

SOME ELEMENTS OF VANIMO, A NEW GUINEA TONE LANGUAGE

MALCOLM ROSS

0. INTRODUCTION

The purpose of this paper is to broaden the available description of the Vanimo language, a member of the Vanimo Family of the Sko phylum-level Stock. The stock, stretching along the north coast of the island of New Guinea from the eastern end of Jayapura Bay in Irian Jaya (Voorhoeve 1975) to Sissano Lagoon in the West Sepik Province of Papua New Guinea, was surveyed by Laycock (1973a), who found that it is apparently unrelated to any other New Guinea language group. Laycock (1975) has also provided notes on previous (fragmentary) studies which touched on Sko languages and has described some structural features of the Vanimo language. The only other published descriptive information for Sko languages is for Sko itself (notes on structural features in Voorhoeve 1971) and for Warapu (notes and vocabulary in Laycock 1973b). The phonological characteristics of the stock, according to Laycock (1975), are 'the presence of some semantic tone and complex consonant clusters'. Important structural features are the conjugation of verbs by means of subject prefixes and the distinction between masculine and feminine in third person pronouns.

The data for this study were provided by Miss Bernadette Wuniki and Miss Veronica Pekima, both students at the Goroka campus of the University of Papua New Guinea from 1976 to 1978, for whose assistance with analysis I am also very grateful¹. Both informants are from Waromo village, known to its inhabitants as /valomo/, and are speakers of the dialect known locally as /dúmò/. Laycock's data are from the dialect known as /dúsó/, spoken in the immediate area of Vanimo station.

1. PHONOLOGY

1.1. SEGMENTAL PHONOLOGY

The segmental phonology of /dúmò/ has eight vowels and thirteen consonants. The vowel phonemes and their principal allophones are:

i	[i]		u	[u]
e	[e ~ ei]	ø	o	[o]
ε	[ε ~ æ]		ɔ	[ɔ]
		a		[a]

All vowels occur in nasalised variants, some occurrences of which contrast phonemically with their non-nasal equivalents. Phonemic nasals are indicated by a following -ŋ rather than a tilde, in order to limit the use of diacritics. Although this ŋ is sometimes manifested phonetically as a nasal consonant, it does not appear to have phonemic status. Nasalised /u/ is often manifested as a syllabic nasal [ŋ]. Examples of phonemic contrast through nasalisation are:

dá	'water'	lá	'net'	li	'sea'
dáŋ	'hair'	láŋ	'south-east monsoon'	liŋ	'I gave'
pe	'you.s sit', ²	pé	'you.s see'	hú	'I remove'
peŋ	'bad'	péŋ	'wind'	húŋ	'I drink'

However, nasal variants which occur before voiced stops and nasals (and in some other improperly understood environments) may be allophones of non-nasal vowels. In such cases ŋ is not written.

The consonant phonemes and their principal allophones are:

	Bilabial	Alveolar	Alveo-palatal	Glottal
Stop	v1 p [pʷp]	t [t]		
	vđ b [b]	d [d]	y [yʷdyʷdʒ]	
Fricative	v [bʷw]	s [s]		h [h]
Nasal	m [m]	n [n]	ñ [ñ]	
Liquid		l [l]		

Glottal /h/ is voiced. Consonant clusters are /pɪ/, /bɪ/, /mɪ/, /hv/, /hm/, /hn/, /hñ/, /hy/, /ñv/. The clusters /hv/ and /hm/ are of doubtful status and may be allophones of the same cluster. The cluster /ñv/ is phonetically [ŋb].

An odd feature of the consonants of this dialect is the absence of a velar order. Laycock (1975) notes /k/, /g/, and /ŋ/ in the /dúsɔ̃/ dialect. The scant evidence available in the way of correspondences suggests that earlier voiced velars have become glottal /h/ or have been lost in /dúmò/:

/dúmò/	/dúsú/	
ha	ga	'I hit him'
ha	ŋa	'I go'
a	ga	'you.p hit him'

Correspondences with Voorhoeve's (1971) Sko data, which show /k/ but no /g/ suggest this sort of change too, as /dúmò/ /h/ corresponds to Sko /k/:

/dúmò/	Sko	
hŋ	kö	'tooth'
hé	ke	'he'
né hún	ni kun	'I drink'
hán	kã	'I eat'

1.2. SYLLABLES

The canonical shape of the Vanimo syllable is (C)V, where C is a consonant or consonant-cluster. The vowel may be nasal or non-nasal, and has one of the three phonemic 'tones' described below.

Vanimo is a register-tone language (as opposed to a contour-tone language; cf. Ladefoged 1975:227). Pitch-movement is connected mainly with intonation, and only relative syllable-initial pitch is phonemically significant.

The 'tones' are describable in terms of the features HIGH and LONG, which my informants feel to be present or absent. One (but never both) of these features may be present, giving three 'tones' (or perhaps two tones and absence of tone):

[+ HIGH]	[- HIGH]	[- HIGH]
[- LONG]	[+ LONG]	[+ LONG]

A [+ HIGH] syllable begins at a relatively high pitch, and typically falls sharply, but informants do not find this pitch-movement significant. A [- HIGH] syllable begins at mid pitch, and may fall or rise according to the exigencies of intonation (see 1.4.). A [+ LONG] syllable is felt by the native-speaker to be 'pulled', but the distinction is often barely perceptible to the writer; because Vanimo has strict syllable-timing, the [- HIGH, - LONG] syllable is detectable by the tiny gap between it and the next syllable.

In the notation used here, [+ HIGH] vowels are marked with a grave accent /`/, [+ LONG] with an acute accent /'/, and 'toneless' vowels by the absence of a diacritic. The phonemic nature of these features is illustrated in the following examples:

pi	'swamp'	li	'sea'
pí	'breadfruit'	lí	'dance'
pì	'louse'	lì	'garden'
ne	'she hit me'	o	'star'
né	'I'	ó	'year'
nè	'flesh'	ò	'sago-leaf'
hún	'I drink'	bí	'house'
hùn	'I hit you.s'	bì	'grass-skirt'
va	'dead'	ñéŋ	'octopus'
vá	'person'	ñèŋ	'banana'
hé	'long'	hu	'sago-pancakes'
hè	'moon'	hú	'he removes'

1.3. WORDS

The canonic shape of the Vanimo word is simply one, two, three or four syllables. However, identifying what constitutes a word is difficult, as many polysyllabic 'words' have at least one syllable which may stand alone as a word, and further research would presumably identify more of these. Hence it is difficult to draw the line between a compound word and a looser association between two words. The examples below illustrate this. Since Vanimo has no vowel clusters, a sequence of two vowels is a sequence of two syllables:

yumonu	'two'
vánupa	'who(m)?' (vá 'person', nu 'which?')
yanupa	'what?' (ya 'thing', nu 'which?')
doeŋ	'inside, interior'
áŋhiŋ	'under, underside'
táti	'tree'
vávòŋ	'woman' (vá 'person', vòŋ 'wife')
náhù	'nose' (ná 'voice')
ɔbè	'old'
lùŋdi	'road, path'
voŋá	'sweet potato'
vámó	'village' (vá 'person')
hévo	'himself' (hé 'he')

Of the nine possible two-syllable sequences of the three tones, seven are exemplified above, but two, [+ HIGH] + [+ HIGH] and [+ HIGH] + [+ LONG], occur nowhere in the data. When such sequences potentially occur, the [+ HIGH] feature of the first syllable is lost. The tone-sandhi rule is therefore:

$$[+ \text{ HIGH}] \rightarrow [- \text{ HIGH}] / \text{---} \left\{ \begin{array}{l} [+ \text{ HIGH}] \\ [+ \text{ LONG}] \end{array} \right\}$$

Thus we find:

èŋ 'coconut' + pi 'swamp' → èŋpi
 èŋ 'coconut' + paŋ 'frond' → èŋpaŋ

but:

èŋ 'coconut' + hvó → eŋhvó
 èŋ 'coconut' + mà 'ripe' → eŋmà
 èŋ 'coconut' + nè 'flesh' → eŋnè

Again:

nuplòŋ 'finger' + hè → nuplòŋhè 'fingernail'
 nòò 'four' + mlè-o 'and one' → nòomlèò 'five'

Across word boundaries we find:

musa hlè bí 'Musa is in the house'

but:

musa hlɛ lì 'Musa is in the garden'
 (hlè 3s. 'be-present', bí 'house', lì 'garden')

However, in circumstances which are as yet unclear, the second of two [+ HIGH] words may lose this feature, i.e. there is a rule:

$$[+ \text{ HIGH}] \rightarrow [- \text{ HIGH}] / [+ \text{ HIGH}] \# \text{---}$$

For example:

é nè né 'my father' (é 'father', nè 'my', né 'I')

but:

nò ne né 'my brother' (nò 'brother').

1.4. SUPRASEGMENTAL PHONOLOGY

The suprasegmental systems of Vanimo and English are so diametrically different that an attempt at contrastive description is warranted.

English is a stress-timed language with variable word-stress (Ladefoged 1975:222-3). Hence in the sentence '*Peter is in the house*', the phonemic stress of '*Peter*' may or may not be exploited as a prominent syllable, and the monosyllables selected for prominence may vary. In the English examples below, prominent syllables are in capitals:

- (1) '*peter is in the HOUSE*'
- (2) '*PETER is in the HOUSE*'
- (3) '*PETER is IN the house*'

Vanimo, however, is a strict syllable-timed language in which most syllables are prominent (some 'toneless' syllables in polysyllabic words and a few monosyllables such as connectives may be non-prominent.) Thus in the Vanimo equivalent of '*Musa is in the house*', all six syllables are likely to be prominent:

- (4) *musa hiè bi doeŋ*
Musa is house interior

Whereas the characteristic rhythm of English arises from the roughly even spacing of prominent syllables, the rhythm of Vanimo is dominated by the even spacing of almost all syllables.

English variable word-stress allows the selection of syllables for prominence by the speaker, as in (1)-(3). Prominent syllables carry the system of relative pitch (Brazil 1978)³, analysable into high-, mid-, and low-pitch prominences. This system conveys certain information; in particular, high pitch conveys implicit contrast, so that high-pitch '*PETER*' in (2) would indicate 'Peter, not someone else', whilst high-pitch '*HOUSE*' would indicate 'the house, not elsewhere'.

Because Vanimo makes most syllables prominent, and because it exploits relative pitch semantically, there is apparently no phonological device for indicating implicit contrast. Instead, contrast is made explicit, as for example in:

- (5) *musa hiè bi ve ba biŋno e*
Musa is house this but that.one not
'Musa is in this house, not that one'

English variable word-stress is also the basis of division into tone-units, each with a final prominent syllable, the tonic, which carries pitch-movement (double slashes indicate tone-unit boundaries, underlining the tonic syllable):

- (6) //'*PETER is in the HOUSE*'//
 (7) //'*PETER // is in the HOUSE*'//

According to Brazil's analysis, falling (or rising-falling) pitch-movement 'proclaims' information to the hearer, whereas rising-falling (or rising) pitch-movement 'refers' to information already shared. Thus falling movement on '*HOUSE*' in (6) proclaims Peter's whereabouts, whereas in (7) falling movement on '*PETER*' and rising-falling on '*HOUSE*' proclaims that it is Peter who is in the house already referred to.

Again, the fact that most syllables are prominent in Vanimo precludes analysis into tone-units. However, there are miniscule pauses between syntactic phrases, and the last prominent syllable of a phrase has

falling or rising pitch-movement which appears to correspond functionally to the English 'proclaiming'/'referring' distinction. It is possible, therefore, that the Vanimo phrase corresponds roughly to the English tone-unit, and its last prominent syllable to the English tonic. In (8), brackets indicate non-prominent syllables, 'p' and 'r' respectively 'proclaiming' (falling) and 'referring' (rising):

- (8) // ^r *musa* // ^p *hiè bɪ* (ve) // (ba) ^p *biŋno* (e) //
Musa is house this but that.one not
'Musa is in this house, not that one'

Whereas the English tonic is relatively easy to detect, the frequency of prominent syllables in Vanimo and the almost imperceptible pauses between phrases make its Vanimo equivalent less easily detectable. The situation is complicated by the fact that [+ HIGH] syllables typically fall without necessarily 'proclaiming' anything (this is the case with *hiè* in (8)). Hence this analysis is very tentative.

Just as a final 'referring' pitch-movement in English (e.g. on 'HOUSE' in (6)) may indicate a yes-no question, so rising movement on the final prominent syllable, continuing onto the sentence-final non-prominent *mɛ* (= 'or') is characteristic of the yes-no question in Vanimo:

- (9) // ^r *musa* // ^r *hiè bɪ* (mɛ) //
Musa is house or
'Is Musa at the house?'

2. GRAMMAR

The available data do not permit a full account of even the Vanimo simple sentence, and the notes which follow deal only with certain elements of the grammar.

The most pervasive feature of Vanimo grammar is the repeated distinction, in both noun phrases and verb phrases, between masculine and feminine gender, coupled with a slightly less important distinction between human and non-human actors.

2.1. NOUN PHRASES

A noun phrase consists either of a personal pronoun or of a noun with (optionally) attributive adjectives, demonstrative, etc.

2.1.1. Personal Pronouns

The pronoun system reflects the fact that all nouns are either masculine or feminine in gender. The gender of human nouns corresponds

with the sex of the actor, whereas that of non-human nouns is semantically arbitrary (thus nè 'flesh' and bí 'house' are feminine, but da 'pig' is masculine).

The personal pronouns recorded in the data are set out below. Laycock (1975) has found several other personal pronouns, and it is reasonable to assume that this system is incomplete:

	Singular	Dual	Trial	Plural
1 excl.	né	nimi	nihò	ni
incl.	-	nimivo	nihò	nlvo
2 masc.	mi		éhò	é, évo
fem.	mi		ébu	é, évo
3 masc.	hé	déhé	déhò	dé
fem.	bé	débé	débu	dé

Personal pronouns are invariable, whether they are used in subject, object, or adverbial phrase-positions:

Subj	Obj	VP	Subj	VP	Adv
né	hé	vé	né	liŋ	mi
I	him	ls.see	I	ls.give	you.s
'I see him'			'I give it to you'		

Reflexive singular pronouns⁴ are formed by adding -vo to the forms above:

bé	bévo	bu	sí
she	herself	turn	3sf.hit
'She turned (herself) round'			

2.1.2. Noun Phrases With Non-Human Nouns

The sequence of items in a noun phrase with a non-human head noun is:

(attributive noun) noun (number|adjective) (demonstrative)
 where brackets indicate optional occurrence and overlapping brackets
 | reversible sequence. For example:

bí	ve	woná	ná	
house	this.f	sweet-potato	runner	
'this house'		'sweet-potato runners'		
da	piápeŋ	podí	dìŋ	yumonu
pig	black	many	bird	two
'(the) black pigs'			'(the) two birds'	

Nouns do not form a plural, and number is optionally specified by òpa 'one' or podí 'many'. Adjectives sometimes specify the non-humanness

of their noun by prefixing *ya* 'thing, non-human entity', but the circumstances in which this happens are unclear:

<i>hvun vu</i>	<i>da ya-vu</i>
<i>stone big</i>	<i>pig nh-big</i>
<i>'(a) big stone'</i>	<i>'(a) big pig'</i>

One adjective has been found which has a plural form:

da podí dubebɛpa
pig many big.p
'(the/some/many) big pigs'

Demonstratives agree in gender with their noun. They are:

	Masculine	Feminine
<i>'this'</i>	<i>he</i>	<i>ve</i>
<i>'that'</i>	<i>hiŋ</i>	<i>biŋ</i>

Thus:

<i>da he</i>	<i>da hiŋ</i>
<i>pig this.m</i>	<i>pig that.m</i>
<i>'this pig'</i>	<i>'that pig'</i>
<i>bí ve</i>	<i>bí biŋ</i>
<i>house this.f</i>	<i>house that.f</i>
<i>'this house'</i>	<i>'that house'</i>

A number of locative noun phrases occur, for example:

<i>bí doeŋ</i>	<i>bí áŋhiŋ</i>	<i>táti lu</i>
<i>house inside</i>	<i>house underneath</i>	<i>tree shade(?)</i>
<i>'in the house'</i>	<i>'under the house'</i>	<i>'under the tree'</i>

However, since the adverbial position of the sentence is usually occupied by a noun phrase with no morpheme corresponding to the English preposition, it seems appropriate to regard the examples above as noun phrases consisting of an attributive noun plus head noun (e.g. 'house interior') rather than as head noun plus postposition (e.g. 'house-in'). Nouns of location in locative expressions are common in the language families of the New Guinea area.⁵

2.1.3. Noun Phrases With Human Nouns

The sequence of items in a noun phrase with a human head noun is:
 personal pronoun (attrib.noun) noun (number)(adj)(demonstrative)
 Since the personal pronoun specifies number - as well as gender - the number slot is not used to specify singular/plural. Adjectives and numerals often specify the humanness of their noun by prefixing *vá* 'person, human being':

be vávòŋ vá-vu bŋ	bé èŋ
she woman h-big that.f.	she child
'that big woman'	'baby girl'

déhò váyòŋ vá-əŋnu bá-vuɛlo
 they.t man
 'the three small men'

2.1.4. Possessive Noun Phrases

A noun phrase incorporating a possessor has a personal pronoun in the adjective position to denote the possessor:

tùŋ né	bí dé	bé èŋ hé
head I	house they	she child he
'my head'	'their house'	'his baby (girl)'

However, where the head noun is a kinship term, a possessive pronoun intrudes between the head noun and the personal pronoun. Second person plural and all third person pronouns have a nasal variant which apparently co-occurs with masculine kinship terms⁶. The possessive pronouns are:

	Singular		Plural	
	masc. kin	fem. kin	masc. kin	fem. kin
1	né		nè, ni	
2	mè, mì		èŋ	è
3	masc. hèŋ	hè	dèŋ	dè
	fem. bèŋ	bè		

Possessive pronouns do not distinguish between exclusive and inclusive first persons plural or between dual, trial and plural; these distinctions are made only in the personal pronoun.

Kin nouns found in the data are:

é 'father'
 háŋ 'mother'
 nò 'brother'
 mè 'sister'
 á 'grandparent'

The nouns èŋ 'child', dáŋ 'husband', and vòŋ 'wife' do not behave as kin nouns, i.e. not take possessive pronouns.

Examples of kin possessive noun phrases are:

hé é	hèŋ	hé	bé háŋ	hè	hé
he father	his.m	he	she mother	his.f	he
'his father'			'his mother'		

hé é nè nìmi
he father our we.de
 'our(e) father'

hé á mè mi
he grandparent your you.s
 'your(s) grandfather'

he nò beŋ bé
he brother her.m she
 'her brother'

bé mè de dé
she sister their.f they
 'their sister'

As the last two examples show, where the kin noun has the feature [+ HIGH], the possessive pronoun is affected by tone-sandhi and loses its [+ HIGH] feature.

Where the kin noun is described by an adjective, this replaces the personal pronoun:

hé nò heŋ vá-lo
he brother his.m h-before
 'his older brother'

bé mè he vá-pòŋ
she sister his.f h-after
 'his younger sister'

If the possessor in a possessive noun phrase is itself specified as a noun phrase (i.e. 'the man's house' as opposed to 'his house'), then the possessor noun phrase precedes the head noun, and the phrase-final personal pronoun denoting the possessor remains unchanged:

hé váyòŋ	+	bí hé	→	hé váyòŋ bí hé
<i>he man</i>		<i>house he</i>		<i>he man house he</i>
'the man'		'his house'		'the man's house'

Here *hé váyòŋ* is the possessor noun phrase.

If the head noun is human (and therefore normally preceded by a personal pronoun) and the possessor noun phrase is not a kin noun phrase, then the possessor noun phrase replaces the initial personal pronoun:

bé èŋvɔŋ bíŋ	+	hé é bèn bé
<i>she girl that.f</i>		<i>he father her.m she</i>
'that girl'		'her father'
→	bé èŋvɔŋ bíŋ	é bèn bé
	<i>she girl that.f</i>	<i>father her.m she</i>
	'that girl's father'	

If, however, the possessor noun phrase is a kin noun phrase, then the possessor noun phrase loses its own initial and final personal pronouns and is inserted between the initial personal pronoun and the head noun of the matrix phrase:

bé háŋ hè hé	+	hé nò beŋ bé
<i>she mother his.f he</i>		<i>he brother her.m she</i>
'his mother'		'her brother'

+ hé háŋ he nò beŋ bé
 he mother his.f brother her.m she
 'his mother's brother'

The final personal pronoun of kin possessive noun phrases like those above may disappear if the possessor is itself specified as a noun phrase; thus the last example above may occur as:

hé háŋ he nò beŋ.

However, if the head noun is not a kin noun, and therefore is not followed by a possessive pronoun, the personal pronoun cannot be deleted:

bé mè he hé + bé èŋ bé
 she sister his.f he she child she
 'his sister' 'her child'

+ bé mè he èŋ bé
 she sister his.f child she
 'his sister's child'

2.1.5. Compound Noun Phrases

Compound noun phrases occur very occasionally in the data:

he èŋyɔŋ vuelo déhé háŋ hè hé
 he boy small they.d mother his.f he
 'the small boy and his mother'

Such phrases consist of two human noun phrases, joined by replacing the initial personal pronoun of the second phrase by a dual personal pronoun. This is a similar construction to the New Guinea Pidgin *mi tupela mama*, literally 'I two mother' for 'I and my mother'.

2.1.6. Numerals

The only other feature of the noun phrase about which information is available is the number system, which is apparently a base-four system and thus most unusual for the New Guinea area⁷:

òpa	'one'
yumonu	'two'
eŋnu	'three'
noò	'four'
nɔo mlè o	'five'
nɔo mle yumonu	'six'
nuyu mlè o	'nine'
múti	'ten'

The morphemes *pa* and *nu* are sometimes deleted; they occur in phrase-final contexts only, but their function is not understood.

2.2. VERB PHRASES

As Laycock (1975) observed, the number of true verbs in Vanimo is small. The data described here include forty verbs, for twenty-nine of which conjugations were elicited. What would in English be verb meanings are often expressed in Vanimo by a combination of another morpheme and a verb.

2.2.1. Verb Syntax

Only eight verbs have been found which occur alone as transitive verbs:

<i>hé vá</i>	<i>'he dies'</i>	<i>nò mé</i>	<i>'the skin swells'</i>
<i>hé hyan</i>	<i>'he vomits'</i>	<i>tán hyí</i>	<i>'sun rises'</i>
<i>hé ha</i>	<i>'he goes'</i>	<i>tán hǒ</i>	<i>'sun shines'</i>
<i>hé ló</i>	<i>'he comes'</i>	<i>té hí</i>	<i>'fire burns'</i>

There is also one verb of location which can occur alone:

<i>hé hlè</i>	<i>'he is present'</i>
---------------	------------------------

This verb more normally occurs with an adverbial, however.

Morpheme + verb combinations are of three main types:

- object + verb
- complement + verb
- verb + verb

Object + verb combinations are reckoned to occur where the morpheme preceding the verb may occur independently as a noun and is interchangeable without altering the basic meaning of the verb:

<i>hé musa hvé</i>	<i>'he sees Musa'</i> (<i>'he Musa 3sm.see'</i>)
<i>hé né hvé</i>	<i>'he sees me'</i>
<i>hé ya hvé</i>	<i>'he sees something'</i>
<i>hé danè hén</i>	<i>'he eats meat'</i>
<i>hé ye hén</i>	<i>'he eats something'</i>
<i>hé puve hlón</i>	<i>'he hears Puve'</i>
<i>hé ya hlón</i>	<i>'he hears something'</i>
<i>hé dá húŋ</i>	<i>'he drinks water'</i>
<i>hé dá hví</i>	<i>'he swims in the river'</i> (<i>'he water 3sm.swim'</i>)
<i>hé lí hví</i>	<i>'he swims in the sea'</i> (<i>'he sea 3sm.swim'</i>)
<i>hé danè hlutu</i>	<i>'he cuts meat'</i>
<i>hé woná hǒŋ</i>	<i>'he cooks sweet potato'</i>

hé ʋ há	'he digs (the) ground'
hé nɔ hèn	'he scratches (the) skin'
hé táti hè	'he chops wood'
hé dé hiŋ	'he hides money'

Transitive verbs in Vanimo must have an object; the nearest equivalents to objectless sentences like *'he can see'* and *'he is eating'* are those above containing the 'dummy' object *ya 'thing'*. There are a number of cases in the data where changing the object does change the meaning of the verb in terms of English concepts, but where we may take the changed meaning as a piece of idiomatic usage or as an indication that the verb meaning has a much wider range than its English counterpart:

hé hyaŋ	'he vomits'
hé dá hyaŋ	'he vomits water = he splashes'
hé li hví	'he swims sea (he swims in the sea)'
hé iŋmɔŋ hví	'he swims dream = he dreams'
hé èŋ hyé	'he shakes a coconut'
hé nɔ hyé	'he shakes body = he trembles'

There is one set of transitive verbs, namely verbs of hitting, which incorporates the person and number of the object into the meaning of some verbs in the set. Hence we find:

hé né hle	'he hit me' ('he me 3sm.hit.me')
hé mi hùŋ	'he hit you(s)' ('he you.s 3sm.hit.you.s')
hé hé ha	'he hit him' ('he him 3sm.hit.him')
hé bé hlán	'he hit her' ('he her 3sm.hit.her')
hé ni hliŋ	'he hit us' ('he us 3sm.hit.us')

but:

hé é hyí	'he hit you(p)' ('he you.p 3sm.hit')
hé dé hyí	'he hit them' ('he them 3sm.hit')

The verb expressing *'hit us'* is homophonous with *'give'*:

hé ya hliŋ né	'he gave me something' ('he thing 3sm.give me')
---------------	---

Complement + verb combinations are reckoned to occur (a) where the morpheme preceding the verb does not otherwise occur as an independent word; or (b) where the verb is one with a very wide range of meaning and the preceding morpheme therefore plays a major role in determining meaning in context; or (c) where the morpheme + verb combination itself takes an object and the morpheme cannot therefore itself be an object. Cases of (a) are:

hé lùŋ ha 'he walks' ('he walking 3sm.go')
 hé na hva 'he flies' ('he [?] 3sm.fly')
 hé ho he 'he counts' ('he [?] 3sm.count')

Category (a) also includes a locative construction incorporating a variant of the verb 'be present' (see 2.2.2.):

hé i to 'he stood' ('he standing 3sg.be present')

Cases of (b) occur with four verbs:

hle⁸ 'do, make, perform'
 hlu 'pull, inhale, suck, squeeze'
 hu 'put, remove'
 hlun 'push, throw, eject'

In some of the examples below, the complement may occur independently as a noun; in others its independent occurrence has not been recorded.

Examples of (b) are:

hé nu hle 'he fights' ('he hand 3sm.do')
 hé dù hle 'he speaks' ('he language 3sm.do')
 hé iplà hle 'he sleeps' ('he sleeping 3sm.do')
 hé vù hle 'he cries' ('he crying 3sm.do')
 hé vò hle 'he works' ('he work 3sm.do')
 hé yáyuyu hle 'he ties' ('he knot 3sm.do')
 hé nào hle 'he plays' ('he playing 3sm.do')
 hé lí hle 'he dances' ('he dancing 3sm.do')
 hé ìŋ hle 'he yawns' ('he yawning 3sm.do')
 hé sèŋ hle 'he sings' ('he singing 3sm.do')
 hé hŋ hlu 'he pulls' ('he [?] 3sm.pull')
 hé nò hlu 'he sucks' ('he breast 3sm.pull')
 hé ná hú 'he plants' ('he runners 3sm.put')
 hé ñè hú 'he urinates' ('he urine 3sm.put')
 hé sí hlun 'he shoots' ('he arrow 3sm.push')
 hé dá hlun 'he pushes' ('he [?] 3sm.push')

Most of the cases of (c) found in the data are of combinations involving these same four verbs, i.e. they are transitive cases of (b):

hé <dìŋ> sí hle⁹ 'he hunts <birds>' ('he <bird> arrow 3sm.do')
 hé <da> ì hle 'he cuts up <a pig>' ('he <pig> cutting 3sm.do')
 hé <ya> na hle 'he sews <something>' ('he <thing> sewing 3sg.do')
 he <hya> tɛ hle 'he burns <grass>' ('he <grass> fire 3sm.do')
 hé <èŋ> táŋ hle 'he carries <a coconut>' ('he <coconut> [?] 3sm.do')
 hé <ya> hò hle 'he distributes <food>' ('he <thing> [?] 3sm.do')

he <woná> me hle	'he peels <sweet potatoes>' ('he sweet potato [?] 3sm.do')
hé <ya> lè hle	'he steals <something>' ('he <thing> theft 3sm.do')
hé <ya> boŋ hlu	'he smells <something>' ('he <thing> aroma 3sm.pull')
hé <èŋma> nunà hlu	'he squeezes <grated coconut>' ('he <coconut> hand-[?] 3sm.pull')
hé <vùya> ná hlu	'he spoils <food>' ('he <food> [?] 3sm.pull')
hé <vá va> ñeŋ hú	'he buries <a dead man>' ('he <man dead> [?] 3sm.put')
hé <dé> ó hú	'he looks for <the money>' ('he <money> [?] 3sm.put')
hé <dé> dá hǒ	'he loses <the money>' ('he <money> [?] 3sm. strike')

Verb + verb combinations are sequences of two verbs, both of which show concord with the subject:

hé <pepa> hveŋ hú	'he tears <paper>' ('he <paper> 3sm.split 3sm.put')
hé <táti> hveŋ hyf	'he splits <wood>' ('he <wood> 3sm.split 3sm.hit')
hé <hévo> hú hyf	'he turns round' ('he <himself> 3sm.put 3sm.hit')
hé hyiŋ hliŋ	'he sneezes' ('he 3sm.[?] 3sm.give')
hé húŋ ha	'he laughs' ('he 3sm.drink 3sm.go')
hé húŋ húŋ	'he coughs' ('he 3sm.drink 3sm.drink')
hé <tòŋ> hle hlu	'he erects <a post>' ('he <post> 3sm.be-present 3sm.pull')
hé <yate> hluŋ hle	'he sharpens <a stick>' ('he <stick> 3sm.push 3sm.do')

A special set of verb-verb combinations is formed from verbs of location; their idiosyncrasy lies in the fact that the combinations express aspect, rather than fresh meanings. Thus combining the complement + verb combination *i to* 'standing be.present (= stood)' with the verb of location *hlè* 'be.present' gives a progressive aspect expression:

hé <i>i to</i> hle	'he is standing' ('he standing 3sm.be.present 3sm. be.present')
--------------------	--

The two forms of 'be present' are dealt with in the next section.

The verb *hlè* is also used with other verbs to form progressive aspect expressions, for example:

hé lonpa húŋ hlè	'he often used to drink' ('he often 3sm.drink 3sm.be.present')
------------------	---

but the distribution of this use is not known.

Somewhat different are combinations concerned with sitting. Here

the perfective aspect is formed from a combination of two verbs, neither of which has been encountered independently:

hé hve mɔ 'he sat' ('he 3sm.sit 3sm.be positioned')

The progressive aspect is formed by adding to 'be present' to this combination:

hé hve mɔ to 'he is sitting' ('he 3sm.sit 3sm.be.positioned 3sm.be.present')

The combination mɔ to also occurs independently as a substitute for hlè 'be present':

hé hlè 'he is present' ('he 3sm.be.present')

hé mɔ to 'he is present' ('he 3sm.be.positioned 3sm.be present')

It is also used to form progressive aspect expressions from some other verbs, but its distribution is not properly understood:

hé iplà hle 'he slept'¹⁰

hé iplà hle mɔ to 'he is sleeping'

hé vù hle 'he cried'

hé vù hle mɔ to 'he is crying'

hé ya hvé 'he saw something'

hé ya hvé mɔ to 'he is seeing something'

2.2.2. Verb Morphology

The Vanimo verb undergoes changes in its initial consonant in agreement with the person and number (and in the third person singular, gender) of its subject. Exclusive/inclusive and dual/trial/plural distinctions are not made in the verb, so there are seven forms of concord: three persons each in singular and plural, and masculine and feminine third person singular forms.

Examples of concord are:

	'do, make'	'see'	'drink'	'die'
Sing. 1	né le	né vé	né húŋ	né ñvé
2	mi ble	mi pé	mi múŋ	mi múŋ
3 masc.	hé hle	hé hvé	hé húŋ	hé vá
fem.	bé pli	bé sé	bé vúŋ	bé ñvá
Plur. 1	ni de	ni hvé	ni nú	ni dí
2	é le	é vé	é húŋ	é dí
3	dé di	dé hvé	dé ñú	dé dí

At first sight there is very little regularity in Vanimo verb paradigms. However, apart from the verb 'die' above, which must be explained

in terms of irregular suppletive forms, the twenty-nine verbs for which paradigms were collected do reveal certain patterns. Several, like 'do, make' above, entail as yet unexplained vowel changes, which are probably morphophonemic.

The different paradigms apparently derive historically from the fusion of subject prefixes (or single consonants) with verb-stems with various initial consonants.¹¹ These putative subject prefixes were phonologically related to the personal pronouns, as the table below indicates. The patterns of initial consonants in the paradigms below suggest that there is one basic paradigm for each of the four orders of Vanimo consonants - bilabial, alveolar, alveo-palatal and glottal. In other words, the addition of the subject prefix to the verb-stem neutralised the manner of articulation (stop, fricative, nasal, liquid) of the stem-initial consonant (except perhaps in third person plural forms), leaving significant only the place of articulation.

Basic Verb Paradigms

Person	Personal pronoun	Putative subject prefix	Bilabial	Alveolar	Alveo-palatal	Glottal
Sing. 1	né	∅-	v-	l-	y-	h-
2	mi	m-	p-	bl-	s-	b-
3 m.	hé	h-	hv-	hl-	hy-	h-
f.	bé	b-	s-	pl-	s-	p-,b-
Plur. 1	ni	n-	hv-	d-	n-	d-
2	é	∅-	v-	l-	y-	h-
3	dé	d-	hv-	d-,ñ-,hl-	s-	t-,d-

Verbs which follow the bilabial paradigm are:

	'sit'	'see'	'fly'	'hold'	'swim'
Sing. 1	ve	vé	va	vi	ví
2	pe	pé	pa	pi	pí
3 m.	hve	hvé	hva	hvi	hví
f.	se	sé	sa	si	sí
Plur. 1	hve	hvé	hva	hvi	hví
2	ve	vé	va	vi	ví
3	hve	hvé	hva	hvi	hví

Verbs which follow the alveolar paradigm are:

		'be present' (1)	'be present' (2)	'do, make'	'pull'	'come'	'cut'
Sing.	1	lè	ló	le	lu	lú	lutu
	2	blè	bló	ble	blu	blú	blutu
	3 m.	hlè	*to	hle	hlu	*ló	hlutu
	f.	plè	*tó	pli	plu	*lú	plutu
Plur.	1	dè	dó	de	du	dú	dutu
	2	lè	ló	le	lu	lú	lutu
	3	ñèŋ	*tó	di	hlu	*lú	dutu

The starred forms are unexplained irregularities, but those of 'be present (2)' are evidently suppletive, as the verb appears otherwise to be a variant of 'be present (1)'. This variant has been found only in the perfective expression *i tó* 'stood', described in section 2.2.1.

Only two verbs following the alveo-palatal paradigm, and three following the glottal paradigm, have been found:

	Alveo-palatal:		Glottal:			
	'hit'	'vomit'	'hit him'	'put'	'count'	
Sing.	1	yí	yaŋ	ha	hú	he
	2	sí	saŋ	ba	bú	be
	3 m.	hyí	hyaŋ	ha	hú	he
	f.	sí	saŋ	pa	pú	pe
Plur.	1	ní	*yaŋ	da	dú	de
	2	yí	yaŋ	ha	hú	he
	3	sí	*yaŋ	ta	tú	de

The irregular starred forms may be elicitation errors.

Two of the basic paradigms, the alveolar and the glottal, have variants which most commonly (but not always) occur with verb-stems with a nasal vowel; since the variants entail replacing some consonants in the basic paradigms by their corresponding nasals, they probably result from morphophonemic changes occasioned by the nasal vowel.

The alveolar nasal paradigm is as follows:

		'hit her'	'hit me'	'hit us, give'	'hear'	'push'	
Sing.	1	l-	lájŋ	-	liŋ	lónŋ	luŋ
	2	ml-	mlájŋ	mle	mliŋ	mlónŋ	mluŋ
	3 m.	hl-	hlájŋ	hle	hliŋ	hlónŋ	hluŋ
	f.	n-	nájŋ	nó	niŋ	*sóŋ	nuŋ
Plur.	1	n-	nájŋ	-	niŋ	nónŋ	nuŋ
	2	l-	lájŋ	le	liŋ	lónŋ	luŋ
	3	ñ-	ñájŋ	ñe	ñiŋ	*sóŋ	ñuŋ

The starred forms are apparently 'borrowed' from the alveopalatal paradigm.

The glottal nasal paradigm is:

		'drink'	'go'	'dig'	'hit you(s)'	'cook'	'eat'
Sing. 1	h-	húŋ	ha	há	hùŋ	hòŋ	háŋ
	2	múŋ	ma	má	-	mò	mé
	3 m.	húŋ	ha	há	hùŋ	hòŋ	háŋ
	f. v-,b-	vúŋ	va	vá	*núŋ	bùŋ	béŋ
Plur. 1	n-	nú	na	ná	nù	nò	né
	2	húŋ	ha	há	-	hòŋ	háŋ
	3	d-,ñ-	ñá	ñá	ñùŋ	dùŋ	déŋ

The starred form represents either an elicitation error or a 'borrowing' from the alveolar nasal paradigm.

An apparent 'irregularity' in the nasal paradigms is the denasalisation (shown by absence of ŋ) of certain vowels. This occurs, however, only in conjunction with an initial nasal consonant (m, n or ñ), and its sporadic occurrence - as well as apparent inconsistencies in the data - suggest that the nasal feature on vowels is non-phonemic after a nasal consonant, at any rate in verb-forms.

The alternation of consonants in the third person singular feminine and third person plural forms of the glottal and glottal nasal paradigms is probably explicable by a morphophonemic rule operating on the putative subject prefixes:

$$b \rightarrow \left\{ \begin{array}{l} p / _a, u \\ v / _aŋ, uŋ \end{array} \right\}$$

$$d \rightarrow \left\{ \begin{array}{l} t / _a, u \\ n / _aŋ, uŋ \end{array} \right\}$$

All the verbs considered above derive from apparent consonant-initial stems. There is one verb which suggests a vowel-initial nasal paradigm:¹²

		'be positioned'	
Sing. 1	Ø-	ʒŋ	
	2	mʒŋ	
	3 m.	mʒ	
	f. m-	mú	
Plur. 1	n-	nʒŋ	
	2	Ø-	ʒŋ
	3	m-	mú

This verb occurs in the combination hve mʒ 'sat' and in the sequence mʒ to, used as a replacement for hɪè 'be present', as described in

section 2.2.1. The latter sequence is morphologically complex, as the non-third person forms of to 'be present (2)' are replaced by the forms of 'be present (1)' (alveolar paradigm). The sequence conjugates as follows:

Sing. 1	3ŋ lɛ
2	m3ŋ blɛ
3 m.	m3 to
f.	mú tɔ
Plur. 1	n3ŋ dɛ
2	3ŋ lɛ
3	mú tɔ

2.2.3. Verb Tenses

Strictly speaking, Vanimo has only two tenses, the non-immediate future and the neutral. The non-immediate future is formed by reduplication and is used for events at a specified point of time in the future. Reduplication normally means simple repetition of the verb, but in the case of the only recorded two-syllable verb, hlutu 'cut', only the second syllable is repeated: hlututu. The non-immediate future occurs in:

hé váyðŋ dá pɛð hún-hún
he man water tomorrow 3sm.drink.fut
 'The man will drink water tomorrow'

bé èŋvɔŋ danè hðŋ-ubà plutu-tu
she girl meat one-day 3sf.cut.fut
 'The girl will cut meat one day'

The neutral tense has the forms described in section 2.2.2., and refers to past, present and immediate future actions. Time is specified where necessary by temporal adverbials before the verb and/or particles after it:

hé dá ope hún	'he has drunk water <u>just now</u> '
hé dá pɛɛ hún	'he drank water <u>this morning</u> '
hé dá tɛððŋ hún	'he drank water <u>yesterday</u> '
hé dá hún hɔŋto	'he is drinking water <u>now</u> '
hé dá hún l3	'he has drunk water <u>already</u> '
hé dá hún luŋ	'he has <u>finished</u> drinking water'
hé dá hún ɛbɛ	'he will drink water <u>soon</u> '
hé dá hɔŋ-biŋta hún pa	'he drinks water <u>every day</u> '

The system of tenses and adverbials is augmented by the devices for forming the progressive aspect described in section 2.2.1.

Subj Obj VP Adv
 hé né hle hvuŋ
 he me 3sm.hit.me stone
 'He hit me with a stone'

Subj Obj VP
 bé bévó bú sí
 she herself 3sf.put 3sf.hit
 'She turned (herself) round'

Subj VP Adv
 bé vávòŋ vá-vu biŋ plè vá mó ve-no
 she woman h-big that.f 3sf.be village this.f-one
 'That big woman lives in this village'

Subj Obj VP
 hé vá va ñèŋ hú ebe
 he man dead [?] 3sm.put soon
 'He will bury the dead man soon'

Subj VP Adv
 musa mǔ to bí doeŋ
 Musa 3sm.position 3sm.be house interior
 'Musa is inside the house'

The basic sequence of phrase-positions illustrated above may apparently vary according to the exigencies of the discourse:

Obj Subj VP
 danè biŋ be vávòŋ béŋ hoŋto
 meat that.f she woman 3sf.eat now
 'That meat is being eaten by the woman'

The negative particle *e* negates the phrase or sentence which it follows; all examples found occur at the end of a sentence:

né dá hún e
 I water ls.drink not
 'I'm not drinking water'

musa hìè bí òŋò ba bí ɔŋbè e
 Musa 3sm.be house new but house old not
 'Musa is in the new house, not the old one'

The negative particle also occurs in the full form of a yes-no question, which is a disjunction, e.g. 'Is the man drinking or not drinking?':

hé dá hún me hún e
 he water 3sm.drink or 3sm.drink not
 'Is the man drinking (or not drinking)?'

Main cl.	[Rel. cl.]				
Subj	[Subj VP]	VP		Adv	
bé	vávòŋ né	vé biŋ-no	mú	tó	táti lu
she	woman I	ls.see that.f.one	3sf.pos	3sf.be	tree shade

In the second example, the demonstrative *biŋ-no* 'that one' marks the end of the subject noun phrase in which the relative clause is embedded, whereas the first example is a simple concatenation.

3. SEMANTICS

The phonological system of Vanimo potentially allows the generation of 960 different syllables:¹⁵

20 consonants and clusters x 16 nasal and non-nasal vowels x 3 'tones' = 960.

The syllable and the morpheme appear to be - or to have been until quite recently - coterminous, so that the number of possible morphemes in Vanimo cannot exceed - or have exceeded - 960, an extraordinarily low number. Semantically these resources are in effect less, as each verb paradigm has five or six different morphemes. However, this is counter-balanced by the fact that quite a number of verb-forms are homophonous with other morphemes. For example:

vá	'he dies'	vá	'man'
na	'we go'	na	'voice'
da	'we hit him'	da	'pig'
ve	'I sit'	ve	'this(f)'
ba	'you(s) hit him'	ba	'but'
lè	'I am present'	lè	'theft'
mluŋ	'you(s) push'	mluŋ	'heart'
mlaŋ	'you(s) hit her'	mláŋ	'night'

Other homophonous pairs also exist:

èŋ	'coconut'	èŋ	'child'
nu	'hand'	nu	'which?'
dìŋ	'canoe'	dìŋ	'bird'

However, the main means of expanding semantic resources is the attribution of very wide meanings to some morphemes, and their combination of other morphemes which act as specifiers. This is illustrated for the verb phrase in section 2.2.1. Similar principles apply to the noun phrase, where combinations of attributive noun + head noun or of head noun + adjective/specifier become compound nouns. Noun compounding of this kind appears to be an areal feature of the West Sepik coastal region.¹⁶ The only formal distinction found so far between a phrase

and a compound is a difference in the operation of tone-sandhi, described in section 1.3.

Data limitations preclude a thorough analysis of noun-phrase semantics, but the groups of words given below are intended to give an indication of the nature of Vanimo nouns. Morphemes enclosed in square brackets have not been found as independent words.

1. *vá* 'person'
 - a. *váyòŋ* 'man' [yòŋ] 'male'
 - b. *vávòŋ* 'woman' vòŋ 'wife'
 - c. *vádì* 'name' [dì] ?
 - d. *vánu* 'who?' [nu] 'which?'
 - e. *vámó* 'village' [mó] ?
 - f. *vámóvǎ* 'village headman' *vǎ* 'person'

2. *èŋ* 'child'
 - a. *èŋyòŋ* 'boy' [yòŋ] see 1a
 - b. *èŋvòŋ* 'girl' vòŋ see 1b

3. *táti* 'tree, wood'
 - a. *tátidé* 'tree' [dé] see 9
 - b. *tátiè* 'leaf' è see 7
 - c. *tátimé* 'bark' [mé] 'skin, covering'
 - d. *tátine* 'branch' [ne] ?
 - e. *tátihlè* 'fork in branch' [nlè] ?

4. *nɔ* 'body'
 - a. *nómé* 'skin' [mé] see 3c
 - b. *nɔlɔŋ* 'cold(or person)' [lɔŋ] 'cold'
 - c. *nɔhli* 'hot(of person)' [hli] 'hot'

5. *nè* 'flesh, tangible substance'
 - a. *danè* 'pork' da 'pig'
 - b. *linè* 'salt' li 'sea'
 - c. *èŋne* 'copra' èŋ 'coconut'
 - d. *dáŋnè* 'thigh' [dǎŋ] ?

6. *na* 'voice, breath'
 - a. *dùna* 'voice' dù 'language'
 - b. *nahù* 'nose' [hù] ?
 - c. *naòŋ* 'nasal mucous' [òŋ] ?
 - d. *nahyìŋ* 'fish-gill' [hyìŋ] ?

7. è 'bone, long object'
- | | | | | |
|----|-------|------------|--------|-------------------|
| a. | tátiè | 'leaf' | táti | see 3 |
| b. | hùṅè | 'throat' | hùṅ | 'drink' |
| c. | aè | 'shoulder' | [a] | ? |
| d. | hléṅè | 'leg' | [hléṅ] | cf. hléṅhò 'knee' |
| e. | paṅè | 'arm' | [paṅ] | see 10 |
| f. | dancè | 'chest' | [da] | ? |
| | | | nc | see 4 |
8. pé 'areca nut (betelnut)'
- | | | | | |
|----|--------|---|------|-------------------------------------|
| a. | pédé | 'areca palm' | [dé] | see 9 |
| b. | pèò | 'betel chew' | o | 'sago-leaf' |
| c. | hlífpé | 'kind of edible nut' (Terminalia catappa) | hlí | 'nut' cf. hlida 'Tahitian chestnut' |
9. [dé] 'tree, plant'
- | | | | | |
|----|--------|---------------------------------|-------------|----------|
| a. | tátidé | 'tree' | táti | see 3 |
| b. | pédé | 'areca palm' | pé | see 8 |
| c. | yadé | 'plant' (noun) | ya | 'thing' |
| d. | blédé | 'casuarina tree' | [blé] | ? |
| e. | dáṅdé | 'calophyllum tree' | [dán] | cf. 5d |
| f. | buhýdé | 'coral tree' (Erythrina indica) | [bu], [hyí] | ? |
| g. | dápùdé | 'pandanus tree' | dá | 'water' |
| | | | [pù] | ? |
| h. | ñèṅdé | 'banana tree' | ñèṅ | 'banana' |
10. [paṅ] 'arm, wing, frond'
- | | | | | |
|----|--------|-----------------|-----|----------------------|
| a. | paṅè | 'arm' | è | see 7 |
| b. | dìṅpaṅ | 'wing' | dìṅ | 'bird' |
| c. | èṅpaṅ | 'coconut frond' | èṅ | see 13 |
| d. | ñéṅpaṅ | 'snake' | ñéṅ | 'octopus' |
| e. | yípaṅ | 'sago frond' | yí | 'sago'pudding, food' |
11. [boṅ] 'intangible substance'
- | | | | | |
|----|-------|----------------|------|-----------------|
| a. | yaboṅ | 'smell, odour' | ya | 'thing' |
| b. | téboṅ | 'smoke' | té | 'fire' |
| c. | óboṅ | 'dust' | ó | 'ground, earth' |
| d. | hóboṅ | 'fog' | [hó] | ? |
| e. | èṅboṅ | 'coconut milk' | èṅ | see 13 |
12. muṅ 'water creature'
- | | | | | |
|----|--------|----------------|-------|----------|
| a. | muṅè | 'fishing line' | [è] | 'string' |
| b. | muṅtiṅ | 'fish scale' | [tiṅ] | ? |

- | | | | | |
|-----|----------|-----------------------------------|-------------|---------------------------|
| c. | muŋme | 'eel' | [me] | ? |
| d. | muŋmɔ | 'shark' | [mɔ] | ? |
| e. | muŋnuŋ | 'crocodile' | [nu] | ? |
| f. | muŋyí | 'bait' | yí | 'sago-pudding, food' |
| g. | muŋhɪ́ŋ | 'turtle' | [hɪ́ŋ] | ? |
| 13. | èŋ | 'coconut' | | |
| a. | eŋmà | 'eating coconut' | mà | 'sweet, ripe' |
| b. | èŋhvɔ̃ | 'drinking coconut' | [hvɔ̃] | ? |
| c. | èŋpaŋ | 'coconut frond' | [paŋ] | see 10 |
| d. | eŋnè | 'copra' | nè | see 5 |
| e. | èŋpi | 'coconut cream' | pi | 'swamp' |
| f. | èŋboŋ | 'coconut milk' | [boŋ] | see 11 |
| g. | èŋdǎŋ | 'coconut blossom' | dǎŋ | 'hair' |
| h. | eŋmabù | 'skull' | [bù] | ? |
| 14. | [dù] | 'collection of small objects' (?) | | |
| a. | odù | 'sand' | [o] | ? |
| b. | yadù | 'seed' | ya | 'thing'; cf. yadé 'plant' |
| c. | adù | 'sky' | a | 'cloud' |
| 15. | nu | 'hand' | | |
| a. | nuplòŋ | 'finger' | [plòŋ] | ? |
| b. | nuplɔŋhè | 'fingernail' | [hè] | cf. 16a |
| c. | nuhonòŋ | 'thumb' | [hon], [òŋ] | ? |
| 16. | tùŋ | 'hand' | | |
| a. | tuhè | 'brain' | [hè] | cf. 15b |
| b. | tuhdè | 'side of head,
temple' | [dè] | ? |
| 17. | vu | 'stomach' | | |
| a. | vuya | 'food' | ya | 'thing' |
| b. | vutɔ̃ | 'intestines' | [tɔ̃] | ? |
| 18. | [pɛ] | 'morning' | | |
| a. | pɛɛ | 'this morning' | [ɛ] | ? |
| b. | pɛò | 'tomorrow' | [ò] | ? |
| c. | pɛóhé | 'day after
tomorrow' | [hé] | cf. 20c |
| 19. | tǎŋ | 'sun' | | |
| a. | tǎŋbl | 'daytime' | [bi] | 'time'(?); cf. 20c |
| b. | tǎŋdòn | 'evening' | [dòn] | 'dusk'(?); cf. 20b |

20. *té* 'fire'
- | | | | | |
|----|------------------|---------------------------|--------------|--------------------|
| a. | <i>téboŋ</i> | 'smoke' | [boŋ] | see 11 |
| b. | <i>tédòŋ</i> | 'yesterday' | [dòŋ] | cf. 19b |
| c. | <i>tédòŋbihé</i> | 'day before
yesterday' | [bi]
[hé] | cf. 19a
cf. 18c |
21. a. *nápladi* 'broad'
- | | | | | |
|----|---------------|----------|---|-------|
| b. | <i>nápláe</i> | 'narrow' | e | 'not' |
|----|---------------|----------|---|-------|

N O T E S

1. I should also like to thank Don Laycock (Australian National University), who encouraged me to undertake this study, Anne Cochran (Summer Institute of Linguistics), who advised me on the collection of data in a tone language and listened to my tapes, and David Brazil (University of Birmingham), who taught me how to listen to tone and intonation and also commented on my tapes.

2. Abbreviations used in glosses throughout the paper are:

1, 2, 3	first, second and third person		
d	dual	m	masculine
e	exclusive	nh	non-human
f	feminine	p	plural
fut	non-immediate future	s	singular
h	human	t	trial

3. The analysis of English intonation throughout this section is based on the work of Brazil (1978); for comparative purposes I have replaced his term 'key' by 'relative pitch', and his 'tone' by 'pitch-movement'.

4. I have no data on non-singular reflexive pronouns.

5. This use of nouns of location has been recorded, for example, in the Trans-New Guinea phylum languages Yagaria (East Central Highlands family; Renck 1975:38-42, 67-69), Waskia (Madang-Adelbert Range sub-phylum; Ross 1978:47-48), Koita (Koiarian family; Dutton 1975:320-1); and is common, according to the writer's own field notes, throughout the Austronesian languages of the Central and Milne Bay Provinces.

6. This is the view of one of my informants; the data are not entirely consistent. It is noteworthy that the forms with no nasal variants (nè, nì, mè, mì) themselves begin with a nasal consonant, adding evidence for the view that nasal vowels are non-phonemic and are allophones of their non-nasal equivalents after nasal consonants (see section 2.2.2.).

7. Counting systems, at any rate on the coasts of Papua New Guinea, are usually base-two, base-five, or base-ten. Laycock (1973a) notes base-two and base-five systems in the West Sepik area, as does Z'graggen (1971:143) for the Madang Province, further to the east.

8. Where it is necessary to refer to a Vanimo verb, I cite the third person singular masculine form.

9. Angle brackets < > are used to mark the object, which is not a part of the complement + verb combination.

10. Although the glosses given by my informants differ in tense (past/present), it is reasonably certain that the difference here is one of aspect (perfective/progressive).

11. The situation in Sko is similar (Voorhoeve 1971), so the fusion must date back at least to the Proto-Sko stage.

12. The alternation of /ɔ/ and /u/ in the verb mɔ́ also occurs in the verb hɔ́ŋ 'cook' (glottal nasal paradigm) and is presumable determined morphophonemically.

13. Abbreviations used here and in the following examples are Adv: Adverbial, Cmp: Completion, NP: noun phrase, Obj: Object, Subj: Subject, VP: verb phrase.

14. The particle pa is not properly understood; it apparently also occurs on the adjective dubɛɛpa 'big'(p) (2.1.2.), òpa 'one' (2.1.6.), and in the verb phrase (2.2.3.).

15. The true figure may be smaller if, for example, vowel nasalisation is non-phonemic after a nasal consonant (see note 6 and section 2.2.2.); in this case the figure would be 888.

16. Laycock (1973b) has indicated that the combination generic noun + specifier is an areal feature of the West Sepik coast, in that it is found not only throughout the Sko phylum but in the adjacent Austronesian Siau family, an observation reinforced by the findings of Ross (1977).

BIBLIOGRAPHY

BRAZIL, David

- 1978 *Discourse Intonation II*. University of Birmingham: English Language Research.

DUTTON, T.E.

- 1975 'A Koita Grammar Sketch and Vocabulary'. In T.E. Dutton, ed. *Studies in Languages of Central and South-East Papua*, 281-412. PL, C-29.

LADEFOGED, Peter

- 1975 *A Course in Phonetics*. New York: Harcourt, Brace, Jovanovich.

LAYCOCK, D.C.

- 1973a *Sepik Languages - Checklist and Preliminary Classification*. PL, B-25.
- 1973b 'Sissano, Warapu, and Melanesian Pidginization'. *Oceanic Linguistics* 12:245-277.
- 1975 'Sko, Kwomtari, and Left May (Arai) Phyla'. In Wurm, ed. 1975:849-58.

RENCK, G.L.

- 1975 *A Grammar of Yagarua*. PL, B-40.

ROSS, Malcolm

- 1977 'Relationships of the Austronesian Languages of the Sepik and Western Madang Coast of New Guinea'. University of Papua New Guinea. Mimeo.

