seems most convenient to treat it here as part of the affix inventory and later as part of the structure of words.

TENSE-ASPECT, VOICE MATRIX

	Tense-Aspect		Voice
	Time	Aspect	
Past	ra (aorist) ta (recent) ra + ra (remote)	wao (customary) go (frequentive) ma (perfect)	koV (stative) tuwaNR (completive) δkaV (benefactive)
Non-Past	kéV (present continuous) no (future)		

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2.4 Person affixes (per) - There are four series or sets of person markers. These have been set up on the basis of differences in the nature and number of person distinctions made, the semantic significance of the structural types with which each occurs and the differences in the phonetic shapes of the forms in each series. The alpha(α), beta (β), and gamma (γ) series function as person-subject suffixes occurring with verb stems. The delta (δ) series occurs in complex stem constructions as obligatory prefixes described in Chapter 1.

The differences in person designations in the four series can best be seen in summary as presented in the following chart. Plus indicates that the person-number category or categories represented by a given cell is designated by a form in the person series. It may be noted that the alpha, beta and gamma series make seven person-number distinctions while the delta series makes only three.

Person	Alpha Series			Beta Series			Gamma Series			Delta Series	
	sg	pl	d	sg	pl	d	sg	pl	d	sg	pl
1	+	+	+	+	+		+		+		+
2	+			+	+	+	+		+	+	
3	+	+	+	+	+		+		+		+

The configurations of person-number distinctions shown in the above chart represent the kernel matrices of each series. Sub-series of each show different configurations of components as will be indicated in the following sections.

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Before going into the details of each series it should be noted that the sub-classifications which postulate sub-series within the alpha and beta series are not as securely based as the division between the four series. The person-number configurations are complex and sometimes seem quite erratic. One feels that both homophony and neutralization of contrast are functioning. However it is not always clear where the line should be drawn between the two. In order to facilitate the description of both verb and clause and sentence constructions in which person suffixes play a crucial role the present analysis utilizes both neutralization and homophony. The sub-series classifications may upon further analysis prove either inadequate or unnecessary but for the present they serve as a means to demonstrate the complexity of semantic component configuration and to simplify the statement of syntactic structure. If they should prove to be of no further value they will have been sufficiently useful to justify their use here.

2.41 Delta series (δ) - As has been indicated the delta series occurs as obligatory prefixes in the δns and δvs stem types. The functional relationship between prefix and stem is determined by the stem type. The relationship of prefix to noun stem is that of possessor-possessed, and of prefix to verb stem is that of object-action. The relationship in the benefactive suffix is the same as that of prefix to verb stem.

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The three morphemes of the delta series distinguish between first

person singular-non-third person plural and second-third person

singular and third person plural. The forms of the delta series are:

Delta Matrix (δ)

1st Sing-Non-3rd Plur	2nd-3rd Sing	3rd Plur
ti	a	yi

2.42 Alpha series (α) - The alpha or independent series of person

markers has the widest occurrence and the greatest diversity of

person-number configurations and phonetic shapes. Seven sub-types

may be described as derived from a single kernel matrix of person

forms. Each sub-type is partially like and partially unlike other

alpha types. Because of their obvious similarities of form they have

been grouped as a single series of types. However, there are significant

differences in the person distinctions made, syntactic relationships

marked and partial dissimilarities in the phonetic shapes of some of

the forms which cannot be accounted for by the over-all morphophonemic

structure of the system. One significant syntactic difference in

the distribution of alpha sub-series is that sub-series one through

four occur in both sentence final and sentence non-final clause types

while sub-series five through seven occur only in non-final clauses.

The differences in person distinctions made by the alpha sub-series

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are shown in the following matrix. Differences in the phonetic shapes of the alpha forms may be seen from the sub-series matrices which follow the rules for generating each sub-series.

Person	Final α₁ α₂ α₄			α₃			Non-Final α₅			α₆	α₇	
	sg	pl	d	sg	pl	d	sg	pl	d		sg	pl
1	+	+	+	+		+	+		+	+	+	
2	+			+			+			+	+	+
3	+	+	+	+	+	+	+	+		+	+	

2.421 Alpha kernel matrix (α₁) - The alpha sub-series one is taken as the kernel matrix from which each sub-matrix is generated. In the forms which appear in the cells of the alpha kernel matrix there are some obvious recurring partials which can be identified with specific semantic components. For example, u can be identified as first person and y as dual. This segmentation, however, proves of little value either with reference to the other components included in the matrix or elsewhere in the grammar. Although it may prove to be of historical and comparative significance the forms are analyzed in terms of their synchronic significance as single morphemes with the note that further segmentation is possible. The person designations of the alpha kernel matrix or sub-series one are, first, second and third singular; first and second-third dual; and first and second-third plural.

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Alpha Kernel Matrix (α_1)

	First	Second	Third
Singular	úN	∅N	iV
Dual	úyV	yV	
Plural	únataV	∅V	

2.422 Rules for generating alpha sub-series matrices.

(1) Sub-series two (α_2) – By addition of a{V; N} to the forms in the α_1 matrix the forms in the cells of the α_2 matrix may be generated by application of the following rules.

$$\alpha_1 + a\{V; N\} \longrightarrow \alpha_2$$

$$\{iV; \emptyset V\} + a\{V; N\} \longrightarrow \{iV; \emptyset V\} + \{V; N\}$$

$$\text{únataV} + a\{V; N\} \longrightarrow \text{únataaV}$$

$$xV + (a)\{V; N\} \longrightarrow x(a)N$$

$$xN + (a)\{V; N\} \longrightarrow x(a)V$$

(x is any α_1 form)

Alpha sub-series two matrix (α_2)

	First	Second	Third
Singular	únaV	naV	iN
Dual	úyaN	yaN	
Plural	únataaV	∅N	

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(2) Sub-series three (α_3) _ The forms in the α_2 matrix may be

rewritten in the cells of the α_3 matrix as follows:

$$\alpha_2 \longrightarrow \alpha_3$$

1sg: 1d : 1pl $\longrightarrow$ 1sg-pl: 1d[1]

únataaV $\longrightarrow$ únaV

iN $\longrightarrow$ inaN

Alpha sub-series three matrix (α_3)

	First	Second	Third
Singular	únaV	naV	inaN
Plural		ØN	
Dual	úyaN	yaN	

(3) Sub-series four (α_4) - The forms in the α_2 matrix may be
be rewritten in the cells of the α_4 matrix as follows:

$$\alpha_2 \longrightarrow \alpha_4$$

x{V; N} $\longrightarrow$ x   (x is any α_2 form)

únataa $\longrightarrow$ únana

i $\longrightarrow$ ita

Ø $\longrightarrow$ wa

---

1. Rewrite the opposition of first person singular to first dual and
first plural to the opposition of first person singular-plural to
first dual.

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Alpha sub-series four matrix (α_4)

	First	Second	Third
Singular	úna	na	ita
Dual	úya	ya	
Plural	únana	wa	

(4) Sub-series five (α_5) - The α_3 forms may be rewritten in the cells of the α_5 matrix as follows:

$$\alpha_3 \longrightarrow \alpha_5$$

2-3d : 2-3pl $\longrightarrow$ 2-3d,p

$\underline{x}\{V; N\} \longrightarrow \underline{x}$ ($\underline{x}$ is and α_3 form)

$\{na, ya\} \longrightarrow \{ena, iya\}$

$\{úna, úya\} \longrightarrow \{na, ya\}$

$\emptyset \longrightarrow iya$

Alpha sub-series five matrix (α_5)

	First	Second	Third
Singular	na	ena	ina
Plural		iya	
Dual	ya		

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(5) Sub-series six (α_6) - The α_6 matrix may be derived from the α_2 matrix by neutralization of the number contrasts and the forms from the α_2 matrix rewritten in the cells of the α_6 matrix as follows:

$$\alpha_2 \longrightarrow \alpha_6$$

$$\text{sg : d : pl} \longrightarrow \text{sg-pl}$$

$$\underline{x}\{V; N\} \longrightarrow \underline{x} \qquad (\underline{x} \text{ is any } \alpha_2 \text{ form})$$

Alpha sub-series six matrix (α_6)

First	Second	Third
úna	na	i

(6) Sub-series seven (α_7) - The α_7 matrix may be derived from the α_6 matrix by reintroduction of a singular and plural contrast in the second person and the α_6 forms rewritten in the α_7 matrix as follows:

$$\alpha_6 \longrightarrow \alpha_7$$

$$\text{sg-pl} \longrightarrow \text{1sg-pl : 3 sg-pl : 2sg : 2pl}$$

$$\underline{i} \longrightarrow \text{imma}$$

$$\text{2pl} \longrightarrow \text{ma}$$

Alpha sub-series seven matrix (α_7)

	First	Second	Third
Singular	úna	na	imma
Plural		ma	

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2.423 Alpha composite matrix - The following matrix summarize the forms of the alpha series relating the sub-series to one another for comparison and quick reference.

Alpha Composite Matrix (α)

Sub-Series	Singular			Dual		Plural	
	1s	2s	3s	1d	2-3d	1p	2-3p
α_1	uN	øN	iV	uyV	yV	unataV	øV
α_2	unaV	naV	iN	uyaN	yaN	unataaV	øN
α_3	unaV	naV	inaN	uyaN	yaN	unaV	øN
α_4	una	na	ita	iya	ya	unana	wa
α_5	na	ena	ina	ya	iya	na	iya
α_6	una	na	i				
α_7	una	na	imma				ma (2p)

2.43 Beta series (β) - The beta or subjunctive person suffixes occur as person-subject markers of subjunctive constructions and as anticipatory subject markers in multiple clause sentences. The beta sub-series are derived from a single kernel matrix of forms.

2.431 Beta kernel matrix (β) - The beta sub-series one (β_1) constitutes the beta kernel matrix. The person distinctions made are as follows: first, second and third persons singular; first and second persons plural; first-second person dual; and third person dual-plural.

Beta kernel matrix (β)

	First	Second	Third
Singular	$\emptyset$Q	$\emptyset$V	naV
Dual	kaV		taV
Plural	taaV	$\emptyset$Q	

2.432 Rules for generating beta sub-series.

(1) Sub-series two (β_2) - The contrasts between first person singular and first-second dual; and between first person plural and third dual-plural are neutralized by the following rules for rewriting β_1 forms in the β_2 matrix. The person-number configurations which results is unique.

$$\beta_1 \longrightarrow \beta_2$$

$$\emptyset Q_{1sg} \longrightarrow kaV$$

$$taaV \longrightarrow taV$$

Beta sub-series two matrix (β_2)

	Third	First	Second
Singular	naV		$\emptyset$V
Dual		kaV	
Plural		taV	$\emptyset$Q

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(2) Sub-series three (β_3) - The β_3 matrix may be derived from the β_1 matrix and the β_1 forms rewritten in the cells of the β_3 matrix as follows:

$$\beta_1 \longrightarrow \beta_3$$

$$1 : 2 : 3 \longrightarrow 2 : 3$$

$$\underline{ta}V \longrightarrow \underline{ya}Q$$

$$\underline{na}V \longrightarrow \underline{na}Q$$

Beta sub-series three matrix (β_3)

	Second	Third
Singular	$\emptyset$V	$\underline{na}$Q
Dual	$\underline{ka}$V	$\underline{ya}$Q
Plural	$\emptyset$Q	

2.433 Beta composite matrix - The following matrix summarizes the beta sub-series.

Beta composite matrix (β)

Series	Singular			Non-Singular			
	1s	2s	3s	1-2d	3d-p	1p	2p
β_1	$\emptyset$Q	$\emptyset$V	$\underline{na}$V	$\underline{ka}$V	$\underline{ta}$V	$\underline{taa}$V	$\emptyset$Q
β_2	$\underline{ka}$V	$\emptyset$V	$\underline{na}$V	$\underline{ka}$V	$\underline{ta}$V	$\underline{ta}$V	$\emptyset$Q
β_3		$\emptyset$V	$\underline{na}$Q	$\underline{ka}$V(2d)	$\underline{ya}$Q		$\emptyset$Q

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2.44 Gamma series (γ) - The gamma or imperative series has a single
set of person forms which occur in imperative constructions. These
forms bear resemblance to both alpha and beta forms but differences
in the semantic composition of the forms and the relationship of forms
of the series to one another is significant. The forms γ-kaV and
β-kaV both indicate second person dual subjects. However the beta form
cannot be called a second person dual morpheme in the same sense as
the gamma form is since it is in opposition only to third person dual
while the gamma form is opposed to both first and third persons dual.
Differences in types of morphophonemic processes which the two forms
participate in also suggest that two different but homophonous morph-
emes are involved. The gamma series makes the following person
designations: first person singular-plural; second and third persons
singular; first, second and third persons dual; and second-third
person plural.

Gamma matrix (γ)

	First	Second	Third
Singular	∅N	∅V	iN
Plural		∅Q	
Dual	iV	kaV	taiV

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2.5 Mood affixes (md) - Two prefixes may be classed as mood affixes.
They are:

ı́V   negativə

paa   only, just

Mood suffixes mark syntactic constructions and are complex semantic units. Morphemically mood suffixes may be either simple or complex. Moods indicated are:

Designatory   -   indicating that a particular nominal construction or the subject of a particular action is pointed out for special attention or emphasis.

Indicative   -   indicating that an action is viewed as a simple statement of fact or that a nominal construction is in a state of existence.

Assertative   -   indicating that an action is stated at a certainty.

Interrogative -   indicating a question.

Imperative   -   indicating a command or necessity or with

nominal constructions emphasizing the

fact of a state of existence and with

personal names it functioning as a vocative.

Potential   -   indicating that an action has a potential

for occurring.

Nominal   -   indicating a substantive construction.

Prohibitive   -   indicating an action is forbidden as

potentially harmful to the subject.

Indicative, designatory, assertative and interrogative
moods combine with additional components to form four categories
of moods: DECLARATIVE - declaring the fact of an action without
reference either to the relationship of the subject to the action
or of the action to any other action; ABILITATIVE - indicating the
ability or aptitude of the subject for performing a particular action
or existing in a particular state; CONJUNCTIVE - indicating that
the action specified is one or more than one actions; SUBSTANTIVE -
indicating a substantive construction. The intersecting of these
components is represented in the following matrix display by the
affixes which occur in the cells of the matrix.

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	Declarative	Abilitative	Conjunctive	Substantive
Designatory	-	miye	-	mo
Indicative	e_1	e_2	na + e_2	e_1
Assertative	po	mibo	na + mibo	-
Imperative	o_2	-	-	o_2
Interrogative	o_1	abiyo	-	a
	abo + α_1 + o_1			abiyo
Prohibitive	bo	-	-	-
Potential	poa + β	-	-	-
Nominal	-	-	-	ma

The morphemically complex forms which appear in the fore-
going matrix have been handled as constructions on the preword level
and are treated as single units on higher levels of structure. The
analysis of these affixes follows.

(1) miye abilitative designatory   (2) mibo abilitative assertative

mo + α-iV + e   mo + α-iV + po

designatory + 3rd per + indic   desig + 3rd per + assert

(3) abiyo abilitative interrogative

aV + po + α-iV + o_1

nom inter + assert + 3rd per + inter

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(4) abo + α_1 + $\underline{o}_1$ interrogative   (5) naV + $\underline{e}$ conjunctive indicative

aV + po + α_1 + $\underline{o}_1$ conj + indic

nom inter + assert + per + inter

(6) naV + mibo conjunctive assertative   (7) poa + β

naV + mo + α-iV + po   potential + person

conj + desig + per + assert

2.6 Directional affixes - Two types of relationships between dir-
ectional morphemes and the action signaled by the verb stem are to be
distinguished. The first is simultaneity of the movement indicated
by the directional morpheme and the action of the verb stem, and the
second is a sequential relationship between the two. The former is
marked by directional prefixes and the latter by reduced verb stems
functioning as prefixes. The morphemes which indicate these rela-
tionships are:

Direction of movement	Simultaneity	Sequential
toward; to come	ma	ya (from yeV2a)
away; to go away	mo	ko (from kooV3)
up; to go or come up	mu	u (from uyoQ2Ra)
down; to go or come down	maru	ku (from kumoN2Ra)

Selected examples:

(1) mómaraa   put it away or aside   (2) kómaraao   go put it away

   mo + maráN2Ra + γ-$\emptyset$V + $\underset{=}{o}_2$ ko + maráN2Ra + γ-$\emptyset$V + $\underset{=}{o}_2$

   away + put + 2nd per + imper   go away + put + 2nd per + imper

(3) mámayaao   bring it   (4) yámayaao   come and get it

   ma + mayáQ2Rb + γ-$\emptyset$V + $\underset{=}{o}_2$ ye + mayáQ2Rb + γ-$\emptyset$V + $\underset{=}{o}_2$

   toward + get + 2nd per + imper   come + get + 2nd per + imper

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Chapter 3

WORD STRUCTURE

Stems may occur either without affixes in phrase level con-
structions or with one or more inflectional affixes in word level
constructions. In the first instance the stem without affixation is
a word, and in the second instance the stem plus its attending affixes
is a word. A word then may be described as a stem in some higher level
construction. A word is distinctive in being a single stress group
whose constituent morphemes are inseparable and which may occur with
only one mood suffix.

Corresponding to the two major stem types there are two
major types of words, NOMINAL and VERBAL. The differences between the
two types of constructions are marked by different potentials of occur-
rence with inflectional affixes. Where a given class of affixes may
occur with both types there are co-occurrence restrictions with parti-
cular members of the class. Mood suffixes in particular differ in
their potential of occurrence with nominal and verbal word construc-
tions. Limitations on the occurrence of mood affixes with verbal con-
structions and person-subject suffixes will be specified in section 3.4.
The mood affixes which may occur with nominal stems and examples
of each with various nominal stems are as follows.

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Nominal Mood Matrix (md_n)

	Declarative	Abilitative
Indicative	e_1	
Interrogative	a	abiyo
Nominal	ma	
Designatory	mo	miye
Imperative (Vocative)	e_2	

Examples of nominal stems plus mood suffixes:

(1) pro.s + md   (keV2 + md)

kemá I (nominal)   keé It is I. (indicative)

keá Me? (nom interrogative)   keabiyo What about me? (abl inter)

kemó I am the one (desig)   kemiye I mean me! (abl desig)

(2) ns + md

yaaqá sugar cane   anone It is big.

yaaQ2 + ma   anoN1 + e

sugar cane + nom   big + indic

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inaarúá Is it a girl?

inaarúV2 + a

girl + nom inter

imiye not, it is not

iV1 + miye

negative + abl desig

waamó a man (not someone else)

waaV2 + mo

man + desig

Turúaao Luluai!

TurúaaV1 + o₂

Luluai + imperative

iberabiyo Now?

ibeQ1 + abiyo

now + abl inter

(3) loc + md

maakáqá here

maakáQ2 + ma

here + nom

ebikárá Up there?

ebikáQ1 + a

up there + nom inter

Moképare It is (at) Okapa.

MokepaQ1 + e

Okapa + indic

wagáábarabiyo Do you mean earlier?

wagáábaQ1 + abiyo

before + abl inter

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Four major construction types will now be considered,
(1) Substantives, (2) pronouns (3) locatives, and (4) verbs.
Based on these four word construction types eight word classes may
be defined. These will be specified according to the construction
type from which they are derived.

3.1 Substantives - Noun stems enter into constructions with
nominal affixes to form five word classes, NOUN (n), DESCRIPTIVES (d),
NUMERALS (nb), TEMPORALS (t), and PROPER NAMES (pn). Each word class
may be considered a sub-class of substantives with co-occurrence re-
strictions affecting the substantive suffix potential (sf.p) defin-
itively. The differences in suffix potential for each class may be
regarded as a special and obligatory reading of the substantive formula
governed by the sub-class of noun stem which occurs. Optional readings
of the suffix potential for each word class are then without re-
strictions.

The various readings of the substantive suffix potential
will be referred to by the word class which that particular reading
defines. Noun suffix potential (sf.p_n) reading then is that reading
which includes only those suffixes which may occur with nouns. The
following matrix summarizes the co-occurrence restrictions of suffix
categories and word classes as specified by the structural formulae
which follow. (Plus indicates co-occurrence potential and minus
indicates a lack of co-occurrence potential.)

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	nb	poss	loc	inst	accom
n	+	+	-[1]	+	+
d	+	-	-	+	+
t	+	-	+	-	-
nb	-	-	-	+	+
pn	-	+	-	-	+

3.11 Structural formulae for substantive constructions.

$$sb = ns + (sf.p)$$

$$sf.p = \left(\left\{\begin{array}{l}\left(\begin{array}{l}\{loc;\ poss_{ab};\ inst\} \\ (st) + (nb) + (\{ref;\ accom\})\end{array}\right) + (\{conj;\ md\}) \\ \{poss_{rel\text{-}pl};\ st + poss_{rel\text{-}sg}\}\end{array}\right\}\right)$$

(1) Quantifiable substatives (noun (n), descriptive (d), and temporals (t)).

$$sb_q = ns_q + (sf.p)$$

---

1. The occurrence of common noun stems with locative suffixes is dealt with as a locative construction not as a noun (see section 3.3).

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Noun:

$$n = ns_c + (sf.p_n)$$

$$sf.p_n = \left(\left\{\begin{array}{c}\left(\left\{\begin{array}{l}\{poss_{ab}; \ inst\} \\ (st) + (nb) + (\{ref; \ accom\})\end{array}\right\}\right) + (\{conj; \ md\}) \\ \{poss_{rel-pl}; \ st + poss_{rel-sg}\}\end{array}\right\}\right)$$

$$\delta ns_1 + \{poss_{rel-pl}; \ st + poss_{rel-sg}\} \longrightarrow \delta ns_1 + poss_{rel}$$

Descriptive:

$$d = ns_d + (sf.p_d)$$

$$sf.p_d = \left(\left\{\begin{array}{l}inst \\ (st) + (nb) + (\{ref; \ accom\}) + (\{conj; \ md\})\end{array}\right\}\right)$$

Temporal:

$$t = ns_t + (sf.p_t)$$

$$sf.p_t = \left(\left\{\begin{array}{l}loc \\ (st) + (nb) + (ref) + (\{conj; \ md\})\end{array}\right\}\right)$$

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(2) Non-quantifiable substantive (numerals (nb) and proper names (pn)).

$$sb_{nq} = sb_{nq} + (sf.p_{nq})$$

$$sf.p_{nq} = (\left\{ \begin{matrix} poss_{ab}; \ inst \\ (st) + (\{ref; \ accom\}) \end{matrix} \right\}) + (\{conj; \ md\})$$

Numeral:

$$nb = ns_{nb} + (sf.p_{nb})$$

$$sf.p_{nb} = (\left\{ \begin{matrix} instr \\ (st) + (\{ref; \ accom\}) \end{matrix} \right\}) + (\{conj; \ md\})$$

Personal Name:

$$pn = ns_{pn} + (sf.p_{pn})$$

$$sf.p_{pn} = (\left\{ \begin{matrix} (\left\{ \begin{matrix} poss_{ab} \\ (st) + (\{ref; \ accom\}) \end{matrix} \right\}) + (\{conj; \ md\}) \\ \{poss_{rel-pl}; \ st + poss_{rel-sg}\} \end{matrix} \right\})$$

$$\{poss_{rel-pl}; \ st + poss_{rel-sg}\} \longrightarrow poss_{rel}$$

3.12 Selected samples of substantive constructions

NOUN

(1) waamá   man

    waaV2 + ma

    man + nom

(2) wagotáátabámá   about men

    waaV2 + koV + taaN + yabaV + ma

    man + st + pl + ref + nom

(3) iyápógoratagaraqa   with the two children

    iyápoV1 + koV + ratataV + karaQ + ma

    child + st + dual + accom + nom

(4) waagóní   the man's

    waaV2 + koV + ni

    man + st + poss$_{rel-sg}$

(5) iyápóti   the children's

    iyápoV2 + ti

    child + poss$_{rel-pl}$

DESCRIPTIVE

(1) anómma   big

    anoN1 + ma

    big + nom

(2) anókotaakaraqa   with the big ones

    anoN1 + koV + taaN + karaQ + ma

    big + st + pl + accom + nom

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(3) anoqtabama about bigness (4) anonuyaa big and . . .

anoN1 + yabaV + ma   anoN1 + uyaa

big + ref + nom   big + conj

NUMBER

(1) kaayaqá two   (2) kaayakómá being two

kaayaQ2 + ma   kaayaQ2 + koV + ma

two + nom   two + st + nom

TEMPORAL

(1) aabáyaama morning   (2) nokáátabama concerning night

aabáyaaV1 + ma   nokááN1 + yabaV + ma

morning + nom   night + ref + nom

(3) aabáyaanapine Good morning! (It's in the morning)

aabayaaV + na + piN + e

morning + na + in + indic

PERSONAL NAMES

The following examples illustrate the two types of possessive
and accompaniment constructions.

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(1) __Bínae__ It is Bee's   (2) __Pasáaqyani__ Pasaaqya's

__Bí__ + __na__ + __e__   __Pasáaqya__ + __ni__

Bee + $poss_{ab}$ + indic   Pasaaqya + $poss_{rel-sg}$

(3) __Tipínagara__ with Tipina   (4) __Naanúte__ with Naanu

__Tipína__ + __kara__   __Naanú__ + __te__

Tipina + $accom_{act}$ Naanu + $accom_{pass}$

3.2 Pronouns (pro) - The pronoun class may be defined by the following formula:

$$pro = pro.s + \left(\begin{cases} poss_{rel} \\ (\{inst;\ accom;\ poss_{ab}\}) + (ref) + \{conj;\ md\} \end{cases} \right)$$

$$pro.s \longrightarrow \{pro_{p-ex};\ pro_{p-rx};\ pro_{int};\ pro_{p};\ pro_{loc}\}$$

Co-occurrence restrictions on specific pronoun stems or stem types require the above formula to be rewritten by stem type as follows:

$$pro = $$
(1) pro_{p-ex}

(2) pro_{p-rx} + (ref) + (md)

(3) pro_{int} + (inst) + (ref) + (md)

(4) $\{pro_{p};\ pro_{loc}\} + \left(\begin{cases} poss_{rel} \\ (\{inst;\ accom;\ poss_{ab}\}) + (ref) + \{conj;\ md\} \end{cases} \right)$

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$$\text{accom} \longrightarrow \{\text{accom}_{\text{act}}; \text{accom}_{\text{pass}}\}$$

$$\{\text{pro}_p; \text{pro}_{\text{loc}}\} \longrightarrow \{\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{obj}}; \{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{n-obj}}\}$$

$$\{\text{pro}_p; \text{pro}_{\text{loc}}\} + (\left\{ \begin{array}{l} \text{poss}_{\text{rel}} \\ (\{\text{inst}; \text{accom}; \text{poss}_{\text{ab}}\}) + (\text{ref}) + \{\text{conj}; \text{md}\} \end{array} \right\}) \longrightarrow$$

(1) $\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{obj}} + (\{\text{inst}; \text{accom}_{\text{pass}}\}) + (\text{ref}) + (\{\text{conj}; \text{md}\})$

(2) $\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{n-obj}} + (\left\{ \begin{array}{l} \text{poss}_{\text{rel}} \\ (\{\text{accom}_{\text{act}}; \text{poss}_{\text{ab}}\}) + \{\text{conj}; \text{md}\} \end{array} \right\})$

$$\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{n-obj}} \longrightarrow \{\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{d-foc;sg}}; \{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{d;p}}\}$$

$$\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{n-obj}} + (\left\{ \begin{array}{l} \text{poss}_{\text{rel}} \\ (\{\text{accom}_{\text{act}}; \text{poss}_{\text{ab}}\}) + \{\text{conj}; \text{md}\} \end{array} \right\}) \longrightarrow$$

(1) $\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{d;p}} + (\left\{ \begin{array}{l} \text{poss}_{\text{rel}} \\ (\{\text{accom}_{\text{act}}; \text{poss}_{\text{rel}} + \text{poss}_{\text{ab}}\}) + \{\text{conj}; \text{md}\} \end{array} \right\})$

(2) $\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{d-foc; sg}} + (\left\{ \begin{array}{l} \text{poss}_{\text{rel}} \\ (\text{poss}_{\text{ab}}) + \{\text{conj}; \text{md}\} \end{array} \right\})$

$$\{\text{pro}_p; \text{pro}_{\text{loc}}\}_{\text{d-foc; sg}} \longrightarrow \{\text{pro}_{p.\text{d-foc}}; \text{pro}_{p\text{-sg}}; \text{pro}_{\text{loc}.\text{d-foc; sg}}\}$$

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$$\{pro_p; pro_{loc}\}d\text{-foc}; sg \quad + (\{\begin{matrix} poss_{rel} \\ (poss_{ab}) + \{conj; md\}\end{matrix}\}) \longrightarrow$$

(1) $pro_{p.d\text{-}foc}$
$pro_{loc.d\text{-}foc}; sg$ $\quad + (\{\begin{matrix} poss_{rel} \\ (poss_{rel} + poss_{ab}) + \{conj; md\}\end{matrix}\})$

(2) $pro_{p\text{-}sg} + (\{\begin{matrix} poss_{rel} \\ (poss_{ab}) + md\end{matrix}\})$

Co-occurrence restrictions which apply to the instrument suffix require two further rules:

$$pro_{int} + (inst) \longrightarrow \underline{noe}N1 + (inst)$$

$$\{pro_p; pro_{loc}\} + (inst) \longrightarrow pro_{loc\text{-}inan; neut} + (inst)$$

3.22 Examples of pronoun constructions.

(1) <u>kenamáa</u> I alone

   $(pro_{p\text{-}ex})$

(2) <u>kenamáari</u> myself

   $(pro_{p\text{-}rx})$

(3) <u>náakararabiyo</u> where is it?

   <u>náakaraQ1</u> + <u>abiyo</u>

   where + interrogative

   $(pro_{int} + md)$

(4) <u>kɔqtáaqtábámá</u> about us

   <u>keqtááN2</u> + <u>yabaV</u> + <u>ma</u>

   us + ref + nom

   $pro_{p.obj}$ + ref + md

(5) kenákátí our (two)   (6) epiwániminaé it is his (he near)

    kenákaV2 + ti̱   epiwáV2 + ni̱ + mina + e̱

    us two + possessive   he near + poss + $poss_{ab}$ + indic

3.3 Locative (loc) - A locative is marked by a locative suffix and
may be either a locative stem, a common noun stem or a verb plus
mood, number and movement-away-from or conjunctive suffixes. The
order and co-occurrence potential of these suffixes is specified in
the following formula:[1]

$$loc = \begin{Bmatrix} loc.s \\ \{ns_c;\ vb\} + loc \end{Bmatrix} + (from) + (nb) + (ref) + (\{conj;\ md\})$$

$$vb \longrightarrow vb_{nu} + (t\text{š}) + per$$

Selected examples:

(1) yópáké from the garden   (2) merakákéuyáá from medium far and . . .

    yóN2 + paQ + ke̱V   merakáQ2 + ke̱V + uyaa

    garden + loc + from   medium far + from + conj

---

[1] It should be noted that temporal stems plus locative suffixes are
classed as temporals not locatives. (See 3.1 for specification of the
temporal constructions.)

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(3) naráunabaqa where I ate   (4) yaayúqnóbáqtáámá to the woods

naV2b + ra + unaV + paQ + ma   yaayúQ2 + nobaQ + taaV + ma

to eat + past + I + loc + nom   woods + inside + pl + nom

(5) naaúpaqtabama concerning the house

naaN2 + û + paQ + tabaV + ma

house + inside + loc + ref + nom

3.4 Verb (vb) - There are three categories of verbs paralleling the three types of person suffixes. However each type conforms to the following basic verb formula:

$$vb = (neg) + (dir) + (ts)_{mx} + vs + (vc) + (ts)_{mx} + (per) + (\{ref; md\})$$

A portion of this formula remains unchanged throughout a number of verbal constructions and will be referred to as a verb nucleus (v_{nu}).

$$v_{nu} = (neg) + (dir) + vs + \left(\begin{matrix} \underline{tuwa} \\ (\delta\underline{ka}) + (\underline{ko}) \end{matrix}\right)$$

The potential for co-occurrences of particular tense, person and mood suffixes characterizes the differences in the three verb categories. Each series of person suffixes has a different set of co-occurrence restrictions. These will be specified in the following sections.

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3.41 Alpha co-occurrence restrictions - The alpha verb (α-vb) has the widest range of co-occurrence potential. The rules for the occurrence of alpha person suffixes in verb constructions are specified in the following formula which indicates the actual morphemes or morpheme categories which may occur as manifestations of the structural slots in the basic verb formula.

$$\alpha\text{-vb} = (\underline{keV})_{mx} + vb_{nu} + \left(\begin{Bmatrix} (\{ts_{asp}; \ \underline{ra} + \underline{ro}; \ \underline{ta}\})_{mx} \\ (\underline{ra})_{mx} + (\underline{no}) \end{Bmatrix}\right) + \alpha + \left(\begin{Bmatrix} \text{assert; conj;} \\ \underline{poa} + \beta; \\ \underline{a}_1; \ \underline{o}_1; \ \underline{po} \end{Bmatrix}\right)$$

$$vb_{nu} + \alpha_3 + \underline{bo}$$

The distribution of sub-series of alpha person suffixes with mood suffixes is as follows:

$$\alpha_1 + \{\underline{a}_1; \ \underline{o}_1; \ \underline{po}\}$$
$$\alpha_2 + md_{abl}$$
$$\alpha_3 + \{\underline{bo}; \ \underline{poa} + \beta\}$$
$$\alpha_4 + md_{conj}$$

The alpha person series may occur with all tense morphemes and with the indicative, interrogative, assertative, abilitative, conjunctive, potential and prohibitive mood suffixes. These mood suffixes may occur with any of the tense morphemes except the prohibitive mood

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The future tense suffix (no) may co-occur with either the past or present continuous suffixes but all other tense-aspect suffixes are mutually exclusive with one another. Alpha sub-series number one occurs with indicative, interrogative and assertative moods; alpha sub-series number two with abilitative moods; sub-series number three with prohibitive and potential moods; and sub-series number four with the conjunctive moods. The tense and voice potential of the alpha verb shall be referred to as the alpha nucleus (α-vb$_{nu}$).

3.42 **Beta co-occurrence restrictions** - Beta person suffixes occur only with present continuous, past aorist and future tense-aspect affixes and with indicative, interrogative, abilitative designatory, abilitative interrogative, and abilitative assertative moods. Beta sub-series number three suffixes may occur with the imperative mood when also occurring with either voice or aorist suffixes or with both. The beta nucleus (β-vb$_{nu}$) is the tense and voice potential of the beta verb as defined by the following formula:

$$\beta\text{-vb} = \begin{cases} (\underline{\text{keV}})_{mx} + \text{vb}_{nu} + (\underline{\text{ra}})_{mx} + (\underline{\text{no}}) + \left(\begin{cases} \{\underline{e}_1; \ \underline{abiyo}; \ \underline{mibo}; \ \underline{miye}\} \\ \underline{abo} + \alpha_1 + \underline{e}_1 \end{cases} \right) \\ (\text{neg}) + (\text{dir}) + \text{vs} + \underline{ra} + \beta_3 + \underline{o}_2 \\ (\text{neg}) + (\text{dir}) + \text{vs} + \text{vc} + (\underline{ra}) + \beta_3 + \underline{o}_2 \end{cases}$$

3.43 Gamma co-occurrence restrictions - Gamma suffixes are the most
restricted in their distribution occurring only with one mood, the
imperative, and with no tense affixes. The formula specifying the
structure of the gamma verb is:

$$\gamma\text{-vb} = v_{nu} + \gamma + \underline{o}_2$$

3.44 Co-occurrence of alpha and beta person suffixes - In addition
to the alpha and beta co-occurrence which relate to the structure of
mood affixes already described there are two types of constructions
in which the two series co-occur within the same word. These may be
summarized and compared by the following formulae:

(1) $\beta\text{-vb}_{nu} + \beta_1 + \underline{mo} + \alpha_1 + md$

(2) $\alpha\text{-vb}_{nu} + \alpha + \beta$

The second of these related primarily to sentence structure
and the details of the specific sub-series which occur and the con-
structions in which it occurs will be specified in chapter 7 on
sentence structure. Type one might well have been included in the
description of mood affixes for the semantic significance fits into
the mood categories indicating sufficiency of action and the
structuring can be described as a combination of mood affixes. The

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designatory suffix (mo) followed by the alpha-one person suffixes
which agree in number and person with the beta person suffix preceding occurs with indicative, interrogative and assertative mood suffixes.
Since two variables are involved (both person and mood) and since the
construction is restricted to beta verbs it has been included in this
description of word structure. The following example illustrates
this construction.

> nénamiye he eats enough
>
> naV2b + β-naV + mo + O-iV + ə
>
> to eat + 3rd per + desig + 3rd per + indic

Examples of other verb constructions follow in the next
section. Person and mood variations are given in the present tense
for the verb, naV2b to eat. Tense-aspect and voice contrasts are
given for the same verb in the third person singular. These are followed by diagnostic sets for several verbs of various morphophonemic
types. The English translations merely attempt to give an idea of
the differences in the semantic significances of the various forms
and is by no means a statement of the full semantic significance of
any of the forms.

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3.45 Sample verb constructions.

(1) Present tense indicative, interrogative and assertative moods:

$$\underline{na}V2b + \alpha_1 + \{\underline{e}_1; \underline{o}_1; \underline{po}\} \quad \text{to eat}$$

First person singular ($\alpha\text{-}\underline{u}N$)

__náune__ I eat.

__náuno__ Do I eat?

__naúpo__ I certainly eat.

Second person singular ($\alpha\text{-}\emptyset N$)

__náane__ You eat.

__náano__ Do you eat?

__naapo__ You certainly eat.

Third person singular ($\alpha\text{-}\underline{i}V$)

__naiyé__ He eats.

__naiyó__ Does he eat?

__náibo__ He certainly eats.

First person dual ($\alpha\text{-}\underline{u}\underline{y}V$)

__náuye__ We two eat.

__náuyo__ Do we two eat?

__naúbo__ We two certainly eat.

Second-third person dual ($\alpha\text{-}\underline{y}V$)

__náaye__ You or they two eat.

__naáyo__ Do you or they two eat?

__naábo__ You or they two certainly eat.

First person plural ($\alpha\text{-unataV}$)

__náunatae__ We (pl) eat.

__náunatao__ Do we (pl) eat?

__náunataibo__ We (pl) certainly eat.

Second-third person plural ($\alpha\text{-}\emptyset V$)

__naáe__ You (pl) or they eat.

__naáo__ Do you (pl) or they eat?

__naábo__ You (pl) or they certainly eat.

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(2) Present tense abilitative moods.

$$\underline{\text{na}}V2 + \alpha_2 + \{\underline{\text{e}}_2; \ \underline{\text{abiyo}}; \ \underline{\text{mibo}}; \ \underline{\text{miye}}\}$$

First person singular (α-<u>una</u>V)

<u>náunae</u> I can eat.

<u>náunabiyo</u> Can I eat?

<u>náunaibo</u> I certainly can eat.

<u>náunamiye</u> I am he who can eat.

Second person singular (α-<u>na</u>V)

<u>náanae</u> You can eat.

<u>náanabiyo</u> Can you eat?

<u>náanaibo</u> You certainly can eat.

<u>náanamiye</u> You are he who can eat.

Third person singular (α-<u>iN</u>)

<u>náine</u> He can eat.

<u>náinabiyo</u> Can he eat.

<u>náimibo</u> He certainly can eat.

<u>náimiye</u> He is the one who can eat.

First person dual (α-<u>uyaN</u>)

<u>náuyane</u> We two can eat.

<u>náuyanabiyo</u> Can we two eat?

<u>náuyamibo</u> We two certainly can eat.

<u>náuyamiye</u> We two are they who

    can eat.

Second-third person dual (α-<u>yaN</u>)

<u>náayane</u> You two or they two can eat.

<u>náayanabiyo</u> Can you or they two eat?

<u>náayamibo</u> You or they two certainly
can eat.

<u>náayamiye</u> You or they two are they
who can eat.

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First person plural (α-unataaV)   Second-third person plural (α-$\emptyset$N)

náunataae   We can eat.   náane   You (pl) or they can eat.

náunataabiyo   Can we eat?   náanabiyo   Can you or they eat?

náunataamibo   We certainly can eat.   náamibo   You or they certainly can eat.

náunataamiye   We are the ones who   náamiye   You or they are the ones

          can eat.   who can eat.

(3) Present tense prohibitive and potential moods.

$$\text{naV2b} + \alpha_3 + \{\underline{bo}; \underline{poa} + \beta\}$$

First person singular-plural

    (α-unaV; β-$\emptyset$Q; β-taV)

náunabo   I or we shouldn't eat.

náunaboaqa   I might eat.

náunaboata   We might eat.

Second person singular

    (α-naV; β-$\emptyset$Q)

náanabo   You shouldn't eat.

náanaboaqa   You might eat.

Third person singular

    (α-inaN; β-naV)

náinabo   He shouldn't eat.

náipoana   He might eat.

First person dual

    (α-uyaN; β-kaV)

náuyabo   We two shouldn't eat.

náuyapoaka   We two might eat.

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Second-third person dual

   (α-yaN; β-kaV; β-taV)

naayabo   You or they two shouldn't
           eat.

naayapoaka   You might eat. (dual)

naayapoata   They two might eat.

Second-third person plural

   (α-$\emptyset$N; β-$\emptyset$Q; β-taV)

naabo   You (pl) or they shouldn't
         eat.

naapoaqa   You (pl) might eat.

naapoata   They might eat.

(4) Present tense conjunctive moods.

$$\text{naV2b} + \alpha_4 + \text{na} + \{\underline{e}; \text{mibo}\}$$

First person singular (α-una)

naunanae   I eat and.....

naunaqibo   I certainly eat and....

Second person singular (α-na)

naananae   You eat and.....

naanaqibo   You certainly eat and.....

Third person singular (α-ita)

naitanae   He eats and....

naitaqibo   He certainly eats and....

First person dual (α-uya)

nauyanae   We two eat and....

nauyanaibo   We two certainly eat
             and.....

Second-third person dual (α-ya)

naayanae   You or they two eat and....

naayanaibo   You or they certainly
             eat and....

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First person plural (α-<u>unana</u>)

<u>náunanatae</u> We eat and.....

<u>náunanataibo</u> We certainly eat

and....

Second-third person plural (α-<u>wa</u>)

<u>nááwanae</u> You (pl) or they eat and....

<u>nááwanaibo</u> You (pl) or they cer-

tainly eat and....

(5) Present tense subjunctive moods.

$$\underline{na}V2b + \beta + \{\underline{e}_1; \underline{abo} + \alpha_1 + \underline{o}_1; \underline{abiyo}; \underline{mibo}; \underline{miye}\}$$

First person singular (β-$\emptyset$Q; α-<u>u</u>N)

<u>nére</u> I may eat.

<u>nérabuno</u> May I eat?

<u>neqiyo</u> May I be able to eat?

<u>neqibo</u> I certainly may be able

to eat.

<u>neqiye</u> I may be the one who is

able to eat.

Second person singular (β-$\emptyset$V; α-$\emptyset$N)

<u>née</u> You may eat.

<u>neabono</u> May you eat?

<u>neabiyo</u> May you be able to eat?

<u>neibo</u> You certainly may be able

to eat.

<u>nemiye</u> You may be the one who

is able to eat.

Third person singular (β-<u>na</u>V; α-<u>i</u>V)

<u>nenae</u> He may eat.

<u>nenabiyo</u> May he eat?

<u>nenabiyo</u> May he be able to eat?

<u>nenaibo</u> He certainly may be able to eat.

<u>nenamiye</u> He may be the one who is able to eat.

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First-second person dual

(β-kaV; α-uyV; α-yV)

nékae — We or you two may eat.

nékabuyo — May we two eat?

nékaboyo — May you two eat?

nékabiyo — May we or you two be able to eat?

nékaibɔ — We or you two certainly may be able to eat.

nékamiye — We or you two may be the ones who are able to eat.

Third person dual-plural

(β-taV; α-yV; α-∅V)

nétae — They may eat.

nétaboyo — May they two eat?

nétaboo — May they eat?

nétabiyo — May they be able to eat?

nétaibo — They certainly may be able to eat.

nétamiye — They may be the ones who are able to eat.

First person plural

(β-taaV; α-unataV)

nétaae — We may eat.

nétaabuno — May we eat?

nétaabiyo — May we be able to eat?

nétaaibo — We certainly may be able to eat.

nétaamiye — We may be the ones who are able to eat.

Second person plural

(β-∅Q; α-∅V)

nére — You (pl) may eat.

néraboo — May you (pl) eat?

nérabiyo — May you (pl) be able to eat?

néqibɔ — You (pl) certainly may be able to eat.

néqiye — You (pl) may be the ones who are able to eat.

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(6) Imperative mood.

$$\underline{na}V2b + \gamma + \underline{o}_2$$

First person singular-plural (γ-$\emptyset$N):   <u>naano</u> I must eat.

Second person singular (γ-$\emptyset$V):   <u>naao</u> You must eat.

Third person singular (γ-$\underline{i}$N):   <u>naino</u> He must eat.

First person dual (γ-$\underline{i}$V):   <u>naiyo</u> We two must eat.

Second person dual (γ-$\underline{ka}$V):   <u>naakao</u> You two must eat.

Third person dual (γ-$\underline{tai}$V):   <u>nastaiyo</u> They two must eat.

Second-third person plural (γ-$\emptyset$Q):   <u>naaro</u> You (pl) or they must eat.

$$\underline{na}V2b + \underline{ra} + \beta_3 + \underline{o}_2 \quad \text{(Subjunctive-past)}$$

Second person singular (β-$\emptyset$V):   <u>nareo</u> You must first eat.

Third person singular (β-$\underline{na}$Q):   <u>narenaro</u> He must first eat.

Second person dual (β-$\underline{ka}$V):   <u>narekao</u> You two must first eat.

Third person dual-plural (β-$\underline{ya}$Q):   <u>nareyaro</u> They must first eat.

Second person plural (β-$\emptyset$Q):   <u>narero</u> You must first eat.

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(7) Indicative mood, third person, tense and voice contrasts.

$$(\text{kéV}) + \underline{\text{na}}\text{V2b} + \left(\left\{\begin{array}{c}\text{tuwaNR}\\ \hline \delta\underline{\text{ka}}\text{V}\end{array}\right\}\right) + \left(\left\{\begin{array}{c}\underline{\text{ma}};\ \underline{\text{wao}};\ \underline{\text{go}}\\ \underline{\text{ta}};\ \underline{\text{ra}} + \underline{\text{ro}};\\ (\underline{\text{ra}}) + (\underline{\text{no}})\end{array}\right\}\right) + \text{3rd per} + \underline{\text{e}}_1$$

Present continuous: kénaiye He is eating. (keV + vb)

Completive (present): nátuwaiye He finishes eating. (vb + tuwaNR)

Completive (aorist): nátukaiye He finished eating. (vb + tuwaNR + ra)

Benefactive (first person): natíkáiye He eats in my honor. (vb + ti-δka)

Aorist (independent): naráiye He ate. (vb + ra)

Aorist (subjunctive): narénae He first eats. (vb + ra + β)

Future (independent): naniye He will eat. (vb + no)

Future (subjunctive): nanénae He wants to eat. (vb + no + β)

Customary: néwaiye He used to eat. (vb + wao)

Frequentive: néqiye He ate often. (vb + go)

Perfect: némáiye He has eaten. (vb + ma)

Recent past: nétaiye He ate yesterday. (vb + ta)

Remote past: narériye He ate day before yesterday. (vb + ra + ro)

(8) Diagnostic sets illustrating morphophonemic classes and change.

The following sets include examples of each morphophonemic class (V, N and Q), of reduced stem types (R), differences of final stem vowels (a, e and o), and differences in tone types. The forms given are those forms which indicate the various morphophonemic types of sub-classes.

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V-class:

(1) aV2a (vs$_{tr}$) to shoot at a target

aaó Shoot it! (Second person singular imperative)

aakao You two shoot it! (Second person dual imperative)

aiyé He shoots it. (Present tense indicative)

aráiye He shot it. (Aorist indicative)

ániye He will shoot it. (Future indicative)

(2) agataV1a (vs$_{tr}$) to turn as a page or leaf

agataó Turn it! (Second person singular imperative)

agatáakao You two turn it! (Second person dual imperative)

agatáiye He is turning it. (Present tense indicative)

agataraiye He turned it. (Aorist indicative)

agatániye He will turn it. (Future indicative)

(3) kooV3 (vs$_{intr}$) To go away

kóaao Go away! (Second person singular imperative)

kóokao You two go away! (Second person dual imperative)

kóiye He goes away. (Present tense indicative)

kouraiye He went away. (Aorist indicative)

kóiniye He will go away. (Future indicative)

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(4) **itaVlb** (vs$_{tr}$) to hear, understand, know, listen

itaao Listen! (Second person singular imperative)

itáakao You two listen! (Second person dual imperative)

itaiye He hears. (Present tense indicative)

itaraiye He heard. (Aorist indicative)

itániye He will hear. (Future indicative)

(5) **teV2a** (vs$_{tr}$) to say, talk

tiyo Talk! (Second person singular imperative)

tekao You two talk! (Second person dual imperative)

tiye He is talking. (Present tense indicative)

tiráiye He said. (Aorist indicative)

tiniye He will say. (Future indicative)

N-class:

(1) **ómeNla** (vs$_{tr}$) to give

amiyo Give it to him. (Second person singular imperative)

amékao You two give it to him! (Second person dual imperative)

amiye He gives it to him. (Present tense indicative)

amikaiye He gave it to him. (Aorist indicative)

aminiye He will give it to him. (Future indicative)

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(2) ataeN2Ra (vs$_{tr}$) to chop

ataiyó Chop it! (Second person singular imperative)

atáekao You two chop it! (Second person dual imperative)

atáiye He chops it. (Present tense indicative)

atákaiye He chopped it. (Aorist indicative)

atainiye He will chop it. (Future indicative)

(3) kúmoN2Ra (vs$_{intr}$) to go or come down

kumiwó Go down! (Second person singular imperative)

kúmokao You two go down. (Second person dual imperative)

kúmiye He goes down. (Present tense indicative)

kukáiye He went down. (Aorist indicative)

kuminiye He will go down. (Future indicative)

(4) peraN1Rb (vs$_{tr}$) to pour over, paint

peraao Paint it! (Second person singular imperative)

peráakao You two paint it! (Second person dual imperative)

peráiye He paints it. (Present tense indicative)

pékaiye He painted it. (Aorist indicative)

peraniye He will paint it. (Future indicative)

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(5) puraN2Ra (vs$_{tr}$) to peel with fingers, to shell

puraao Peel it! (Second person singular imperative)

puráakao You two peel it! (Second person dual imperative)

puráiye He peels it. (Present tense indicative)

pukáiye He peeled it. (Aorist indicative)

puraniye He will peel it. (Future indicative)

(6) puyoN2Ra (vs$_{intr}$; stative) to die

puyuwo Die! (Second person singular imperative)

puyokao You two die! (Second person dual imperative)

puiye He dies. (Present tense indicative)

pukaiye He died. (Aorist indicative)

puiniye He will die. (Future indicative)

pukiye He is dead. (Present stative indicative)

pukuraiye He is dead. (Aorist stative indicative)

pukiniye He will be dead. (Future stative indicative)

Q-class:

(1) agayaQ2Ra (vs$_{tr}$) to cook, write

agayaao Cook it! (Second person singular imperative)

agayaakao You two cook it! (Second person dual imperative)

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<u>agáyaiye</u> He cooks it. (Present tense indicative)

<u>agataiye</u> He cooked it. (Aorist indicative)

<u>agayaniye</u> He will cook it. (Future indicative)

(2) <u>káraǪ3b</u> (vs$_{tr}$) to cut

<u>karaao</u> Cut it! (Second person singular imperative)

<u>káráakao</u> You two cut it! (Second person dual imperative)

<u>kárálye</u> He cuts it. (Present tense indicative)

<u>kárataiye</u> He cut it. (Aorist indicative)

<u>káraniye</u> He will cut it. (Future indicative)

(3) <u>kaugoǪ2Ra</u> (vs$_{tr}$; stative) to cook in the ashes or ground

<u>kauguwo</u> Cook it! (Second person singular imperative)

<u>kaugokao</u> You two cook it! (Second person dual imperative)

<u>kaugiye</u> He cooks it. (Present tense indicative)

<u>kautaiye</u> He cooked it. (Aorist indicative)

<u>kauginiye</u> He will cook it. (Future indicative)

<u>kaugiye</u> It is cooked. (Present stative indicative)

<u>kauguráiye</u> It is cooked. (Aorist stative indicative)

<u>kauginiye</u> It will be cooked. (Future stative indicative)

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(4) **káutoQlRb** (vs$_{tr}$; stative) to burn, char

kautuwo Burn it! (Second person singular imperative)

káutókao You two burn it! (Second person dual imperative)

kautíye He burns it. (Present tense indicative)

kautaiye He burned it. (Aorist indicative)

kautíniye He will burn it. (Future indicative)

káugiye It is burned. (Present stative indicative)

káuguraiye It is burned. (Aorist stative indicative)

káuginiye It will be burned. (Future stative indicative)

(5) **uyoQ2Ra** (vs$_{intr}$) to go or come up

uyuwó Go up! (Second person singular imperative)

uyókao You two go up! (Second person dual imperative)

uíye He goes up. (Present tense indicative)

utáiye He went up. (Aorist indicative)

uíniye He will go up. (Future indicative)

(6) **waeQ2Rb** (vs$_{intr}$; stative) to lie down, sleep

waiyo Lie down! (Second person singular imperative)

watáiye He lay down. (Aorist indicative)

waguráiye He is asleep (Aorist stative indicative)

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Chapter 4

PHRASE STRUCTURE

Words have the following three characteristic, (1) they contain a single stress group, (2) their constituent elements are inseparable, and (3) they contain a single closing suffix. On the basis of the word characteristics which they share, phrases are divided into three types, DESCRIPTIVE, SYNTACTIC AND IDIOMATIC. The following matrix specifies the features of each.

	Constituent elements inseparable	Single stress group	Single closing suffix
Word	+	+	+
Descriptive Phrase	-	+	+
Syntactic Phrase	-	-	-
Idiomatic Phrase	+	+/-	+/-

The plus-minus marking in the idiomatic phrase row indicates that there may be one or more stress groups or closing suffixes. This contrasts with the plus markings of the descriptive phrase row which indicates that only one stress group and closing suffix may occur and the minus markings of the syntactic phrase row which indicates that more than a single stress group and closing suffix always occurs.

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4.1 Descriptive Phrase (DescP; $[x + y]_1$) _ The descriptive phrase shares two features with the word differing only in that its constituent elements are separable by expansion. The words of a descriptive phrase form a single stress group and only the final word of the phrase occurs with inflectional suffixes. The morphotonemic pattern of change is the same for the non-initial words of a descriptive phrase as for inflectional affixes (see section 8.231).

The descriptive phrase structure is expressed by the following formula:

$$DscP = \begin{Bmatrix} \{ns; \; loc; \; pro\} + n \\ \{ns; \; pro\} + \{loc; \; t; \; Dsp\} \end{Bmatrix}$$

$$ns \longrightarrow (ns_{nb}) + (ns_d) + (ns_d) + (\{ns_t; \; ns_c\})$$

$$pro \longrightarrow \{pro_{int}; \; pro_{loc}\}$$

It will be noted that the noun stem in the basic formula may be rewritten as a sequence of noun stem types and that only interrogative and locative pronouns occur. Usually sequences of noun stem types are limited to three but the full range is structurally possible. The following examples will illustrate the different types of fillers of the final position in the formula, this position may be considered the head of this construction type.

4.11 Noun Phrase (NP$_1$) - {ns; loc; pro} + n

(1) ns$_{nb}$ + n (number stem plus noun)

móra namma one house

[⟨móraV1⟩ + ⟨naaN2 + ma⟩]$_1$

   one + house + nom

(2) ns$_{nb}$ + ns$_d$ + ns$_d$ + n (number stem, two descriptive stems

plus noun)

móra ano karogaro namma a big red house

[⟨móraV1⟩ + ⟨anóN1⟩ + ⟨karogaroN2⟩ + ⟨naaN2 + ma⟩]$_1$

   one + big + red + house + nom

(3) ns$_t$ + n (temporal stem plus noun)

nokáán aawaqa food for at night (night food)

[⟨nokááN1⟩ + ⟨aáwaQ1 + ma⟩]$_1$

   night + food + nom

(4) ns$_c$ + n (comon noun stem plus noun)

ira nómmá hot water (fire water)

[⟨iraV2⟩ + ⟨nóN1 + ma⟩]$_1$

   fire + water + nom

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(5) loc + n (locative plus noun)

<u>yopáke</u> <u>kááyukáe</u> He is a man from the garden. (a from-the-garden

man)

[⟨<u>yóN2</u> + <u>paQ</u> + <u>keN</u>⟩ + ⟨<u>waayúkaVl</u>+ <u>e</u>⟩]₁

garden + place + from + man + indic

(6) pro$_{loc}$ + n (locative pronoun plus noun)

<u>min</u> <u>aáwáqá</u> that food

[⟨<u>miN2</u>⟩ + ⟨<u>aáwaQl</u> + <u>ma</u>⟩]₁

that + food + nom

(7) pro$_{int}$ + n (interrogative pronoun plus noun)

<u>náa</u> <u>waayukama</u> which man

[⟨<u>náaVl</u>⟩ + ⟨<u>waayúkaVl</u> + <u>ma</u>⟩]₁

which + man + nom

4.12 Locative phrase (LocP₁) {ns; pro} + loc

(1) pro$_{int}$ + loc (interrogative pronoun plus locative)

<u>náa</u> <u>yopake</u> from which garden

[⟨<u>náaVl</u>⟩ + ⟨<u>yóN2</u> + <u>paQ</u> + <u>ke</u>⟩]₁

which + garden + place + from

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(2) ns$_d$ + loc   (descriptive stem plus locative)

ắtế aapaqa   in the delicious shade

[⟨ắtếV1⟩ + ⟨ắapaQl + ma⟩]$_1$

   delicious + in the shade + nom

4.13 Temporal phrase (TemP$_1$) - {ns; pro} + t

(1) ns$_d$ + t   (descriptive stem plus temporal)

anó kanaama   a long time

[⟨anóN1⟩ + ⟨kanaaV2 + ma⟩]$_1$

   bit + time + nom

(2) pro$_{int}$ + t   (interrogative pronoun plus temporal)

nóe kanaama   when   (what time)

[⟨nóeN1⟩ + ⟨kanaaV2 + ma⟩]$_1$

   what + time + nom

(3) pro$_{loc}$ + t   (locative pronoun plus temporal)

maa kánáamá   now (this time)

[⟨maaN2⟩ + ⟨kanaaV2 + ma⟩]$_1$

   this + time + nom

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4.14 Embedded descriptive phrases - {ns; pro} + DscP

(1) anó yopake kaayukae   He is a big man from the garden.

                              (a big-from-the-garden man)

    [⟨anóN1⟩ + [yopáké kááyúkáé]₁]₁

      big + [⟨yéN2 + paQ + keN⟩ + ⟨waayúkaV1 + e⟩]₁

          garden + place + from + man + indic

(2) náa paaqya poma   which little pig

    [⟨náaV1⟩ + [pááqya poma]₁]₁

      which + [⟨pááqyaN1⟩ + ⟨póV1 + ma⟩]₁

          little + pig + nom

4.2 Syntactic phrase (SynP; [x + y]₂) - The constituent elements
of a syntactic phrase are separable by expansion but they neither
form a single stress group nor occur with only one set of inflec-
tional affixes. The non-permutability of its constituent elements
distinguish it as a single unit. Two types of syntactic phrases
occur, POSSESSIVE and CO-ORDINATE.

4.21 Possessive phrase (SynP_poss) - A possessive phrase consists
of a possessive and either a noun, locative, temporal or a descrip-
tive phrase. The possessive element of the phrase may be either
a possessive personal name, a possessive pronoun or a possessive

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noun or noun phrase. This may be expressed in terms of the following formula and set or rewrite rules.

$$SynP_{poss} = poss + \{n; loc; t; DscP\}$$

$$poss \longrightarrow \{pn_{poss}; pro_{poss}; (x) + n_{poss}\}$$
$$x \longrightarrow \{ns; loc; pro; poss\}$$
$$ns \longrightarrow (ns_{nb}) + (ns_d) + (ns_d) + (\{ns_t; ns_c\})$$
$$pro \longrightarrow \{pro_{int}; pro_{loc}\}$$

Selected examples:

(1) ketí iyámmá my dog

[⟨keV2 + ni⟩ + ⟨iyáN2 + ma⟩]₂

I + poss_{sg} + dog + nom

(2) waagoní yopáqá the man's garden

[⟨waaV2 + koV + ni⟩ + ⟨yóN2 + paQ + ma⟩]₂

man + stative + poss_{sg} + garden + place + nom

(3) ení wagááma your day

[⟨eV2 + ni⟩ + ⟨wagááV1 + ma⟩]₂

you + poss + midday + nom

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(4) **Pasááguyani áugen unaamma** Pasaaqya's new string bag

$[\langle\underline{Pas\acute{a}\acute{a}qya} + \underline{ni}\rangle + [\langle\underline{\acute{a}ugeN1}\rangle + \langle\underline{un\acute{a}\acute{a}N1} + \underline{ma}\rangle]_1]_2$

Pasaaqya + poss$_{sg}$ + new + string bag + nom

(5) **aaragoní anóani iyákomá** the woman's mother's dog

$[[\langle\underline{aaraV2} + \underline{koV} + \underline{ni}\rangle + \langle\underline{a\text{-}\delta no} + \underline{ni}\rangle]_2 + \langle\underline{iy\acute{a}N2} + \underline{koV} + \underline{ma}\rangle]_2$

woman + stative + poss$_{sg}$ + her-mother + poss$_{sg}$ + dog + st + nom

(6) **anóñ inarugoni unáámmá** the big girl's string bag

$[[\langle\underline{anóN1}\rangle + \langle\underline{inaruV2} + \underline{koV} + \underline{ni}\rangle]_1 + \langle\underline{un\acute{a}\acute{a}N2} + \underline{ma}\rangle]_2$

big + girl + stative + poss$_{sg}$ + string bag + nom

4.22 Co-ordinate phrases (SynP$_{co}$) - A co-ordinate phrase is a sequence of parallel nominal constructions such that $\underline{x}_1$ (where $\underline{x}$ is any given nominal construction and sub-script one is a given manifestation of that construction) may be followed in the same syntactic phrase by $\underline{x}_2^n$ (where $\underline{x}$ is the same or parallel construction and sub-script two is a second and different manifestation, superscript $\underline{n}$ indicates that the same construction may be successively repeated with different manifestations without structural limitation). A parallel construction is one in which the suffix configuration remains the same but the stem class and/or the lateral expansion is different.

The co-ordinate phrase formula: $SynP_{co} = x_1 + x_2^n$

may be rewritten to show the sequences which may occur.

$$x_1 + x_2^n \longrightarrow \{\{sb;\ pro\}_1 + \{sb;\ pro\}_2;\ loc_1 + loc_2\}^n$$

Selected examples:

(1) aaramá, waamá, iyápoma women, men and children

[⟨aaraV2 + ma⟩ + ⟨waaV2 + ma⟩ + ⟨iyápoV1 + ma⟩]$_2$

woman + nom + man + nom + child + nom

(2) kamaágara, arikokokara with sweet potatoes and green beans

[⟨kamáaV1 + karaQ⟩ + ⟨arikokoQ1+ karaQ⟩]$_2$

sweet potato + accom + green beans + accom

(3) Waaqémiyaá, Titiqmoúyaá, Toqaáouyaá Waaqema, Titiqmo and Toqaao

[⟨Waaqémá + uyaa⟩ + ⟨Titiqmo + uyaa⟩ + ⟨toqáaó + uyaa⟩]$_2$

Waaqema + conj + Titiqmo + conj + Toqaao + conj

(4) yópaké, naaópake, yaayúqnobáké from the garden, the house and forest

[⟨yoN2 + paQ + ke⟩ + ⟨naaN2 + o + paQ + ke⟩ + ⟨yaayúQ2 + nobaQ + ke⟩]$_2$

garden + place + from + house + o + place + from + woods + in + from

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4.3 Idiomatic phrases (IdP; $[x + y]_3$) - The constituent elements of an idiomatic phrase are inseparable, may form one or more stress groups and may contain more than one set of inflectional suffixes. When an idiomatic phrase forms a single stress group and contains only one set of inflectional suffixes the line between word and phrase is difficult to draw. In such a case a combination of intuition and economy has been used to divide the two. The major types of idiomatic phrases which occur are QUANTIFIABLE SUBSTANTIVE, NUMERAL, PRONOUN, INTERROGATIVE and VERB. The following sections will present each type giving examples to illustrate different constructions.

4.31 Quantifiable substantive phrases (IdP_{sb}) - The head word of the substantive phrase is either a noun, temporal or descriptive occurring phrase finally. Four structural types occur as follows:

(1) Noun stem plus noun or noun phrase.

(2) Verb or verb phrase plus noun.

(3) Verb phrase plus nominal formative.

(4) Reduplicated quantifiable noun stems.

The examples which follow will illustrate each type.

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4.311 Noun stem plus noun or noun phrase (Selected examples).

ns + {n; NP}

(1) aa wáayúkámá interpreter (a sound or speech man)

[⟨a-δaaV2⟩ + ⟨waayúkaV1 + ma⟩]₃

his-sound + man + nom

(2) áai kataa wataama talk about customs

[⟨áaiN1⟩ + [⟨wataaV2⟩ + ⟨wataaV2 + ma⟩]₃]₃

base of tree, custom + talk + talk + nom

4.312 Verb or Verb phrase plus noun (Selected examples).

{vb; VP} + n

(1) aa ítarai karamma judge (a smart white man)

[[⟨a-δaaV2⟩ + ⟨itaV1b + ral + iN⟩]₃ + ⟨karaN2 + ma⟩]₃

his-sound + hear + past + 3rd per + white man + nom

(to have understood sound, that is to be smart)

(2) aá itarai karámmá judge (a white man who interprets)

[[⟨a-δaáQ1⟩ + ⟨itaV1b + ra2 + iN⟩]₃ + ⟨karaN2 + ma⟩]₃

his-ear + hear + past + 3rd per + white man + nom

(his ears have heard, that is he interprets)

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(3) ikátuwai iyapoma a child who dies shortly after birth

[⟨a-δikamoN1Rb + tuwaN + iV⟩ + ⟨iyápóV1 + ma⟩]₃

   him-hit + completive + 3rd per + child + nom

(4) koaóna yaaóna waayukama craftsman

[[⟨ko + a-δónaV3⟩ + ⟨ya + a-δónaV3⟩]₃ + ⟨waayukaV2 + ma⟩]₃

   go + it-see + come + it=see + man + nom

   (look carefully)

(5) iyapóma ima akai wimmá an abortive

[[⟨iyápóV1 + ma⟩ + ⟨iV1 + ma⟩ + ⟨a-δka + iV⟩]₃ + ⟨wiN1 + ma⟩]₃

   child + nom + neg + nom + him-put for + 3rd per + ginger + nom

4.313 Verb phrase plus noun formative (Selected examples).

<div align="center">VP + nf</div>

(1) amam iwainaqa an unfortunate person

[[⟨a-δmaN2⟩ + ⟨iV + waV + iV]₃ + naQ + ma⟩]₃

   his-shadow + neg + to be + 3rd per + person + nom

   (he doesn't have a shadow)

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(2) maramá airáináqá a surveyor

[[⟨maraV2 + ma⟩ + ⟨airaN1Rb + iV]₃ + naQ + ma⟩]₃

　　ground + nom + to sort + 3rd per + person + nom

　　(one who sorts the ground)

(3) áá wairaináqá interpreter

[[⟨a-δááQl⟩ + ⟨wairaN2R + iV]₃ + naQ + ma⟩]₃

　　his-ear + turn + 3rd per + person + nom

　　(one whose ears turn)

(4) iyapóma ima akáiyáqtááqá abortive

[[⟨iyapóVl + ma⟩ + ⟨iVl + ma⟩ + ⟨a-δka + iV]₃ + yaqtaaQ + ma⟩]₃

　　child + nom + neg + nom + him-put for + 3rd per + thing + nom

4.314 Reduplicated quantifiable noun stems (sb_q^r) _ A class of
quantifiable noun stems (nouns, temporals and descriptives) occur
reduplicated with the first vowel of the stem changing to aa ($v_1 \longrightarrow$ aa).
The following are examples of these stems:

aati aatimá	all the time		koyu kááyu	angry
aaga naágá	to catch breath		kaipu kaapu	squirming
negi naagima	crazy		wataa wataama	discussion, talk
turi táárima	messy		yobo naabo	clumsy

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Onomatopoeia - Onomatopoetic phrases are characteristically reduplicated sequences. The following suggest the range or types of onomatopoetic expressions which occur, significantly absent is the category of animal sounds which often find expression in onomatopoetic form. Usarufa regards such sounds merely as noise.

tágaq naagaqa	the sound of scratching
táu tauma	the sound of chewing
tabuq tabaaqá	the sound of the shooting of many bows
naróq náróqa	the sound of a stomach gurgling
karú karuqa	the sound of crunchy food
paró paraaqa	the sound of crackling flames
pakí bakíma	the sound of footsteps
paké bakema	the sound of knocking
tága tagama	the sound of paper rattling
kamu gamáama	the sound of a burp

4.32 Numerals (IdP$_{nb}$) - All but three of the Usarufa numerals are complex stem, word or phrase constructions. The latter is the more common and will be described here. The numeral system may be described as consisting of twenty number distinctions, these being the twenty digits which are the sum of a man's fingers and toes. Any number beyond twenty may be indicated by increasing the number of men each adding twenty or that part of twenty which may be needed. Forty-one, for example, would be two men and one. The Usarufa's disinterest in being specific about numbers beyond ten is reflected in the complexity of the numeral system.

The numeral system includes only three basic numerals: one (móráV1), two (kaayaQ2), and three (kaomoV2). All other numeral distinctions are combinations of these with morphemes meaning hands, feet and man used as units of five. The combination two plus two adds a fourth distinction which is used in combination with the units of five to give the final required distinction. This construction is:

kaayaqté   kaayaqtéQ2   four

[⟨kaayaQ2 + teQ⟩ + ⟨kaayaQ2 + teQ⟩]$_3$

two + teQ[1] + two + teQ

---

[1] This may be the passive accompaniment morpheme (teV) but if so a class changing morpheme must be postulated.

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Units of five have the following structure:

nb + {n; loc}

    nb ⟶ $\left\{\begin{array}{ll}\underline{\text{mórâVl}} & \text{one} \\ \underline{\text{mákaV}} & \text{both}\end{array}\right\}$

      n ⟶ $\left\{\begin{array}{ll}\underline{\text{tiyáákama}} & \text{my two hands} \\ \underline{\text{títauqa}} & \text{my foot} \\ \underline{\text{waayúkámá}} & \text{man}\end{array}\right\}$

   loc ⟶ $\underline{\text{tiyáápaqa}}$ at my hand

Thus the numbers five, ten, fifteen and twenty are:

$\underline{\text{môra}}$ $\underline{\text{tiyaapaqa}}$ five (at my one hand)

$[\langle\underline{\text{mórâVl}}\rangle + \langle\underline{\text{ti-δyááNl}} + \underline{\text{paQ}} + \underline{\text{ma}}\rangle]_3$

one + my-hand + place + nom

$\underline{\text{máka}}$ $\underline{\text{tiyaakama}}$ ten   (both my hands)

$[\langle\underline{\text{máNl}} + \underline{\text{raV}}\rangle + \langle\underline{\text{ti-δyááNl}} + \underline{\text{raV}} + \underline{\text{ma}}\rangle]_3$

all + dual + my-hand + dual + nom

$\underline{\text{móra}}$ $\underline{\text{títauqa}}$ fifteen (my one foot)

$[\langle\underline{\text{mórâVl}}\rangle + \langle\underline{\text{ti-δitauQl}} + \underline{\text{ma}}\rangle]_3$

one + my-foot + nom

môra waayukama   twenty

[⟨môrâVl⟩ + ⟨waayúkáVl + ma⟩]₃

one + man + nom

The numbers six through nine, eleven through fourteen and sixteen through nineteen are complex combinations of the foregoing as follows:

(1) Six through nine

abapaké	mórama	six
"	kaayaqá	seven
"	kaomomá	eight
"	kaayaqté kaayaqtéqá	nine

[⟨aba + paQ + ke⟩ + ⟨{1, 2, 3 or 4}⟩]₃

sum + place + from

(from the sum (my hand, i.e. five), one, two etc.)

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(2) Eleven through thirteen

tiyáaka naekamá títaupake	mòrama	11
	kaayaqá	12
	kaomomá	13
	kaayaqté kaayaqtéqá	14

[⟨ti-δyááN1 + raV⟩ + ⟨naeN + raV + ma⟩ + ⟨ti-δitauQ1 + paQ + keN⟩ + nb]₃

my-hand + dual + nae + dual + nom + my-foot + place + from + ⟨nb⟩

(my hands completed, from my foot one, two etc.)

(3) Sixteen through twenty

tiyáaka naekamá mòra títauqa abapaké	mòrama	16
	kaayaqá	17
	kaomomá	18
	kaayaqté kaayaqtéqá	19

[⟨ti-δyááN1 + raV⟩ + ⟨naeN + raV⟩ + [⟨mòráV1⟩ + ⟨ti-δitauQ1⟩]₁ +

⟨aba + paQ + keN⟩ + nb]₃

my-hand + dual + nae + dual + one + my-foot + sum + place + from + nb

(my two hands completed, one foot and from that sum, one, two etc.)

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Another construction can be used for twenty which utilizes both the hands and feet. It is:

tiyaámma títauq yáutama   twenty

[⟨ti-δyaáN1 + ma⟩ + ⟨ti-δitauQ1⟩ + ⟨yáutaV1 + ma⟩]

my-hand + my foot + circle + nom

(a circle of my hands and feet)

4.33   Pronoun phrases (IdP$_{pro}$) - Pronoun phrases are used to indicate singular and plural focus of plural personal pronouns. The structure is as follows:

[pro.s$_p$ + ⟨maqteN1 + (paQ) + (md)⟩]$_3$

(personal pronoun stem + all + place + mood)

Singular focus:

pro.s$_p$ ⟶ pro.s$_{p-sg}$

Plural focus:

pro.s$_p$ ⟶ {pro.s$_{p-1pl}$; pro.s$_{p-3n-sg}$}

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The resulting phrase nuclei are:

	Singular Focus	Plural Focus
1.	ké máqteN̄l	ketáá máqteN̄l
2.	é máqteN̄l	
3.	wé máqteN̄l	yé máqteN̄l

The formula for plural focus phrases must be rewritten for a possessive construction as follows:

$$[\langle pro.s_p \rangle + \langle máqteN̄l + (paQ) + (md) \rangle]_3 + poss_{pl} \longrightarrow \langle pro.s_p + poss_{pl} \rangle$$

The resulting forms contrast with singular possessive pronoun forms in second and third persons.

eni your (sg)   eti your (pl) but primarily your (sg)

weni his   weti their but primarily his

When the place suffix (paQ) occurs it seems to add the implication of 'all everywhere'. The following examples will illustrate the semantic significances of various focus phrase constructions.

(1) we máqtemma   they all but primarily him

  [⟨weV2⟩ + ⟨máqteN1 + ma⟩]₃

  he + all + nom

(2) we máqtepaqa   they everywhere but primarily him

  [⟨weV2⟩ + ⟨máqteN1 + paQ + ma⟩]₃

  he + all + place + nom

(3) ye máqtemma   they all but primarily them (a selected few)

  [⟨yeV2⟩ + ⟨máqteN1 + ma⟩]₃

  they + all + nom

4.34 Interrogative Phrases - Two interrogative phrases fall into the
category of idiomatic phrase types the constituent words being in-
separable. Their structure is:

  [pro$_{int}$ + ra⟩ + ⟨umá + (md)⟩]

(1) nôra umá   how much, how many
(2) náara umá   how, in what manner

nòra umábiyo   how many are there?

[⟨nóe + ra⟩ + ⟨umá + abiyo⟩]

what + for + do$_{past}$ + abl interr

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4.35 Verb phrases (VP) - On the basis of separability, suffix potential and stress group patterning all verb phrases are idiomatic phrases. However, on the basis of co-occurrence potential of constituent words, and relative degree of productivity they may be divided into the idiom type and the inflectional type. The idiom type has a restricted co-occurrence potential of constituent words and a limited degree of productivity. The inflectional type is highly productive and the co-occurrence potential of constituent words is relatively unlimited within the range of class potential. There are three categories of the idiom type verb phrase: (1) delta phrases, (2) impersonal phrases and (3) verbal idioms. The inflectional type falls into two categories: (1) adverbial phrases and (2) constructions with the verb to do.

This rather rough categorization and classification merely provides the framework for a much more detailed study of verb phrases than is possible within the scope of this present grammar. The semantic significances of various verb phrase types have barely been touched and needs further study. In the following sections the structural formulae for each phrase type is given along with sufficient examples to illustrate the range of categories which occur.

4.351 Delta phrases (VP_δ) - Typical of many New Guinea highland languages Usarufa expresses states of being by verb phrases with either a body part term (δns_2) and a verb, or a noun and a verb with

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an object prefix (δvs). In both cases the person of the delta prefix agrees with the subject tagmeme of the clause or sentence in which it occurs. This tagmeme may be either overt or elliptical. The person-subject suffix of the verb is either third person agreeing with the noun of the phrase or it agrees in person with the delta prefix. The difference in the person-subject suffix agreement marks the two types of delta phrases. The structure of the two types is expressed in the following formulae. The numbered arrow heads indicate the type of agreement which occurs. The optional subject tagmeme is indicated by (S).[1]

(1) (S) [$\langle\delta$ns + (nom)$\rangle$+ (ns$_{d-ad}$) + $\langle$vb$_{nu}$ + (ts) + 3rd per + md$\rangle$]$_3$
$\overset{\rightarrow 1\ 1\leftarrow\ \rightarrow 2}{}$ $\overset{2\leftarrow}{}$

  (S) [($\langle$ns + nom$\rangle$) + (ns$_{d-ad}$) + $\langle\delta$vb$_{nu}$ + (ts) + 3rd per + md$\rangle$]$_3$
$\overset{\rightarrow 1\quad \rightarrow 2}{}$ $\overset{1\leftarrow}{}$ $\overset{2\leftarrow}{}$

(2) (S) [$\langle\delta$ns + (nom)$\rangle$ + (ns$_{d-ad}$) + $\langle$vb$_{nu}$ + (ts) + per + md$\rangle$]$_3$
$\overset{\rightarrow 1\ 1\leftrightarrow 1}{}$ $\overset{1\leftarrow}{}$

The difference in functional relationships marked by the two delta phrase types is that of a subject-action relationship between noun and verb in type one and an object-action relationship between the two in type two.

1.
The nature of the optional descriptive-adverbial stem (ns$_{d-ad}$) in the formulae will be explained in section 4.354 on adverbial phrases.

The following examples illustrate each type.

Delta noun stem – third person-subject suffix $(VF_{\delta-1ns})$

(1) táa kéyaiye   I am hungry. (My hunger is dancing.)

   [⟨ti- δáaVl⟩ + ⟨kéV + yaV2b + α-iV + e⟩]

   my-hunger + pres con + dance + 3rd per + indic

(2) táá kégaiye   I am afraid. (My ear is burning.)

   [⟨ti-δááQl⟩ + ⟨kéV + kaV2a + α-iV + e⟩]

   my-ear + pres con + burn + 3rd per + indic

(3) tááqa kéitaiye   I believe. (My ear hears.)

   [⟨ti-δááQl + ma⟩ + ⟨kéV + itaVlb + α-iV + e⟩]

   my-ear + nom + pres con + hear + 3rd per + indic

(4) táákaq wáiye   I remember. (It is at my ear.)

   [⟨ti-δááQl + raQ + ma⟩ + ⟨wa + α-iV + e⟩]

   my-ear + at + nom + be + 3rd per + indic

(5) tíbo kégaiye   I am tired. (My shoulder is burning.)

   [⟨ti-δbo⟩ + ⟨kéV + kaV2a + α-iV + e⟩]

   my-shoulder + pres con + burn + 3rd per + indic

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(6) tíga kéiye   I am in pain. (My pain is doing.)

[⟨ti-δiQl + ma⟩ + ⟨kéV + oV2b + α-iV + e⟩]

my-pain + nom + pres con + do + 3rd per + indic

(7) títauga púkiye   My foot is asleep. (My foot is dead.)

[⟨ti-δitauQl + ma⟩ + ⟨puyoN2Ra + ko + α-iV + e⟩]

my-foot + nom + die + stative + 3rd per + indic

(8) títauga áaga áaga kétiye   I am longing for someone.

                                 (My foot is gossiping.)

[⟨ti-δitauQl + ma⟩ + áaga áaga + ⟨kéV + teV2a + α-iV + e⟩]

my-foot + nom + gossip + pres con + say + 3rd per + indic

(9) timaimmá kéyaiye   I am yawning. (My chin is dancing.)

[⟨ti-δmaaiN2 + ma⟩ + ⟨kéV + yaV2b + α-iV + e⟩]

my-chin + nom + pres con + dance + 3rd per + indic

(10) timmíga kéyaiye   I am full. (My stomach is dancing.)

[⟨ti-δmmiQl + ma⟩ + ⟨kéV + yaV2b + α-iV + e⟩]

my-stomach + nom + pres con + dance + 3rd per ± indic

(11) tirummá kéitaiye   I believe. (My liver hears.)

[⟨ti-δruN2 + ma⟩ + ⟨kéV + itaVlb + α-iV + e⟩]

my-liver + nom + pres con + hear + 3rd per + indic

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(12) tirummá kéiye I am sad. (My liver is doing.)

 [⟨ti-δruN2 + ma⟩ + ⟨kéV + oV2b + α-iV + e⟩]

 my-liver + nom + pres con + do + 3rd per + indic

(13) tugáibáá kéiye I am sleepy. (My sleepiness is doing.)

 [⟨ti-δugáibáá⟩ + ⟨kéV + oV2b + α-iV + e⟩]

 my-sleepiness + pres con + do + 3rd per + indic

(14) tiyamma táiq kéiye I am angry. (My anger is bad.)

 [⟨ti-δyaN1 + ma⟩ + ⟨táiQl + ma⟩ + ⟨kéV + α-iV + e⟩]

 my-anger + nom + spoiled + nom + pres con + 3rd per + indic

Delta verb stem - third person-subject suffix (VP$_{\delta-1vs}$)

(1) kétikaiye I like it. (It is for me.)

 ⟨kéV + ti-δka + α-iV + e⟩

 pres con + me----for + 3rd per + indic

(2) karimá kétikaiye I am sick. (Sickness is for me.)

 [⟨kariV2 + ma⟩ + ⟨kéV + ti-δka + α-iV + e⟩]

 sickness + nom + pres con + me----for + 3rd per + indic

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(3) yabáaqnámá tikákaiye I fell down. (The earth hit me.)

[⟨yabáaqnáVl + ma⟩ + ⟨ti-δikamoNlRb + ra + α-iV + e⟩]

earth + nom + me-hit + past + 3rd per + indic

(4) taiyamma ketikaiye I am sick. (Sickness is for me.)

[⟨taiyaNl + ma⟩ + ⟨keV + ti-δka + α-iV + e⟩]

sickness + nom + pres con + me + for + 3rd per + indic

Delta noun stem - delta prefix and person-subject suffix agree ($VP_{δ-2}$)

(1) taáma kemaraune I am breathing. (I am placing my breath.)

[⟨ti-δaáVl + ma⟩ + ⟨keV + maráN2Ra + α-uN + e⟩]

my-breath + nom + pres con + put + I + indic

(2) taákaq kemaraune I am going to remember it.

                    (I am placing it at my ear.)

[⟨ti-δaáQl + raQ + ma⟩ + ⟨keV + maráN2Ra + α-uN + e⟩]

my-ear + at + nom + pres con + put + I + indic

(3) timuqá kemaraune I am pleased. (I have placed my seed.)

[⟨ti-δmuQ2 + ma⟩ + ⟨keV + maráN2Ra + α-uN + e⟩]

my-seed + nom + pres con + put + I + indic

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(4) tíruqa kéuyune   I am hurrying. (I have caused my thigh to go up.)

[⟨ti-ốruQl + ma⟩ + ⟨kéV + uyoQ2Ra + α-uN + e⟩]

my-thigh + nom + pres con + go up + I + indic

(5) tuwáayakaq kémaraune   I am learning it.

                    (I am placing it at my forehead.)

[⟨ti-ốuwáayaNl + raQ + ma⟩ + ⟨kéV + maráN2Ra + α-uN + e⟩]

my-forehead + at + nom + pres con + put + I + indic

(6) túyanámmá kémaraune   I am thinking. (I am placing my thoughts.)

[⟨ti-ốuyánaN2 + ma⟩ + ⟨kéV + maráN2Ra + α-uN + e⟩]

my-thoughts + nom + pres con + put + I + indic

(7) tíyapi kéitaune   I believe. (I have heard in my intestines.)

[⟨ti-ốyaQl + pi⟩ + ⟨kéV + itaVlb + α-uN + e⟩]

my-intestines + in + pres con + hear + I + indic

4.352 Impersonal phrases (VP$_{impl}$) - The impersonal phrase is similar
to the delta phrase type one in that the person-subject suffix is
always third person agreeing with the noun of the phrase and the
relationship between noun and verb is that of subject-action. How-
ever delta noun stems do not occur and there is a significant differ-
ence in external distribution in that an overt subject tagmeme never
occurs in the same clause as an impersonal phrase. The structural

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formula and illustrative examples follow:

$$[\langle ns + nom\rangle + (ns_{d-ad}) + \langle vb_{nu} + 3rd\ per + ml\rangle]_3$$

(1) aammá kégaiye The way is clear. (The path is burning.)

[⟨aaN2 + ma⟩ + ⟨kéV + kaV2b + α-iV + e⟩]

path + nom + pres con + burn + 3rd per + indic

(2) aaq ékiye It is getting dark. (Weather is darkening.)

[⟨aaQ2 + ma⟩ + ⟨enaN2R + ko + α-iV + e⟩]

weather + nom + darken + stative + 3rd per + indic

(3) aaqá kégaiye It is a sunny day. (Weather is burning.)

[⟨aaQ2 + ma⟩ + ⟨kéV + kaV2b + α-iV + e⟩]

weather + nom + pres con + burn + 3rd per + indic

(4) aaqá kéiye It is raining. (Weather is coming.)

[⟨aaQ2 + ma⟩+ ⟨kéV + yeV2a + α-iV + e⟩]

weather + nom + pres con + come + 3rd per + indic

(5) aaqá ikákiye It has stopped raining. (Weather has been hit.)

[⟨aaQ2 + ma⟩ + ⟨ikamoNlRb + ko + α-iV + e⟩]

weather + nom + hit + stative + 3rd per + indic

4.353 Verbal idioms (VP_{id}) - There are four types of verbal idioms as follows:

    (1) Noun with nominal suffix plus verb.

        $[\langle ns + nom \rangle + vb]_3$

    (2) Noun stem plus verb.

        $[\langle ns \rangle + vb]_3$

    (3) Reduplicated noun plus verb.

        $[\{[ns^r]_3; ns_r\} + vb]_3$

    (4) Verb stem with nominal suffix plus verb.

        $[\langle vs + nom \rangle + vb]_3$

In each of the above constructions only a few verbs are potential fillers of the verb slot. The following examples give the more common ones which account for about two-thirds of the verbal idioms.

(1) Noun with nominal suffix plus verb.

x + o̱V2b (to do)

komá̱ (a pout) + o̱V2b = to be angry, to pout

wá̱a̱ga (noise) + o̱V2b = to shout, to bark, etc.

maabumá̱ (young man) + o̱V2b = to initiate a boy

agayemá̱ (shame) + o̱V2b = to be bashful

x + te̱V2b (to say)

umoimá̱ (a cough) + te̱V2b = to cough

a̱úga (inside) + te̱V2b = to hum

awimá̱ (urine) + te̱V2b = to urinate

x + yoráN2Rb (to move)

anumá̱ (mountain) + yoráN2Rb = to move a stubborn child

kámenama (a rough leaf) + yoráN2Rb = to sand

x + mayáQ2Ra (to get, to take)

meyámmá̱ (purchase) + mayáQ2Ra = to buy

moyámmá̱ (theft) + mayáQ2Ra = to steal

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$$x + \underline{ye}V2a \text{ (to come)}$$

nammáqá (a visit) + $\underline{ye}V2a$ = to visit

karagíqá (sorrow) + yeV2a = to bemoan

$$x + \underline{pera}N1Rb \text{ (to pour over)}$$

nommá (water) + $\underline{pera}N1Rb$ = to bathe

ayammá (color) + $\underline{pera}N1Rb$ = to paint

$$x + y$$

ibíqá (a cry) + $\underline{yara}N2b$ (to weep) = to cry

ákúqa (odor) + $\underline{ita}V1b$ (to hear) = to smell

(2) Noun stem plus verb.

$$x + \underline{o}V2b \text{ (to do)}$$

ákubitaa (fragrance) + $\underline{o}V2b$ = to sniff, smell

wíráá (a laugh, smile) + $\underline{o}V2b$ = to laugh, be happy

abáá (lost) + $\underline{o}V2b$ = to search

aayoq (a gaze) + $\underline{o}V2b$ = to admire

$$x + \underline{ka}V2a \text{ (to burn)}$$

ópo (dullness) + $\underline{ka}$V2a = to fade

áwáarara (brilliance) + $\underline{ka}$V2a = to shine

$$x + \underline{ya}V2b \text{ (to dance)}$$

aábé (play) + $\underline{ya}$V2b = to play

imaamú (rage) + $\underline{ya}$V2b = to be beside oneself with anger

arabé (flight) + $\underline{wo}$V2b (to go) = to fly

(3) Reduplicated noun plus verb.

$$ns_r + \underline{o}V2b \text{ (to do)}$$

aqteqe + $\underline{o}$V2b = to shiver

tete + $\underline{o}$V2b = to wash, to scrub, to cut wood finely

apibi + $\underline{o}$V2b = to shake something

$$ns_r + \underline{te}V2b \text{ (to say)}$$

této + $\underline{te}$V2b = to be crackly dry

kíkí + $\underline{te}$V2b = to be firmly planted

títí + $\underline{te}$V2b = to fit tightly together

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míqmiq + teV2b = to suck

abububu + teV2b = to stutter

ameme + teV2b = to mimic

$$ns^r + \underline{o}V2b \ (\text{to do})$$

amóqna moqna (a kiss) + oV2b = to kiss

kamu gamáá (a burp) + oV2b = to burp

turi táári (messy) + oV2b = to be messy

negí naagi (crazy) + oV2b = to be crazy

$$ns^r + \underline{te}V2b \ (\text{to say})$$

níkiq nikiq (hiccough) + teV2b = to have the hiccoughs

áagaa ágaa (gossip) + teV2b = an itching foot indicating someone

is thinking of you

waku waku + teV2b = to hurry someone

(4)   Verb stem with nominal suffix plus verb.

itama ónaao   Ask him!

$[\langle \underline{ita}V1b + \underline{ma} \rangle + \langle \underline{a}\text{-}\delta\underline{ona}V3 + \gamma\text{-}\emptyset V + \underline{o}_2 \rangle]_3$

hear, listen + nom + him + see + 2nd per + imper

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náma ónaao Taste it!

[⟨naV2b + ma⟩ + ⟨aónaao⟩]₃

eat + nom + see

máqma ónaao Try it!

[⟨mayáQ2Rb + ma⟩ + ⟨aónaao⟩]₃

take + nom + see

yoqma ónaao Feel it![1]

yaqma ónaao Test it![2]

timá miyo Tell him!

[⟨teV2b + ma⟩ + ⟨a-óme + γ-ØV + o₂⟩]₃

say + nom + him + give + 2nd per + imper

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1. It is not clear what the verb stem is in this case, possibly yoráN2Rb to move.

2. Again it is not clear what the verb stem is.

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4.354 Adverbial phrases (VP_{ad}) - A sub-class of descriptive stems (ns_{d-ad}) occur immediately preceding a phrase final verb to indicate the manner in which the action of the verb is performed. These include:

arupúV1	straight
arútâmaV1	well, straight, strong
iráqoN1	good
kabé kabéV2	quickly
kanaaráQ2	well, right
{ miráN2 / miráumaV1 }	thus
ņetuqyáaN2	plenty
òriQ1	very
táiQ1	bad, spoiled

Adverbial phrases may occur imbedded in other phrase types such as in example 5 of the following. In almost all constructions it is possible to rewrite verb as verb or adverbial phrase.

$$vb \longrightarrow \{vb; \ VP_{ad}\}$$

Whereas other verb phrase types have some restrictions on their external distribution which require more specific rewrite rules.

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The examples which follow illustrate various of the adverbial descriptive stems.

(1) ôri kénaiye He eats very much.

   [ôriQ1 + ⟨kéV + naV2b + α-iV + e⟩]

   very + pres con + eat + 3rd per + indic

(2) arútáma tiyo Say it clearly!

   [arútámaV1 + ⟨teV2b + γ-∅V + o⟩]₃

   straight + say + 2nd per + imper

(3) miráum agayaao Cook like this!

   [miráumaV1 + ⟨agáyaQ2Ra + γ-∅V + o⟩]₃

   thus + cook + 2nd per + imper

(4) kabé kabé iyo Come quickly!

   [[kabé kabéV2]₃ + ⟨yeV2a + γ-∅V + o⟩]₃

   quickly + come + 2nd per + imper

(5) taá ôri kégaiye I am very afraid.

   [⟨ti-δaáQ1⟩ + [⟨òri⟩ + ⟨kéV + kaV2a + α-iV + e⟩]₃]₃

   my-ear + very + pres con + 3rd per + indic

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4.355 Constructions with the verb to do (VP_{do}) - The verb to do, $\underline{o}V2b$, is an auxiliary verb which occurs only in verbal phrases and equational clauses. In many of its functions it is like the English verb to be. As a verbal auxiliary it may be used to form tense, voice or mood contrasts instead of the usual suffixation. In this case the appropriate suffixes occur on the verb to do and the main verb precedes it without suffixation. In equational clauses and descriptive or state of being phrases it functions as a copula.

Five categories of phrases with this verb will be considered.

(1) State of being phrases

$$ns_d + \underline{o}V2b_{vb}$$

(2) Desiderative phrases

$$[\langle\beta\text{-}vb_{nu} + \underline{no} + \beta\rangle \; (\text{-}\beta) + \langle\underline{o}V2b_{vb\text{-}nu} + \alpha_1 + md\rangle]$$

(3) Abilitative phrases

$$[\langle\beta\text{-}vb_{nu} + \underline{no} + \beta\rangle \; (\text{-}\beta) + \langle\underline{o}V2b_{vb\text{-}nu} + \alpha_2 + abl\rangle]_3$$

(4) Continued action phrases

$$[\langle vs + \underline{iQ}\rangle^n + \underline{o}V2b_{vb}]_3$$

(5) Repeated action phrases

$$[vs^r + \underline{o}V2b_{vb}]_3$$

State of being phrases - A descriptive stem plus the verb, $\underline{o}$V2b
to do, expresses attribution.

$$n\varepsilon_d + \underline{o}V2b \quad \text{to do}$$

$\underline{pé}$ (skinny) + $\underline{o}$V2b = to be emaciated

$\underline{kó}$ (pout) + $\underline{o}$V2b = to be displeased

$\underline{kato}$ (obedient) + $\underline{o}$V2b = to be obedient

$\underline{kaúbi}$ (disobedient) + $\underline{o}$V2b = to be disobedient

$\underline{oyáa}$ (light) + $\underline{o}$V2b = to be easy, light

$\underline{kokó}$ (warm) + $\underline{o}$V2b = to be warm, dry

$\underline{táiq}$ (bad) + $\underline{o}$V2b = to be bad

$\underline{anó}$ (big) + $\underline{o}$V2b = to be big

$\underline{páaq}$ (found) + $\underline{o}$V2b = to be found

Desiderative phrases - Desire may be expressed by use of the future
subjunctive with regular inflectional suffixation. However an alterna-
tive and more common desiderative construction is the use of the beta
verb nucleus with the future tense suffix in the form appropriate to
the person-subject plus the verb to do in any tense but with alpha-one
person suffixes and moods. The following compares the two types of
constructions.

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I want to eat.

nanáare   (Future subjunctive naV2b + no +β-OQ + e)

nanáá onúne   (Desiderative phrase)

[⟨naV2b + no + β-∅Q - β-∅Q⟩ + ⟨oV2b + no + α-uN + e⟩]₃

Abilitative phrases - A phrase construction similar to that of the desiderative phrase can be used to express capability of the subject to perform an action. The same subjunctive stem construction is used but abilitative moods are used with the verb to do.

nané íne He is able to eat.

[⟨naV2b + no + β-na - β-na⟩ + ⟨o + iN + e⟩]₃

   to eat + fut + 3rd per - 3rd per + do + 3rd per + abl

Continued action phrases - An action which is continued over a period of time may be expressed by use of the verb stem and the morpheme iQ plus any form of the verb to do which will express the appropriate person, tense, voice and mood distinctions.

(1) naiq naiq onúne I am going to eat and eat.

   [⟨naV2b ± iQ⟩ʳ + ⟨oV2b + no + α-uN + e⟩]₃

   to eat + iQ + do + fut + 1st per + indic

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(2) náiq náiq náiq uráiye   He ate and ate and ate.

$[\langle naV2b + iQ \rangle^{r-3} + \langle oV2b + ra + \alpha\text{-}iV + e \rangle]_3$

eat + iQ + do + aorist + 3rd per + indic

Repeated action phrases - An action which is made up of the repetition
of some one action may be expressed by the reduplication of the verb
stem without affixation plus the verb to do.

úbó ubo keiye   He is digging.

$[uboN2Rb^r + \langle keV + oV2b + \alpha\text{-}iV + e \rangle]$

to plant + pres con + do + 3rd per + indic

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Chapter 5

TAGMEME INVENTORY

A tagmeme will here be defined as that correlation of

functional slot and manifesting class by which lexical units combine

in syntactic constructions. This is a more restricted definition of

the tagmeme than that used by leading tagmemicists.[1] It yields

tagmemes which are much like Longacre's clause level tagmemes and

avoids the use of the term as a level oriented concept.

The tagmemes of Usarufa are either NUCLEAR or PERIPHERAL

depending upon whether or not they are restricted in occurrence or

manifesting class by clause or sentence construction types. The

following sections will give an inventory of the tagmemes which occur

indicating manifesting classes and grammatical function.

5.1 Nuclear tagmemes - Nuclear tagmemes are those tagmemes which are

either restricted in their potential for occurrence to specific clause

or sentence types or whose manifesting class is restricted by the type

of clause or sentence in which they occur. These are the tagmemes

which are significant in determining differences in clause and sen-

tence construction types. There are four such tagmemes in Usarufa,

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1.
 See Elson and Pickett, pages 3 and 57; Longacre page 15; and Pike,
Language Vol. III, Chapter 11.

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SUBJECT, OBJECT, COMPLEMENT, and PREDICATE.

Subject, object and complement tagmemes are manifested by substantives, pronouns or locatives which may be optionally expanded to higher level units as follows:

$$\{S; \; O; \; C\}:\{sb; \; loc; \; pro\}$$

Optional rewrite rules:

$$sb \longrightarrow \{sb; \; SbP; \; Cl_{sb}\}$$

$$SbP \longrightarrow \{NP; \; NbP; \; TemP\}$$

$$Cl_{sb} \longrightarrow (X)^n + P:vb + nf \quad (\text{Where } X^n \text{ is any tagmeme}$$

$$\text{or tagmeme sequence})$$

$$loc \longrightarrow \{loc; \; LocP; \; Cl_{loc}\}$$

$$Cl_{loc} \longrightarrow (X)^n + P:vb + loc$$

$$pro \longrightarrow \{pro; \; ProP\}$$

Obligatory rewrite rules for word units as they manifest either subject, object or complement tagmemes will be given under the section which deals with each tagmeme. These obligatory rules apply both to the original statement of manifestation potential and to the head words of each of the complex units resulting from the above optional rewrite rules.

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5.11 Subject tagmeme (S) - The grammatical functions or semantic significances of the Usarufa subject tagmeme include both performer of an action and topic of an equation. The manifesting classes of the subject tagmeme are substantives, locatives and pronouns. Restrictions on lexical form of each class may be stated in terms of the rewriting of the lexical formulae already given. In summary these rewrite rules specify the following: A subject tagmeme may be manifested by a substantive, a locative or a pronoun; only non-object pronouns manifest subject tagmemes; three subject allo-tagmas occur: equational subject, transitive subject and intransitive subject; the equational subject is manifested by substantives, loc-atives or non-object pronouns while transitive and intransitive sub-jects are manifested only by substantives and pronouns; relative-possessive suffixes do not occur with substantives or pronouns man-ifesting subject tagmemes; non-object pronouns manifesting transitive or intransitive subject tagmemes may be pronoun stems or stems plus mood suffix; substantives manifesting transitive or intransitive subjects are noun stems with either conjunctive or mood suffixes and optional stative and number suffixes as may be grammatically possible in accordance with co-occurrence restrictions on stems and suffixes; personal names only optionally require a mood or conjunctive suffix and temporal stems do not manifest transitive subjects.

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The following is the formal statement of subject manifestation potential.

$$S:\{sb;\ loc;\ pro\}$$

$$pro \longrightarrow pro_{n.obj}$$

$$S \longrightarrow \{S_{eq};\ S_{tr};\ S_{intr}\}$$

$$\{S_{eq};\ S_{tr};\ S_{intr}\}:\{sb;\ loc;\ pro_{n.obj}\} \longrightarrow$$

(1) $S_{eq}:\{sb;\ loc;\ pro_{n.obj}\}$

$$pro_{n.obj} \longrightarrow pro.s_{n.obj} + (\begin{Bmatrix} poss_{ab} \\ accom \end{Bmatrix}) + (ref) + (\begin{Bmatrix} conj \\ md \end{Bmatrix})$$

$$sb \longrightarrow ns + (\begin{Bmatrix} \{loc;\ poss_{ab};\ inst\} \\ (st) + (nb) + (\{ref;\ accom\}) \end{Bmatrix}) + \{conj;\ md\}$$

(2) $S_{tr;intr}:\{sb;\ pro_{n.obj}\}$

$$pro_{n.obj} \longrightarrow pro.s_{n.obj} + (\{conj;\ md\})$$

$$sb \longrightarrow ns + (st) + (nb) + \{conj;\ md\}$$

$$ns \longrightarrow \{sb_q;\ sb_{nq}\}$$

$$\{sb_q;\ sb_{nq}\} + (st) + (nb) + \{conj;\ md\} \longrightarrow$$

(1) $sb_q + (st) + (nb) + \{conj;\ md\}$

$$(2) \quad sb_{nq} + (st) + \{conj; \; md\}$$

$$sb_{nq} \longrightarrow \{ns_{nb}; \; ns_{pn}\}$$

$$\{ns_{nb}; \; ns_{pn}\} + (st) + \{conj; \; md\} \quad \longrightarrow$$

$$(1) \quad ns_{nb} + (st) + \{conj; \; md\}$$

$$(2) \quad ns_{pn} + (st) + (\{conj; \; md \; \})$$

$$S_{tr} : sb_q + (st) + (nb) + \{conj; \; md\}$$

$$sb_q \longrightarrow \{ns_c; \; ns_d\}$$

$$S_{intr} : sb_q + (st) + (nb) + \{conj; \; md\}$$

$$sb_q \longrightarrow \{ns_c; \; ns_d; \; ns_t\}$$

5.12 Complement tagmeme (C) - The complement tagmeme occurs only in equational clauses and includes the functional categories of comment, citation and complementation. Complement tagmemes may be manifested by substantives, locatives and pronouns. The manifesting class must occur with a nominal mood suffix and relative-possessive suffixes do not occur with stems manifesting the complement tagmeme.

$$C : \{sb; \; loc; \; pro\}$$

$$pro \longrightarrow pro.s + (\{accom; \; poss_{ab}\}) + (ref) + md_{nom}$$

$$sb \longrightarrow ns + \left(\begin{cases} \{loc; \; poss_{ab}; \; inst\} \\ (st) + (nb) + (\{ref; \; accom\}) \end{cases} \right) + md_{nom}$$

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$$\text{loc} \longrightarrow \left\{ \begin{array}{c} \{ns_c; \text{ vb}\} + \text{loc} \\ \text{loc.s} \end{array} \right\} + (\text{from}) + (\text{nb}) + \left(\left\{ \begin{array}{c} \text{ref} \\ \text{accom} \end{array} \right\}\right) + \text{md}_\text{nom}$$

5.13 Object tagmeme (O) - The object tagmeme functions as the goal of the action of a transitive verb. Its distribution is limited to transitive clauses and its occurrence is optional. Substantives, locatives and pronouns may manifest object tagmemes. Instrument, referent, passive accompaniment and relative-possessive suffixes do not occur with words manifesting the object tagmeme.

$$\text{O:} \{\text{sb; loc; pro}\}$$

$$\text{pro} \longrightarrow \text{pro.s}_\text{obj} + (\{\text{accom}_\text{act}; \text{ poss}_\text{ab}\}) + \{\text{conj; md}\}$$

$$\text{sb} \longrightarrow \text{ns} + \left(\left\{ \begin{array}{l} \{\text{loc; poss}_\text{ab}\} \\ (\text{st}) + (\text{nb}) + (\text{accom}_\text{act}) \end{array} \right\}\right) + \{\text{conj; md}\}$$

5.14 Predicate tagmeme (P) - The predicate tagmeme is the central or nuclear tagmeme of all syntactic constructions. Differences of clause and sentence type are marked by changes in the manifesting class of the predicate tagmeme. The predicate tagmeme is the only obligatory tagmeme which occurs in all clause types and it is optional only in an equational clause which has a complement tagmeme. The predicate tagmeme includes functions of other tagmemes such as subject, object, feferent, complement and time and functions which are unique to it such as expression of action or occurrence and manner of action.

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The predicate tagmeme of an equational clause may be manifested by the verbs $\underline{wa}V$ or $\underline{ma}V$ inanimate and animate verbs to be, and $\underline{o}V2b$ to do; by stative verbs; descriptive or state of being verb phrases; and by any substantive, locative or pronoun construction with a verbal mood suffix. Transitive and intransitive predicate tagmemes are manifested by verbs and verb phrases. Greater detail as to the nature of these predicate slot fillers will be given in the next two chapters which deal with clause and sentence structure.

The predicate tagmemes of each of the three major clause types are manifested as follows:

$$P_{eq} : \{vb; VP; \ sb; \ loc; \ pro\}$$

$$vb \longrightarrow \{\{\underline{wa}V; \ \underline{ma}V\}; \ \underline{o}V2b; \ vb_{st}\}$$
$$\{sb; \ loc; \ pro\} \longrightarrow \{sb; \ loc; \ pro\} + md_{vb}$$

$$P_{tr} : \{vb_{tr}; \ VP_{tr}\}$$

$$P_{intr} : \{vb_{intr}; \ VP_{intr}\}$$

5.2 Peripheral tagmemes - Those tagmemes which may occur without change in any clause type are classed as periperal tagmemes. These include: LOCATION; TIME; INSTRUMENT; ACCOMPANIMENT; REFERENT-REASON and TOPIC. The manifesting classes of these tagmemes are generally mush more restricted than those of the nuclear tagmemes.

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5.21 Location tagmeme (L) - The location tagmeme indicates spatially the location or direction of an event, action, place, person or thing. Locatives are the only manifestation of the location tagmeme on the word level with locative phrases and clauses being higher level manifestations.

The formal statement of the location tagmeme manifestations is:

$$L:loc$$

Optional rewrite rules:

$$loc \longrightarrow \{loc;\ LocP;\ Cl_{loc}\}$$

$$Cl_{loc} \longrightarrow (X)^n + P:vb + loc \quad \text{(Where } X^n \text{ is any appropriate}$$
$$\text{tagmeme or tagmeme sequence.)}$$

Obligatory rewrite rules:

$$loc \longrightarrow \begin{cases} \{ns_c;\ vb\} + loc \\ loc.s \end{cases} + (from) + (nb) + (\{conj;\ md\})$$

$$loc.s \longrightarrow \{loc.s_p;\ loc.s_d\}$$

5.22 Time (T) - The time tagmeme indicates either a unit of time or the location in time of some event or action. Temporals or locatives of time may occur as manifestations of time tagmemes with temporal phrases and clauses being higher level manifestations.

Time manifestations:

$$T:\{loc; t\}$$

Optional rewrite rules:

$$t \longrightarrow \{t; TemP; Cl_{tem}\}$$

$$Cl_{tem} \longrightarrow (X)^n + P:vb + \alpha_2 + \langle\{taoQ2; kanaaV2\}\rangle$$

Obligatory rewrite rules:

$$loc \longrightarrow loc.s_t + (from) + (nb) + (\{conj; md\}$$

5.23 Accompaniment (Acc) - The accompaniment tagmeme indicates participation in an action by someone or thing other than the subject or object. It is manifested by either a substantive or pronoun with an accompaniment suffix.

$$Acc:\{sb; pro\}$$

Optional rewrite rules:

$$sb \longrightarrow \{sb; NP; NbP\}$$
$$pro \longrightarrow \{pro; ProP\}$$

Obligatory rewrite rules:

$$sb \longrightarrow ns + (st) + (nb) + accom + (\{conj; md\})$$
$$ns \longrightarrow \{ns_c; ns_d; ns_{nb}; ns_{pn}\}$$

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$$\text{pro} \longrightarrow \text{pro.s} + \text{accom} + (\{\text{conj}; \text{md}\})$$

5.24 Referent-Reason (R) - The referent-reason tagmeme functions as indirect object, benefactive and reason for an action. Any word class plus the referent suffix may manifest this tagmeme and only those co-occurrence restrictions which govern the occurrence of the referent suffix are operative. Phrase units and clauses may manifest the referent-reason tagmeme as specified by the optional rewrite rules in the following statement of referent-reason manifestations.

$$\text{R:}\{\text{sb}; \text{loc}; \text{pro}; \text{vs}\}$$

Optional rewrite rules:

$$\text{sb} \longrightarrow \{\text{sb}; \text{SbP}\}$$

$$\text{loc} \longrightarrow \{\text{loc}; \text{LocP}\}$$

$$\text{vb} \longrightarrow \{\text{vb}; \text{VP}; \text{Cl}_{\text{ref}}\}$$

$$\text{Cl}_{\text{ref}} \longrightarrow (X)^n + \text{P:vb} + \text{ref}$$

$$\text{pro} \longrightarrow \{\text{pro}; \text{ProP}\}$$

Obligatory rewrite rules:

$$\text{sb} \longrightarrow \text{ns} + (\text{st}) + (\text{nb}) + \text{ref} + (\{\text{conj}; \text{md}\})$$

$$\text{loc} \longrightarrow \{\text{loc.s}; \{\text{ns}_c; \text{vb}\} + \text{loc}\} + (\text{from}) + \text{ref} + (\{\text{conj}; \text{md}\})$$

$$\text{pro} \longrightarrow \text{pro.s} + (\{\text{inst}; \text{accom}; \text{poss}_{\text{ab}}\}) + \text{ref} + (\{\text{conj}; \text{md}\})$$

$$\text{vb} \longrightarrow \text{vb}_{\text{nu}} + (\text{ts}) + \text{per} + \text{ref} + (\text{md})$$

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5.25 Instrument tagmeme (I) - The instrument tagmeme expresses the inanimate means by which an action is accomplished. It is manifested by an inanimate noun or pronoun occurring with the instrument suffix or by a noun or pronoun phrase whose head word occurs with the instrument suffix. The class of noun stems which may occur is limited to inanimate common nouns. Pronoun stems are limited to inanimate or neutral locative pronoun stems and the interrogative stem, nóeN1 what.

$$I:\{n; NP; pro; ProP\}$$

$$n \longrightarrow ns_{c-inani} + inst + (\{conj; md\})$$

$$pro \longrightarrow \begin{cases} pro.s_{loc-inani;neut} \\ pro.s_{int-nóeN1} \end{cases} + inst + (\{conj; md\})$$

2.26 Topic tagmeme (Tp) - The topic tagmeme might be better treated as a hyper-tagmeme. It differs from other tagmemes in that its manifesting class is a tagmeme rather than a lexical unit. Any non-predicate tagmeme may occur as manifesting the topic tagmeme in which case it is brought into the focus of attention as being the topic of a given clause, sentence,paragraph or discourse. The topic tagmeme occurs either clause initially or finally and is set apart from the rest of the clause by features of pause and intonation.

The manifesting class of the topic tagmeme may be expressed as follows:

$$Tp: X_{n-P}$$

$$X_{n-P} \longrightarrow \{S; I; Acc; O; C; L; T; R\}$$

The following excerpt from an Usarufa folk tale will illustrate the use of the topic tagmeme. In the first sentence the topic tagmeme is manifested by the subject tagmeme which in turn is manifested by a descriptive phrase. In the second sentence the topic tagmeme is manifested by the object tagmeme.

T:S:NP   +   S:NP   +   P:VP   +   O:n   +   P:vb

#[móra anon uqmagoma], anón uqmagoma yaa máina abímma atakáiye#.....

  one big old-man   big old-man tree he be insect he breaks

S:pro + P:vb + O:d   +   P:vb   +   T:O:NP

wemá atáqma   aúgemma naráiye,   [min abímmá]#

he breaks   new   he ate   that insect

Free Translation: An old man who lived in the forest was killing insects and eating them raw.

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Chapter 6

CLAUSE STRUCTURE

Clause types may be defined by use of three different types
of evidence. Differences in nuclear tagmeme potential and in verb
stem class divide clauses into TRANSITIVE, INTRANSITIVE and EQUATIONAL;
differences in external distribution within the sentence and differences
in verbal suffix requirements divide them into FINAL and NON-FINAL;
and differences in external distribution within the clause and/or
paragraph and differences in verbal suffix requirements divide them
into SUBJUNCTIVE and INDEPENDENT.

6.1 General ordering of tagmemes - Since the ordering of tagmemes
and the occurrence of peripheral tagmemes is not dependent upon clause
type a general statement may be made which will apply to all types.

Non-predicate tagmemes except the topic tagmeme are not
restricted in their order with reference to one another. However,
they always occur before the predicate tagmeme. The topic tagmeme
occurs either clause initially or clause finally and the predicate
tagmeme occurs clause finally except when followed by a topic tagmeme.

There are not usually more than three non-predicate tagmemes
in any one clause. Where multiple tagmeme distinctions are desired
for any one action multiple clause sentences are used rather than

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using a sequence of several tagmemes in one clause. The following formula reflects the most common ordering of tagmemes with reference to one another.

$$Cl = \frac{(Tp) + (T) + (I) + (L) + (S) + (Acc) + (\{0; C\}) + (R)}{(3)} + P$$

Since only the nuclear tagmemes differ in their co-occurrence potential for different clause types the foregoing formula may be considered in two parts:

(1) $Cl_{nu} = (S) + (\{0; C\}) + P$

(2) $Cl_{per} = (Tp) + (T) + (L) + (Acc) + (R)$

The clause periphery (Cl_{per}) need not be considered further but the clause nucleus (Cl_{nu}) will have to be restated in terms of clause type. The predicate tagmeme will then have to be examined with reference to further sub-classification.

6.2 Transitive versus intransitive versus equational - The clause nucleus as presented in the preceding section must now be restated in terms of tagmeme potential and manifesting class of the predicate tagmeme. The transitive clause nucleus includes optional subject and object tagmemes and the transitive manifestation of the predicate

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tagmeme; the intransitive clause nucleus includes only an optional subject tagmeme and the intransitive manifestation of the predicate tagmeme; and the equational clause nucleus includes an optional subject tagmeme and either a complement tagmeme and an optional predicate tagmeme with equational manifestation or simply the equational manifestation of the predicate tagmeme. This may be stated formally as follows:

$$Cl_{nu} = (S) + (\{O; C\}) + P$$

$$Cl_{nu} \longrightarrow \{Cl_{nu-tr}; Cl_{nu-intr}; Cl_{nu-eq}\}$$

$$P \longrightarrow \{P_{tr}; P_{intr}; P_{eq}\}$$

$$\{Cl_{nu-tr}; Cl_{nu-intr}; Cl_{nu-eq}\} = (S) + (\{O; C\} + \{P_{tr}; P_{intr}; P_{eq}\} \longrightarrow$$

(1) $Cl_{nu-tr} = (S) + (O) + P_{tr}$

(2) $Cl_{nu-intr} = (S) + P_{intr}$

(3) $Cl_{nu-eq} = (S) + \{C + (P_{eq}); P_{eq}\}$

6.3 Final versus non-final and subjunctive versus dependent - The interaction of the final-non-final and subjunctive-independent oppositions is such that they are best treated together. The differences between the four clause types represented by the intersecting of these components are marked by the form of the predicate tagmeme manifestation and by external distribution.

Final clauses occur sentence finally and the manifestation

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of the predicate tagmeme must occur with a mood suffix. Non-final clauses occur either non-finally in the sentence or as manifestations of some non-predicate tagmeme and hence non-finally with a clause.

Subjunctive final clauses are marked by the predicate manifestation occurring with the beta person series. Semantically the action of the subjunctive final clause is contingent upon some other action. Distributional restrictions within the paragraph have not been fully studied but there seems to be evidence that these will differ from those of the independent final clause.

$$S.FCl = P:vb + \beta + md$$

Independent final clauses are marked by the predicate manifestation occurring with the alpha person series.

$$I.FCl = P:vb + \alpha + md$$

Subjunctive non-final clauses are those clauses which occur as manifestations of a non-predicate tagmeme. These have been indicated in the preceding chapter as optional rewrites of the appropriate word level manifestations. They are marked by the occurrence of a noun or nominal suffix with the verb manifestation of their predicate tagmemes, as appropriate for the tagmeme which they are manifesting.

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$$S.NFCl = P{:}vb + per + tg^{1}$$

Independent non-final clauses occur in multiple clause sentences and are marked by the occurrence of relational indicating suffixes or suffix configurations as will be specified in the next chapter.

$$I.FCl = P{:}vb + per + rel$$

A transitive or intransitive clause may be either independent final or non-final or subjunctive final or non-final. However only those equational clauses which have a predicate tagmeme and whose predicate tagmeme is manifested by a verb or verb phrase have the potential for final versus non-final and subjunctive versus independent distinctions. Equational clauses which do not have a predicate tagmeme or whose predicate tagmeme is manifested by a nominal word or phrase may not occur non-finally and there is no subjunctive versus independent distinction.

6.4 Clause types illustrated by selective examples – The following matrix summarize the intersecting of these various clause types as distinguished by the distinctive manifestations of their predicate tagmemes.

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[1]. Tagmeme indicating noun or nominal suffix.

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	Transitive $P:vb_{tr}$	Intransitive $P:vb_{intr}$	Equational $P:vb_{eq}$
Final			
Subjunctive	$vb_{tr} + \beta + md$	$vb_{intr} + \beta + md$	$vb_{eq} + \beta + md$
Independent	$vb_{tr} + \alpha + md$	$vb_{intr} + \alpha + md$	$vb_{eq} + \alpha + md$
Non-Final			
Subjunctive	$vb_{tr} + per + tg$	$vb_{intr} + per + tg$	$vb_{eq} + per + tg$
Independent	$vb_{tr} + per + rel$	$vb_{intr} + per + rel$	$vb + per + rel$

Examples will be given of all but the independent non-final clauses which will be illustrated in the next chapter under multiple clause sentences.

6.41 Transitive final clauses

(1) I saw it.

aónaraune. (P:vb) Independent

it-I saw

(2) He gave it to me because of my work.

tiyaániqtabama timikaiye. (R:n + P:vb) Independent

my work-concerning + me-he gave

(3) What are you bringing?

noenaq mame keyeno. (O:pro + P:vp) Independent

what + here-get you come

(4) I am going to positively stuff myself with food.

kema aawaqa naiq naiq onaare. (S:pro + O:n + P:VP) Subjunctive

I + food + eat eat I want

(5) I don't know where he went.

weni koinapaqa kema ima itaraune. (L:LocP + S:pro + P:VP) Independent

his going-place + I + not I heard

(6) A lot of men built the big red house.

ano karogaro namma netuq waayukama taroq uraiye. (O:NP + S:NP + P:VP)

big red house + plenty man + work he did   Independent

(7) Kill the pig in the garden.

poma yopaqa ikamuwo. (O:n + L:loc + P:vb) Independent

pig + garden + you hit

(8) Sing the song once more.

ima mora taoqa tiyo. (O:n + T:TemP + P:vb) Independent

bow + one time + you say

(9) When did they two give you that land?

náaraq taoraqa mi márámá ámikaayo? (T:TemP + O:NP + P:vb)

which time + that ground + you-they gave   Independent

(10) At his coming we will cook a big feast.

weni yinataoqa anón oniqa agayánúnatae. (T:TemP + O:NP + P:vb)

his coming time + big feast + we will cook   Independent

(11) First he peeled the potatoes with a knife.

púnápó kaatopémá púrénae. (I:n + O:n + P:vb) Subjunctive

with knife + potato + he first peeled

(12) We want to eat mushrooms with the women.

aaragóté aráamma nanáátaae. (Acc:n + O:n + P:vb) Subjunctive

with woman + mushroom + we want to eat

6.42 Intransitive final clauses

(1) Help me?

tiwaqnaa uwo. (P:VP) Independent

my-aid you do

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(2) It wants to rain.

aaqá yinénae. (P:VP) Subjunctive

weather it wants to come

(3) The people used to sleep with the animals.

waiwaakara póiyakara waayúkamá waéwaomiye. (Acc:NP + S:n + P:vb)

with wild animals, with domestic animals + man + he used to sleep

(4) Why are you coming?

noetaba keyeno? (R:pro + P:vb)

about what + are you coming

(5) I think the green snake left Kaagu's forest.

yaaéna iraakabaayaama kaagú yaayúqnobáké kourafaniye.

(S:NP + L:LocP + P:vb) Independent

green snake + Kaagu's forest-from + I think he left

(6) The man will return in one month.

waagómá móra wiyoma yauwaré yiniye. (S:n + T:TemP + P:VP)

man + one moon + returning he will come   Independent

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(7) Tomorrow they want to have a discussion over there.

ebíbáqá abayaama watáá watáá onétae. (L:loc + T:t + P:VP)

over there + tomorrow + talk talk + they want to do

6.43 Equational final clauses

(1) There are beans.

aríkoko wáiye. (S:n + P:vb) Independent

beans there are

(2) I have beans.

ketí aríkoko wáiye. (S:NP + P:vb) Independent

my beans + there are

(3) A lot of people were in our garden.

netuq aáráwáámá ketaai yópáqá máiq uraae. (S:NP + L:NP + P:VP)

plenty people + our garden + to be they did   Independent

(4) At the present I have no helper.

My helper is not here now.

ibeqa tiwáqnaagoma íma máiye. (T:t + S:n + P:VP) Independent

now + my-help one + not he is

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(5) Your bed is now in good condition.

oní waiyáárémá íbeqa íráqóne. (S:NP + T:t + P:d)   Independent

your bed + now + is good

(6) Where is Luluai's garden?

turúaani yóumá náakarabiyo? (S:NP + P:p) Independent

Luluai's garden + where is it

(7) The house is big.

anómma naammá. (C:d + S:n) Independent

big + house

naammá anómma. (S:n + C:d) Independent

house + big

naammá anóne. (S:n + P:d) Independent

house + big

naammá anó keiye.

house + big it does (S:n + P:VP) Independent

(8) It is a pig.

pógoma. (C:n) Independent

pig-stative

(9) Were you asleep?

waguráano? (P:vb) Independent

did you sleep-stative

(10) Over there the garden is big.

mibáq yópáqá anó kéiye. (L:loc + S:loc + P:VP) Independent

over there + garden + big is doing

(11) With a knife is alright.

púnápó kanáára íye. (I:n + P:VP) Independent

with a knife + well it does

(12) With a bow he is not afraid.

igáráq wemá áá íkegaiye. (Acc:n + S:pro + P:VP) Independent

with a bow + he + his ear does not burn

(13) The discussion about your pig is finished.

ení pógotaba watáá watáá ánataguraiye. (R:NP + S:NP + P:vb)

your pig-concerning + talk talk + it is finished   Independent

(14) He wants to be big.

anón oginénae. (P:VP) Subjunctive

big + he wants to do

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6.44 Subjunctive non-final clauses

(1) When he is well he will go up and stay at his own home.

karí érakakurai kanaama wen amáápaqa yawainiye.

sickness for him is done time + his-homeland + he will go up and stay

(T:Cl$_{tem}$ + L:loc + P:VP)

(2) He came from where he killed the dog.

iyákómá ikákainapake iráiye.

dog him-he hit place from + he came

(L:Cl$_{loc}$ + P:vb)

(3) The one who is in the garden gave me water.

yópáq máinakoma + nommá tímikaiye.

in the garden he is person + water + me-he gave

(S:Cl$_{sb}$ + O:n + P:vb)

(4) I saw him who took the peanuts.

kemá karipé mataínaqa aónaraune.

I + peanut + he took-person him-I saw

(S:n + O:Cl$_{sb}$ + P:vb)

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(5) I don't know about your being in Kainantu.

kemá kainaatúpaq máanataba íma itaraune.

I + Kainantu-at + you are there-concerning + not I heard

(S:pro + Loc:Cl$_{ref}$ + P:VP)

Chapter 7

SENTENCE STRUCTURE

A sentence is marked by the occurrence of a mood suffix
with a clause, clause segment or sequence of clauses. A final clause
is therefore also a sentence. Since subjunctive non-final clauses
manifest tagmemes as clause constituents they are not constituents
of sentences except through the media of the clauses in which they
occur. A sequence of independent non-final clauses connected by
relational marking suffixes and combinations of suffixes may precede
a final clause in a sentence construction.

$$S = (I.NFC1)^n + FC1$$

The number of non-final clauses which may occur in any
one sentence does not seem to be structurally limited. There may
be some higher level limitations such as the paragraph or discourse
which are not clear at the present stage of analysis.

Two different categories of sentence types will be discussed.
The first includes modal differences and the second relational differences
in multiple clause sentences. The latter is of much greater complexity
and significance. Differences will be stated in terms of the predicate
tagmemes of constituent clause elements.

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7.1 Modal types - Differences in modal sentence types correspond to
the divisions of mood suffixes described in section 2.5. The follow-
ing eight modal types are defined with reference to the mood suffix
or suffixes which occurring with the final clause tagmeme identify
them. Further sub-classification of types is possible but adds nothing
that has not been already dealt with in the description of the mood
suffixes.

Modal type:

    Indicative = Cl-$\underline{e}$

    Assertative = Cl-{$\underline{po}$; $\underline{mibo}$}

    Imperative = Cl-$\underline{o}_2$

    Interrogative = Cl-{$\underline{o}_1$; $\underline{abo} + \alpha + \underline{o}_1$; $\underline{abiyo}$}

    Designatory = Cl-$\underline{miye}$

    Prohibitive = Cl-$\underline{bo}$

    Potential = Cl-$\underline{poa} + \beta$

    Nominal = Cl-{$\underline{ma}$; $\underline{mo}$; $\underline{a}$}

The interrogative sentence type must occur if an interroga-
tive pronoun or pronoun phrase occurs manifesting any clause tagmeme.
Although the type of mood suffix which may co-occur with any given
word or phrase unit is restricted as previously described there are
no other restrictions on the type of sentence which may occur when
it is manifested by a single clause.

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7.2 Multiple clause sentences - The subordination and co-ordination of clauses within a sentence is perhaps the most interesting feature of Usarufa syntax. It is certainly the most difficult to learn. Relationships between clauses are indicated by subtle combinations of features. Features which effect relational changes are: choice of person-subject suffix series or combination of series; tense-aspect opposition or agreement; mood suffix selection; verb phrase constructions; and special relational markers. The full range of semantic significance of combinational possibilities is not yet known. A wide range of subtle differences in the relational significance of various clause sequences is evident but at the present degree of competency in the language it is not possible to go into these finer details. This description will deal with the broader constructional types which these various sequences of clauses manifest. The general sentence formula which was given in the preceding section must now be read with both the final and non-final clauses as obligatory: $I.NFCl^n + FCl$.

Three distinct construction types manifest this still quite general formula. Each type is characterized by a particular manifestation of the final and non-final predicate tagmemes. The three types are:

(1) The future-imperative construction

(2) The present-aorist construction

(3) The suppositional construction

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7.21 The future-imperative construction - The predicate of the final clause of this sentence construction must be manifested by either a verb in the imperative or by one in the future tense. The form of the verb manifesting the predicate of the non-final clause or clauses depends upon whether the action of that clause is conditional or non-conditional and whether the person-subject of the verb is the same or different from the person-subject of the verb manifesting the predicate of the following clause. If the subjects are the same and the action is non-conditional the verb of the first clause will consist of the reduced verb stem and the suffix _ma_; if the action is conditional the form of the first verb will be verb nucleus plus beta person-subject sub-series one. If the subjects are different a complex person-subject suffix combination $\alpha_5 + \beta_1$ occurs with the verb nucleus, the alpha suffix indicating the subject of the given non-final clause and the beta form anticipating the subject of the predicate of the next clause;[1] if the action is conditional an optional conditional suffix (_ma_) may occur following the beta suffix. The formula for the future-imperative construction may be stated as follows:

$$\text{I.NFC1}_{\alpha\text{-}5}^{(n)} + \text{FC1-P:}\{\text{vb}_{fut}; \text{vb}_{imp}\}$$

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[1] It is important to note that the person-subject agreement or anticipation is between the verb person-subject suffixes. This may or may not be the same as the person of the subject tagmemes of the clauses involved.

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The relationship between clauses in a future-imperative construction is that of events in sequence. This is often best translated by 'and', however when an imperative verb occurs in the final clause it may be translated as an infinitive construction.

The following matrix gives the structure of the verb forms which occur as manifestations of the predicate tagmemes of each of the constituent clause types.

Clause:	Independent Non-Final$_{\alpha-5}$		Final
	Non-Conditional	Conditional	
Different Subject	$vb + \overleftarrow{\alpha_5} + \overrightarrow{\beta_1}$	$vb + \overleftarrow{\alpha_5} + \overrightarrow{\beta_1} + (\underline{\underline{ma}})$	$vb_{nu} + \underline{\underline{no}} + per + md$
Same	$rvs + \overleftrightarrow{\underline{\underline{ma}}}$	$vb + \overleftrightarrow{\beta_1}$	$vs + \gamma + \underline{o_2}$

7.22 The present-aorist construction - The predicate of the final clause of this construction type must be either manifested by a verb with a present continuous or aorist tense-aspect morpheme of if the action is conditional by an abilitative verb phrase. The relationship between clauses may be either causal or temporal depending upon the form of the verb manifesting the non-final predicate tagmeme. The structural formula for the construction is:

$$I.NFCl_{\alpha-4;\ 7}^{(n)} \div Fcl-P: \begin{cases} (ke)_{mx} + vb_{nu} + (ra)_{mx} + per + md \\ VP_{do-abil} \end{cases}$$

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If there is a causal relationship between the constituent clauses and the subjects are the same or the action is conditional the form of the verb manifesting the non-final predicate tagmeme will be as follows: reduced verb stem plus beta sub-series one. If the action is non-conditional and the subjects are different the non-final verb form will be: verb nucleus plus the person-subject complex $\alpha_4 + \beta_1$ with the alpha form indicating the subject of the clause with which it occurs and the beta form anticipating the subject to follow.

The actions of temporally related clauses in a present-aorist construction are viewed as having taken place at the same time. This simultaneity of occurrence need not be a specific moment in time but covers a period of time during which the events specified took place. If the subject of the non-final clause is the same as that of the following clause the verb form will be the same as the same-subject form in the future-imperative construction, that is, reduced verb stem plus the suffix ma. If the subjects are different the alpha sub-series number seven occurs with the verb nucleus indicating the subject of the first clause and that a different but unspecified subject is to follow.

The tense component of the tense-aspect affixes occurring with the final clause may be neutralized by those occurring with the non-final clause. The alpha four and alpha seven sub-series seem to indicate a narrative past which may or may not refer to actual past events depending upon the tense-aspect affixes with which they may occur. The time significance of the non-final clause is carried over

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If there is a causal relationship between the constituent clauses and the subjects are the same or the action is conditional the form of the verb manifesting the non-final predicate tagmeme will be as follows: reduced verb stem plus beta sub-series one. If the action is non-conditional and the subjects are different the non-final verb form will be: verb nucleus plus the person-subject complex $\alpha_4 + \beta_1$ with the alpha form indicating the subject of the clause with which it occurs and the beta form anticipating the subject to follow.

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ever to the final clause.

The structure of the verbs manifesting the predicate tagmemes of the constituent clauses of the present-aorist construction is indicated in the following display.

	Non-Conditional	Conditional
Final Clause	$\left\{\begin{array}{l}\underline{ke} + vb_{nu} \\ vb_{nu} + \underline{ra}\end{array}\right\} + per + md$	$VP_{do\text{-}abil}$
Non-Final-Causal: Diff.Subj.	$vb + \overleftarrow{\alpha_4} + \overrightarrow{\beta_1}$	
Same Subj.	$rsv + \overleftrightarrow{\beta_1}$	
Non-Final-Temporal: Diff.Subj.	$vb + \overleftarrow{\alpha_7}$	
Same Subj.	$rvs + \overleftrightarrow{\underline{ma}}$	

7.23 The suppositional construction - There are two types of suppositional constructions, contrary-to-fact and subjunctive. In both types the non-final clause is marked by the suppositional suffix $\underline{raa}$ and the final clause predicate is manifested by either an abilitative or a future verb phrase construction. The structural formula including the verbal manifestations of the constituent predicates is:

$$I.NFC1\text{-}P:vs + \{\alpha_3; \beta_2\} + \underline{raa} + FC1\text{-}P:VP_{do\text{-}abil; fut}$$

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The contrary-to-fact suppositional construction indicates that the supposed action or event is known to contrary to the actual facts of the situation and is marked by the alpha three sub-series. The beta two sub-series marks the subjunctive suppositional construction which indicates that the supposed action or event could possibly occur.

7.3 Illustrative examples of sentence types - The following examples give a sketch of the types of sentence constructions which occur. Translations try to give the English significance of the constructions as simply as possible.

7.31 Modal types:

(1) oé. (Indicative)

Yes.

(2) íkamónúpo. (Assertative)

I will certainly hit it.

(3) eqáao. (Imperative)

No!

(4) ímiye. (Designatory)

No. (It is not able to be.)

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(5) ínarúábíyo? (Interrogative)

Is it a girl?

(6) wagibo! (Prohibitive)

He shouldn't be asleep.

(7) amayúyapoaka. (Potential)

We two may give it to you.

(8) ketiwaamá ayaaqtáaqa. (Nominal)

7.32 Multiple clause sentences.

7.321 Future-imperative constructions:

(1) Future-same-subject-non-conditional

I will peel the sweet potato and eat it.

kemá kamáama púqma nanúne。

I + sweet potato + peel-ma + eat-fut-α-1st-indic

He will pour out the water and drink it。

wemá nommá atíma nániye。

he + water + pour-ma + eat-fut-α-3rd-indic

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(2) Future-different-subject-non-conditional

You tell him and he will come.

t<u>imá</u> <u>mínana</u> <u>yíníye</u>.

talk-ma + him-give-α-2nd-β-3rd + come-fut-α-3rd-indic

He is eating, I'll come later.

<u>we</u> <u>kénainaq</u> <u>anáekaq</u> <u>yenúne</u>.

he + pres.con-eat-α-3rd-β-1st + later + come-fut-α-1st-indic

Later he will come from Ukarampa and we two will go to Kemiyu.

<u>anáekaq</u> <u>wemá</u> <u>ukáraápake</u> <u>kumínaka</u> <u>kemáíyupáq</u> <u>koyuye</u>.

later + he + Ukarampa-from + come down-α-3rd-β-1st dual +

Kemiyu-place + go-fut-α-1st dual-indic

He cooked it, I will eat it.

<u>agatáinaq</u> <u>nanúne</u>.

cook-aorist-α-3rd-β-1st + eat-fut-α-1st-indic

He is cooking it and I will eat it.

<u>kágayainaq</u> <u>nanúne</u>.

pres.con-cook-α-3rd-β-1st + eat-fut-α-1st-indic

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He will cook it and I will eat it.

agayáinaq nanúne.

cook-α-3rd-β-1st + eat-fut-α-1st-indic

(3) Future-conditional

If I die, I die.

áqibo puyéqa puyónúne.

if + die-β-1st + die-fut-α-1st-indic

If I tell him (to) he will cook.

timá mónanama agayániye.

talk-ma + him-give-α-1st-β-3rd-con + cook-fut-α-3rd-indic

If he cries she won't give it to him.

íbiqá yaráinanama iamíniye.

cry + cry-α-3rd-β-3rd-con + neg-him-give-α-3rd-indic

(4) Imperative

I must cook and eat.

agamá naano.

cook-ma + eat-ỷ-1st-imp

Tell him to come!

timá mínana yíno!

talk-ma him-give-α-2nd-β-3rd + come-ỷ-3rd-imp

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If you like, come to my house.

__akáinama__ __ketí__ __naaópaq__ __iyo__.

for you-put-α-3rd-β-2nd-con + my house + come-γ-2nd-imp

I am here, you mustn't be afraid.

__kemá__ __maakáq__ __máunana__ __aáqa__ __igaino__.

I + here + be-α-1st-β-3rd + your-ear + neg-burn-γ-3rd-imp

7.322 Present-aorist constructions:

(1) Present-aorist-causal-different-subject

He hit the two of us so we cried.

__naiyóbaq__ __tikámitaka__ __ibiqá__ __yakáuye__.

before + us-hit-α-3rd-β-1st dual + cry cry-aorist-α-1st dual-indic

He is sick because he ate the snake.

__iraakabayaamá__ __náitana__ __táiyama__ __kákaiye__.

snake + eat-α-3rd-β-3rd + sickness pres con-him-put for-α-3rd-indic

I am sick because that is my punishment for eating.

__ke__ __táako__ __itaq__ __náunana__ __táiyama__ __tikáiye__.

I my-ear-st + do-α-3rd-β-1st + eat-α-1st-β-3rd + sickness

for me-put-α-3rd-indic

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He cooked it so I ate it.

agatáitaq naráune.

cook-aorist-α-3rd-β-1st + eat-aorist-α-1st-indic

He cooked it so I just now ate it.

agayáitaq naráune.

cook-α-3rd-β-1st + eat-aorist-α-1st-indic

He is cooking it so I will eat it.

kágayaitaq naráune.

pres.con-cook-α-3rd-β-1st + eat-aorist-α-1st-indic

He cooked it so I am eating it.

agatáitaq kénaune.

cook-aorist-α-3rd-β-1st + pres.con-eat-α-1st-indic

(2) Present-aorist-causal-same-subject

He is dead so he does not talk to me.

pukuréna timá ítimiye.

die-st-aorist-β-3rd + talk-ma + neg-me-give-∅-3rd-indic

If I had not peeled it I would not be able to eat it.

náiyóbaq íma puréq ínanaa únae.

before + not + peel-β-1st + neg-eat-fut-β-1st + do-α-1st-abil

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(3) Present-aorist-temporal-different-subject

When he hit us two we did not cry.

naíyóbaq tikámimma ibiqá iyakauye.

before + us-hit-α-3rd + cry neg-cry-aorist-α-1st dual-indic

If he comes you will be able to see him then.

we kumímma e aónane ónae.

he come down-α-3rd + you + him-see-fut-β-2nd + do-α-2nd-abil

When he cooked it I ate it.

agatáimma naráune.

cook-aorist-α-3rd + eat-aorist-α-1st-indic

When he cooked it I was eating it.

agatáimma kénaune.

cook-aorist-α-3rd + pres.con-eat-α-1st-indic

When he cooks I eat.

agayáimma naráune

cook-α-3rd + eat-aorist-α-1st-indic

I will eat when he is cooking.

kágayaimma naráune.

pres.con-cook-α-3rd + eat-aorist-α-1st-indic

(4) Present-aorist-temporal-same-subject

If I cook it I will be able to eat it at that time.

ke agamá ke nanáá únae.

I + cook-ma + I + eat-fut-β-1st-abil

When he cut his hand he did not cry.

ayáama káráma ibiqá íyakaiye.

his-hand + cut-ma + cry neg-cry-aorist-α-3rd-indic

7.33 Suppositional constructions:

(1) Contrary-to-fact-suppositional

If I had seen it (but I didn't) I would know.

aónaunaraa ítanaa únae.

it-see-α-1st-supp + hear-fut-β-1st + do-α-1st-abil

If I had not eaten it (but I did) I wouldn't be sick.

aqibo íma náunaraa táiyama ítikane íne.

if + not + eat-α-1st-supp + sickness neg-for me-put-fut-β-3rd +

do-α-3rd-abil

If you don't cook (but you do) he won't eat.

aqibo íagayaanaraa ínane íniye.

if + neg-ccok-α-2nd-supp + neg-eat-fut-β-3rd + do-fut-α-3rd-indic

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If I had a car (but I don't) I could go to Goroka.

keti káari wáikakaa károkapaq koonáá unae.

my car + be-α-3rd-supp + Goroka + go-fut-β-1st + do-α-1st-abil

(2) Subjunctive-suppositional

If you don't cook he won't eat.

aqibo iagayeraa inane iniye.

if + neg-cook-β-2nd-supp + neg-eat-fut-β-3rd + do-fut-α-3rd-indic

If he comes I will be able to see him.

we yenaraa ke aonanaa unae.

he + come-β-3rd-supp + I + him-see-fut-β-1st + do-α-1st-abil

If I go I can eat.

aqibo ke wekaraa nanáá unae.

if + I + go-β-1st-supp + eat-fut-β-1st + do-α-1st-abil

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Chapter 8

MORPHOPHONEMICS

Morphophonemic rulœs are divided into five categories:
(1) rules which deal with morphophonemic changes effected by person
affixes;   (2) rules which deal with tone placement and perturbation;
(3) rules pertaining to changes effected by the pervasive system of
morphophonemic classification which affects morphemes of all classes;
(4) general rules which deal with miscellaneous phonemic changes re-
sulting from combinations of specific phonemes either wherever the
combination occurs or in specific morphemic environments; and (5) rules
for the removal of symbols and signs and for orthographic changes.

The order in which the rules have been given is in general
the order in which they should be applied. The order of application
between types of rules is usually more important than the order of
rules within any one type. In some instances the order of applica-
tion will not make a significant difference in the results. The order
of application in noun constructions is much less important than in
verb constructions.

The rules presented here will undoubtedly need to be added
to and revised as more data come to hand, however they seem to be
sufficient to account for a significantly high percentage of the
material which this grammar will generate. The area most in need of
further work is the area of tone placement on verbal forms.

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The following symbols and abbreviations have been used in the specification morphophonemic rules.

v	any vowel.	x	any grammatically permitted morpheme or morpheme sequence.
c	any consonant.		
v́	vowel with high tone.	y	any other grammatically permitted morpheme or morpheme sequence.
v̀	vowel with low tone.		
ć̗	each succeeding vowel in the word is high.	{x́: ý}	all vowels of x or y are high.
c̗̀	each succeeding vowel in word is low.	{x̀; ỳ}	all vowels of x or y are low.
##{v; c}	word initial.	vs	verb stem.
#{v; c}	morpheme initial.	ns	noun or nominal stem.
{v; c}#	morpheme final.	d	dual.
{ }	alternative choices.	pl	plural.
⟨ ⟩	word unit.	sg	singular.
[ ]	phrase unit.	1st	first person.
⟨x-y⟩	complex stem.	2nd	second person.
⟨x + y⟩	inflection.	3rd	third person.
( )	optional	→	rewrite as
		;	or

8.1 Alpha-beta-gamma-delta rules - The rules given here are those
for changes effected by person affixes. They will be presented under
five categories: (1) General rules which apply either to more than
one person series type or to more than one morphemic environment;
(2) Alpha rules which apply to specific alpha morphemes and specific
morphemic environments; (3) Beta rules which apply to specific beta
morphemes and specific morphemic environments; (4) Gamma rules which
apply to specific gamma morphemes and specific morphemic environments;
and (5) Delta rules which apply to changes effected by delta morphemes.

8.11 General person-subject rules:

(1) x + {α-x + na; β-x} + mibo ⟶ x + {α-x + na; β-x} + ibo

(2) v# + {β-x; ta; ts$_{asp}$; ro} ⟶ e + {β-x; ta; ts$_{asp}$; ro}

(3) vs-{e; o }# + no + α-{2nd; 3rd} ⟶ vs-i + no + α-{2nd; 3rd}

(4) x + {no; ne} + {α; β}-d ⟶ x + {yo; ye} + {α; β}-d

(5) x-a# + {α; γ}-{#c; ∅} ⟶ x-aa + {α; γ}-{#c; ∅}

(6) x-{e; o} + α-#u ⟶ x- + α-u

(7) x-{e; o}# + {α; γ}-#i ⟶ x- + {α;γ}-i

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(8) α-{xV; xN; xQ} + β-x $\longrightarrow$ α-x + β-x

8.12 Alpha rules (α-rules):

(1) α-únataV + po $\longrightarrow$ α-únataiV + po

(2) α-únana + na + {e; ibo} $\longrightarrow$ α-únana + ta + {e; ibo}

(3) α-inaN + poa + β-na $\longrightarrow$ α-iN + poa + β-na

(4) α-inaN + raa $\longrightarrow$ α-ikaN + raa

(5) β-taaV + abo + α-únataV + o $\longrightarrow$ β-taaV + abo + α-úN + o

(6) α-sg + na + ibo $\longrightarrow$ α-sg + q + ibo

(7) vs-{e; o}# + α_5-ena $\longrightarrow$ vs- + ina

(8) vs-a# + α_5-ena $\longrightarrow$ vs- + ena

8.13 Beta rules (β-rules):

(1) {ne; ye}$_{fut}$ + β-1st $\longrightarrow$ {naa; yaa} + β-1st

(2) β-ϕQ$_{1sg}$ + abiyo $\longrightarrow$ β-ϕQ + iyo

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8.14 Gamma rules (γ-rules):

(1) vs-{e̱; o̱}# + γ-∅V ⟶ vs-{i̱; u̱} + γ-∅V

(2) {vs + ko̱; vs-o̱o̱#} + γ-∅V ⟶ {vs + ka̱; vs-o̱a̱} + γ-∅V

8.15 Delta rules (δ-rules):

(1) ti̱-δo̱iQl$_{face}$ ⟶ o̱ti̱Ql

(2) {ti̱; yi̱}-δo̱-vs ⟶ {ti̱m; yi̱m}-δo̱-vs

(3) {ti̱; yi̱}-δ#v̱ ⟶ {ṯ; y̱}-δv̱

(4) a̱-δ#{u̱; i̱}-vs ⟶ {u̱; i̱}-vs

(5) a̱-δ#a̱x ⟶ a̱x

(6) {a̱; yi̱}-δns$_1$-o̱V# ⟶ {a̱; yi̱}-δns$_1$-o̱V + a̱V

(7) {a̱; yi̱}-δns$_1$-{u̱; a̱; i̱}V# ⟶ {a̱; yi̱}-δns$_1$-{u̱; a̱; i̱}V + o̱V

8.2 Morphotonemic rules - This section deals with rules of tone placement and perturbation. Nominal stems are classed as either tone type one (1) or tone type two (2). Verb stems may be either 1, 2 or tone type three(3). The rules of tone placement and change for nomininal constructions are much simpler than those for verbal constructions and have been checked much more thoroughly. The study of tone placement and change is in beginning stages for verbal constructions and adequate data is not available to make an exhaustive statement of the rules at this time. The rules which are presented here, however, have been checked carefully and represent a statement of tone placement for the most critical forms for determining verb stem classes and sub-classes on the morphophonemic level. Other verbal constructions seem to be much more uniform in the types of tone patterning which occur but because it has not been possible to check these as thoroughly as the forms represented here the rules for such constructions have been omitted. The rules for tone place-ment which are given for verbal constructions represent over three thousand verbal forms.

The morphotonemic rules will be divided into three major categories: Rules for constructions with verb stems of tone types 1 and 2; rules for constructions with verb stems of tone type 3; and rules for constructions with nominal stems and with delta prefixes.

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8.21 Rules for constructions with verb stems of tone types 1 and 2 –
In these constructions the final (v)vcv or vv of the verb stem are
the crucial syllables in determining and stating the rules for tone
placement. In the citation of verb stems these vowels are either
unmarked or marked with the high tone symbol (/). This marking of
the citation forms represents a type of sub-classification and is
not indicative of the innate tone of the verb stem itself. Other
marks of significance to the morphotonemic rules are the imperative
tone sub-types (a and b) and the morphophonemic sub-classification
symbols (V; N; Q). Various combinations of these factors plus the
tone type of the verb stem and the morphemic construction which occurs
affect the tone placement. For any given rule some one or more
of these factors may be insignificant in which case the symbol re-
presenting that factor will be omitted. For example:

vs1 – any verb stem of type 1.

vs – any verb stem.

vsN(R) – any verb stem of morphophonemic class N.

vs(R)a – any verb stem of sub-class a.

The six categories of constructions which will be accounted
for here are: (1) Alpha present tense third person singular; (2) Gamma
second person singular imperative; (3) Gamma second person dual imper-
ative; (4) Alpha future tense forms; (5) Alpha aorist forms; and
(6) stative forms.

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8.211 Alpha present tense third person singular:

$$\{vs1; \ vs2\} + \alpha\text{-}\underline{i}V + md$$

(1) $\left\{ \begin{array}{l} vs\{V1; \ N(R); \ Q(R)\}\text{-}\underline{vcv}\# \\ vs\{V1; \ N2R\}\text{-}\underline{v\acute{c}v}\# \end{array} \right\} \longrightarrow vs\{V; \ N(R); \ Q(R)\}\text{-}\underline{v\acute{c}v}$

(2) $vsV2\text{-}\underline{vcv}\# + \alpha\text{-}\underline{i}V + \{\underline{e}; \ \underline{o}\} \longrightarrow vsV\text{-}\underline{\grave{v}c\grave{v}} + \grave{i}V + \{\acute{e}; \ \acute{o}\}$

(3) $vs\{V1; \ N(R); \ Q(R)\}\text{-}\underline{v\acute{c}v}\# + \alpha\text{-}\underline{i}V \longrightarrow vs\{V; \ N(R); \ Q(R)\}\text{-}\left\{ \begin{array}{l} \underline{v\acute{c}v} + \grave{i}V \\ \underline{v\acute{c}} + \acute{i}V \end{array} \right\}$

(4) $\{vsV1\text{-}\underline{v\acute{c}v}\#; \ vsQ1R\text{-}\underline{vcv}\#\} + \alpha\text{-}\underline{i}V \longrightarrow vs\{V; \ QR\}\text{-}\left\{ \begin{array}{l} \underline{v\acute{c}\grave{v}} + \grave{i}V \\ \underline{v\acute{c}} + \acute{i}V \end{array} \right\}$

(5) $vsN2R\text{-}\underline{v\acute{c}v}\# \longrightarrow vsNR\text{-}\underline{v\acute{c}}$

(6) $\{vsQ2R\text{-}\underline{v\acute{c}v}\#; \ vsQ2R\text{-}\underline{vcv}\#\} \longrightarrow vsQR\text{-}\underline{v\acute{c}\grave{v}}$

8.212 Gamma second person singular imperative:

$$\{vs1; \ vs2\}\{a; \ b\} + \gamma\text{-}\emptyset V + \underline{o}$$

(1) $vs(R)a + \gamma\text{-}\emptyset V + \underline{o} \longrightarrow vs(R) + \emptyset V + \underline{\acute{o}}$

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(2) $vs(R)b + \gamma\text{-}\emptyset V + \underline{o} \longrightarrow v\grave{s}(R) + \emptyset V + \underline{\grave{o}}$

(3) $vsQlR\text{-}\underline{vcv}\# + \gamma\text{-}\emptyset V + \underline{o} \longrightarrow vsQR\text{-}\underline{\acute{vcv}} + \emptyset V + \underline{\grave{o}}$

8.213 Gamma second person dual imperative:

$$vs + \gamma\text{-}\underline{ka}V + \underline{o}$$

(1) $\begin{Bmatrix} vs\text{-}\{\underline{vcv}; \ \underline{\acute{vcv}}; \ \underline{\acute{vcv}}\# \} \\ vsVl\text{-}\underline{\acute{vcv}}\# \end{Bmatrix} + \gamma\text{-}\underline{ka}V \longrightarrow vs\text{-}\underline{\acute{vcv}} + \gamma\text{-}\underline{\grave{ka}}V$

(2) $\{vsN; \ vsQ\}2R\text{-}\underline{\acute{vcv}}\# \longrightarrow vs\{N; \ Q\}R\text{-}\underline{\acute{vcv}}$

(3) $vs\text{-}\underline{vv}\# \longrightarrow vs\text{-}\underline{\acute{vv}}$

(4) $\{vs\text{-}\underline{\acute{e}}\#; \ vs\text{-}\underline{\acute{o}}\#\} + \gamma\text{-}\underline{ka}V \longrightarrow \{vs\text{-}\underline{\hat{e}}; \ vs\text{-}\underline{\hat{o}}\} + \gamma\text{-}\underline{\grave{ka}}V$

8.214 Alpha future tense:

$$vs + \underline{no} + \alpha + md$$

(1) $vs\text{-}\underline{v}\# + \underline{no} + \alpha \longrightarrow vs\text{-}\underline{\acute{v}} + \underline{\acute{no}} + \alpha$

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8.215 Alpha aorist:

$$vs + \underline{ra} + \alpha + md$$

(1) $\left\{\begin{array}{l} \{vsQ1R; \ vsN1R-\underline{cvcv}\#\} \\ vsV1-\{\underline{vcv}; \ \underline{vcv}\}\# \end{array}\right\} + \underline{ra} \longrightarrow vs\{V; \ Q; \ N\}(R)-(\underline{c})\underline{vcv} + \underline{ra}$$

(2) $vsV1-\{\underline{vcv}; \ \underline{vcv}\}\# + \underline{ra} \longrightarrow vsV-\underline{vcv} + \underline{ra}$

(3) $\left\{\begin{array}{l} \{vsV2; \ vsQ2R\} \\ vsN2R-\{\underline{vcv}; \ \underline{vcv}\}\# \end{array}\right\} + \underline{ra} \longrightarrow vs\{V; \ Q; \ N\}(R)-\underline{vcv} + \underline{ra}$

(4) $vsN2R-\{\underline{vcv}; \ \underline{vcv}\}\# + \underline{ra} \longrightarrow vsNR=\underline{vcv} + \underline{ra}$

(5) $vsN1R-\{\underline{vvcv}; \ \underline{vvcv}\}\#+ \underline{ra} \longrightarrow vsNR-\underline{vvcv} + \underline{ra}$

8.216 Stative forms:

$$vs + \underline{koV}$$

(1) $vs\{N; \ Q\}(R)-\{\underline{vcv}; \ \underline{vcv}; \ \underline{vvcv}\}\# \longrightarrow vs\{N; \ Q\}(R)-(\underline{v})\underline{vcv}$

(2) $vs\{N; \ Q\}(R)2-\underline{vcv}\# \longrightarrow vs\{N; \ Q\}(R)-\underline{vcv} + \underline{koV}2$

(3) $vsV1-\underline{vcv}\# \longrightarrow vsV-\underline{vcv}$

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8.22 Rules for constructions with verb stems of tone type 3 - The

high tone nucleus of verbal constructions with verb stems of type 3

always occurs on the syllables of the verb stem and is usually on the

same syllable or syllables in all or most of the various types of

constructions. This differs from the heavy influence of morphemic

environments characteristic of constructions with verb stems of tone

types 1 and 2. Syllable of verb stems of tone type 3 may be marked

in one of the following ways:

(1) Stem unmarked (#(c)v).

(2) A medial vowel marked for high tone (-cv́-).

(3) An initial vowel marked for high tone (#(c)v́).

(4) A final vowel marked for high tone (cv́#)

(5) The consonant of a penultimate syllable marked with high tone
      (#vć̰vcv#).

(6) The consonant of a final syllable marked with high tone (ć̰v#).

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8.221 Unmarked stems (#(c)v):

(1) #(c)v-vs3b + γ-∅V + o ⟶ (c)v̀-vs̀ + ∅V ♦ ò

(2) #(c)v-vs3b + x ⟶ (c)v́-vs + x

(3) #(c)v-vs3 + x ⟶ (c)v́-vs + x

8.222 Stems with marked medial vowel (-cv́-):

(1) vs-cv́-3 + x ⟶ vs-cv́- + x

8.223 Stems with marked initial vowel (#(c)v́):

(1) #(c)v́-vs3 + {γ-∅V; no} ⟶ (c)v́-vs + {∅V; nò}

(2) #(c)v́-vs3 + x ⟶ (c)v́-vs̀ + x

8.224 Stems with marked final vowel (cv́#):

(1) vs3-cv(c)vcv́ + γ-kaV ⟶ vs-cv́(c)v́(cv́) + kaV

(2) vs3-cv(c)vcv́# + x ⟶ vs-cv́(c)v̀(cv̀) + x

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8.225 Stems with marked consonant of penultimate syllable ($\#\acute{vcvcv}\#$):

(1) $\underline{v\acute{c}vcv}3 + \underline{no} \longrightarrow \underline{v\grave{c}v\acute{c}\acute{v}} \pm \underline{n\grave{o}}$

(2) $\underline{v\acute{c}vcv}3 + x \longrightarrow \underline{v\grave{c}v\acute{c}\grave{v}} + x$

8.226 Stems with marked consonant of final syllable ($\underline{\acute{c}v}\#$):

(1) $(\underline{v}(\underline{c})\underline{v})\underline{cv\acute{c}v}3 + \{\gamma\text{-}\underline{kaV};\ \alpha\} \longrightarrow (\underline{\grave{v}}(\underline{c})\underline{\acute{v}})\underline{cv\acute{c}v} + \{\underline{kaV};\ \alpha\}$

(2) $(\underline{v}(\underline{c})\underline{v})\underline{cv\acute{c}v}3 + x \longrightarrow (\underline{\grave{v}}(\underline{c})\underline{\acute{v}})\underline{cv\grave{c}\grave{v}} + x$

$\underline{a\grave{a}\acute{c}v\grave{c}\grave{v}} \longrightarrow \underline{\acute{a}\acute{a}c\grave{v}\grave{c}\grave{v}}$

8.23 Constructions with nominal stems and/or delta prefixes:

(1) $\{\langle x\text{-}y\rangle_2;\ \langle x + y\rangle;\ [x + y]_1\}$

$x1 + \{y1;\ y2\} \longrightarrow x + \grave{y}1$
$x2 + \{y1;\ y2\} \longrightarrow x + \acute{y}2$

(2) $\langle x\text{-}y\rangle_1$

$\{x1;\ x2\} + y1 \longrightarrow x + y1$

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$$\{x1;\ x2\} + y2 \longrightarrow x + y2$$

$$x\text{-}\acute{\underline{v}}\# + y2 \longrightarrow x\text{-}\underline{v} + y2$$

(3) $\{\underline{ti};\ \underline{vi};\ \underline{a}\}\text{-}\acute{\delta}x \longrightarrow \{\underline{ti};\ \underline{vi};\ \underline{a}\}\text{-}\delta x$

(4) $\{\underline{t};\ \underline{v}\}\text{-}\delta\#\underline{v}\text{-}x \longrightarrow \{\underline{t};\ \underline{v}\}\text{-}\delta\underline{v}\text{-}x$

8.3 Morphophoneme rules (N, Q and V rules) _ All of the morphemes of
the language are classified as belonging to one of three morphophonemic
classes (N, Q, or V)[1]. The criteria for determining the morphophonemic
class of any morpheme are types of morphophonemic phenomena which occur
contiguously following that morpheme within the same word or descriptive
phrase. The rules related to this system of classification will be
given in section 8.33. These rules which seem to have diachronic as
well as synchronic significance effect allomorphic varients for most
morphemes of the language. In specific morphemic environments the
morphophonemic class of a given morpheme may be changed or the systemic
rules of morphophonemic change neutralized. These environments will be
specified in section 8.31. A few morphophonemic changes and/or allomorphic
varients seem unrelated to the over-all system of change and are limited
to a few morphemic environments. These will be specified in section 8.32.

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[1]. A few morphemes have not been classified because the evidence from
crucial morphophonemic environments is lacking at the present time.

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8.31 Class changing and neutralizing rules:

$$(1) \quad \begin{cases} vs\{V; \ N; \ Q\} + \{ts_{non\text{-}\underline{ra}}; \ per\} \\ vs\{N; \ Q\} + \{\underline{ti}; \ \underline{yi}\}\text{-}\delta\underline{ka} \end{cases} \longrightarrow \quad vs + \begin{cases} \{ts_{non\text{-}\underline{ra}}; \ per\} \\ \{\underline{ti}; \ \underline{yi}\}\text{-}\delta\underline{ka} \end{cases}$$

$$(2) \quad \alpha\{V; \ N; \ Q\} + \beta \longrightarrow \alpha + \beta$$

$$(3) \quad x\{V; \ N; \ Q\} + \underline{b} \longrightarrow x + \underline{b}$$

$$(4) \quad vsQ + \underline{ko} \longrightarrow vsV + \underline{ko}$$

$$(5) \quad x\{V; \ N; \ Q\} + \{\underline{ka}Q; \ \underline{ke}V\} \longrightarrow xV + \{\underline{ka}Q; \ \underline{ke}V\} \quad \text{(locatives)}$$

$$(6) \quad x\{V; \ N; \ Q\}\#\# \longrightarrow x$$

8.32 Extra systemic changes:

$$(1) \quad vsQ + \underline{ra} \longrightarrow vs + \underline{ta}$$

$$(2) \quad vsV + \delta\underline{ka} \longrightarrow vs\text{-}\underline{ma} + \delta\underline{ka}$$

$$(3) \quad vsQ + \underline{a}\text{-}\delta\underline{ka} \longrightarrow vs + \underline{ya}\text{-}\delta\underline{ka}$$

$$(4) \quad vsN + \underline{a}\underline{m}\delta\underline{ka} \longrightarrow vs + \underline{ra}\text{-}\delta\underline{ka}$$

(5) $\underline{poa}$ + $\underline{taaV}$ $\longrightarrow$ $\underline{poa}$ + $\underline{ta}$

(6) $\underline{ke}V2$ + $\underline{ni}$ $\longrightarrow$ $\underline{ke}V2$ + $\underline{ti}$

(7) $\underline{ketaa}V2$ + $\underline{ti}$ $\longrightarrow$ $\underline{ketaa}V2$ + $\underline{i}$

(8) $pro.s_{d;\ p;\ loc-sg}$ + $\underline{ni}$ + $\underline{na}$ $\longrightarrow$ $pro.s$ + $\underline{ni}$ + $\underline{minae}$

(9) xV + $\underline{rarata}$ $\longrightarrow$ {$\underline{rata}$; $\underline{tarata}$}

$\quad\quad vb$ + $\underline{rarata}$ $\longrightarrow$ $\underline{tarata}$

(10) pro_{int} + $\underline{abiyo}$ $\longrightarrow$ $pro_{int}Q$ + $\underline{abiyo}$

8.33 Systemic changes:

(1) xV + {$\underline{c}$; $\underline{v}$} $\longrightarrow$ x + {$\underline{c}$; $\underline{v}$}

(2) x{N; Q} + {$\underline{p}$; $\underline{t}$; $\underline{k}$} $\longrightarrow$ x + {$\underline{qp}$; $\underline{qt}$; $\underline{qk}$}

(3) x{N; Q} + $\underline{r}$ $\longrightarrow$ x + $\underline{qk}$

(4) xN + {$\underline{w}$; $\underline{y}$} $\longrightarrow$ x + {$\underline{qk}$; $\underline{qt}$}

(5) xQ + {w; y} $\longrightarrow$ x + {qw; qy}

(6) $x\bar{N}$ + {m̲; n̲} $\longrightarrow$ x + {m̲m̲/m̲; n̲n̲/n̲}

$$\left.\begin{cases} \text{per-}x\bar{N} + \{m̲; n̲\} \\ [\langle ns\bar{N}\rangle + \langle\{m̲; n̲\}\rangle]_1 \end{cases}\right\} \longrightarrow x + \{m̲; n̲\}$$

(7) xQ + {m̲; n̲} $\longrightarrow$ x + {q̲m̲/q̲; q̲n̲}

$$\left.\begin{cases} \langle nsQ + m̲\rangle \\ \text{per-}xQ + m̲ \end{cases}\right\} \longrightarrow x + q̲$$

(8) $x\bar{N}$ + v̲ $\longrightarrow$ x-n̲ + v̲

(9) xQ + v̲ $\longrightarrow$ x-{r̲; q̲} + v̲

$$\left.\begin{cases} \langle nsQ + v̲\rangle \\ \text{per-}xQ + \{e̲; o̲; a̲\} \end{cases}\right\} \longrightarrow x-r̲ + v̲$$

$$\left.\begin{cases} [\langle nsQ\rangle + \langle v̲\rangle]_1 \\ \text{per-}xQ + i̲ \end{cases}\right\} \longrightarrow x-q̲ + v̲$$

8.4 Rules of general change:

(1) vsR-{v̲c̲v̲; v̲v̲}# + {vc; r̲a̲} $\longrightarrow$ vs-v̲ + {vc; ra}

(2) vs-{o̲; e̲}# + {vc; r̲a̲} $\longrightarrow$ vs-{u̲; i̲} + {ve; r̲a̲}

(3) vs-m̲a̲ + y̲i̲-δka̲ $\longrightarrow$ vs-m̲a̲ + i-δka̲

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(4) $\underline{a} + \underline{ax} \longrightarrow \underline{a} + x$

(5) $\underline{uwu} + \underline{o} \longrightarrow \underline{u} + \underline{o}$

(6) $\underline{u} + \underline{o} \longrightarrow \underline{uw} + \underline{o}$

(7) $\underline{i} + \{\underline{e}; \underline{o}\} \longrightarrow \underline{iy} + \{\underline{e}; \underline{o}\}$

(8) $\underline{uy} + \underline{i} \longrightarrow \underline{u} + \underline{i}$

(9) $\cancel{\#\#y\grave{\underline{i}}} \div x \longrightarrow \underline{i} + x$

(10) $\underline{ke}\acute{V}_{ts} + vs\text{-}\cancel{\#\underline{a}} \longrightarrow \underline{k} + \underline{a}$

8.5 Rules of orthographic change and removal of signs and symbols –
The rules of this section should be the last to be applied.

(1) $\{[(\langle x\rangle + \langle\{k; p\}]_1; \langle x + \{k; p\}\rangle\}$
$$\{k; p\} \longrightarrow \{g; b\}$$

(2) $\{qk; qp\} \longrightarrow \{k; p\}$

(3) $\grave{\underline{y}} \longrightarrow \underline{y}$

(4) $\{\alpha; \beta; \gamma\}$-x $\longrightarrow$ x

(5) x-δy $\longrightarrow$ x-y

(6) x-y $\longrightarrow$ xy

(7) x + $\emptyset$ $\longrightarrow$ x

(8) $\langle$x + y$\rangle$ $\longrightarrow$ xy

(9) $\{[x + y]; [\langle x\rangle + \langle y\rangle]\}$ $\longrightarrow$ x y

(10) $\acute{c}vcv(cv)^n$ $\longrightarrow$ $cv\acute{c}v(cv)^n$

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APPENDIX

Abbreviations

abl = abilitative

Acc = Accompaniment tagmeme

accom = accompaniment

act = active

ad = adverbial

ani = animate

asp = aspect

assert = assertative

C = Complement tagmeme

$\underline{c}$ = consonant

Cl = clause

coll = collective

conj = conjunction, conjunctive

d = descriptive, dual

desig = designatory

dir = directional

DscP = Descriptive phrase

eq = equational

ex = exclusive

foc = focus

I = Instrument tagmeme

IdP = Idiomatic phrase

imper = imperative

impl = impersonal

inani = inanimate

indic = indicative

instr = instrument

inter = interrogative

L = Location tagmeme

loc = locative, locational

loc_d = directional stems

loc_p = positional stems

loc_{pn} = place names

loc_{sp} = location in space

loc_t = location in time

LocP = Locative phrase

md = mood

n = noun

nb = numeral, number

neg = negative

nf = noun, nominal formative

nom = nominal

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NP = noun phrase

ns = noun stem

ns_c = common noun stem

ns_d = descriptive stems

ns_{nb} = numeral stem

ns_{nq} = non-quantifiable noun stem

ns_{pn} = personal name

ns_q = quantifiable noun stem

O = Object tagmeme

P = Predicate tagmeme

per = person affixes

pl = plural

pn = personal names

poss = possessive

$poss_{ab}$ = absolute possessive

$poss_{rel}$ = relative possessive

pres.con = present continuous

pro = pronoun

pro.s = pronoun stem

pro_p = personal pronoun

$pro.s_{obj}$ = object pronoun stem

$pro.s_{loc}$ = locative pronoun

pro_{int} = interrogative pronoun

R = Referent-reason tagmeme

r = reduplication

ref = referent

rvs = reduced verb stem

rx = reflexive

S = Subject tagmeme, sentence

sb = substantive

sf.p = substantive suffix potential

st = stative

SynP = Syntactiv phrase

T = Time tagmeme

t = temporal

Tp = Topic tagmeme

tr = transitive

ts = tense-aspect

$\underline{v}$ = vowel

vb = verb

vc = voice

vs = verb stem

VP = Verb phrase

1st = first person

2nd = second person

3rd = third person

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