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GOLIN PHONOLOGY

GORDON AND RUTH BUNN

0. Introduction.

1. Phoneme.

2. Syllable.

3. Word.

4. Phrase.

0. INTRODUCTION

This paper is a description of the phoneme and syllable in Golin.¹ It also deals briefly with the phonological word and phrase. Golin is a sub-dialect of the Marigl dialect of the Dom language and is situated on the south bank of the Marigl River, the boundaries from east to west being the Sua River and the Mo River, respectively. S.A. Wurm divides the Dom language into four dialects: Dom, Marigl, Salt and South Marigl.² This gives a good general picture of the language; however of these dialects there are distinct sub-dialects. In the Marigl dialect alone there are four sub-dialects: Golin, Kia (Sa), Keri, and Gunaa. There are some differences in these sub-dialects on both a segmental and suprasegmental level.

It will be noted that a number of the segmental phonemes have a wide degree of undefineable allophonic variation. These phonemes do not have variation among specific allophones, but rather they have a range of sound within definable limits.

1. PHONEME

There are twenty segmental phonemes in Golin, fifteen consonants: p, t, k, kw, b, d, g, gw, s, w, y, m, n, r, l, and five vowels: i, u, e, a, o.

1.1. Consonants contrast with their phonetically similar counterparts.³

p/b/w/m: pó 'go', bó 'sugar cane', wó 'come', mo 'or'.

t/d/s/n/y: tó 'give', dó 'speak', só 'strike', nó 'eat', yeyó 'put it'.

k/g/kw/gw: kí erino 'are you doing wrong?', gí 'girl', kwí 'new', gwí 'wind'.

r/l: gurungwé 'he is pulling', gulungwé 'he is dead'.

t/r/d/l: sutan 'two', úrá dimúe 'it is soft', dodáí 'corn', korálé 'fowl', kolá 'here'.

1.2. Vowels contrast with their phonetically similar counterparts.

i/e: diní 'fern type', diné 'dead banana leaf'.

o/a: bó 'sugar cane', bá 'moon'.

a/e: arín 'leaf', erin 'trunk of tree'.

o/u: dú 'frog', dó 'speak'.

1.2.1. Stops occur at bilabial, alveolar and velar points of articulation. Distinction is made between voiced and voiceless stops, and at the velar point of articulation there is contrast between labialisation and non-labialisation:

/p/ pírn 'salt', pípolá mugu 'whistle';

/t/ terín 'flea', sutan 'two', táránta 'one';

/k/ keba 'sweet potato', tákal 'what', kalkán 'something';

/kw/ kwí 'new', kwígí bíló 'you whistle';

/b/ bá 'moon', nobé 'edible leaf';

/d/ díí 'pumpkin type', dodáí 'corn', aldé 'where';

/g/ gumán 'nose', digé 'armband', singé 'you hit';

/gw/ gwí 'wind', sígwíné 'ant', sungwé 'he hit'.

Of these phonemes /p/ and /b/ range in point of articulation between bilabial and labiodental positions, and in manner of articulation between stop and fricative. The phoneme /k/ ranges in manner of articulation between stop, affricate and fricative. [k] [kx] [x] [h]. The variation of these allophones is entirely free without any observable conditioning factor. It has been observed that /g/ does not have this same range of variants.

1.2.2. Non-nasal continuants occur at bilabial, alveolar and alveopalatal points of articulation. /w/ voiced bilabial semi-vowel: wén 'very', kewá 'wild cane'; /s/ [s/ʃ] voiceless grooved fricative which has a free range between alveolar and alveopalatal positions: sutan

'two', bánsú 'short'; /y/ voiced alveopalatal semi-vowel: yené 'down below', mayán 'blood'.

1.2.3. Nasal continuants are voiced and contrast at bilabial and alveolar points of articulation. /m/ voiced bilabial nasal: mááíé 'bamboo', simíí 'bow', tárámbi 'type of taro'; /n/ [ŋ] voiced velar nasal occurs preceding velar stop, whereas [n] voiced alveolar nasal occurs elsewhere: nóngaré 'type of tree', naalé 'locu bánsú 'short'.

1.2.4. The two liquids occur at the alveolar position. /r/ voiced alveolar flapped vibrant: more 'blue', bíríín 'ridge pole';⁴ /l/ [ɺ] voiced alveolar flapped lateral occurs inter-vocally, [l̥] voiced alveolar lateral with no distinction made between friction or the lack of it, occurs elsewhere: dulé 'water fern', níbíí eremúé 'he is sick', kulkán 'grass'.

1.3. The five vowels are: /i/ voiced high front unrounded vowel, with a free range from [ɪ] high open tending central to [i] high close; word finally, contiguous to another vowel, and following labialised velar stops, there seems to be no variation, the high close [i] occurring consistently: bíríín 'ridge pole', ibé 'above', ébí 'cassowary', kwígí bííó 'you whistle'. /e/ voiced mid open front unrounded vowel: éró 'do it', diné 'dead banana leaf', mená 'outside'; /a/ [a/ʌ] voiced central vowel which has a free range between low and mid positions, except that only low occurs in the geminate cluster /aa/: abáí 'woman', alá 'inside', gilaá 'night'; /o/ voiced mid open back rounded vowel: onibá 'snake', kobá 'pandanas fruit', bó 'sugar cane', woongwé 'he is digging'; /u/ voiced high open back rounded vowel: sugú 'heart', múrú 'all', úrá dí múé 'it is soft', puúí 'knife'.

2. SYLLABLE

The syllable in Golin has the following features: it has a nucleus as its peak which may be either a simple vowel or a close knit nucleus of vowel plus semi-vowel, it has potential stress placement, it carries one phonemic tone and it has potential consonant margins. Geminate clusters are considered two syllables since each vowel carries a tone and stress may occur on the second vowel: kaán 'his name', kaáí 'pandanas leaf mat'.

2.1. The glides [aⁱ] and [a^u] are close knit syllable nuclei of two

phonemes /ay/ and /aw/ respectively. They act in distribution as single vowels since there are no CC clusters in syllable margins: akawn 'pearl shell' acts as V CVC, that is, /aw/ CV is represented by V. There is contrast between short [aⁱ] and [a^u] glides carrying one emic tone, therefore constituting one syllable, and a sequence of two vowels /a/ and /au/ carrying two tones, which constitute two syllables: káwn 'his foot', kaún 'time', gaynán 'my skin', ul paingwé⁵ 'he is sleeping', gaín 'his skin'.

2.2. Each possible Golin syllable type occurs in isolation as a single syllable word: V í 'you', VC éí 'bow', CV ká 'word', CVC kai 'something'. Each type may occur phonological word initially, medially or finally. Any consonant may begin a syllable but only the consonants /l/, /m/,⁶ and /n/ close syllables. The five vowels and two vowel glides occur in the V position of any syllable type.

Within the word, /l/ and /r/ do not occur initially, and /l/ and /n/ are the only consonants that occur finally. The only restrictions of vowels occurring contiguous to consonants are: (1) /i/ does not follow /y/ and /u/ does not follow /w/; (2) Because of the low frequency of occurrence of the labialised velar stops, /kw/ has been found only preceding /i/ and /gw/ does not precede /u/. Of the 25 possible clusters of two vowels, six: ao, ae, ea, oe, eo, ie, do not occur in the data. Since /l/, /m/ and /n/ are the only consonants that close syllables, consonant clusters are restricted, and the following have been found to occur: lb, ld, lk, lg, ln, mb, nb, nt, nd, nk, ng, ngw, ns.

2.3. Each syllable has one toneme, high or low: kúbá 'stick', kuba 'vegetable type', goíln 'old', góíln 'finished off edge of bag'.

2.3.1. High tone has three allotones, conditioned by its occurrence with stress, or its occurrence on unstressed syllables. Stress occurs on the final high tone of a word, and in the absence of a high, it occurs on the final low.⁷ Rising pitch occurs on stressed closed syllables with low vowels (e,a,o) and on stressed close knit syllables (ay and aw). When these syllables are unstressed, the rising pitch varies with high pitch: puái 'twins', koráy 'mens g-string', mángará 'type of plant', moráyná 'green beetle'. Rising pitch also occurs on high stressed open syllables with low vowels when /n/, /m/, and /y/ are in the following syllables: mayámuga 'type of spear', téno 'you gave'. Otherwise extra high pitch occurs on high stressed syllables, and high pitch on high unstressed syllables: góíln 'old', sígwíné 'ant'. High falling pitch and a lengthened high falling pitch as part of intonation are described in Section 4.

2.3.2. Low tone has three allotones. Mid pitch occurs following high stressed syllables: gomági 'type of sweet potato'. Extra low pitch occurs on low stressed syllables in variation with low pitch: keba 'sweet potato'. Low pitch occurs on low unstressed syllables: milemúe 'he is here'. Low falling pitch as part of intonation is described in Section 4.

2.3.3. In one, two and three syllable words there is full distribution in that each possible tone pattern occurs and the contiguous occurrence of any of these patterns with each other does not cause sandhi. However, sandhi does occur within words, conditioned by suffixation of one class of noun stems and verb stems, and within phrases when descriptives precede nouns. Description of those phenomena is beyond the scope of the present paper.

3. WORD

The phonological word is composed of one or more syllables. Each word carries only one primary stress, the placement of which is determined by the tone pattern of the word as described in section 2.3.1. Thus stress occurs on the final syllable of ówáfé 'bat', onibá 'snake', kawligi 'post', énderín 'fire', ogálá 'woven hat', on the medial syllable of síbági 'sweet potato type', gomági 'type of sweet potato', and the first syllable of ákola 'wild fig tree'. The borders of the phonological word may be determined by potential pause, and stress placement. A stressed low syllable indicates word juncture following that syllable, and a stressed high syllable followed by a high syllable indicates word juncture between the two syllables. ke'ba su'tan 'two sweet potatoes', dí gólin 'the old axe' (axe old). When a low syllable follows a stressed high syllable it is not possible to determine juncture on the basis of stress placement. ákola 'wild fig tree', dí sutan 'two axes' (axe two).

4. PHRASE

A phonological phrase in Golin consists of one or more phonological words with an optional nuclear syllable marked by stress. If the nuclear syllable occurs on a high tone syllable, then the stress is indicated by loudness and a raising of the pitch, whereas if it occurs on a low tone syllable, the stress is indicated by loudness and an optional lowering of the pitch: ná dí bí gólin 'my big old axe' (my axe big old). eri more su'an 'two green trees' (tree green two). Placement of the

nuclear syllable of the phonological phrase is predictable, as it may occur on any word in the phrase adding emphasis to that word, and occasionally it does not occur at all. However on any word it occurs only on the normally stressed syllable of the word: ná dí kamá gólín 'my old black axe' (my axe black old). ná dí kamá gólín 'my old black AXE', ná dí kamá gólín 'my old BLACK axe'.

The post nuclear marginal border may be marked by a ballistic final syllable, voicelessness, length, decrescendo, falling pitch, tenseness, and/or glottal stop, depending on the phonological phrase type. When the post nuclear border of one phrase and prenuclear marginal border of the following phrase are fused together in fast speech, then the border is often marked by an increase in speed of the prenuclear marginal syllables of the second phrase.

4.1. Phonological phrase "Tentative pause" /,/ is signalled by a phrase final ballistic syllable followed by voicelessness: ená, abá|kirú bó|é, *cooked bananas.* (Then, European man European woman together, banana they cooked.)

4.2. "Final pause" /./ is signalled by a phrase final short falling pitch with decrescendo. In a high tone phrase final syllable a high falling pitch with decrescendo would occur, whereas in a low tone phrase final syllable a low falling pitch with decrescendo would occur: ná kabé negé. 'I am eating bananas.' (I banana I am eating.) yá| tá mí|emúe. 'A man is here.' (man one he is.)

4.3. "Tentative pause with excitement" /!/ is signalled on the phrase final syllable by tenseness and lack of voicelessness with an optional glottal stop: duá erunguré pare! duá umfa sire! simúe. 'after they hunted the rats, as the rats came they struck, they hit them.' (rats hunted after! rats as came hit and, they hit.)

4.4. Phonological phrase "Attention getting" /!/ is signalled by length on the phrase final syllable with a gradual lowering of pitch: enó! 'listen', ya|kúnó! "'man my equal" greeting'. No "Attention getting" utterances with basic final low tone have been observed.

NOTES

1. The material for this paper was collected during the period 1961-1964, in the village of Kone, four miles east of the Gumine Sub-District Office, Chimbu District of the T.N.G. We are in debt to E. Pike for her assistance in the analysis of the phonological phrase, and to D. James for her assistance in the analysis of tone. This research has been supported in part by the New Guinea Branch of the Summer Institute of Linguistics Research Fund.
2. S.A. Wurm, "The Languages of the Eastern, Western and Southern Highlands Territory of Papua and New Guinea" published in *Linguistic Survey of the South-Western Pacific*. 1962.
3. High tone is marked by acute accent and low tone is unmarked.
4. /r/ has been found to vary to a trilled allophone [r̄] in certain words: pirín 'salt', terín 'flea'; and to a more stopped allophone between front vowels [ḍ]: iré 'take and', siré 'strike and'.
5. paingwé has been found to vary with paangwé.
6. In this position /m/ is followed only by /b/ to form an /mb/ cluster. In many instances this fluctuates with /nb/, which could have been its origin. The Dom dialect however, uses word final /m/.
7. There is contrastive stress on words with the tone pattern '``. Those words not following the general pattern are all compounds in which the stress occurs on the first high tone of the word: pú 'blow' mugu 'container' → 'púmúgu 'flute'. This is in contrast with '' tone pattern tálámbi 'taro type', and '' pattern 'ákoia 'wild fig tree'.
8. Loudness is symbolised by ° above the syllable.

KUNIMAIPA NOMINALS

ALAN PENCE, ELAINE GEARY AND DORIS BJORKMAN

0. Introduction.
1. Nouns.
2. Noun Phrases.
3. Nominalised Clauses.
4. Conclusion.

0. INTRODUCTION

This paper presents a tagmemic analysis of some Kunimaipa nominals.¹ Noun roots and the suffixes which occur with them form the most extensive part of the paper. In addition four types of noun phrases are described. A unique feature of the system is a series of 30 suffixes which often indicate the general semantic quality of a noun root and are either singular, plural, collective, or numberless.²

itingade (iti-ngade *fire-qual*³) '*fire*'

gelevo (gele-vo *stone-qual*) '*stone*'

gelengade (gele-ngade *stone-qual*) '*ground oven*'

Not only may examples like this be multiplied, but these same qualitative suffixes occur with word bases and longer constructions of many types, nominalising them.

saha (sa-ha *go-he/acas*) '*he went*'

sahavo (sa-ha-vo *go-he/acas-qual*) '*his going*'

In this case the qualitative suffix nominalises the verb to which it is attached and refers back to an unspecified noun in the context. The usefulness of constructions of this type for expressiveness is immediately apparent.

1. NOUNS

There are no prefixes occurring on nouns, but six orders of suffixes occur, including about forty-six morphemes. Table 1 is a list of all suffixes and their order of occurrence.

By far the most frequent in occurrence and most central to the noun system are the first order suffixes referred to above. A word, root, phrase or clause so affixed is a nominal, that is, it acts in syntactic constructions as a noun.

In preliminary investigation it appeared that these first order suffixes and the sets of noun roots that each occurs with might be usefully correlated with semantic categories of the real world.

For instance the suffix *-pu* occurs almost exclusively on noun roots with animate referents. Similarly the suffix *-mede* is related exclusively to tree items.

abanapu (abana-pu *man-qual*) '*man*'
 idepu (ide-pu *bird-qual*) '*bird*'
 zimedede (zi-medede *tree-qual*) '*tree*'
 murimedede (muri-medede *citrus-qual*) '*citrus tree*'

Certain contradictions, however, make this awkward. Many roots occur with two or three of the suffixes, some with change of meaning (see (a) below), and others with a totally different meaning (see (b) below).

(a) data (da-ta *dance-qual*) '*dance*'
 dasi (da-si *song-qual*) '*song*'
 zata (za-ta *intestine-qual*) '*intestine*'
 zasi (za-si *intestine-qual*) '*excrement*'
 apira (api-ra *sugar-qual*) '*sugar cane*'
 apivo (api-vo *sugar-qual*) '*sugar or sugar cane juice*'

(b) garosi (garo-si *first-qual*) '*first*'
 garovo (garo-vo *point-qual*) '*point*'
 hadata (hada-ta *tooth-qual*) '*molar*'
 hadavo (hada-vo *wind-qual*) '*heavy wind*'
 hatapu (hata-pu *friend-qual*) '*friend*'
 hatasi (hata-si *thatch-qual*) '*thatch*'
 hatavo (hata-vo *testicle-qual*) '*testicle*'

It is quite possible to identify subclasses of noun roots based on the occurrence of these affixes either by (1) setting up partially or completely overlapping classes; or by (2) analysing the roots which take several affixes as homophonous forms. However such a classification has not been utilised in this paper.

A fully expanded noun may be represented by the following formula. It is rare to find in spontaneous text a stem with more than three

TABLE 1

STEM	QUALITATIVE TAGMEME	QUANTITATIVE TAGMEME	SYNTACTIC TAGMEME	SUBORDI-NATE - A TAGMEME	SUBORDI-NATE - B TAGMEME	SUBORDI-NATE - C TAGMEME	
	Qualitatives 100	Quantitatives 200	Relators 300	Singulative 400	Emphatic 500	Diminutive 600	
root	<i>Group 1</i>						
	101 -si	110 -ro	201 {-zaro}	301 {-ha}	401 {-hara}	501 -ga	601 -ama
	102 -ta	111 {-mara}	202 {-tara}	302 -ti			
	103 -vo	112 -rume	203 {-toro}	303 -nanga			
	104 -e	113 {-maki}	204 -ro	304 {-hananga}			
	105 -mede	114 {-ra}		305 -tihananga			
	106 -ropo	115 -ri		306 -ra			
	107 -ngade	116 -i		307 -za			
	108 -repe	117 -ngi		308 -ho			
	109 -tome	118 -pu		309 -na			
root/root	<i>Group 2</i>						
	121 -ngi	123 -holo					
	122 -tu	124 -ri					
	<i>Group 3</i>						
	131 -kapi						
	132 -have						
	133 -ngabo						
	<i>Group 4</i>						
	141 {-ripa}	144 -rera					
	142 -irara	145 -ri					
	143 -rapa						
root-ra-root							

affixes.

$$\left\{ \begin{array}{l} +STEM: \left\{ \begin{array}{l} \text{root} \\ \text{root-root} \end{array} \right\} +QUAL:qual \quad \pm QUAN:quan \\ +STEM: \text{root-ra-root} \end{array} \right\} \pm SY:re$$

$$\pm SU_A :sg \quad \pm SU_B :e \quad \pm SU_C :d$$

A noun consists of a stem with up to six orders of suffixes. There are three types of noun stems: simple, compound, and coordinate. Coordinate stems are never suffixed by first and second order suffixes. The six orders of suffixes are all optional except that the first order is obligatory with simple and compound stems (but not with coordinate stems). The six suffixial tagmemes are: a Qualitative slot filled by qualitative suffixes, a Quantitative slot filled by quantitative suffixes, a Syntactic slot filled by relators, and three Subordinate slots filled by a singulative suffix, and emphatic suffix and a diminutive suffix respectively.

1.1. NOUN STEMS

Simple noun stems consist of a single noun root and are obligatorily followed by a qualitative suffix.

papapu (papa-pu *father-qual*) '*father*'
 virepe (vi-repe- *vine-qual*) '*vine*'
 hadepe (hade-pu *dog-qual*) '*dog*'
 hapisi (hapi-si *pot-qual*) '*pot*'

Compound noun stems consist of two juxtaposed noun roots and these stems also are obligatorily followed by a qualitative suffix. Several hundred compound nouns have been recorded and while some of them have idiomatic meanings, many do not. The potential for creating new compound stems is great.

ide-nekevo (ide-neke-vo *bird-abdomen-qual*) '*egg*'
 volo-nonopu (volo-nono-pu *pig-mother-qual*) '*pig caretaker*'
 volo-zeita (volo-zei-ta *pig-place-qual*) '*pig house*'

Coordinate noun stems consist of two noun roots linked by the coordinating morpheme *-ra*. These stems are a close knit construction which contrasts with the coordinate noun phrase described in 2.1. below. These coordinate stems are never followed by qualitative or quantitative suffixes. Some 50 coordinate stems have been observed. A few of them have idiomatic meanings (especially generic or mass concepts) but most do not. In fact there seem to be limitless possibilities of coining new combinations.

nono-ra-papa (nono-ra-papa *mother-and-father*) '*parents, ancestors*'
 da-ra-ngai (da-ra-ngai *dance-and-anger*) '*dance*'
 zi-ra-vi (zi-ra-vi *tree-and-vine*) '*jungle*'
 ide-ra-pate (ide-ra-pate *bird-and-?*) '*head decoration*'
 volo-ra-gipizo (volo-ra-gipizo *pig-and-vegetable food*) '*food*'
 nane-ra-vosi (nane-ra-vosi *older brother-and-younger brother*)
 '*age mates*'

1.2. QUALITATIVE TAGMEME

The qualitative affixes may be described in four groups: (1) singular qualitative, (2) plural qualitative, (3) collective qualitative, and (4) numberless qualitative. These four groups are mutually exclusive. Members of the first group are much more frequent in occurrence, and could perhaps be used as the basis of setting up root classes (mentioned in 1.). The usage of the collective and numberless qualitative suffixes cuts across the subclasses that could be set up in reference to singular and plural qualitative morphemes.

1.2.1. Group One

In this group are eighteen mutually exclusive suffixes with singular qualitative meanings. The percentage figures given represent a count of about 400 nouns in which the roots were grouped according to the qualitative suffix or suffixes with which they occur. Names of tree, vegetable, and animal types were not included in the count.

Suffix 101 -si which seems to have a semantic quality of length or location occurs on 19.9% of noun roots.

adasi (ada-si *sweet potato-qual*) '*sweet potato*'
 hapi-si (hapi-si *pot-qual*) '*pot*'
 kosi-si (kosi-si *skin-qual*) '*skin*'
 kokosi (koko-si *head decoration-qual*) '*head decoration*'

Suffix 102 -ta which seems to have a semantic quality of shortness or location occurs on 15% of noun roots including the following:

gopota (gopo-ta *top-qual*) '*top*'
 hamata (hama-ta *ground-qual*) '*place*'
 ulita (uli-ta *knot-qual*) '*knot*'
 kuturuta (kuturu-ta *dark-qual*) '*night*'

Suffix 103 -vo which seems to have a semantic quality of shapelessness or nebulosity occurs with 25.1% of noun roots including the following:

abatavo (abata-vo *name-qual*) '*name*'
 helevo (hele-vo *stone-qual*) '*stone*'

havevo (have-vo *pool-qual*) '*pool, sea*'
 lamavo (lama-vo *sickness-qual*) '*sickness*'

Suffix 104 -e which seems to have a semantic quality of flatness and thinness, occurs with 2% of noun roots including the following:

dimie (dimi-e *cloth-qual*) '*cloth*'
 huhuae (huhua-e *blanket-qual*) '*blanket*'
 tepae (tepa-e *paper-qual*) '*paper*'

Suffix 105 -mede which is used in referring to trees and plants, occurs with 0.5% of noun roots including the following:

zimedede (zi-mede *tree-qual*) '*tree*'
 itimedede (iti-mede *fire-qual*) '*dry tree*'
 parauamede (paraua-mede *specific tree-qual*) '*type of tree*'

Suffix 106 -ropo which has a semantic quality referring to things which have a number of extensions or points branching from a single source, occurs with 1.2% of noun roots including the following:

ziropo (zi-ropo *tree-qual*) '*bush*'
 kutiropo (kuti-ropo *arrow-qual*) '*bird arrow*'
 angiropo (angi-ropo *eating stick-qual*) '*fork*'

Suffix 107 -ngade which is used in referring to fire occurs with 0.5% of noun roots including the following:

itingade (iti-ngade *fire-qual*) '*fire*'
 ramungade (ramu-ngade *lamp-qual*) '*lamp*'
 helengade (hele-ngade *stone-qual*) '*ground oven*'

Suffix 108 -repe which is used in referring to rope-like things occurs with 0.5% of noun roots including the following:

virepe (vi-repe *vine-qual*) '*vine*'
 zageigeirepe (zageigei-repe *intestine-qual*) '*small intestine*'

Suffix 109 -tome which is used in referring to large rope-like things occurs with 0.5% of noun roots including the following:

vitome (vi-tome *vine-qual*) '*vine (large)*'
 hovotome (hovo-tome *specific vine-qual*) '*type of vine*'

Suffix 110 -ro, the semantic quality of which is uncertain, occurs with 1% of noun roots including the following:

nonoro (nono-ro *path-qual*) '*path, road*'
 vapro (vapo-ro *hole-qual*) '*hole*'
 anigoro (anigo-ro *fence-qual*) '*stake fence*'

Suffix 111 (-mara ~ -mare) the semantic quality of which is uncertain occurs with 1.5% of noun stems. The allomorph -mare occurs before morpheme 201; -mara occurs elsewhere.

hemara (he-mara *taro-qual*) '*taro*'

kosimara (kosi-mara *back-qual*) '*back*'
 raimara (rai-mara *bow-qual*) '*bow*'
 raimarezaro (rai-mare-zaro *bow-qual-two*) '*two bows*'

Suffix 112 -rume which is used in referring to large flat areas occurs with 0.5% of noun roots including the following:

vatarume (vata-rume *floor-qual*) '*floor*'
 taurume (tau-rume *floor-qual*) '*floor*'

Suffix 113 (-maki ~ -make) which is used in referring to buildings and structures of various sorts occurs with 0.5% of noun roots. The allomorph -make occurs alternating freely with -maki before morpheme 201; -maki occurs elsewhere.

zeimaki (zei-maki *house-qual*) '*house*'
 tupumaki (tupu-maki *house (men's)-qual*) '*men's house*'
 karimaki (kari-maki *vehicle-qual*) '*vehicle*'

Suffix 114 (-ra ~ -re) which seems to be used in referring to stubby round things occurs with 9.6% of noun roots. The form -re occurs preceding morpheme 201; the form -ra occurs elsewhere.

alira (ali-ra *thigh-qual*) '*thigh*'
 zozora (zozo-ra *bud-qual*) '*bud end of fruit*'
 vahara (vaha-ra *post-qual*) '*house post*'
 vaharezaro (vaha-re-zaro *post-qual-two*) '*two house posts*'

Suffix 115 -ri which is used in referring to pointed or sharp things occurs with 2.2% of noun roots including the following:

enari (ena-ri *axe-qual*) '*axe*'
 tokari (toka-ri *tail-qual*) '*tail*'
 getari (geta-ri *thorn-qual*) '*thorn, spike*'

Suffix 116 -i which is used in referring to meat and other things occurs with 0.5% of noun roots including the following:

voloi (volo-i *pig-qual*) '*pork*'
 hadei (hade-i *dog-qual*) '*dog meat*'

Suffix 117 -ngi which is used in referring to bag items occurs with 0.5% of noun roots including the following:

kingi (ki-ngi *bag-qual*) '*string bag*'
 kizuvengi (kizuve-ngi *bag-qual*) '*man's string bag, pocket*'
 vekingi (veki-ngi *bag-qual*) '*bag, sack*'

Suffix 118 -pu which is used to refer to animate things occurs with 18.5% of noun roots. The zero allomorph -∅ occurs before allomorph -ngarivi of morpheme 201; -pu occurs elsewhere.

abanapu (abana-pu *man-qual*) '*man*'
 vepu (ve-pu *frog-qual*) '*frog*'

napapu (napa-pu *kinship-qual*) '*kinship term*'
 hadengarivi (hade-Ø-ngarivi *dog-qual-two*) '*two dogs*'

1.2.2. Group Two

This group is made up of four mutually exclusive plural qualitative morphemes.

Suffix 121 -ngi is the most widely used plural morpheme. It occurs with 81% of noun roots, including the roots which characteristically occur with suffixes 101 through 116.

adangi (ada-ngi *sweet potato-qual*) '*sweet potatoes*'
 arezangi (areza-ngi *star-qual*) '*stars*'
 zingi (zi-ngi *tree-qual*) '*trees*'
 itingi (iti-ngi *fire-qual*) '*fires*'
 vingi (vi-ngi *vine-qual*) '*vines*'
 elengi (ele-ngi *arrow-qual*) '*arrows*'

Suffix 122 -tu is most often used in connection with stems which characteristically take suffix 116 and 117. However it has also been observed occurring with a few other stems.

kitu (ki-tu *bag-qual*) '*string bags*'
 kizuvetu (kizuve-tu *men's string bags-qual*) '*men's string bags, pockets*'

Suffix 123 -holo is a general animate plural occurring with about 18.5% of noun roots, including only those which characteristically occur with suffix 118 -pu (singular animate).

roholo (ro-holo *boy-qual*) '*boys*'
 emaholo (ema-holo *marsupial-qual*) '*marsupials*'
 amiholo (ami-holo *leader-qual*) '*leaders*'

Suffix 124 -ri which is a specific animate plural occurs with all roots which characteristically take suffix 118 -pu. One of these roots, abana '*man*', takes only -ri as a plural and does not take -holo. Roots with adjectival referents tend to take -ri as a plural, rather than -holo.

abanari (abana-ri *man-qual*) '*men*'

1.2.3. Group Three

In this group are three mutually exclusive suffixes. All suffixes of this group are collective in meaning in that they refer to a quantity of the item or group of items viewed as one entity.

Suffix 131 -kapi is used in referring to prepared food and occurs with any root which has a food referent:

adakapi (ada-kapi *sweet potato-qual*) '*prepared sweet potato*'

ginevikapi (ginevi-kapi *greens-qual*) '*prepared green vegetable*'
 hekapi (he-kapi *taro-qual*) '*prepared taro*'

Suffix 132 -have is used in referring to prepared or usable wood items, and occurs with any root which has a wood referent:

zihave (zi-have *tree-qual*) '*pole, board*'
 ngalahave (ngala-have *thatch-qual*) '*thatch holding baton*'
 tokohave (toko-have *ridge-qual*) '*ridge pole*'

Suffix 133 -ngabo refers to a flock, family, bunch or a group consisting of different varieties. It is not common in occurrence but may occur with a number of roots. It indicates either animate or inanimate groups.

apingabo (api-ngabo *sugar cane-qual*) '*several varieties of sugar cane*'
 idengabo (ide-ngabo *bird-qual*) '*a flock of birds*'

1.2.4. Group Four

Five mutually exclusive suffixes make up this group. These have size and other quality meanings, and are used with roots which have a wide variety of referents, although they are not frequent in occurrence. Their actual meanings vary according to the particular root with which they occur.

Suffix 141 -ripa ~ -ripi means '*very big*' and has, in some contexts, an overtone of endearment. The allomorph -ripi occurs in free variation with -ripa preceding Subordinate-A tagmeme. No restrictions on the types of roots with which it may occur have been observed.

roripa (ro-ripa *boy-qual*) '*big, dear boy*'
 utaripa (uta-ripa *rain-qual*) '*big, nice rain*'
 heveripahara, heveripihara (heve-ripa-hara, heve-ripi-hara *stick-qual-sg*) '*just a big planting stick*'

Suffix 142 -irara means '*very small*' and is used, like suffix 141 with a wide variety of roots:

enairara (ena-irara *knife-qual*) '*a very small knife*'
 tengoirara (tengo-irara *thorn-qual*) '*a very small thorn*'

Suffix 143 -rapa appears to mean '*young*' or '*new*', and is also used with a wide variety of roots:

virapa (vi-rapa *vine-qual*) '*new, young vine*'
 rorapa (ro-rapa *boy-qual*) '*young boy*'
 mararapa (mara-rapa *arm-qual*) '*young branch*'

Suffix 144 -rera means '*small*' and is also used with a wide variety of roots:

ngarirera (ngari-rera *girl-qual*) '*small girl*'

abanarera (abana-rera *man-qual*) '*small man*'

This suffix appears to take the shape -rera when following roots which ordinarily take suffix 115.

enarira (ena-rira *axe-qual*) '*small hatchet*'

Suffix 145 -ri which means '*very tiny*' also occurs with a large number of roots, although it is infrequent in occurrence:

marari (mara-ri *arm-qual*) '*tiny branch*'

tangari (tanga-ri *tongue-qual*) '*tiny tongue*'

1.3. QUANTITATIVE TAGMEME

The quantitative tagmeme may be filled by any one of four morphemes (class 200), and occurs in order two from the root. These morphemes seem to be basically quantitative in meaning although size is also part of the meaning of two of them.

Suffix 201 -zaro ~ -karo ~ -ngarivi ~ -garo occurs following most first order suffixes, and means '*dual*' following those of groups 1, 3, and 4, and '*all*' following suffixes 121 and 124 of group 2. The allomorphs of this suffix are morphologically conditioned as follows: -zaro occurs following morphemes 110 through 115, 131, 132, 124 and 145; -karo occurs following morphemes 101 through 109, 116, 117, 121 and 133; -ngarivi occurs following morpheme 118; and -garo occurs following morphemes 141 through 144. This morpheme has not been observed following suffixes 112 and 123.

zeingikaro (zei-ngi-karo *place-qual-all*) '*all the villages*'

hapisikaro (hapi-si-karo *pot-qual-two*) '*two pots*'

tenaverezaro (tenave-re-zaro *drum-qual-two*) '*two drums*'

avengarivi (ave-∅-ngarivi *stranger-qual-two*) '*two strangers*'

adairaragaro (ada-irara-garo *sweet potato-qual-two*) '*two very small sweet potatoes*'

Suffix 202 -tara ~ -para means '*a very small amount, little*' or at times, '*less*'. The allomorphs of this suffix are morphologically conditioned as follows: -tara occurs following morphemes 103, 106, 108, 109, 112, 113, 117, and 118; -para occurs following morphemes 101, 104, 105, and 107. This morpheme does not occur following other first order morphemes.

havevotara (have-vo-tara *pool-qual-less*) '*a very small pool*'

kingitara (ki-ngi-tara *bag-qual-less*) '*a very small bag*'

itingadepara (iti-ngade-para *fire-qual-less*) '*a very small fire*'

Suffix 203 -toro ~ -poro means '*long*'. Its two allomorphs are morphologically conditioned in a manner similar to the conditioning of

morpheme 202, however, this morpheme occurs following even fewer first order morphemes. The allomorph *-toro* has been observed following morphemes 103, 109, 112, 117, 121; the allomorph *-poro* has been observed following morphemes 101, 104, 105, and 107.

ngetivotoro (ngeti-vo-toro *story-qual-long*) 'a long story'
 vitometoro (vi-tome-toro *vine-qual-long*) 'a long vine'
 tepaeporo (tepa-e-poro *paper-qual-long*) 'a long piece of paper'

Suffix 204 *-ro* means 'large', and its full distribution has not been charted. Following are two examples of typical usage:

virepero (vi-repe-ro *vine-qual-large*) 'a large vine'
 zeimakiro (zei-maki-ro *house-qual-large*) 'a large house'

1.4. SYNTACTIC TAGMEME

The syntactic tagmeme occurs with any of the tagmemes previously described. Nine different suffixes which mark phrase or clause relationships occur in the syntactic slot.

Suffix 301 *-ha ~ -ka* is a general locative translated in various contexts as 'on, in, at'. The occurrence of the allomorphs is morphologically determined as follows: the allomorph *-ka* occurs following morphemes 101 through 109, 116, 117, 121, and 132; allomorph *-ha* occurs following morphemes 110 through 115, 118, 122 through 124, 131, 141 through 145, and 201 through 204. This morpheme does not occur with suffix 133. The rare form *-si-si*, which co-occurs with no first, second, or third order suffix except *-hananga* (304), appears to be a free variant of the sequence *-si-ka* (101 + 301).

itihaveka (iti-have-ka *fire-qual-at*) 'in the firewood'
 marasika (mara-si-ka *hand-qual-at*) 'in the hand'
 sahaeka (sa-ha-e-ka *go-he/acas-qual-at*) 'at his going/where he went'
 abanangariviha (abana-Ø-ngarivi-ha *man-qual-two-at*) 'beside the two men'
 marairaraha (mara-irara-ha *hand-qual-at*) 'in the very tiny hand'
 aliraha (ali-ra-ha *thigh-qual-at*) 'on the thigh'
 zeisika, zeisisi (zei-si-ka, zei-si-si *place-qual-at*) 'at the place'

Suffix 302 *-ti* is a locative indicating direction 'to' or 'toward'. It is often difficult to distinguish between the two locatives, 301 and 302.

roputi (ro-pu-ti *boy-qual-to*) 'towards the boy'
 hapisiti (hapi-si-ti *pot-qual-to*) 'to the pot'
 enariti (ena-ri-ti *axe-qual-to*) 'towards the axe'

Suffix 303 -nanga is usually translated 'with' and carries meanings of both instrument and accompaniment.

ropunanga (ro-pu-nanga *boy-qual-with*) 'with the boy'
 enarinanga (ena-ri-nanga *axe-qual-with*) 'with the axe'
 abanangarivinanga (abana-Ø-ngarivi-nanga *man-qual-two-with*) 'with the two men'

Suffix 304 -hananga ~ -kananga may have developed historically from a combination of suffix 301 with 303. It means 'from, out of'. The alternation of this morpheme is the same as that of suffix 301.

hapisikananga (hapi-si-kananga *pot-qual-from*) 'from the pot'
 posikarohananga (po-si-karo-hananga *this-qual-two-from*) 'from these two'

Suffix 305 -tihananga appears to be a combination of suffix 302 -ti and 304 -hananga. It means 'to and from', and is quite rare in occurrence.

zeisitihananga (zei-si-tihananga *place-qual-to and from*) 'to and fro in the place'

Suffix 306 -ra is a coordinator roughly translated 'and' and occurs only in coordinate phrases and coordinate stems. Any first or second order suffix may occur in such a phrase and consequently may occur with morpheme 306. This morpheme may not be directly followed by morphemes in any Subordinate slot (401, 501, 601). Examples may be seen in section 1.1. and 2.1.

Suffix 307 -za is a possessive, benefactive and purpose marker. It has very wide use with all types of noun construction. It occurs following any of the first and second order suffixes previously described. The syntactic function of 307 is as a slot governing morpheme in the possessive phrase and as a benefactive and purpose slot marker in clause level strings.

ropuza (ro-pu-za *boy-qual-poss*) 'the boy's'
 abanangariviza (abana-Ø-ngarivi-za *man-qual-two-poss*) 'the men's'
 enariza (ena-ri-za *axe-qual-for*) 'to (get) the axe'

Suffix 308 -ho is a subject marker in clause level strings. It may follow any first or second order suffix. It occurs only on the subject of transitive clauses, especially when no object is stated.

abanapuhohara (abana-pu-ho-hara *man-qual-sub-sg*) 'only the man'
 ropuho (ro-pu-ho *boy-qual-sub*) 'the boy'

Suffix 309 -na is an indirect object marker in clause level strings. It is very limited in occurrence. This marker occurs obligatorily with the verbs -nga 'tell' and eter 'see', and optionally with the verbs -ngaira 'show', ta 'do', haza 'speak', and hatete 'hear'. So far it

has not been observed to occur with any other verbs. This morpheme has also been observed several times on nouns in the topic slot of a stative equational clause.

abanapuna (abana-pu-na *man-qual-io*) '*the man*'
 ropunaama (ro-pu-na-ama *boy-qual-io-d*) '*the boy only*'
 angapuna rei ununu (onga-pu-na rei ununu *leader-qual-io we ignorant*) '*we are ignorant of the leader*'

1.5. SUBORDINATE-A TAGMEME

The singulative morpheme is the only fourth order suffix. It occurs following any of the qualitative, quantitative or syntactic morphemes.

Suffix 401 -hara ~ -hoe may be translated '*single*' or '*only*' and points up the singularity or uniqueness of the item suffixed. This semantic quality does not make it an improbable combination with a plural morpheme such as 121. The two allomorphs vary freely, although one restriction in the use of -hoe has been noted. It may not be followed by morpheme 501 -ga.

ropuhara (ro-pu-hara *boy-qual-sg*) '*just that boy*'
 hapingihara (hapi-ngi-hara *pot-qual-sg*) '*only those pots*'
 adasitihara (ada-si-ti-hara *sweet potato-qual-to-sg*) '*only in the sweet potato garden*'
 tupumakihahoe (tupu-maki-ha-hoe *men's house-qual-at-sg*) '*only at the men's house*'
 raiehoeama (rai-e-hoe-ama *bow-qual-sg-d*) '*just that bow only*'

1.6. SUBORDINATE-B TAGMEME

The emphatic morpheme is the only fifth order suffix. It occurs following any of the qualitative, quantitative, syntactic or singulative morphemes.

Suffix 501 -ga adds an element of emphasis to the construction on which it occurs. Its occurrence is very infrequent.

ropuga (ro-pu-ga *boy-qual-e*) '*certainly a boy*'
 abanangarivinangaga (abana- \emptyset -ngarivi-nanga-ga *man-qual-two-with-e*) '*certainly with the two men*'

1.7. SUBORDINATE-C TAGMEME

The diminutive morpheme is the only sixth order suffix. It occurs following any of the suffixes previously described.

Suffix 601 -ama has a meaning which at times is difficult to distinguish from that of suffix 401, singulative. It is often translated

'only' or 'just', but seems to also have diminutive aspect whereas 401 is more of a distinctive pointer.

ropuama (ro-pu-ama *boy-qual-d*) '*only a boy*'

enarinangaama (ena-ri-nanga-ama *axe-qual-with-d*) '*just with an axe*'

virepeharaama (vi-repe-hara-ama *vine-qual-sg-d*) '*just that single vine*'

2. NOUN PHRASES

Although the suffixes described in 1.2.-1.7. are there referred to as noun suffixes, in fact they also occur on names, adjectives, demonstratives, locative words, pronouns and verbs. That is, these suffixes may be regarded as clitics attached to nominals whether nouns, noun phrases or nominalised clauses. For instance, these suffixes attach to the final word of a descriptive phrase which may be either an adjective, demonstrative or verb. However, the suffix of class 100 on this final word still related essentially to a noun since it is always that suffix which would be attached to the particular noun which fills the head slot (or which is implied by the context) if all other parts of speech were absent from the phrase.

zisi (zi-si *tree-qual*) '*plank*'

zi tinasi (zi tina-si *tree good-qual*) '*good plank*'

Nouns, names, adjectives, pronouns and demonstratives may be distinguished by the occurrence of noun suffixes. Demonstratives are obligatorily suffixed. Nouns and adjectives are obligatorily suffixed when they are the final word in a noun phrase. Nouns are not suffixed when they are in a descriptive phrase. Adjectives are not suffixed when they are non-final in a noun phrase and when they fill the manner slot in a clause. Adjectives and demonstratives can take any of the class 100 suffixes, whereas each noun can only take a particular suffix (or a small set of suffixes). Names and pronouns do not take noun suffixes of classes 100 and 200, but they take classes 300-600. Pronouns take additional suffixes which do not occur with any of the above classes.⁴

There are four distinctive types of noun phrase: coordinate phrase, possessive phrase, descriptive phrase, and appositional phrase. Their contrastive features are summarised in Table 2. Each of these phrases can embed within noun phrases as well as fill clause level slots.

2.1. COORDINATE PHRASE

The coordinate phrase is a device for listing people or things. It

allows for almost unlimited expansion but the maximum number of coordinated items observed in text is eight.

$$\text{Co P} = \left((+ H_1 : n/\text{np}/\text{pro}/\text{name} \pm \text{Co} : -\text{ra}/\text{ma})^n \right. \\ \left. + H_2 : n/\text{np}/\text{pro}/\text{name} \pm \text{Co} : -\text{ra} \right)$$

Thus there are two head slots, both of which are manifested by a noun, noun phrase, pronoun, or name, and both of which may be followed by a coordinator. The combination of head₁ and optional coordinator may be repeated any number of times. Possessive, descriptive and appositional phrases may manifest both head slots.

rei-ma nono-holo-ra tete-holo ma rei-ma iza-holo
(we-poss mother-qual-and sister-qual and we-poss grandparent-qual)
'our mothers, older sisters and grandparents'

ne-ma papa-pu savar ne-ma nono-pu etai nono moda-pu
saval ne-ma nono na-pu zaurai
(I-poss father-qual Savar I-poss mother-qual Etai mother
another-qual Saval I-poss mother one-qual Zaurai)
'my father Savar, my mother Etai, my aunt Saval, and my other aunt
Zaurai'

If a coordinator follows the head₂ slot it signifies that there are additional items in the list which are not being enumerated explicitly, and gives the impression of 'et cetera'. This is rarely found in text. The only coordinator which occurs finally is -ra.

hade-pu-ra ema-pu-ra volo-pu-ra
(dog-qual-and marsupial-qual-and pig-qual-and)
'the dog, marsupial and pig, et cetera'

No suffix follows -ra in either head slot but if the filler is a noun or noun phrase an obligatory class 100 suffix and an optional class 200 suffix precede the -ra. Class 400-600 suffixes can be added to the head₂ slot (in the absence of -ra) and, if present, they add meaning to the whole phrase. These suffixes do not occur on the filler of a head₁ slot even in the absence of -ra/ma.

The coordinator -ra may not co-occur with any other relator. Thus it may occur following head₂ slot only when the coordinate phrase is filling a clause level slot that does not require a relator, namely subject, topic or object. When a coordinate phrase fills a clause level slot that takes a relator, either optional or obligatory, the relator occurs on the filler of the head₂ slot.

ab-kame-pu-ra tete-pu-kananga
(brother-in-law-qual-and sister-qual-from)
'from the brother-in-law and older sister'

A coordinate phrase may embed in a possessive, descriptive or appositional phrase, but when it does the optional final coordinator is always absent. Any relator necessary to the particular slot filled by a coordinate phrase occurs on the filler of head₂.

2.2. POSSESSIVE PHRASE

Possessive phrases may be either full or elliptical.

2.2.1. Full Possessive Phrase

There are three obligatory and no optional slots in the possessive phrase.

Poss P = +Posr:n/np/pro/cl +Poss:-za/{-ma} + Posd-H :n/np/loc

Thus there is a possessor slot realised by a noun, noun phrase, pronoun or clause, and a possessed-head slot realised by a noun, noun phrase or locative word, linked by a possessive relator. The order of these slots is fixed.

The noun phrase filler of the possessor slot is either descriptive, coordinate or appositional, and that of the possessed-head slot coordinate, possessive or descriptive. A clause in the possessor slot has a predicate marked for potential aspect and it is not nominalised by a class 100 suffix.

A noun, noun phrase or clause filler of the possessor slot occurs obligatorily suffixed with the relator *-za* (possessive) whereas a pronoun filler of this slot occurs suffixed with the pronoun possessive *{-ma}*.

The phrase as a whole, since it has no optional tagmemes, is expandable only to the extent that the filler of the two obligatory slots may occur in minimal or extended form.

A possessive phrase is different from a coordinate phrase in that it may embed within itself (coordinate phrases do not), in that expansion is limited, and in the occurrence of coordinators *-ra* and *ma* versus possessives *-za* and *{-ma}*.

The attributive relationship between the two tagmemes in a possessive phrase includes the concepts of possession, kinship, whole-to-part, and relative position.

abana-pu-za volo-pu
 (man-qual-poss pig-qual)
 'the man's pig'

abana-pu-ra ro-pu-za zei-maki
 (man-qual-and boy-qual-poss house-qual)
 'the man and the boy's house'

ne-ma papa-pu
 (I-poss father-qual)
 'my father'

zei-maki-za arapo-si
 (house-qual-poss roof-qual)
 'the roof of the house'

kutur ma-na-pane-za ngeti-vo
 (dark it-give-it/poss-poss story-qual)
 'the story of it becoming dark'

A possessive phrase is commonly used to express location relative to some person or thing.

zi-mede-za nakae
 (tree-qual-poss near)
 'near the tree'

nono-ra-papa-za revah
 (mother-and-father-poss above)
 'above the parents'

An appositional phrase, with the item slot filled by a personal name and the apposition slot filled by a pronoun, embedded in the possessor slot of a possessive phrase is the usual way of handling personal name possession.

baroa pi-ma hade-pu
 (Baroa he-poss dog-qual)
 'Baroa's dog'

The embedding of a possessive phrase in the possessed-head slot of another possessive phrase results in a series of possessor slots, each subordinate to the following one. With this kind of embedding a pronoun may only occur as filler of the initial possessor slot.

na-pu-za anga-pu-za ki-ngi
 (some-qual-poss woman-qual-poss bag-qual)
 'someone's wife's bag'

2.2.2. Elliptical Possessive Phrase

An interesting feature of possessive phrases is the ellipsis which frequently occurs. Any noun root occurring in the possessed-head slot may be deleted and all its suffixation is added to the filler (noun, noun phrase, pronoun or clause) of the possessor slot, following -za

(possessive) or {-ma} (pronoun possessive). Any class 400-600 suffix following -za or {-ma} in the possessor slot is also deleted when this extra suffixation is added. Since each class 100 suffix can occur with a number of noun roots, the particular qualitative suffix which follows -za/{-ma} in this construction provides only a partial clue as to what noun has been deleted, and the exact item referred to must be deduced from the context.

ro-pu-za hade-pu-ama
 (boy-qual-poss dog-qual-d)
 'only the boy's dog'

ro-pu-za-pu-ama
 (boy-qual-poss-qual-d)
 'only the one belonging to the boy'

Possessive phrases fill clause level slots, taking optional or obligatory relators, appropriate to that slot. These relators (class 300) occur on the final word of the filler of the possessed-head slot.

ro-pu-za hade-pu-nanga
 (boy-qual-poss dog-qual-with)
 'with the boy's dog'

Possessive phrases have no suffixation on the final word of the filler of the possessed-head slot when they embed in descriptive phrase head slots. They may also embed within themselves or within coordinate phrases with the optional coordinator following the final word in the possessed-head slot.

2.3. DESCRIPTIVE PHRASE

Descriptive phrases may be either full or elliptical.

2.3.1. Full Descriptive Phrase

The descriptive phrase also has tagmemes in an attributive relationship to a head. It is widely used and frequent in occurrence.

Des P = ±H:n stem/np ±(M:int/adj)³ +M-H:int/adj/dem/ncl/nm p

Thus a descriptive phrase is manifested by an optional head whose filler is always unsuffixed followed by up to four modifiers, the last of which is obligatorily suffixed. The filler of the modifier-head slot carries the suffixation for the whole construction. The head slot may be filled by a noun stem, a possessive phrase, or a descriptive phrase.

Several order restrictions have been noted in the occurrence of adjectives, demonstratives and interrogatives. Only one demonstrative

can occur and it must occur in the modifier-head slot and take the suffixation for the whole phrase. Adjectives occur in any order following the head. Interrogatives tend to occur in the modifier-head slot except in the presence of a demonstrative when it occurs in the preceding modifier slot.

The modifier tagmemes amplify the meaning of the head tagmeme which precedes them, and all three tagmemes assume the qualities signified by the suffixation occurring on the modifier-head slot filler. Thus this construction is a closely bound unit.

Descriptive phrases may embed in coordinate, possessive and appositional phrases as well as filling clause level slots. In each of these positions, relators appropriate to the slot filled by the descriptive phrase occur on the filler of its modifier-head.

This phrase type is distinguished from the previous two by the lack of suffixation in non-final slots, by the absence of a possessive suffix or coordinator and by expansion possibilities which are more limited than coordinate phrases and greater than possessive phrases.

hama epe-si
(ground this-qual)
'this area'

voe-ra-givogi aho-vo
(violence-and-stealing big-qual)
'much violence and stealing'

ne-ma pei tina-ta
(I-poss thing good-qual)
'my good thing'

volo vede na-pu
(pig wild certain-qual)
'a certain wild pig'

pei moda tina taira-ta
(thing another good what-qual)
'what other good thing?'

zei gori-si-kananga
(place bad-qual-from)
'from the bad place'

Clauses filling the modifier-head slot are not uncommon. In such cases the clause is always nominalised by the occurrence of a noun class 100 suffix (see section 3).

anga ada-ngi ma-na-ha-pu
(woman sweet potato-qual her-gave-he-qual)
'the woman to whom he gave the sweet potato'

2.3.2. Elliptical Descriptive Phrase

A form of ellipsis occurs with this phrase type also. A noun root filling the head slot can be omitted and the only clue given about the person or thing referred to (by the adjective, demonstrative, or nominalised clause filling the modifier and modifier-head slots) is the class 100 suffix occurring on the filler of the modifier-head slot. It is usually obvious from the context to what item reference is being made. The elliptical form of this phrase may embed within other phrases and commonly does.

abana goe-pu
 (man small-qual)
 'the small man'

goe-pu
 (small-qual)
 'the small one'

2.3.3. Numeral Phrase

The numeral phrase is the means by which numerals are formed. It is a construction which has very limited fillers, and which shows some similarities to a descriptive phrase and some to a coordinate phrase. In the numerals illustrated below, all except five and ten are shown with a qualitative *-vo* which represents any qualitative suffix of class 100, and which is selected according to the noun being counted.

na-vo / gone-vo
 (one-qual) 'one'

na-vo-karo / goulo-vo-karo
 (one-qual-two) 'two'

na-vo-karo na-vo / goulo-vo-karo goulo-vo
 (one-qual-two one-qual) 'three'

na-vo-karo na-vo-karo / goulo-vo-karo goulo-vo-karo
 (one-qual-two one-qual-two) 'four'

mara na-si
 (hand one-101) 'five'

mara na-si-kananga na-vo / mara goulo-si-kananga goulo-vo
 (hand one-101-from one-qual) 'six'

mara na-si-kananga na-vo-karo / mara goulo-si-kananga goulo-vo-karo
 (hand one-101-from one-qual-two) 'seven'

mara na-si-kananga na-vo-karo na-vo /
 mara goulo-si-kananga goulo-vo-karo goulo-vo
 (hand one-101-from one-qual-two one-qual) 'eight'

mara na-si-kananga na-vo-karo na-vo-karo /
 mara goulo-si-kananga goulo-vo-karo goulo-vo-karo
 (hand one-101-from one-qual-two one-qual-two) 'nine'

 mara na-si-karo
 (hand one-101-two) 'ten'

 mara na-si-karo-kananga na-vo/mara goulo-si-karo-kananga goulo-vo
 (hand one-101-two-from one-qual) 'eleven'

 mara na-si-karo-kananga na-vo-karo /
 mara goulo-si-karo-kananga goulo-vo-karo
 (hand one-101-two-from one-qual-two) 'twelve'

In other contexts *na* is a demonstrative meaning 'a', 'a certain', 'some'; gone is an adjective meaning 'one'; and *goulo* occurs in derived adverbs meaning 'a long time', and as an adjective with plural suffixes meaning 'all'.

The tendency now is for English numerals to be used for numbers over five. For five and under both English and Kunimaipa numerals are used, with the younger generation tending to use English numbers more.

2.4. APPOSITIONAL PHRASE

This phrase type is a device by which two multi-term statements about the same person or thing may be made within a single phrase.

App P = +I:n/np/name +App:n/np/pro/name ±Sum:pro

Thus an appositional phrase is realised by two obligatory slots, namely item and apposition, and one optional slot, the summary. Although the potential for expansion is limited to the possibility of expansion within the two obligatory slots, appositional phrases tend to be longer than other noun phrases. Any noun phrase can occur as manifestation of either item or apposition slots.

This phrase differs from the three preceding phrases in the occurrence of noun class 100 suffixes on fillers of both item and apposition slots, in the possibility of a name being the filler of either of these slots, in the lack of any formal link between the three slots, and in the occurrence of an optional summary slot.

Apposition phrases fill clause level slots, taking optional or obligatory relators, appropriate to that slot, and they embed in coordinate and possessive phrases with coordinating or possessive relators. These relators (class 300) occur on the final word of the phrase whether it be a filler of the apposition slot or a filler of the summary slot.

hirisipai-ra ngari iza-holo paru-paro
 (Hirisapai-and girl grandchildren-qual they-all)
 'Hirisipai and her granddaughters, all'

mas na-pu master rovis pi
 (master certain-qual Master Rovis he)
 'a certain man, Mr Roberts'

rei-ma nono-ra-papa rei-ma iza-ra-horove
 (we-poss mother-and-father we-poss grandparent-and-great grandparent)
 'our ancestors'

Some discontinuous examples of appositional phrases have been observed in which the predicate of the clause in which they occur separates the item and apposition slots.

ngari anga na-pu (ema-ha) pi-ma abata-vo doris
 (girl woman certain-qual came-she/acas she-poss name-qual-Doris)
 'a certain young woman by the name of Doris (came)'

3. NOMINALISED CLAUSES

Independent (transitive, ditransitive, intransitive or stative) clauses can be nominalised by the addition of any class 100 noun suffix. Most Kunimaipa clauses contain and terminate with a verbal predicate to which these nominalising suffixes are attached. The particular class 100 suffix which occurs on the predicate depends on the noun in the head (or the contextually understood noun head) of the phrase in which this clause is embedded (see section 2.3.). Nominalised clauses usually embed in descriptive phrases, optionally taking any of the suffixes listed in Table 1. These phrases in turn either fill clause level slots or embed in other noun phrases.

Nominalised clauses can also embed directly in the clause level location slot and rarely in the purpose slot. The class 100 suffixes which occur on such nominalised clauses are limited to 10⁴ -e in the location slot and 10³ -vo in the purpose slot.

3.1. SUFFIX LIMITATIONS

(a) A clause with a predicate in the potential aspect must take -za before the addition of a class 100 suffix. In this usage -za seems to have no particular meaning, and certainly nothing as specific as possessive or purpose. It could be regarded as a nominaliser.

abana sa-pane-za-pu
 (man go-he/poas-nom-qual)
 'the man who will go'

sa-pane-za-pu
 (go-he/poas-nom-qual)
 'the one who will go'

(b) A clause with a predicate in the actual aspect is nominalised by suffixation with a class 100 noun suffix. Further suffixation (classes 200-600) is optional.

anga gogo-vo ta-ma-ha-pu
 (woman work-qual do-con-she/acas-qual)
 'the woman who works'

gogo-vo ta-ma-ha-pu
 (work-qual do-con-she/acas-qual)
 'the one who works'

(c) Stative verbs have a unique suffix *-za*, which does not occur with any other class of verb. The stative verb stem may not occur without suffixation and when there is no other suffixation *-za* occurs. That is, in the present tense positive and in the actual aspect negative *-za* occurs as the only suffix, and in no other forms of the stative verb does it occur.

Stative clauses with regular person/number/aspect suffixes are nominalised as described in section 3.1., (a) and (b). Stative clauses with *-za* suffix are nominalised by the addition of a class 100 noun suffix. The homophonous nominalising morpheme *-za* does not occur here.

ro kohati he-za-pu
 (boy inside is-pr-qual)
 'the boy who is inside'

kohati he-za-pu
 (inside is-pr-qual)
 'the one who is inside'

3.2. ELLIPSIS IN NOMINALISED STATIVE CLAUSES

A unique type of stative clause nominalisation is that in which the stative predicate is deleted and the nominalising suffix (or suffixes) which would have occurred on that predicate occur on the instrument/accompaniment, benefactive or locative slot immediately preceding the predicate. This second set of suffixes follows any suffixes which are already present in these slots.

Stative clauses are of two types, those in which the predicate is obligatory and those in which it is optional. Either of these types can occur with elliptical nominalisation.

The resultant form consists of a noun, noun phrase, locative word,

or pronoun, with its typical suffixation obligatorily including a syntactic relator appropriate to the particular slot it fills within the stative clause, followed by one or more suffixes appropriate to the slot which this nominalised clause itself fills. Thus there are two layers of suffixes. The first set of suffixes may be either locative, pronoun or noun suffixes, but the second set are only noun suffixes.

zei-ta-ka he-za-pu
 (place-qual-at is-pr-qual)
 'the one who is a village one'

zei-ta-ka-pu
 (place-qual-at-qual)
 'the one who is a village one'

Elliptical nominalised clauses embed in descriptive phrases in the same way as full nominalised clauses do.

volo zei-ta-ka-pu
 (pig place-qual-at-qual)
 'the pig who is a village one (not wild)'

Occurrences of three sets of suffixes are possible but rare. Only the combination of ellipsis of both a nominalised stative clause and a possessive phrase has been observed in such a form.

epe-maki-ha he-za-pu-za volo-pu
 (this-qual-at is-pr-qual-poss pig-qual)
 'the pig who belongs to the one at this (house)'

epe-maki-ha-pu-za-pu
 (this-qual-at-qual-poss-qual)
 'the one who belongs to the one at this house'

3.3. SYNTACTIC RELATORS IN ELLIPTICAL NOMINALISED CLAUSES

The first set of suffixes never goes beyond suffix 401 {-hara}. Suffixes 501 -ga and 601 -ama only occur in the final set of suffixes. The first set of suffixes always contains a relator (class 300). Hence a suffix of class 100 in the second set never directly follows a class 100 or 200 suffix in the first set.

(a) If the slot preceding the deleted stative predicate is instrument/accompaniment the syntactic relator -nanga 'with' occurs in the first set optionally followed by suffix 401 {-hara}. These are followed by the second set of suffixes.

abana-pu-nanga orae-za-ri
 (man-qual-with is-pr-qual)
 'the thing that is with the man'

abana-pu-nanga-ri
 (man-qual-with-qual)
 'the thing that is with the man'

(b) If the slot preceding the deleted stative predicate is benefactive the syntactic relator *-za* 'for' occurs in the first set optionally followed by *-hara*. These are followed by the second set of suffixes. If the filler of the benefactive slot is a noun this layered construction is indistinguishable from an elliptical possessive phrase described in 2.2.2. But if the benefactive slot is filled by a pronoun then it is distinguished from an elliptical possessive phrase by the presence of the pronoun possessive {-ma} preceding *-za*.

ne-ma-za he-za-si
 (I-poss-ben is-pr-qual)
 'the thing that is for me'

ne-ma-za-si-hara
 (I-poss-ben-qual-sg)
 'only the thing that is for me'

(c) If the slot preceding the deleted stative predicate is a locative filled by a locative word, then this word obligatorily takes *-za* before the addition of the noun suffix (or suffixes) which would have occurred on the predicate, had it been present. Here *-za* seems to function as a nominaliser.

deti orae-za-repe
 (above is-pr-qual)
 'the vine that is above'

deti-za-repe
 (above-nom-qual)
 'the vine that is above'

(d) If the locative slot is filled by a pronoun, noun or noun phrase with locative relators {-ha} 'at' or *-ti* 'to', these may be optionally followed by nominaliser *-za* and then by {-hara} before the addition of the second set of suffixes. If the locative relator {-hananga} occurs on the pronoun, noun or noun phrase, then this may only be followed by {-hara} before the second set of suffixes is added.

zei-maki-ha-pu
 (house-qual-at-qual)
 'the one who is in the house'

po-ta-ka-za-ri
 (this-qual-at-nom-qual)
 'the ones who are at this place'

(e) The syntactic relators -ra (coordinate), -ho (subject), and -na (indirect object) do not occur in the first set of suffixes in any layered construction.

4. CONCLUSION

Several languages have been described as having a system of noun classifiers rather similar to the qualitative (class 100) suffixes described in 1.2. However, Kunimaipa is unusual in that the partial ellipsis of possessive phrases and nominalised stative clauses made possible by the presence of qualitative suffixes results in two or more layers of similar suffixes on the one word, as described in 2.2.2. and 3.2.-3.3.

Noun suffixes occur on many parts of speech but they are basically noun suffixes. They have the effect of nominalising the construction on which they occur, allowing them to occur in clause and phrase constructions where one would expect a noun. The usefulness of nominals, particularly nominalised clauses, as a mode of expression for new items and ideas as well as a means of describing familiar people and things is apparent. An understanding of the wide usage of noun suffixes in structuring nominals of all kinds is basic to the understanding of Kunimaipa.

N O T E S

1. This tagmemic analysis is based on the Kunimaipa dialect spoken in the lower Bubu River Valley near Garaina, Morobe District, Territory of Papua and New Guinea. It is drawn mainly from examples recorded in spontaneous text, with supplementary data provided by informants. The authors wish to acknowledge the Linguistic Information Retrieval Project of the Summer Institute of Linguistics and University of Oklahoma Research Institute, sponsored by grant GS-270 of the National Science Foundation, for preparing a concordance from these texts with an IBM 1410 Computer. The first author spent approximately 12 months in the language area from 1959 to 1963 and is primarily responsible for section 1. The second and third authors spent approximately 13 months in the language area from 1966 to 1969 and are primarily responsible for sections 2 and 3. This research has been supported in part by the New Guinea Branch of the Summer Institute of Linguistics Research Fund.

The alphabet used in this paper may be pronounced basically as it appears; however 'h' is initially a voiced backed velar stop and medially a voiced backed velar fricative; 'v' is initially a voiced bilabial stop and medially a voiced bilabial fricative. Throughout the paper all words are written in a form which includes their final vowel, but these are usually elided in normal speech.

2. The authors are indebted to Alan Healey and Elizabeth Murane of the Summer Institute of Linguistics for their help in the preparation of this paper.

3. Abbreviations and symbols used throughout the paper are:

- + obligatory
- ± optional
- = is made up of
- { } morpheme which has several allomorphs;
(in a formula) alternate choices
- / or

acas	actual aspect	ncl	nominalised clause
adj	adjective	nm	numeral
App	appositional	nom	nominaliser
ben	benefactive	np	noun phrase
cl	clause	P	phrase
Co	coordinate	poas	potential aspect
con	continuative	Posd-H	possessed-head
d	diminutive	Posr	possessor
dem	demonstrative	Poss	possessive
Des	descriptive	pr	present
e	emphatic	pro	pronoun
H	head	qual	qualitative
I	item	quan	quantitative
int	interrogative	re	relator
io	indirect object	sg	singulative
loc	locative word	SU	subordinate
M	modifier	sub	subject
M-H	modifier-head	Sum	summary
n	noun	Sy	syntactic

4. The pronouns are listed in: Alan R. Pence, *An Analysis of Kunimaipa Pronouns*, *Kivung* 1(2): 109-115 (1968). The three extra suffixes which pronouns take are -ma (pronoun possessive), -pi 'two' and -paro 'all'.

nominalised clause	ndi	central aspect	ncp
numeral	nm	adjective	adj
nominaliser	nom	appositional	app
noun phrase	np	predicative	ben
phrase	p	clause	cl
potential aspect	poss	coordinate	co
possessed-head	posh	conjunction	con
possessor	posr	diminutive	d
possessive	pose	demonstrative	dem
present	pr	descriptive	des
pronoun	pro	emphatic	e
qualifier	qual	head	h
quantitative	quan	stem	l
relator	re	interrogative	int
relative	rd	indirect object	io
subordinate	su	locative word	loc
subject	sub	modifier	m
summary	sum	modifier-head	m-h
syntactic	sy	noun	n

4. The pronouns are listed in Alan R. Tance, *An Analysis of Kanioko* (Baltimore, Md.: University of Maryland Press, 1968), pp. 109-112 (1968). The three extra suffixes which pronouns take are: ma (pronoun possessive), -ai 'and' and -pa 'with'.

REDUPLICATION IN YAREBA

HARRY AND NATALIA WEIMER

0. Introduction.
1. Complete Reduplication.
2. Partial Reduplication.

0. INTRODUCTION

There are two main types of reduplication in Yareba:¹ complete word reduplication, and partial reduplication which adds just one CV syllable to a word. Both types of reduplication exhibit a similar range of meanings. Nouns and adjectives reduplicate to show plurality. Depending on the type of verb, reduplication of verbs indicates either plurality of the object or subject, or an action that is multiple, repeated or continued.

Generally speaking, reduplication of verbal forms is different from reduplication of non-verbal forms. When verbal forms completely reduplicate, either the first vowel or all the vowels of the reduplicated form are replaced by *a*, whereas when non-verbal forms completely reduplicate, both forms are identical.² Verbal forms are partially reduplicated in a number of ways, but non-verbal forms reduplicate the first CV only.

1. COMPLETE REDUPLICATION

Complete reduplication occurs in complex verbs, secondary and tertiary verbs, adjectives and nouns.

1.1. COMPLETE REDUPLICATION OF COMPLEX VERBS³

A complex verb is a unit of two words. The first may not be inflected

in any way, whereas the second is affixed for aspect, tense, number, person, and mood.

Some, but not all, complex verbs show full reduplication of their first word. Of these, some only occur in the reduplicated form, and some always have a significant vowel change occurring along with reduplication.

About twelve complex verbs whose first word ends in *ari* fully reduplicate to indicate a plural object and repeated action.

ísu kosári usínu *'he scraped a stick outwards'*

ísu kosári kosári usínu *'he scraped the sticks outwards'*

nío bijári usínu *'he gritted his teeth'*

nío bijári bijári usínu *'he repeatedly gritted his teeth'*

Some complex verbs which are onomatopoeic only occur in the reduplicated form.

kúama káu káu usínu *'the dog barked'*

úkuma úku úku usínu *'the mourning dove cooed'*

dána góí góí usínu *'he knocked'*

When some complex verbs reduplicate, either the first or all the vowels of the reduplicated part are always replaced by *a*.

Replacement of the first vowel by *a* indicates a plural object.

káiyama iwíji usínu *'he inflicted a wound with a knife'*

káiyama iwíji awíji usínu *'he inflicted wounds on many objects with a knife'*

odéi fufúno usínu *'he crumbled a loaf of sago'*

odéi fufúno fafúno usínu *'he crumbled loaves of sago'*

Replacement of all vowels by *a* indicates plurality of manner or place of the action or plurality of the kind of object.

ísuma birúru usínu *'he twirled the stick'*

ísuma birúru barára usínu⁴ *'he twirled the stick in different ways'*

gusúna usínu *'he gathered one kind of food'*

gusúna gasána usínu *'he gathered many kinds of food'*

náma bisísi usínu *'the rope slipped'*

náma bisísi basása usínu *'the rope slipped from one place to another'*

Some other complex verbs which only occur in a reduplicated form may have the first vowel or all the vowels of the reduplicated form replaced by *a* to indicate a plural subject. Plurality must also be shown in the inflection of the verb.

tówima síri síri usínu *'the snake flicked its tongue'*

tówima síri sára ufta *'the snakes flicked their tongues'*

wadía rúfu rúfu usíni *'he shook the cloth'*

wadía rúfu ráfa ufta *'they shook the cloth'*

údimá gíno gíno usínu *'the duck waddled'*

údimá gíno gána ufta *'the ducks waddled'*

1.2. COMPLETE REDUPLICATION OF SECONDARY AND TERTIARY VERBS⁵

A secondary verb suffixed with -ebe *'and then'* may be reduplicated to express continuation of the action.

dobér-ebe dobér-ebe imósinu *'he searched and searched and then he rested'*

mán-ebe mán-ebe mán-ebe maidáni ótoro fári *'he went up and up and up and then he arrived at the top of the mountain'*

A tertiary verb (suffixed with -e) may be reduplicated and followed by a durative form of u- *'do'* to express a repeated action.

náu-i *'he sniffed'*

náu-e náu-e utébi *'he kept sniffing around'*

ér-i *'he looked'*

ér-e ér-e utébi *'he kept looking around'*

1.3. COMPLETE REDUPLICATION OF NOUNS AND ADJECTIVES

Complete reduplication of nouns and adjectives signifies a distributive plural, that is, not several things as a group, but several individual, distinct, or different things.

ána *'tree'*

ána ána *'many distinct trees'*

aná *'who'*

aná aná *'who and who'*

ogó *'water'*

ogó ogó *'many distinct bodies of water'*

sadéi *'two'*

sadéi sadéi *'by twos'*

In a few instances there is a change from initial-syllable to second-syllable stress.

éba *'hole'*

ebá ebá *'different holes'*

síni *'thorn'*

siní siní *'different thorns'*

dáma *'meat'*

damá damá *'different meats'*

1.4. Two instances of complete reduplication have been observed in which m- is prefixed to the reduplicated form, and two problematic instances in which b- is prefixed to the reduplicated form. In one of

these examples the first vowel of the reduplicated form is also replaced by a.

igéra usínu *'he stared'*
 igéra magéra usínu *'he stared intently'*
 áika *'different'*
 áika máika *'different ones'*
 uyár-i *'he stood up'*
 uyár-e buyár-e usínu *'he tumbled about'*
 iwáwa usínu *'he made a mistake'*
 iwáwa áta báta usínu *'he made many mistakes'*

2. PARTIAL REDUPLICATION

Partial reduplication has been noted in more verbal than non-verbal forms, and with a greater variety of ways of reduplication.

2.1. PARTIAL REDUPLICATION OF COMPLEX VERBS

Complex verbs may be marked for repeated action or plural object by reduplicating the first CV of the first word of the unit.

iwíji usínu *'he inflicted a wound'*
 iwíwiji usínu⁶ *'he inflicted many wounds on one object'*
 éta anfa *'move away'*
 etáta anfa *'move away from everything'*
 ábe sá *'throw it away'*
 abébe sá *'throw them all away'*

There is a set of complex verbs whose first word ends in gari, the majority of which reduplicate the first CV of the first word to indicate a plural object:

awégari usínu *'he capsized it'*
 awéwégari usínu *'he capsized them'*
 serígari usínu *'he by-passed him'*
 šesérigari usínu *'he by-passed them (one after another)'*
 fisúgari usínu *'he pinched him'*
 fifísugari usínu *'he pinched them'*

There is another set of complex verbs whose first word ends in ari. Of these many do not seem to reduplicate, a few show full reduplication (see 1.1.), and a few show partial reduplication and replace ari by egari.

gowári usínu *'he poked a hole in the ground'*
 gogówégari usínu *'he poked holes in the ground'*

dofári usínu 'he flattened it'
 dodófeğari usínu 'he flattened them'

Three verbs show other changes when they reduplicate.

jugári usínu 'he felled a tree'
 jujúweğari usínu 'he felled trees'
 gogófari usínu 'he dented it'
 wowófeğari usínu 'he dented them'
 jegířari usínu 'he knelt'
 jejéřigari usínu 'he knelt repeatedly'

2.2. PARTIAL REDUPLICATION OF PRIMARY VERBS

In the second person singular imperative form, a limited number of verb stems partially reduplicate to indicate a plural object. They are all listed below in one of five patterns.

(1) The first CV of the stem reduplicated:

adí-a 'trample it!' adidí-a 'trample them!'
 rói-a 'strip it off!' rorói-a 'strip them off!'

(2) The second CV of the stem reduplicated:

tasí-a 'tear it!' tasisí-a 'tear them!'

(3) The initial consonant of the stem added as a suffix and the stress moves to the -a suffix:

fomú-a 'break it!' fomuf-á 'break them!'

(4) The final vowel of stem changed, the initial consonant suffixed, and the stress moves to the -a suffix:

ma furí-a 'break the stick!' ma furuf-á 'break the sticks!'
 ma burí-a 'pluck the flower!' ma burub-á 'pluck the flowers!'

(5) The final vowel of stem lost, the initial consonant suffixed, and the stress moves to the -a suffix:

dorói-a 'go through the hole!' dorod-á 'go through the holes!'
 borói-a 'reveal it!' borob-á 'reveal them!'

2.3. PARTIAL REDUPLICATION OF NOUNS AND ADJECTIVES

Partial reduplication of the first CV of nouns and adjectives shows plurality.

báka	'egg'	ba báka	'eggs'
rátu	'small'	ra rátu	'small pl.'
ráu	'good'	ra ráu	'good pl.'
iéta	'food'	ié tata	'foods'
emétu	'thing'	emé metu	'things'
íni	'root'	in íni	'roots'

When an adjective modifies a noun both words are reduplicated to mark plurality.

iéta ráu 'good food'

iétata raráu 'good foods'

2.4. Most nouns and adjectives show plurality either by complete reduplication (1.3.) or by partial reduplication (2.3.). However, a few nouns, most of which are kinship terms, take one of several plural marking enclitics instead.

awéta 'woman'

awéta-bo 'women'

uwára 'person'

uwára-bo 'people'

kúa 'dog'

kuá-siri 'dogs'

bóro 'pig'

boró-siri 'pigs'

awéra 'husband'

awéra-si 'husbands'

amáí 'sore'

amáí-ma 'sores'

arúma 'daughter'

arúma-mi 'daughters'

bába 'my father'

babá-mutu 'my fathers'

káka 'my elder brother'

kaká-mutu 'my elder brothers'

In addition a few nouns and adjectives are intrinsically plural and do not reduplicate.

masígu 'comrades'

fáíya-were 'many'

nesía 'all'

N O T E S

1. Yareba is spoken by some 750 people in the Middle Musa Valley which is in the Tufi Sub-District of the Northern District of Papua. The data presented here were gathered under the auspices of the Summer Institute of Linguistics from 1963 to 1967. We are grateful to Alan Healey for his many hours of help in organising and revising this paper for publication. This research has been supported in part by the New Guinea Branch of the Summer Institute of Linguistics Research Fund.

2. The first five examples under 1.1. and the examples under 1.4. are the only exceptions to this statement that we have found.

3. Complex verbs are more fully described in Weimer 1964. Although phonemic stress has not been marked in Weimer 1964 or in Yareba literacy materials and translations, it has been marked throughout the present paper to show how it is affected by reduplication.

4. When the last two CVs of the first word are the same, the preferred form of the reduplication would be to drop the final CV of each word: fsuma bfru bára usfnu. However, both forms of reduplication are permissible.

5. Secondary and tertiary verbs are two types of dependent verbs also described in Weimer, 1964.

6. This same word can be noted under Section 1.1. where its fully reduplicated form (along with a vowel change to a) has a different meaning.

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LANGUAGES OF THE FINISTERRE RANGE - NEW GUINEA

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K. A. McELHANON

0. Introduction.
1. Classification.
2. The Finisterre Stock.
3. The Rai Coast Stock.
4. Unclassified non-Austronesian Languages.
5. The Austronesian Languages.
6. Typological Features.
7. Language List.

0. INTRODUCTION

During the past decade the linguistic picture for the Territory of Papua and New Guinea has been brought considerably nearer completion. In 1960, S.A. Wurm published his lexicostatistical classification of the Highlands languages and since that time a number of lexicostatistical classifications relating to other parts of the Territory have been completed: Bougainville (Allen and Hurd 1965); the Central District (Dutton 1969, Steinkraus and Pence 1964); the D'Entrecasteaux Islands (Lithgow and Staalsen 1965); the Gulf District (Franklin 1968); the Madang District (Z'graggen 1969); the Morobe District (Hooley and McElhanon 1970, Wilson 1969); New Britain (Chowning 1969); New Ireland (Lithgow and Claassen 1968); the Northern District (Dutton 1969, Wilson 1969); the Sepik area (Healey 1964, Laycock 1965, 1968, Dye, Townsend and Townsend 1968); and the Western District (Healey 1964, Voorhoeve 1968).

The present paper is the result of preliminary studies toward filling in yet another gap of the linguistic picture. Hooley and McElhanon (1968) surveyed the Morobe District languages and noted the existence of a large group of non-Austronesian (NAN) languages. This group stretches from Umboi Island in the east through the Huon Peninsula and along the Finisterre mountain range into the southeastern Madang District. In an addendum to the paper, McElhanon provisionally named the group the Finisterre-Huon Micro-phylum consisting of two stocks - the Finisterre Stock and the Huon Stock - and a language isolate on Umboi Island. Although the eastern boundary of the micro-phylum was known, the western boundary was indeterminate.

A survey of the Madang District languages by Z'graggen (1969) left an area of an unknown number of languages in the eastern Ramu Sub-district and the Saidor Sub-district. This area lay between the Madang Phylum as posited by Z'graggen (1969:40-69) and the Finisterre-Huon Micro-phylum as posited by McElhanon (Hooley and McElhanon 1968). In order to determine the degree of relationship between these two phyla Claassen surveyed the languages of the Saidor Sub-district and the Bogadjim, Kabenau, Naho-Rawa, Dumpu-Kaigulan and Urigina-Kesawai census divisions of the Ramu Sub-district. This paper constitutes an initial step towards clarifying the knowledge of the linguistic situation of that area and provides preliminary remarks regarding the Finisterre Stock.¹

The languages discussed in this paper are spoken on either side of the Saruwaged and Finisterre mountain ranges (see map) stretching from the area of the Boana Patrol Post near Lae northeasterly into the Madang District as far as the Kabenau River. Portions of the upper Ramu valley, the Astrolabe Bay area and the Rai coast are also included. The people dwell in hamlets and villages of a dozen to 600 inhabitants located on the mountain slopes below an altitude of 7000 feet and in the valley flats and coastal areas.

1. CLASSIFICATION

Two of a number of problems confront the field worker who attempts a lexicostatistical classification of New Guinea languages. The first of these is the problem of dialect chains; e.g., in A-B-C-D-E, A is mutually intelligible with B, B with C and so on. Dialects A and D, however, may be unintelligible. The problem confronting the classifier concerns drawing the boundary separating dialects A and D which apparently represent different languages. Although a number of scholars would undoubtedly consider all the dialects to represent a single language, the

present writers have divided such dialect chains into separate languages on the basis of the native speakers' judgments.² A related problem concerns the question of language or dialect.³ It was found that the borderline between language and dialect as judged by native speakers generally coincided with 70-75% shared basic vocabulary. Thus when a lexicostatistical percentage was at the borderline of language and dialect, resort was made to the natives' judgments as well as structural criteria when it was available.

The basic vocabulary list upon which this study is based consists of a selection of 139 items from Swadesh's lists of 100 and 215 items (Swadesh 1955b). In determining probable cognates the writers used established sound correspondences whenever possible. Otherwise the "inspection method" as outlined by Gudschinsky (1956) was followed. In coding the list for computer counting a particular item was numbered serially throughout the list of languages with identical numbers being given to items considered as cognate. By so doing, the determination of cognates was done with a minimum of interruption in the hope of recording consistent decisions. The counting was done at the Australian National University on an IBM 360/50 computer and the results are presented in Table 1. The upper right triangle presents the percentage of shared vocabulary and the lower left triangle presents the number of items compared.

In classifying the languages the following percentages of shared vocabulary were generally followed in separating levels: *a.* 75-100%, dialects of the same language; 28-75%, languages within the same family; 12-28%, families within the same stock; 4-12%, stocks within the same micro-phylum. Using these percentages as a starting point, a number of groupings are posited. The languages from the Boana area along both slopes of the Saruwaged and Finisterre ranges northeast to the Rawa language near Dumpu constitute one group of interrelated languages which is named the Finisterre Stock. This stock of languages, the Huon Stock and a language isolate on Umboi Island form the Finisterre-Huon Micro-phylum. The majority of the remaining non-Austronesian languages in the upper Ramu area and the western Rai Coast apparently constitute another group of interrelated languages which may be tentatively included in the Madang Phylum. Lexicostatistical percentages indicate the possible existence of a single stock, the Rai Coast Stock, which consists of the Usino, Evapia, Kabenau and Yaganon families. The Bongu, Gusap and Abaga languages are not classified.

2. THE FINISTERRE STOCK (POP. 46,000)

The Finisterre Stock may be sub-divided into six families of languages

and a language isolate. There are no clearly defined borders for most of these families because of the problem of the languages forming chains. For most of the languages, the only data available are the test lists of vocabulary so that not enough structural features of the individual languages are known for structural criteria to be of use in clarifying the classification. For the moment, the languages which show a high lexical relationship to more than one family will be listed with the family exhibiting the closest lexical relationship.

Table 2 indicates the relationship between member families of the Finisterre Stock. Column one presents the percentage range of shared basic vocabulary items in the stock. The remaining columns tabulate the number of language comparisons indicating a particular percentage of lexical relationship when the member languages of two given families were compared. Thus, column two shows that when the seven languages of the Gusap-Mot Family were compared with the three languages of the Warup Family, two of the comparisons indicated 8% lexicostatistical relationship, two indicated 9% relationship, one indicated 10% relationship; there were no relationships at 11% (so indicated by a blank), two indicated 12% relationship and so on. In this way the degree of relationship between any two families may be quickly ascertained. For example, the Uruwa and Erap families share 13-36% of the basic vocabulary but the tabulation indicates that most comparisons fall between 18% and 24% shared basic vocabulary.

2.1. THE GUSAP-MOT FAMILY (POP. 14,000)

This is the westernmost family in the Finisterre Stock.⁴ Except for the Ufim language in the Morobe District, all members are within the Madang District. The languages within this family show a range of 19-76% shared vocabulary. There appear to be three sub-groups within the family: (1) Gira; (2) Ngaing, Neka, Nekgini; and (3) Nahu, Rawa and Ufim.

2.1.1. The Gira language is spoken by about 400 people living in an area along the coast and extending about six miles inland west of Saidor in the Mot census division. Two dialects, 90% related, are represented by the villages of Yeimas and Wab. The villages of Nampa and Suang east of the Nankina River are reported to speak the same language. This language appears to be the most divergent of the family with its highest lexicostatistical relationship at 45% (with Neko) and the lowest at 19% (with Ufim).

2.1.2. The Ngaing language is spoken by 800-900 people inhabiting the

PERCENTAGES	Gusap-Mot : Warup	Gusap-Mot : Yupna	Gusap-Mot : Uruwa	Gusap-Mot : Wantoat	Gusap-Mot : Erap	Warup : Yupna	Warup : Uruwa	Warup : Wantoat	Warup : Erap	Warup : Uruwa	Yupna : Wantoat	Yupna : Erap	Uruwa : Wantoat	Uruwa : Erap	Wantoat : Erap
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10	1														
11	2														
12	1														
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TABLE 2: INTER-FAMILY RELATIONSHIPS

hinterland between the Nankina and Mot rivers. The word lists for this language are from the villages of Amun and Busaka near the eastern boundary of the language. Reports from Ngaing, Neko, and Nekgini informants indicate the presence of a dialect chain linking the three languages. A vocabulary list from a more central village would probably reveal a closer lexical relationship to the Neko and Nekgini languages than those reported here.

2.1.3. The Neko language is spoken by 200 people in two coastal villages west of the Mot River. The vocabulary list is from Warai village near Biliau (Lutheran) mission station.

2.1.4. The Nekgini language is very closely related to the Neko language and subsequent study may show these two languages to be dialects of a single language. The 450 speakers of this language live in five inland villages west of the Mot River. There are two dialects represented by the villages of Sorang in the west and Reite in the east, about 90% related. The relationship of the Neko language to these dialects is about 70%.

2.1.5. The 5,400 speakers of the Nahu language live in villages on both sides of the Finisterre Range; on the northern slopes along the headwaters of the Mot and Yangda rivers, and on the southern slopes along the upper Gusap River. The villages of Yorkia and Matoko on the northern slopes and the villages of Sewe and Budemu on the southern slopes represent four dialects about 95% interrelated.

2.1.6. Although the Rawa language is the largest (pop. 6000) in this family and covers an extensive area, there are only slight dialectal variations. On the northern slopes the language is spoken in the western villages of Gur, Bangri and Usau and throughout the tributaries of the Yaganon River and in the middle Yangda River valley. On the southern slopes it is spoken along the upper Bura, Lanu, Surinam, and Uria rivers. The people of the northeasternmost villages of Ramba, Koiaku, Gut1, and Kurei were reported by Rawa informants to speak Rawa and by Nahu informants to speak Nahu.

2.1.7. The Ufim language (pop. 500) is the southernmost language of this family and is spoken in a number of villages along the upper Umi and Ufim rivers in the Morobe District.

2.2. THE WARUP FAMILY (POP. 1700)

The Warup language family is located along the Rai coast from Saidor eastward to the Yaut River. Three languages are in the family. Their relationships are: Degenan-Asat, 37%; Asat-Morafafa, 34%; Morafafa-Degenan, 27%.

2.2.1. The Asat language is spoken by 500 people living on the coastal plain between the Yaut and Warup rivers. Informants stated that the people of Monara and Guiarak villages speak either a divergent dialect of Asat or a different language.

2.2.2. About 300 people in three villages near the mouth of the Warup River are reported to speak the Degenan language. Two villages, Sel and Seure, are said to be composed of speakers of Degenan as well as speakers of the Austronesian language, Moromiranga (see 5.3.). People in the village of Mamgak are said to speak a divergent dialect of Degenan or perhaps a different language.

2.2.3. The extent of the Morafafa language remains undetermined. Vocabulary lists from three villages, Baru, Kasu, and Somek, located southeast of Saidor reveal only slight dialectal differences.

2.3. The Dahating language (pop. undetermined) is a language isolate spoken in a number of villages south of Saidor. A vocabulary list of 45 items from the village of Wilwilan indicates the following relationships with the languages of the Warup family: Morafafa, 20%; Degenan, 17%; Asat, 15%. Comparison with the languages of the Gusap-Mot Family yields relationships of 9-16%.

2.4. THE YUPNA FAMILY (POP. 7000)

Four languages, and probably five, belong to this family. The languages are between 34-58% interrelated and are spoken on the northern slopes of the Finisterre Range on both sides of the Madang-Morobe district boundary.

2.4.1. The Nankina language is spoken by about 1800 people in the upper Nankina River valley.

2.4.2. The Domung language is spoken by about 850 people in a number of villages near Tapen (Lutheran) mission station.

2.4.3. The language spoken at Nokopo village is tentatively classified as a language distinct from that spoken at Kewieng village. There is a

great amount of dialectal variation within the Yupna River valley. Although the lexicostatistical relationship is only 57% a number of informants have said that the villages of upper Yupna valley, including Nokopo and Kewieng, represent a single language. This area, together with the Uruwa area to the east exhibit conditions particularly suitable to a sociolinguistic study.

2.4.4. The Kewieng language (pop. 2300) is reported to be spoken with considerable dialectal variation in eight villages of the upper Yupna valley in the Morobe District.

2.4.5. One other language has been reported to be spoken at the villages of Bonkiman and Wandabong (pop. c.500). No word list was obtained but informants stated that the language is similar to the Kewieng language and so it is provisionally included in the Yupna family.

2.5. THE URUWA FAMILY (POP. 2300)

The Uruwa basin contains a number of widely scattered villages with small populations. These villages represent a chain of languages and one informant from a central village, who regularly patrolled the area for the administration (D.A.S.F.), stated that the villages in the upper Uruwa represented a single language rather than the five languages reported in this paper. The individual status of these languages needs to be confirmed by further research. The languages share 26-75% of the basic vocabulary.

2.5.1. The Som language is spoken at the village of Gorgiok (pop. 80). Its high lexical relationship of 28-37% with the Yupna languages may be the result of its location on the main trail linking the Yupna and Uruwa valleys. Its lexical relationship with the remaining Uruwa languages varies from 25-40%.

2.5.2. The Sakam language (pop. 400) is the most divergent of the remaining Uruwa languages. It is spoken in three villages, Sakam, Kundem, and Dinabat, in the foothills south of the Som River, and in one village, Kamdarang, south of the Saruwaged Range in the Erap census division.

2.5.3. The remaining languages of the Uruwa basin form a subgroup of five languages sharing between 60-75% of the basic vocabulary. These languages are: Sindamon (pop. 150) spoken south of the Som River; Mup (pop. 100) and Mitmit (pop. 100) spoken in villages of the same names

on the west side of the upper Uruwa valley; Worin (pop. 400) spoken in the villages of Worin, Yawan and Gotet on the east side of the upper Uruwa valley; and Kumdauron (pop. 400) spoken at the villages of Kumdauron, Sapmanga and Boksawin on the east bank of the middle Uruwa River.

2.5.4. The Komutu language is spoken in a number of small villages in the lower Timbe valley and along the coastal ridge. Word lists obtained in Komutu and Hamelengan villages indicate two dialects, 83% related. The people, who number about 500, are gradually being assimilated by the more populous Timbe (10,000) people.

2.5.5. Another language which may be within the Uruwa family is spoken at the villages of Karangi and Weleki in the lower Timbe and Selepet areas. Assimilation of the people by both the Timbe and Selepet peoples is in an advanced stage and word lists collected from the two villages show considerable borrowing from these languages.

2.6. THE WANTOAT FAMILY (POP. 9500)

This family of languages stretches from the Leron valley in the west along the southern slopes of the Saruwaged Range to the Irumu valley in the east. The family is dominated by the Wantoat language which represents more than half of the total population. Member languages share 28-70% of the basic vocabulary.

2.6.1. The Awara language is spoken by 900 people in the upper Leron valley. Davis (1967) regards it as a dialect of Wantoat. The lexicostatistical relationship, however, is only 61% and so in this paper it is classed as a separate language. Davis is preparing a dialectal study of his greater Wantoat language and results should be forthcoming.

2.6.2. The Leron language (pop. 500) is spoken in the villages of the middle Leron valley below the Awara villages. The individual status of this language is based on lexicostatistical relationships of 69% with Awara and 70% with Wantoat. Davis also considers this to be a divergent dialect of Wantoat.

2.6.3. The Wantoat language (pop. 5000) is spoken in the villages along the Wantoat River and eastward to the Bam River. Davis (personal communication) reports considerable dialectal variation.

2.6.4. The Bam language, spoken by 600 people living in four villages

along the Bam River, in part of a chain linking the western languages of the Wantoat Family with those in the Irumu and Erap valleys to the east.

2.6.5. The Yagawak language (pop. 400), spoken in three villages south of the Bam language, completes the chain between Wantoat and Irumu with a relationship of 37% with Bam and 68% with Irumu. Subsequent study may show it to be a dialect of the Irumu language.

2.6.6. The Saseng language is spoken in the village of Saseng (pop. 200) on the west bank of the lower Leron River.

2.6.7. The Irumu language (pop. 1800), spoken along the headwaters of the Irumu River, is the easternmost language in the Wantoat Family. With a lexicostatistical relationship of 43% with the Gusan language of the Erap Family, it is one of the main links connecting the Wantoat and Erap families.

2.7. THE ERAP FAMILY (POP. 11,400)

This family stretches across the headwaters of the Busip and Erap Rivers and along the lower reaches of the Irumu River. The languages form a chain and share 21-72% of the basic vocabulary list. The four languages around Boana - Nuk, Nek, Nakama, and Numanggang - form a subgroup of more closely related languages.

2.7.1. The Mamaa language is spoken in the village of Mamaa (pop. 200) on the east bank of the lower Irumu River. With the exception of the Finungwan language, this language shows no lexicostatistical relationship greater than 35% with the other languages in the family. The 46% relationship with Finungwan may reflect borrowings since the people are being assimilated by the Finungwan people and most of them are bilingual.

2.7.2. The Finungwan language is spoken by 400 people living along the ridge separating the Irumu and Erap river basins.

2.7.3. The Gusan language (pop. 800) includes a number of villages in the headwaters of the Erap River. Informants from various villages indicate that there is some dialectal variation.

2.7.4. The Sauk language (pop. 300) is spoken near the airstrip at Kisengan in the eastern Erap river basin.

2.7.5. The Nimi language (pop. 1400) of the central Erap basin appears to have substantial dialectal variation among its several villages.

2.7.6. The Uri language (pop. 2100) has two dialects; a small eastern dialect spoken in the villages of Fi, Tinibi and Torowa in the central Erap and a larger dialect of several villages between the Erap and Irumu rivers.

2.7.7. The village of Munkip (pop. 100) on the east bank of the lower Erap village speaks a distinct language. Its apparently close relationship with the Numanggang and Nakama languages north of it may be due to contact since Munkip village is located on the main trail leading from the Markham valley (and the port of Lae) into the hinterland.

2.7.8. The Numanggang language (pop. 2200) is spoken in several villages along the mountain ridge separating the Busip and Erap river valleys. There are two dialects, 87% related. This language and three other languages, Nakama, Nek and Nuk, constitute a sub-group of languages sharing 46-72% of the basic vocabulary.

2.7.9. The Nakama language is spoken by 900 people directly west of the Boana patrol post. There are two dialects - northern and southern - which are 87% related.

2.7.10. The Nek language is spoken by 1300 people north of Boana. A western dialect is 96% related to an eastern dialect. Many of the adults are bilingual in the Nuk language which is about 60% related.

2.7.11. The easternmost language in this family is Nuk which is spoken by 1800 people living east of Boana. There is little dialectal variation.

3. THE RAI COAST STOCK (POP. OVER 8300)

This stock includes four families, one of which, the Usino Family, is included by Z'graggen (1969:61) within the Madang Phylum. A number of the more stable vocabulary items of the Mobsu Stock of that phylum are also regular throughout most of the languages of the proposed Rai Coast Stock. These items are: the pronouns 'I', 'thou', 'he', 'we', and the words for 'breast', 'ear', 'elder brother', 'eye', 'fat', 'louse', 'moon', 'name', 'sun', 'tongue', 'tooth', 'two' and 'water'. Z'graggen is planning to collect further data in the languages of the

Rai Coast Stock and then compare these typologically with the Mobusu Stock.

The languages of the Rai Coast stock appear to be quite heterogeneous, particularly with regard to the basic vocabulary.⁵ One of the main problems encountered in the classification was the generally low percentages of shared vocabulary among the member languages. It was difficult to decide if lexical evidence warranted the classification of the four families as constituting a single stock rather than two or perhaps three stocks.

There is good evidence for classifying the Kabenau and Evapia families within a single stock. The Yaganon Family, however, is lexically divergent and its inclusion in the same stock is tenuous. The Usino Family is related to the Yaganon Family below the stock level and its relationship to the Kabenau and Evapia families just borders on the stock level. On the assumption that a more detailed study would probably reveal correspondences and relationships not recognised in this preliminary study, the writers have chosen to posit a single stock.

Although the percentages in Table 1 indicate that the languages of the proposed Rai Coast Stock are generally 4-8% related to the languages of the Finisterre Stock, the two groups are classified in different micro-phyla for a number of reasons. The lexicostatistical relationship is slight and within the range which could be attributed to chance or to the presence of unrecognised loans. The pronominal system differs as also do a number of vocabulary items which are generally stable throughout the Finisterre-Huon Micro-phylum. These vocabulary items are: *burn*, *eat*, *earthquake*, *eye*, *fire*, *say* and *sleep*.

3.1. THE USINO FAMILY (POP. OVER 3000)

In studying the languages of the southeast Madang District, Z'graggen (1969:61-2) posited an Usur Group consisting of three languages: Usino, Garia (Sumau) and Urigina. Z'graggen followed Swadesh's (1954) percentage of 36% as the border between family and stock and stated that the Urigina language links with the other two languages at the stock level. The present writers, however, on the basis of Swadesh's (1955a) figure of 28%, combine these three languages with a fourth language, Bagasin, and suggest that the group be provisionally named the Usino Family. The percentages of shared basic vocabulary are given in Table 3.⁶

TABLE 3: USINO FAMILY RELATIONSHIPS

USINO				
38%	GARIA			
30%	34%	URIGINA		
50%	63%	44%	BAGASIN	

3.1.1. The extent of the Bagasin language is not known and further field work is necessary in the area south of the Gogol River to determine whether there are other languages within this family. Data indicate a dialect chain linking this language with the Garia language and a detailed study may show them to be dialects of a single language.

3.1.2. About 800 people living in eight villages northeast of the Usino patrol post speak the Garia (Sumau) language (Z'graggen 1969:62).

3.1.3. The Usino language is spoken by about 1000 people living in an area west of the Usino patrol post. Z'graggen (1969:61) lists seven villages for the language.

3.1.4. The southernmost of the Usino languages is Urigina, spoken by about 1500 people in fifteen villages east of Usino and north of the Ramu River (Z'graggen 1969:62).

3.2. THE EVAPIA FAMILY (POP. EST. 2500)

The Evapia Family comprises an undetermined number of languages along the upper Ramu River northwest of Dumpu. Four languages have been classified as belonging to this family and their lexicostatistical relationships are 49-77%.

3.2.1. The Sinsauru language is spoken by the people living on the upper Midjim River in the Bogadjim census division. Word lists from Baipa and Saipa villages indicate about 85% lexicostatistical relationship.

3.2.2. The Koropa language is spoken southwest of the Sinsauru language. A word list from Koropa village indicates close lexical ties with both Sinsauru (75%) and Kaikovu (77%). The relationship with the Sinsauru dialect spoken at Baipa village, however, is only 69%. Subsequent study may establish that these are simply divergent dialects of a single language.

3.2.3. The Kaikovu language is spoken in a number of villages along the

Evapia and Ramu rivers northwest of Dumpu.

3.2.4. The Taga language is spoken along the Ramu River northwest of Dumpu. Its full geographic extent and number of speakers is not known.

3.3. THE KABENAU FAMILY (POP. EST. 1700)

This family stretches along the Rai coast from Bilau westward to Bongu and thence inland across the foothills at the western end of the Finisterre Range to Dumpu in the Ramu valley. Five languages are tentatively included in the family. Only two languages, Lemio and Gurumbu, are closely related (71%) and these may eventually prove to be dialects of a single language. The remaining three languages share 19-33% of the basic vocabulary.

3.3.1. The 120 speakers of the Kolom language live in the villages of Lamtub and Singor located near the mouth of the Yangda river.

3.3.2. The Suroi language is spoken by about 600 people in the coastal villages between the Guabe and Male rivers. Its lexicostatistical relationship (24-27%) with other members of the Kabenau Family is not significantly greater than its relationship with the members of the Evapia Family (17-25%). It may constitute a link between the families and so its inclusion in the Kabenau Family is tentative. Note, however, its position on the coast, relatively distant from the Evapia Family of languages.

3.3.3. The Lemio language is spoken by an undetermined number of people living in several villages along the upper Kabenau River.

3.3.4. The Gurumbu language is spoken by approximately three-fourths of the population of the village of Gurumbu (pop. 91) on the Uria River. The remainder of the population of Gurumbu speak the Rawa language of the Finisterre Stock (see 2.1.6.).

3.3.5. The Watiwa language is spoken by 250 people in the villages of Dumpu, Abikal, and Bembei along the Ramu River near Dumpu. The language shows a range of 12-24% relationship with the Kabenau Family and 15-18% with the Evapia Family. Therefore, its inclusion in the Kabenau Family is tenuous and it may prove to be a language isolate.

3.4. THE YAGANON FAMILY (POP. 1050)

The Yaganon Family comprises three languages, Yabong, Ganglau and Saep with the following lexicostatistical relationships: Yabong-Saep, 48%; Yabong-Ganglau, 35%; and Ganglau-Saep, 57%.

3.4.1. The Yabong language (pop. 370) is spoken in five villages west of the Yangda River. Vocabulary lists from Gogou, Bidua, and Basor villages reveal only very slight dialectal variations. Many of the people are reported to be fluent in the Rawa language.

3.4.2. The Ganglau language is spoken by 200 people living along the coast near the Yaganon, Ganglau and Menglau rivers. A widely divergent dialect is reported to be spoken in the villages of Kulilau and Dumun to the west.

3.4.3. The 475 speakers of the Saep language live in four villages between the middle Yaganon and Gowar rivers.

4. UNCLASSIFIED NON-AUSTRONESIAN LANGUAGES

Three languages included in this study remain unclassified. The first is the language of Bongu (Astrolabe Bay). A word list obtained by Claassen shows no more than 16% probable cognates with the languages included in this study. The area west of Bongu and around the Astrolabe Bay to the Gogol river, which was not covered by this survey, is reported to be linguistically complex and brief vocabulary lists from four coastal villages near Bongu indicate three other languages closely related to Bongu. There are perhaps as many as 14 languages spoken along the coastal and hinterland areas from the Guabe River westward to Bogadjim. These languages may constitute another stock, the Astrolabe Bay Stock, of the Madang Phylum.

The second unclassified language is that of Gusap which is spoken between the Gusap and Umi rivers in the Morobe District. The language appears to be related to the Gusap-Mot Family, but the similarities in vocabulary are slight and may be due to borrowing.

An examination of an Abaga language word list collected by F. Mecklenburg and drawn to the writers' attention by S.A. Wurm reveals evidence that the language is within the Finisterre Stock. The language is known to be spoken by only a few people living in the villages of Kose and Kanofi near Kainantu in the Eastern Highlands District. When the Austronesian people invaded the Markham valley most of the people speaking the Finisterre languages were forced eastward out of the Ramu-Markham valley and into the Finisterre Range. This remnant probably

represents a small group which were cut off and forced westward into the Highlands only to be assimilated by the more numerous Kamano (pop. 31,000) and Benabena (pop. 11,700). The language is heavily influenced by loans from both Kamano and Benabena.

5. THE AUSTRONESIAN LANGUAGES

The Austronesian languages are found along the coast in the Saidor Sub-district from the Morobe District border westward just beyond the Yaganon River. Six languages, and probably seven, share 30-45% of the basic vocabulary and are 27-58% lexicostatistically related to the Gedaged language of the Belan Family (see Z'graggen 189f.).⁷

5.1. The Roinji language is spoken in the villages of Roinji and Gali near the mouth of the Yupna River.

5.2. The Malalamai language is spoken by 300 people living in the villages of Malalamai and Bonga east of the Sama River.

5.3. The Moromiranga language is spoken in the coastal villages of Mur, Sel and Seure west of Malalamai.

5.4. The Sengam language (pop. 600) is spoken west of Saidor in several villages.

5.5. The Mindiri language is spoken in the village of Mindiri (pop. 81) just west of the Yaganon River.

5.6. The Arop language is spoken by 600 people living on Long (Arop) Island.

5.7. Another Austronesian language is reported to be spoken in the villages of Wab and Sau'i near Saidor. Lawrence (1964:19) states that this group, which he names the Som, number about 150 people.⁸

6. TYPOLOGICAL FEATURES

In general the typological features of one language from each family have been compared. When sufficient data are not available in any one language of a family, some general remarks regarding the family are made on the basis of the vocabulary lists. The languages included in these comparisons are: Saep (Yaganon Family); Suroi and Kolom (Kabenau

Family); Sinsauru (Evapia Family); Rawa (Gusap-Mot Family); Kewieng (Yupna Family); the Uruwa Family in general; Wantoat (Wantoat Family); and Uri (Erap Family).

6.1. PHONOLOGY

6.1.1. The Yaganon languages have a series of voiceless stops, voiced stops, and nasals in the labial, alveolar and velar positions. Voiced prenasalised stops may also be phonemically distinct, particularly in Yabong where they occur word initially. Velar nasals have been observed word initially in Ganglau but not elsewhere. Syllabic velar nasals occur in Saep and occasionally in Ganglau. The alveolar lateral and flap are not phonemically contrastive. The alveolar lateral in Saep and Ganglau corresponds to an alveolar flap in Yabong.

The following oral continuants occur in all three languages: [p], [s], [w] and [y]. A voiced labial fricative in Ganglay may be an allophone of w. The phone [h] in Saep corresponds to [s] in Ganglau and Yabong and also [p] in Ganglau. An [h] phone has an infrequent occurrence in Ganglau.

6.1.2. The Suroi language has 21 consonant phonemes: p, t, k, b, d, g, mb, nd, ng, m, n, ŋ, f, s, dʒ, ndʒ, l, r, w, y, and ny; and 5 vowel phonemes: i, e, a, o and u. The consonant phonemes contrast in manner of articulation as to voiceless stops, voiced stops, prenasalised stops, nasals, voiceless fricatives, voiced affricates, lateral, vibrant and semivowels. The stops and nasals are contrastive in labial, alveolar, and velar points of articulation. The voiceless fricatives contrast in alveolar and alveopalatal points of articulation. The semivowels contrast in labial and alveolar points of articulation. The vowels contrast as to high, mid and low tongue heights. The high and mid vowels contrast as to front and back tongue positions.

The voiceless stops, unaspirated intervocalically, have aspirated and unaspirated variants occurring in free alternation initially and finally. Except for k the voiceless stops have final unreleased variants. The phoneme g has a variant [ʔ] occurring medially and finally. The Phoneme f has a variant [h] occurring in free alternation intervocalically with [f]. The phoneme r has a variant [ʀ] occurring in free alternation with [r̥] initially and intervocalically.

6.1.3. The languages of the Evapia Family have voiceless stops in the labial, alveolar and velar positions. Koropa and Sinsauru appear to have contrastive voiced stops in these positions also. Nasals have been observed only in the labial and alveolar positions. An alveolar vibrant

occurs in all the languages, and all except Koropa appear to have a contrasting lateral. The following oral continuants occur in all the languages: [f], [s], [h], [w] and [y]. All the languages appear to have five vowels: i, e, a, o and u.

6.1.4. The Rawa language has 17 consonant phonemes: p, t, k, b, d, g, mb, nd, ŋg, m, n, ŋ, s, h, r, w and y; and six vowel phonemes: i, e, a, â, o and u.⁹ The consonant phonemes contrast in manner of articulation as to voiceless aspirated stops, voiceless unaspirated stops, prenasalised voiced stops, nasals, voiceless fricatives, vibrant, and semivowels. The stops and nasals contrast in labial, alveolar and velar points of articulation. The fricatives contrast in alveolar and glottal points of articulation. Semivowels contrast in labial and alveolar points of articulation. The vowel phonemes contrast as to high, mid and low tongue heights and front and back tongue positions. The alveolar vibrant [ʀ] has a lateral allophone [ɺ] occurring in free alternation.

6.1.5. The Yupna language appears to have nineteen consonants: p, t, k, kp, b, d, g, gb, m, n, ŋ, w, y, g, s, dz, ts, l, and r; and six vowels: i, e, a, â, o and u. Vowel length is probably phonemic. The consonants contrast in manner of articulation as to voiceless and voiced stops, nasals, flat and grooved fricatives, voiceless and voiced affricates, lateral and vibrant. Only the stops contrast in four points of articulation: labial, alveolar, velar and labio-velar. The nasals and flat fricatives lack the labio-velar series. The apparent contrast between the voiced affricate dz and the voiceless affricate ts may be resolved by more data and a more detailed study. The same may be said with regard to the apparent contrast between l and r. The six vowels contrast as to high, mid and low tongue heights and front and back tongue positions.

The voiceless stops are aspirated in initial and intervocalic positions and unreleased in syllable final position. The velar stops are backed. The voiced stops are prenasalised when they occur intervocalically and tend to be prenasalised initially. The affricates and lateral are palatalised.

6.1.6. The Uruwa languages have a series of voiceless stops, voiced stops and nasals in the labial, alveolar and velar positions. The voiceless stops are unreleased syllable finally. Prenasalisation of the voiced stops is common, although not universal. The velar stops are backed. All the languages have an alveolar vibrant and for all except Mitmit and Sindamon an alveolar lateral has been observed as well. The lateral in Som is palatalised and fluctuates with [y].

A series of oral continuants including [w], [y] and [s] occurs in all languages. Komutu, Kumdauron, and Worin have an [h], probably with phonemic status. All languages have a voiced velar fricative [ɣ] which may be an allophone of the h in those languages where h occurs. In some languages, on the other hand, [ɣ] fluctuates with intervocalic [k^h]. In two languages, Kumdauron and Mitmit, there is an [f]. This phone occurs in Mup as well, but it fluctuates with [p^h] and is probably a variant of p. The phone [h] in the Worin language corresponds to the [f] and [s] in the Kumdauron and Mitmit languages. Many of the languages have a final glottal stop. An intervocalic glottal stop in the Mup language corresponds to intervocalic [ɣ] or [k^h] in the other languages.

The Som and Sakam languages are the westernmost of the Uruwa languages and resemble the Kewieng language of the Yupna Family in that there is a series of labiovelar stops as well as an affricate dz. Furthermore, these languages are the only Uruwa languages with a syllable final [ɨ], another feature of the Yupna languages.

All the languages appear to have six vowels: i, e, a, â, o and u. In Som and Sakam the vowel â tends to have a centralised phonetic norm approaching [ə].

6.1.7. The Wantoat language has sixteen consonants: p, t, k, kw, b, d, g, gw, m, n, ŋ, ŋw, s, z, w and y; and seven vowels: i, e, ə, a, â, o and u.¹⁰ The consonants are contrastive in manner of articulation as to voiceless and voiced stops, nasals, voiceless and voiced fricatives and semivowels. The stops and nasals contrast in four points of articulation: labial, alveolar, velar and labio-velar. The semivowels contrast as to labial and alveolar points of articulation. Vowels are contrastive as to front, central and back tongue positions and high, mid and low tongue heights.

The voiceless stops are aspirated in initial and intervocalic positions and unreleased in word final position. The voiceless velar and labio-velar stops are backed. Voiced stops and the voiced fricative are prenasalised. Some dialects of Wantoat have an h, corresponding to the s of the main dialect.

6.1.8. The Uri language has sixteen consonants: p, t, k, kw, b, d, g, gw, m, n, ŋ, f, s, r, w, and y; and five vowels: i, e, a, o, and u. Vowel length is also phonemic for the vowels i, a and u. The consonants contrast in manner of articulation as to voiceless and voiced stops, nasals, fricatives, semivowels and a vibrant. The stops contrast in four points of articulation: labial, alveolar, velar and labio-velar.

The nasals contrast as to labial, alveolar and velar points of articulation. Fricatives contrast as to labio-dental and alveolar points of articulation. Semivowels contrast as to labial and alveolar points of articulation. Vowels contrast as to front, central and back tongue positions and high and low tongue heights.

The voiceless stops, p and k, have aspirated variants initially and intervocally, and nasally released variants utterance finally. The voiceless alveolar stop has a glottal variant in syllable final position. Voiced stops are not prenasalised. The phoneme g has a voiced velar fricative variant [g̤] occurring between a sequence of u phonemes. The phoneme r has a lateral variant [r̤] occurring in fluctuation with [ʀ] intervocally. The semivowel w has a bi-labial fricative variant [w̤] occurring intervocally between two i phonemes. The vowel a has a phonetic norm [ə]. When the vowel is lengthened, however, the quality is that of [aː]. The phone [æ] is a variant of e and [ɔ] is a variant of o.

Among the languages of the Finisterre Stock, the syllable structure is generally simple, with no consonant clusters within the syllable. In most of the languages the syllables may be closed by voiceless stops p, t, k and nasals m, n, and ŋ. A few languages have a syllable final lateral. Two languages, Rawa and Nahu have no closed syllables. The nucleus of the syllable is simple and vocoid clusters in Rawa, Wantoat and Uri have been interpreted as sequences of simple syllable nuclei. Stress is phonemic in Rawa but probably sub-phonemic in Yupna and Wantoat. In none of these languages does it carry a heavy functional load.¹¹

The languages of the Rai Coast Stock also do not have consonant clusters within the syllable. Most of the languages evidence closed syllables. In the Yaganon Family syllables may be closed by voiceless stops, p, t, k, voiced stops b, d, g, and nasals m, n and ŋ. In the Suroi language syllables are closed by any consonant except w, γ, and ny. In languages of the Evapia Family syllables are closed by voiceless stops t and k as well as nasals m and n, except in the Kaikovu and Taga languages which apparently do not have closed syllables. Complex syllable nuclei occur in the Rai Coast languages, e.g., Suroi has vocoid clusters of up to three segments in length. In Suroi stress is contrastive, but only on a limited number of words.

6.2. NOUN STRUCTURE

The languages of the Finisterre Stock generally evidence two noun classes; those which occur with obligatory possession marking suffixes and those which do not. The former class includes kinship nouns and

body parts. In some languages these possessed nouns may also be marked for number. Uri distinguishes singular and plural as in sabana 'my son' and sabane 'my sons'; Rawa has a suffix meaning 'all' as in bareno 'his wife' and baresumâno 'all of his wives'. The class of nouns which does not take obligatory possession marking suffixes includes nouns which have never been observed with possession markers, e.g. terms denoting 'sickness', 'cloud', and other meteorological phenomena, and nouns with optional possession markers, e.g. terms denoting personal possessions and domestic animals. Possession marking suffixes in Rawa and Yupna have separate forms indicating (1) 1s, (2) 2s, (3) 3s, (4) 1d, (5) 2 and 3d, (6) 1p and (7) 2 and 3p. In Uri the forms do not distinguish between dual and plural nor between 2p and 3p in these non-singular forms. In Wantoat the distinction between dual and plural is absent in the second person and all distinction of number is absent in the third person.

Some general features of the noun phrase are uniform throughout the Finisterre Stock: (1) a possessive axis-relator phrase occurs in a pre-head position and (2) optional post head qualifiers have an order of adjective, quantifier (numeral) and demonstrative.

The languages of the Rai Coast Stock have not been observed with number marked in the noun structure. Obligatory possession markers occur on kinship nouns and body parts in a number of Rai Coast languages; Saep in the Yaganon Family, Watiwa in the Kabenau Family and Usino in the Usino Family.

6.3. PRONOUNS

Pronouns may be divided into two types, free forms and bound forms. The free forms are basic minimal forms which accept post clitics when occurring in grammatical constructions marked by the clitics. For example, in Rawa the basic form no '1s' may take the subject marking clitic -ndo as in nondo 'I (the actor)'. In the location slot the forms are nono 'to me', and nonoŋgo 'from me'; and in the possessive phrase or benefactive slot the form is noro 'my, for me'. No inclusive/exclusive distinction in the personal pronouns has been found in any of the languages included in this survey.

The phonemic shape of the free pronouns is quite uniform throughout the Finisterre stock and the pronominal systems show obvious relationship to the languages of the Huon Peninsula Stock as well as the Highlands' languages. First person forms begin with n and second person singular forms with g or k. Dual forms are often distinguished by an alveolar nasal. The free forms also resemble the possession marking suffixes. The Wantoat forms are given in Table 4.

TABLE 4:

WANTOAT PERSONAL PRONOUNS AND POSSESSIVE SUFFIXES

	FREE PRONOUNS			POSSESSIVE SUFFIXES ¹²		
	Sg.	Du.	Pl.	Sg.	Du.	Pl.
1	nâ	nit	nin	-na	-nit	-nin
2	gâ	git	gin	-ga	-sâ	-sâ
3	an	git	gin	-nâ	-nâ	-nâ

The pronominal systems of the Rai Coast languages are different from those of the Finisterre languages. First person singular forms generally begin with *y* or *i* and the other first person forms begin with *s*. Second person forms begin with *n*. In some languages dual and plural are distinguished as in the Finisterre group. The Suroi free forms are given in Table 5.

TABLE 5: SUROI PERSONAL PRONOUNS

	Sg.	Du.	Pl.
1	ye	sile	sine
2	ne	tale	tane
3	nu	nale	nane

In Kolom, Suroi and Sinsauru the pronominal forms have a different phonemic shape when occurring as possessive pronouns, e.g. Sinsauru *lye* 'I', *iyo* 'my'; Suroi *ye* 'I', *yine* 'my'; and Kolom *inga* 'I', *imi* 'my'.

The second type of pronoun occurs as object marking affixes bound to transitive verbs. These bound pronouns show concord in number and person with optionally occurring free forms functioning as objects at the clause level.

Transitive verbs in the Rawa language may be divided into two classes, those which have obligatory object prefixes and those which have obligatory object suffixes. This appears to be the case for Yupna as well, but both Wantoat and Uri have only object prefixes. The object prefixes and suffixes for the Rawa language are given in Table 6. Note that the initial consonants are the same for both prefixes and suffixes.

TABLE 6: RAWA OBJECT AFFIXES

	SINGULAR		DUAL AND PLURAL	
	Prefix	Suffix	Prefix	Suffix
1	nâ-	-nerâ	yâ-	-yerâ
2	gâ-	-gerâ		
3	∅-	-∅		

In the Rai Coast languages object markers are suffixed rather than prefixed. In Suroi one class of transitive verbs never occurs with object suffixes, another class always occurs with object suffixes and a third class has an optional occurrence of the suffixes. The Suroi forms are presented in Table 7.

TABLE 7: SUROI OBJECT SUFFIXES

	Sg.	Du.	Pl.
1	-y	-sik	-sing
2	-n	-tik	-ting
3	-∅	-nik	-ning

All the languages distinguish '1s', '2s' and '3s'. Furthermore, '3s' is uniformly represented by a zero morpheme. In the Saep language dual and plural in all persons is represented by a single form. Other languages show a variety of distinctions relevant to the dual and plural forms. For example in the Sinsauru language one form includes '1s' and '1d' while another indicates '1p' and another indicates second and third person dual and plural.

6.4. VERB STRUCTURE

All of the languages have a contrast between dependent sentence medial verbs and independent sentence final verbs. As characteristic of NAN languages in general, the affixation involves a large number of suffixes and a few prefixes. Verbal prefixes are usually limited to object pronouns although Davis (1964) identified two other prefixal orders in Wantoat indicating mode and aspect.

6.4.1. Dependent verb morphology usually includes a suffix indicating whether the subject of the following verb is the same or different. If the subject is different a further suffix occurs which indicates the

number of the subject of the dependent verb. In Rawa these suffixes also indicate an indicative or subjunctive mode. Wantoat suffixes indicate whether the action of the dependent verb is punctiliar or continuative and simultaneous or antecedent to that of the independent verb. In the Suroi language (Rai Coast Stock) the only medial form has a suffix indicating that the following verb is a closely related action performed by the same actor. If the action of the two verbs is not closely related or the following verb has a different subject, independent verb suffixation occurs in both verbs and a conjunction joins the clauses.

6.4.2. Independent verb morphology varies considerably in complexity. Generally suffixes include object pronouns, benefactive markers, aspect and/or mode, tense and subject person-number markers in that order.

In Rawa at least four tenses are distinguished: future, present, past and remote past; four aspects are indicated: completive, intentional, habitual and continuative; and two modes, indicative and subjunctive. Continuative action is indicated by different allomorphs occurring with the future, present and past tenses. The imperative and contrary-to-fact (subjunctive) suffixes do not occur with tense indicating suffixes.

Wantoat verb suffixation distinguishes nine modes: assertive, intensive, benefactive, negative, interrogative, prohibitive, imperative, phobic and subjunctive of desirability. Completive and continuative aspects are also distinguished.

The verb in the Suroi language is marked for five tenses: indefinite future, immediate future, present, immediate past, and simple past; and six modes: imperative, question, interrogative, apprehensive, narrative and intensive. The intensive mode suffix may occur as the only suffix or with the indefinite future tense suffixes. The continuative aspect is indicated by the addition of the verb *'to be'* to other verbs. Person and tense are combined in portmanteau suffixes.

6.5. NUMERALS

Counting systems are uniform throughout the languages included in this survey. Counting begins with the small finger of one hand, progresses through the other hand, the toes of one foot and finally the toes of the other foot to complete a unit of twenty. Numerals *'one'* through *'four'* are expressed by separate terms, although in Saep (as well as the other languages of the Yaganon Family) the terms for *'two'* and *'three'* are similar: *abode* and *abokon* respectively. In Nahu *'four'* is expressed by *'not the thumb'* or *'minus the thumb'*. *'Five'* is usually expressed by *'one hand'* and *'ten'* by *'two hands'*. *'Twenty'* is expressed

by either 'one body' or by 'two hands and two feet'.

6.6. CLAUSE STRUCTURE

A number of clause types have been recognised as occurring in most of the languages. The illustrative data are from the Rawa language.

6.6.1. The declarative transitive clause has a falling intonation contour (↓) and the predicate is filled by a transitive verb. The usual tagmeme order is ± temporal ± subject ± instrument ± object + predicate. The temporal tagmeme may also follow the subject.

kuyowo simâ mâ ne-wo-ro ↓
yesterday man taro eat-past-they (du.)
'Yesterday the men ate taro.'

6.6.2. The declarative intransitive clause contrasts with the declarative transitive clause by the obligatory absence of the object and instrument tagmemes and the occurrence of intransitive verbs in the predicate tagmeme.

no-ndo ko-no ârowu-te-no ↓
I-subject marker garden-to go-present-I
'I am going to the garden.'

6.6.3. A declarative clause may be made interrogative by the substitution of a rising intonation contour (↑). A number of languages (e.g., Saep and Suroi) also have optional interrogative markers translatable as 'or' occurring sentence finally. The Rawa language has no such interrogative marker.

ge no-ro se keno-wo-∅ ↑
you I-for dog see-past-you
'Did you see my dog?'

6.6.4. The equative clause has the usual tagmeme order of + subject + predicate in which the subject is manifested by a nominal construction or its substitute and the predicate is usually manifested by an adjectival construction.

mâ ŋa puwo
taro this rotten
'This taro is rotten.'

6.6.5. A common feature is the occurrence of a clause filling another clause level slot. Such embedded clauses have been observed filling the subject, object, temporal locative and benefactive slots. The

resultant construction is treated as an axis-relator phrase with a clause filling the head slot plus a relator post clitic.

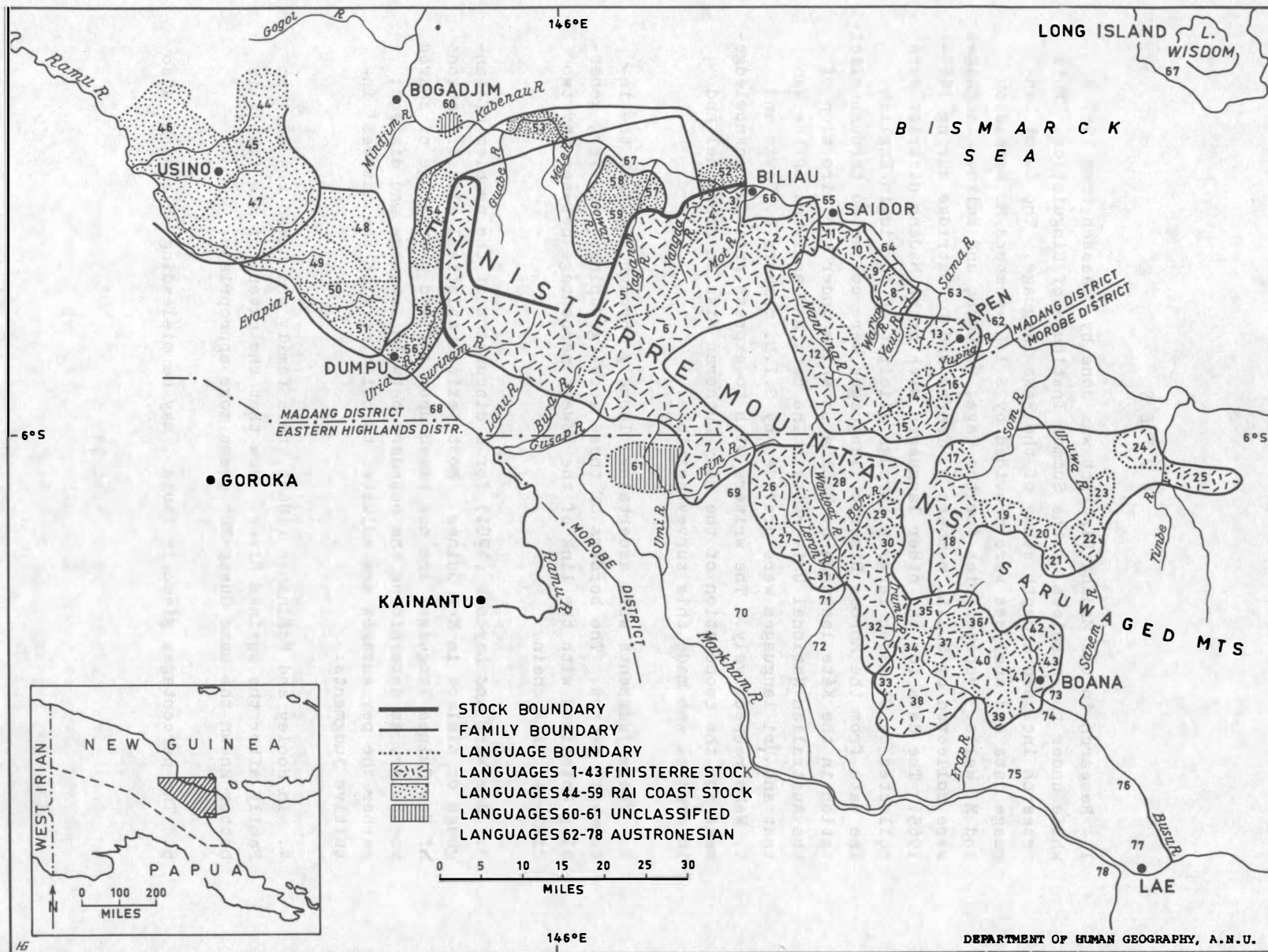
no-ndo bowera ŋa-no ye-wo-no-mu-ndo namba bini dowâ-rorâ-te-Ø
*I-subject trap this-locative put-past-I-included-subject cassowary
 maybe hold-continuous-present-it*

'Perhaps the trap which I set here is holding a cassowary.'

7. LANGUAGE LIST

The following list of languages is keyed to the Map.

- | | | |
|---------------|----------------|-----------------|
| 1. Gira | 27. Leron | 53. Suroi |
| 2. Ngaing | 28. Wantoat | 54. Lemio |
| 3. Neko | 29. Bam | 55. Gurumbu |
| 4. Nekgini | 30. Yagawak | 56. Watiwa |
| 5. Rawa | 31. Saseng | 57. Yabong |
| 6. Nahu | 32. Irumu | 58. Ganglau |
| 7. Ufim | 33. Mamaa | 59. Saep |
| 8. Asat | 34. Finungwan | 60. Bongu |
| 9. Degenan | 35. Gusan | 61. Gusap |
| 10. Morafa | 36. Sauk | 62. Roinji |
| 11. Dahating | 37. Nimi | 63. Malalamai |
| 12. Nankina | 38. Uri | 64. Moromiranga |
| 13. Domung | 39. Munkip | 65. Som |
| 14. Nokopo | 40. Numanggang | 66. Sengam |
| 15. Kewieng | 41. Nakama | 67. Mindiri |
| 16. Bonkiman | 42. Nek | 68. Houp |
| 17. Som | 43. Nuk | 69. Yaros |
| 18. Sakam | 44. Bagasin | 70. Azera |
| 19. Sindamon | 45. Garia | 71. Sukurum |
| 20. Mup | 46. Usino | 72. Sirasira |
| 21. Mitmit | 47. Urigina | 73. Sirak |
| 22. Worin | 48. Sinsauru | 74. Guwot |
| 23. Kumdauron | 49. Koropa | 75. Laewomba |
| 24. Komutu | 50. Kaikovu | 76. Musom |
| 25. Karangi | 51. Taga | 77. Bukaua |
| 26. Awara | 52. Kolom | 78. Labu |



LANGUAGES OF THE FINISTERRE RANGE - NEW GUINEA

NOTES

1. Research in the Madang District was done by Claassen from 1967-9 while under the auspices of the Summer Institute of Linguistics. This research included a depth study of the Rawa language. The Suroi language data and analyses were provided by S.I.L. members M. Mathieson and M. Wells. Vocabularies for the Taga, Gurumbu, and Kaikovu languages were collected by S.I.L. members D. Trefry and D. Oatridge during 1964-1965. The data for the other languages within the Madang district were collected by Claassen largely through elicitation in Pidgin English. The data from the Morobe District languages were collected through elicitation in the Kâte language by McElhanon while under the direction of the Australian National University. The data and analyses of the Wan-toat and Uri languages were provided by S.I.L. members D. Davis and T. Webb respectively. The writers wish to express grateful acknowledgment for the cooperation of the many Lutheran Mission personnel and informants who made this survey possible.
2. These judgments were ascertained largely through the "ask the informant" method. The borders of these local groupings, however, generally coincided with the link of the lowest percentage between any two dialects of a chain.
3. See Wurm and Laycock (1961) for a discussion of the problem of language or dialect in New Guinea. Most lexicostatistical classifications of New Guinea languages are not based upon a fixed percentage of shared vocabulary as determining the boundary between language and dialect; rather the percentages are adjusted to coincide with the natives' intuitive judgments.
4. In Hooley and McElhanon (1968), this family was named the Surinam Family after the Surinam River. Now that the extent of the family is better known the name Gusap-Mot seems more appropriate.
5. The percentages given in Table 1 may be misleading unless one also

notes the number of comparisons involved in determining any given percentage. Note that for Gurumbu, Koropa, Taga, Kaikovu and Bagasin, there are always less than 50 comparisons. For Suroi, the number is usually about 95. In dealing with basic vocabulary lists of varying lengths it is advisable to adjust the percentages when a small number of comparisons are involved. Voorhoeve (1968:3) suggests that maximally 1% must be subtracted for every 10 items less than 200.

6. All percentages except that for Usino-Bagasin have been calculated by Z'graggen.

7. The Roinji language, which is included in the Siassi Family (Hooley and McElhanon 1968), shares 27% of the basic vocabulary with Gedaged. The decision as to whether the Siassi and Belan families really represent a single family and the relation of Roinji to these two groups must wait until further study is completed.

8. Note that this name is the same as that of a NAN language of the Uruwa Family. No attempt will be made to avoid possible confusion of these names until the status of the Austronesian group is determined.

9. In Rawa, p, t, and k represent voiceless aspirated stops; b, d, and g represent voiced stops in the northern dialect and voiceless unaspirated stops in the southern dialect. The symbol â represents a phoneme with a phonetic norm of [ɔ] in Rawa and [ə] in Wantoat and other languages.

10. Phonetic vowel length in Wantoat on phonemes a, e, ə and o has been interpreted by Davis (1961) as sequences of like vowels.

11. In an early analysis Davis (1961) showed stress differences in near identical (analogous) environments for pairs of words in Wantoat. In the most recent analysis Davis (1967) states that stress is non-phonemic.

12. Allomorphic variations are given in Davis (1964).

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