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by

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IDENTIFICATION AND MOVEMENT OF PARTICIPANTS IN WERI NARRATIVE DISCOURSE

MAURICE BOXWELL

0. INTRODUCTION

A tentative investigation of discourse in Weri¹ lists four discourse types: narrative, procedural, expository and hortatory.² Narrative discourse includes contemporary narrative, history, and legend, and expository discourse includes description and explanatory sub-types.

Narrative discourse is mainly presented in the past tense, though habitutive tense commonly occurs in legends, with Temporal Sentences being the most common sentence type. Narrative discourse focuses on participants. In contrast, procedural discourse is goal oriented, with present and habitutive being the normal tenses. The normal tense of expository discourse is present or past, and a pro-verb linking sentences is notably absent (see section 1.3.). The pro-verb is the common form of linkage between sentences in narrative and procedural discourses. Hortatory discourse is marked by present or future imperative, and a predominance of second person.

This paper is confined solely to a description of some aspects of narrative discourse. First of all the general features of narrative discourse, and its tagmemes and fillers, are briefly described. Then the characteristics of paragraph and sentence are described. In Weri narrative discourse, participants are clearly identified, introduced, removed and re-introduced onto the stage where the action is viewed. Related to this, and partially overlapping, is the way in which a subject is expanded to incorporate a new participant and then contracted as one of the participants is deleted from the subject. This is described in the final section of the paper.

1. GENERAL FEATURES OF NARRATIVE DISCOURSE

1.1. TAGMEMES OF DISCOURSE

Narrative discourse in Weri is a multi-base construction with a nucleus of at least one episode, a periphery with optional title and introduction tagmemes, and an obligatory finis tagmeme. A tagmemic formula with slots and fillers is:

NarrD = ±Title:NP ±Intro:Narr Par +Nuc:Epⁿ +Finis:yok (StatS)³

A title is normally manifested by a possessive or attributive noun phrase. This is usually a simple phrase or a phrase with embedded material. The title specifies the general content of the discourse. Examples (1) to (3) are three titles with varying degrees of complexity. Example (1) is a simple possessive noun phrase, and example (2), a possessive noun phrase with a descriptive noun phrase embedded in the possessor slot. Example (3) is an attributive noun phrase with a possessive noun phrase embedded in the attributor slot and in turn a temporal sentence embedding in the head slot of the possessive noun phrase.

- (1) kou-t-a ngön-te
 dark-cl-pos story-sg.cl
 'the eclipse story'
- (2) koö tap-t-a ngön-te
 dark same-cl-pos story-sg.cl
 'the story of the same eclipse'
- (3) ne-m Sim ka-k sē rē-ak wais-a ngön-te
 I-pos Sim village-loc go break-comp come-pst story-sg.cl
 'the story of my going to Sim and back'

An introduction tagmeme is manifested by a narrative paragraph of one or two sentences in which the setting for the whole discourse is established and the main participant(s) is introduced. Example (4) is a single sentence paragraph with two of the three main participants, the narrator and a man and his wife as a group, introduced. The time phrase, wangam kan rōökēēr *'early in the morning'*, sets the time for the beginning of the discourse, in which the events spread over three days. Location setting is less important at the beginning of a discourse and is not always given. In example (4), however, e *'here'* sets the location for the beginning of this travel narrative.

- (4) Ne wangam kan rō-ök-ēēr e wlr waur ē-ak peret
 I morning road night-loc-only here come work do-comp plate
 iir wi ulmē-ak it-aangk-ēn omn-arō om wē-ēn o
 wash put put-comp eye-see-ds person-pl.cl only stay-ds up

Kasngar-aan omp Petoro-ore Öng-öp ye-s-ën piarip-ring
 Kasngar-from man Petoro-and wife-sg.cl pres-go-ds they-dl-with
 s-aup
 go-sg.pst

'Very early in the morning I came here, and when I had worked and washed and put the plates away, I saw the people were there and Petoro and his wife were going, and I went with them.'

Example (5) is an introduction manifested by a narrative paragraph with two sentences. No time word or phrase is used to establish the time setting, but the setting is implied in the reference to worship, which is only done on Sunday. The location is clearly in the village because of the reference to *sant ka kaati* 'in the Church'.

- (5) Ten sant wel aisë-ak wë-ën sant ka ka-at-i
 we.pl worship sit sit-comp stay-ds worship house house-cl-loc
 Mante-et-ak koö ola-pnaan ya-ë pë-l y-a. Pë-l
 Monday-cl-loc dark throw-3.f pres-do that-way pres-say that-way
 ë-ën kat wi-ak wais ka ur-aut.
 do-ds ear put-comp come sleep sleep-sg.pst

'When we had worshipped (someone) in the Church, said, "Darkness will fall on Monday". Then we heard, and came, and slept.'

Finis appears in all the texts recorded and formally closes the discourse. It is formulaic and is usually manifested by *yok 'right'* or *yok pi tapët 'right, that's it'*.

A nucleus consists of one or more episodes, each manifested by a paragraph. The predominant tense of narrative discourse is past. This can be seen from example (4) and the second sentence of example (5), as well as many examples in the text in the appendix. Present tense may occur, but never in the final sentence of a paragraph. Thus in example (6) the final verb, *yamëngk* 'blow', of the first sentence is in the present tense, and *waisaut* as the final verb of the paragraph, occurs with the past tense suffix. Similarly in example (7), the verb of the first sentence, *yoola* 'throw', is in the present tense and because *ka uraut* 'slept' is the final verb of the paragraph it is in the past tense.

- (6) ...kuup ya-mëngk. ...Asi wiap kan ek wes-ak
 conch.shell pres-blow Asi weak road directly make-comp
 kan wais-ën ne kaaö ya-ë-ën ka ur-ak ëlpam-ök
 road come-ds I dislike pres-do-ds sleep sleep-comp tomorrow-loc
 wais-aut./
 come-pst
'...(someone) blew the conch shell. ...and Asi came directly, but I didn't want to, and slept and came the next day.'

- (7) ...yang-et koö yo-ola. Pë-l ë-ën wais ten Eren
 ground-sg.cl dark pres-throw that-way do-ds come we.pl Helen
 ka ur-aut./
 sleep sleep-pst
 '...darkness fell. Then I came and Helen and I slept.'

The occurrence of the present tense in a clause normally indicates that that clause is background information. Thus in examples (6) and (7), the blowing of the conch shell and the falling of darkness, which are in present tense, express background information and are not in the main event line of the narrative.⁴

A special type of background information is reported speech. The direct quotation complements the verb 'say'. In this case the background information, that is the quotation, is not necessarily in the present tense, but the verb 'say', which signals this background information, is always in the present tense. Thus in examples (8) and (9), because the verb 'say' indicates the presence of a direct quotation giving background information, it occurs in the present tense.

- (8) ...Moris-ë naë wais ngön kopëta wes-ak kou-t
 Maurice-pos near come talk prepare make-comp dark-cl
 Mante-et-ak ola-pnaan ya-ë pë-l y-a.
 Monday-sg.cl-loc throw-3.f pres-do that-way pres-say
 '...came to Maurice and when we had discussed it (he) said,
 "Darkness will fall on Monday".'
- (9) ...ne kaalak Moris-ë naë wais kat wi-in yok won s-a
 I again Maurice-pos near come ear put-ds right no go-3.pst
 pë-l y-a.
 that-way pres-say
 '...I came to Maurice again and heard him say, "It has gone".'

Present tense is used in another but less frequent way in narrative discourse. Sometimes a speaker uses a dummy present tense on all but the final sentence of a paragraph. Present tense in this instance does not signal background information and carries no temporal meaning; it exists because the grammar requires tense on the final verb of the sentence. The speaker then uses past tense on the final sentence of a paragraph, which expresses the tense for all events of the paragraph. This feature is more of a stylistic device, employed by some speakers. In example (10), the sun is acting as a participant, but the sentence final verb yarë 'break' is in the present tense though its meaning in context is clearly past tense.

- (10) ...kët-ëp yok apër pi-m ur-öt-ak ya-rë.
 sun-sg.cl right come.up he-pos place-cl.loc pres-break
 '...the sun came up and went into its place.'

1.2. PARAGRAPH

The commencement of a paragraph in narrative discourse is marked by a new time and/or location setting. It may be linked to the preceding paragraph by the recapitulation of the final verb or it may have no grammatical linkage at all. The recapitulation may use the same verb or a more specific synonym. Recapitulation of a specific verb between paragraphs distinguishes paragraph linkage from sentence linkage, in which the common linkage is a general pro-verb *pēi ēēn* or *pēi ēāk* 'having done that'. In example (11) the recapitulation at the beginning of the new paragraph involves the same verb, where *sē* is the medial form⁵ of the verb 'go', and *sauwaar* is the final form with full person, number, tense affixation.

- (11) ...*tenip pou-waar s-auwaar./ Ōngk Sim-ē kou-t-ak sē...*
we.dl both-dl.cl go-dl.pst down Sim-pos bank-cl-loc go
'...we both went.
We went down to the bank of the Sim River and...'

In example (12), recapitulation involving a more specific synonym occurs at the beginning of the new paragraph. The word *un*, which indicates going along on the level, is more specific than *sauw* 'went'.

- (12) ...*ēnēm rē no-oiē-ak s-aup./ Ēngk Iil Urweri un...*
behind break I-throw-comp go-sg.pst along Iil Urweri go.along
'he left me behind and went on.
He went along to Ili Urweri and...'

Sometimes the latter type of recapitulation involves two synonyms in successive clauses. In example (13), both *im* 'go' and *is* 'go up' are more specific than *sauwaar* 'went'. They are linked together in a paraphrase sentence as recapitulation at the beginning of a new paragraph.

- (13) ...*apr-ō koin pip-ō-ōk s-auwaar./ Im o*
come.up-pur grass that-sg.cl-loc go-dl.pst go up
Sērēm-ē I-it-ak is...
Sirim-pos blood-cl-loc go.up
'...coming up we went to the grass area.
We went up to the place of Sirim's blood and...'

The absence of linkage between paragraphs is seen in the following example, where there is no recapitulation of the verb 'sleep' at the beginning of the new paragraph.

- (14) *Pē-l ē-ēn kat wi-ak wais ka ur-aut./ Ēlpam-ōk*
that-way do-ds ear put-comp come sleep sleep-pst tomorrow-loc
rō-ōk-ēēr wai ē...
night-loc-only rise do

'Then having heard we came and slept.

Early next morning we rose and...'

Note that in each new paragraph a new location or time setting is specified. Examples (11), (12), (13), and (15) all have a new location setting at the beginning of the new paragraph, and example (14) has a new time setting. These new time or location settings signal the beginning of a new paragraph when there is a no pro-verb sentence linkage (see section 1.3.). Occasionally a detailed new time setting is given in the final clause of a paragraph.

- (15) ...ka ur-ak ělpam-ök Sante-et-ak rö-ök-ěër
 sleep sleep-comp tomorrow-loc Sunday-cl-loc night-loc-only
 ělěöp apr-ö s-aup./ 0 Moris-re Eren-ě
 carefully come.up-pur go-sg.pst up Maurice-and Helen-pos garden

kot-t-ak ls...
 small-sg.cl-loc go-up

'...I slept and very early the next day, Sunday, I went up carefully.

I went up to Maurice and Helen's small garden and...'

Several things should be noted from the above example. The speaker made the time setting very explicit with the three separate time tagmemes, ělpamök 'tomorrow', Santeetak 'on Sunday', and röökěër 'very early'. Normally the time setting occurs at the beginning of the next paragraph. However, since there is already a new location setting given in the next paragraph, the initial clause would be clumsy if the lengthy time setting were also given there. The time setting is possibly highlighted in this abnormal position.

Identification of participant is very minimal between paragraphs. Change of subject between sentences only occurs within paragraphs, so that very little overt identification is given paragraph initially. The pattern of recapitulation of the final verb of the preceding paragraph immediately identifies the participant of the new paragraph. Likewise, when there is no recapitulation, the absence of pěl ěën, the pro-verb with different subject suffix and the common linkage between sentences, indicates that the same participant is involved. Thus in example (16), no identification is needed to indicate that the subject of wal ě 'rise' in the new paragraph is the same as that for ka uraut 'slept' in the preceding paragraph.

- (16) Pě-l ě-ěn kat wi-ak wais ka ur-aut./ ělpam-ök
 that-way do-ds ear put-comp come sleep sleep-pst tomorrow-loc
 rö-ök-ěër wal ě...
 night-loc-only rise do

'Then having heard we came and slept.

Very early the next day we rose and...'

The participant at the close of one paragraph and the beginning of the next must be the same. Where the narrator wishes to change or introduce another participant for a new paragraph, he must do so at the end of the preceding paragraph. The new paragraph then begins without any further identification.

- (17) Pë-l ë-ën koir-ak tenip pou-waar s-auwaar. / Öngk
 that-way do-ds find-comp we-dl both-dl.cl go-dl.pst down
 Sim-ë kou-t-ak së...
 Sim-pos bank-cl-loc go
 'Then I met him and we both went.
 We went down to the Sim River and...'

In the above example, the first person singular participant is expanded to first person dual, with the identification made more explicit by the dual person pronoun *tenip* because of the change in composition of the subject. The new paragraph then commences without change of subject or further identification.

1.3. SENTENCE

Sentence closure is clearly marked by final intonation and person-number-tense on the final verb. Tense is normally past, but it may be present in the situations already described: suffixed to the quote verb in reported speech, suffixed to the final verb in sentences, non-final in the paragraph where tense is relative to the other events in the paragraph and not to the time of narration, and also suffixed to verbs presenting background information.

Normal linkage between sentences in a narrative paragraph is manifested by the pro-verb *pël ëën* which usually is translated as *'then'*. The pro-verb recapitulates in general form the final clause of the preceding sentence and indicates change of subject in the following clause. The pro-verb *pël ëäk* *'then (with same subject)'* also occurs, but is less common. That is, sentence breaks normally occur where there is a change of subject. In example (18), the subject of *apra* *'came up'*, the final verb of the first sentence, is different from the subject of *koirak* *'find'*, the first event verb of the new sentence. The pro-verb *pël ëën* signals this change of subject.

- (18) ...apr-a. Pë-l ë-ën koir-ak...
 come.up-3.pst that-way do-ds find-comp
 '...they came up. Then I met them and...'

In example (19) the pro-verb *pël ëäk* does not indicate change of subject. Thus the subject of *ka uraut* *'slept'*, the final verb of the first sentence, and *wëënak* *'stayed'*, the first event verb of the new

sentence, are the same. Though the new sentence has a new time setting, it is not a new paragraph because of the normal pro-verb sentence linkage used here.

- (19) ...waɪs ten Eren ka ur-aut. Pë-i ë-ak ëlpam-ök
 come we.pl Helen sleep sleep-pst that-way do-comp tomorrow-loc
 wë-ën-ak...
 stay-ds-comp
 '*...I came and Helen and I slept together. Then we stayed the*
 next day and...'

Sentences may also be joined by juxtaposition when the second amplifies the final clause of the first. In example (20) the second sentence repeats the final clause of the preceding sentence, not with the identical verb, but with a synonym, and adds additional locational information. This amplification differs in an important way from specific verb recapitulation, which is characteristic of a new paragraph. In the type of amplification seen in example (20), the two verbs have the same grammatical form. The form kangk ëa 'lasted' in each case is a final verb in the past tense. In contrast to this, recapitulation signalling a new paragraph always involves the sequence: final verb (paragraph 1 conclusion) - medial verb (paragraph 2 initial) (see section 1.2.).

- (20) ...ka ur-ak kangk wë-ën kot nent rö-ök
 sleep sleep-comp wait stay-ds small one dark-loc
 wi-imaap kangk ë-a. Ten-im wë-au-t-ë koö
 put-1.sg.f wait do-pst we.pl-pos stay-pst-cl-loc dark
 ole-maap kangk ë-a.
 throw-1.sg.f wait do-pst
 '*...we slept and waited and darkness lasted for a little while.*
 Darkness lasted where we live.'

2. IDENTIFICATION AND MOVEMENT OF PARTICIPANTS

Features which are independent of the hierarchical structure also serve to define narrative discourse. These features include introduction and movement of participants and answer the following questions: How are participants introduced into narrative discourse? Once introduced, how are they identified from then on? How are participants taken out of the action of the narrative, and how are they re-introduced? Who are the main participants? Who are the lesser ones? What are the props or background information? These are important questions for the correct interpretation of a given narrative. Control of the degree of involvement of participants, props or background information is important if the speaker wants to communicate clearly what is in his mind. In

Wer1, verbs form the skeleton of narrative discourse giving the events, but the primary orientation is toward the participants.

There is a basic distinction between participants and props or background information. Participants are usually the human agencies involved in the actions, and props, the non-human. In some discourses, especially origin myths, animals are more important than normal and assume the role of participants. This can be true even of inanimate objects. In one discourse on a spoilt battery, the battery is treated as the main participant. Similarly, in two of three parallel discourses on an eclipse, by three different witnesses, the sun is given a much more prominent role than normal, and is treated as a participant. This contrasts with the third discourse where the human activity and reaction to the eclipse is more in focus, and the sun assumes its expected role of a prop.

Thus, a participant is distinguished from a prop or background information by its level of involvement in a narrative. A participant continued to interact with other participants, whereas a prop or background information does not interact with participants, and normally is named once only. Participants and props are further distinguished by the particular means of introduction onto the stage. Stage introduction of participants and props is described in section 2.1.2. Once introduced, props or background are not named again and do not need to be formally removed from the stage as they do not interact with the participant.

2.1. INTRODUCTION OF PARTICIPANTS, PROPS, AND BACKGROUND INFORMATION

2.1.1. First Participant

The first participant of the narrative discourse is simply named in the first clause along with background information such as time or location, which form the setting. Most of the narrative discourses analysed are first person accounts so that the initial participant in such cases is the narrator with pronominal identification *ne* 'I' or *ten* 'we'. This does not necessarily imply that the narrator is the main participant in the narrative. He may simply introduce a more major participant and then fade out of focus.

In examples (21) and (22) the first participant is the narrator, or includes him, as signalled by *ten* 'we plural' in example (21) and *ne* 'I' in example (22), whereas in example (23) the main participant is an inanimate object, the battery.

- (21) Ten Sante-et-ak sant wel aisë-ak orö-ak...
 we.pl Sunday-cl-loc worship sit sit-comp emerge-comp
'On Sunday after we had worshipped and come out...'
- (22) Ne wangan kan rö-ökëër e wir waur ë-ak...
 I morning road night-loc-only here come work do-comp
'I came here early in the morning and when I had worked...'
- (23) Pateri-it utpet ë-ën yokot-aar ma-ngk-ën w-ak Karain
 battery-cl bad do-ds boy-dl.cl 3-give-ds get-comp Garaina
 ka-k së...
 village-loc go
'The battery was discharged and he gave it to the two boys and they took it to Garaina and...'

2.1.2. Other Participants, Props, and Background Information

Normally, a new participant is introduced by the verb *itaangkën* 'see', the cue that a new participant is to be introduced in the following clause. The word *itaangkën* is the medial verb form with different subject suffix -ën, so that the complement of 'seeing' or what is seen then comes on stage.

In a particular travel narrative in which there is constant interaction between three main participants, the second participant, *Petoroore Öngöp* 'Petoro and his wife', is introduced, together with background information regarding some other people, by *itaangkën*. Normally, the participants are introduced in the clause immediately following *itaangkën*, but in example (24) Petoro and his wife are introduced two clauses later. Because of this separation from *itaangkën*, a secondary introductory signal, *wëën*, (see later in this section) is used to support the introduction of the participant.

- (24) ...peret iir wi ulmë-ak it-aangk-ën omn-arö om
 plate wash put put-comp eye-see-ds person-pl.cl only
 wë-ën o Kasngar-aan omp Petoro-ore öng-öp ye-s-ën...
 stay-ds up Kasngar-from man Petoro-and wife-sg.cl pres-go-ds
'...when I had washed and put away the plates I saw the people were there and Petoro and his wife from up at Kasngar were going and...'

The third participant, *Asi*, comes on stage immediately following *itaangkën* in example (25) and becomes involved there in the action for the first time, though he is mentioned a few clauses earlier.

- (25) ...ne wet kaal ë-ak im im ëngk un it-aangk-ën Asi Pol
 I first first do-comp go go along go eye-see-ds Asi Pol
 Këërak ënëm rë no-olë-ak s-aup
 Kiirak behind break 1-throw-ds go-sg.pst
'...I went and saw that Asi overtook me at Pol Kiirak and went ahead.'

Sometimes the speaker considers non-human objects important enough to class as participants. In one account of an eclipse, the sun and moon are introduced by *itaangkën*, just like a human participant:

- (26) ...waam kan-ö-ök nain kirook kët-ëp rö-ök
morning road-sg.cl-loc nine o'clock sun-sg.cl night-loc
 wi-imaap kangk ë-ën it-aangk-ën ngoon-öp së kët-ëp-ë
put-1.sg.f wait do-ds eye-see-ds moon-sg.cl go sun-sg.cl-pos
 iri ilë-a.
under enter-3.pst
 '...at nine o'clock in the morning it became dark and we saw
 the moon go behind the sun.'

Similarly, in the story of the killing of a snake, the snake is the main participant and is introduced by the verb 'see', in this case, *itna*, a variant of *itaangkën*.

- (27) ...Poonu-ak o ngaar-ëk it-n-a pö-t kamal-mor
Poonu-ag up above-loc eye-see-pst that-cl snake-sg.cl
 wir ka ëpla-ö-ök-ë rangk wë-ën...
come house wall-sg.cl-loc-to on stay-ds
 '...Poonu saw up above a snake come and stay on top of the
 wall and...'

There is one unusual use of *itaangkën* where the introduced item is not an object but a state. It is in the account of the spoilt battery. In example (28), the battery has already been named in the first clause as the first and main participant. Then it was discovered that the battery was still discharged. As this fresh information is the major turning point for the rest of the narrative, its introduction is on the level of a new participant.

- (28) ...w-ak wais ma-ngk-ën ök ë-ak it-aangk-ën pangk
get-comp come 3-give-ds try do-ds eye-see-ds correct
 na-ë-n.
neg-do-neg
 '...(they) brought it and gave it to him and he tested it and
 saw that it was no good.'

Participants may be introduced in two other ways, that do not involve *itaangkën*, but these occur much less frequently. The first is as the object of a verb. By this means the new participant is brought on stage and continued to interact with any other participant. Thus in example (29), the single group participant (i.e. a group participating as a unit), Kuup, Yunangmu and Rei, is introduced as the object of the verb *koir* 'find', and becomes part of the subject of the following verb *së* 'go'.

- (29) ...o ka-at-ak is Kööp-re Yönammö-öre Rei-re ë-ak
 up house-cl-loc go Kuup-and Yunangmu-and Rei-and do-comp
 koir wawaö o ya ël-ö-ök së...
 find search up garden old-sg.cl-loc go
 '...(I) went up to the house and found Kuup, Yunangmu and Rei
 and we went up to the disused garden and...'

Similarly in example (30), a new participant, yokotaar 'two boys', is introduced as object of mangkën 'give', and that participant becomes subject of the following clause.

- (30) Pateri-it utpet ë-ën yokot-aar ma-ngk-ën w-ak Karain
 battery-cl bad do-ds boy-dl.cl 3-give-ds get-comp Garaina
 ka-k së...
 village-loc go
 'The battery was discharged so he gave it to the two boys, and
 they took it to Garaina and...'

The second way in which a participant may be introduced is by naming him in the quotation of a direct quote sentence. In example (31), both the narrator and Helen are introduced this way for the first time quite late in the story of the spoilt battery.

- (31) ...së-pna-k ye-e-m ne-en ar Eren ka ur-ön
 go-3.f-im pres-do-ss I-io you-pl Helen sleep sleep-pl.f
 rö kan pö-t pë-l ne-a-k...
 night road that-cl that-way l-say-comp
 '...as he was about to go he said to me, "You and Helen sleep
 together tonight", and...'

At first sight example (32) appeared to be one example of a participant being introduced without any signal:

- (32) Pë-l ë-ën ka ur-ak ëlpam-ök Moris pi-mënt
 that-way do-ds sleep sleep-comp morning-loc Maurice he-only
 w-ak Sim-ë s-aut omn-arö-aring.
 get-comp Sim-to go-pst person-pl.cl-with
 'Then when he had slept Maurice took it to Sim with the people.'

This is the first mention of Maurice in the discourse exactly halfway through it. However, he actually is the first animate subject of the discourse as the one who gives the battery to the boys (see example (30)). He is quite clearly understood from the context, but is unnamed in order to deliberately downplay the human agencies and focus on the inanimate battery as the main participant.

The verb wëën 'stay' is used to introduce a prop or background information and like itaangkën, is the cue that the new item will be introduced in the following clause. This word wëën is the medial verb form with the different subject suffix -ën.

Another way in which background information is introduced is through a direct quotation. The direct quotation is preceded by *wëën*, and the speaker of the quotation is unspecified, focusing on the information rather than the participant. Thus in example (33), background information about a coming eclipse is introduced as complement of the verb 'say' and following *wëën*. Similarly in example (34), background information about an injury to a man's leg is introduced following *wëën* and as complement of the verb 'say'.

- (33) Ten Sante-et-ak sant wel aisë-ak wë-ën Mante-et-ak
 we.pl Sunday-cl-loc worship sit sit-comp stay-ds Monday-cl-loc
 koö ola-pnaan ya-ë pë-i y-a.
 dark throw-3.f pres-do that-way pres-say
 'On Sunday after we had worshipped (someone) said, "Darkness
 will fall on Monday".'

- (34) ...ëngk ka-k së orö-ak wë-ën wiap kan Karong
 along village-loc go appear-comp stay-ds weak road Karong
 ing-es-i këra kaö waal-a pë-l y-a.
 leg-sg.cl-loc wood end pierce-3.pst that-way pres-say
 '...we went along to the village and when we had arrived
 (someone) said, "The end of a stick pierced Karong's leg".'

In two of three texts on an eclipse, the announcement of the eclipse comes as background information following *wëën*, and with the speaker unspecified (see example (33)). In the third text, the quotation is not introduced as background information. Hence the signal *wëën* is not used, and the speaker, Maurice, is named:

- (35) Ten Sante-et-ak sant wel aisë-ak orö-ak Moris-ë
 we.pl Sunday-cl-loc worship sit sit-comp emerge-comp Maurice-pos
 nae wais ngön kopëta wes-ak kou-t Mante-et-ak
 near come talk prepare make-comp dark-sg.cl Monday-cl-loc
 ola-pnaan ya-ë pë-l y-a.
 throw-3f pres-do that-way pres-say
 'When we had worshipped on Sunday we came out and came to
 Maurice and had a discussion and he said, "Darkness will fall
 on Monday".'

This playing down of the role of the participant when background information is given occurs in situations apart from a direct quote. In the following example the background information, in this case about blowing a conch shell, is introduced by *wëën* and again the subject is unspecified.

- (36) Pë-l mē-a-k pō-r-ek wē-ën kuup ya-mēngk.
that-way 3-say-comp that-cl-comp stay-ds conch.shell pres-blow
'Having said that I was there and (someone) blew the conch shell.'

Background information is never part of the event line of a narrative discourse, but adds additional information. Thus, time elements may be introduced following wēën. In example (37), 'after a little while', which is expressed by a clause, is introduced following wēën.

- (37) Pë-l ē-ën ka ka-at-i sē wē-ën kot nent won
that-way do-ds house house-cl-loc go stay-ds small one no
sē-ën ne kaalak Moris-ē naē wais...
go-ds I again Maurice-pos near come
'Then we went inside and after a little while I came again to Maurice and...'

One unusual use of wēën occurs in one of the eclipse accounts. It is one in which the sun appears to be a participant because of the prominence placed on it, but it is introduced by wēën. This may reflect the three narrators' uncertainty as to the role of the sun, with it clearly introduced as a participant in one text, not even named in another, so obviously not a participant, and here in the third manifesting some elements of both participant and prop.

- (38) Ēlpam-ök rō-ök-ēēr wal ē wē-ën kēt-ēp kot
tomorrow-loc night-loc-only rise do stay-ds sun-sg.cl small
nent me-maap ya-ē.
one shine-1.sg.f pres-do
'The next day we got up early and the sun shone for a little while.'

A significant difference between background information and participants is that background information is named only once and not mentioned again. Participants, however, interact with the other participants and appear and re-appear at various stages through the narrative.

2.2. INTERACTION OF PARTICIPANTS

After a participant has been introduced, he is on stage and interacts with other participants on stage. Though he may not take a major part in the action, he remains on stage until he is specifically taken off. Normally no more than two participants are on stage at any one time. A participant may be a group acting as a unit or a single individual.

There is a minimum of specific identification of participants. Usually the only time a particular participant is specifically identified by name, phrase or pronoun is when he is introduced, taken off

stage, or re-introduced. Once he has been identified and brought on stage, normally the only means of identification is through the different subject suffix which indicates that there is to be a switch in the following clause to another participant on stage. That person in turn may remain in focus for a number of clauses until there is a switch back to the former participant by means of the different subject suffix. Identification of participants by different subject suffix is employed across sentence and paragraph boundaries as well as within sentences.

The following sentence of eleven clauses maintains identification of the participants after they are introduced in the first two clauses. This is done solely through verb affixation, by the presence or absence of the different subject suffix -*ën*.

- (39) Pateri-it utpet *ë-ën* yokot-aar ma-ngk-*ën* w-ak Karain
 battery-cl bad do-ds boy-dl.cl 3-give-ds get-comp Garaina
 ka-k sē ompyaō wes-ak w-ak wais ma-ngk-*ën*
 village-loc go good make-comp get-comp come 3-give-ds
 ök *ë-ak* it-aangk-*ën* pangk na-*ë-n*.
 try do-comp eye-see-ds correct neg-do-neg
'The battery was discharged so he gave it to the two boys and they took it to Garaina, fixed it and brought it back and gave it to him and he tested it and saw that it was no good.'

The following example demonstrates a typical structure with no means of identification across sentence boundaries, apart from the presence or absence of the different subject suffix -*ën* on the verb. This example gives the end of one sentence and beginning of another in a narrative discourse. The most common linkage between sentences in narrative discourse is the pro-verb *pēl ëën* 'he (she, it) did that' which has the different subject marker -*ën* suffixed to the medial form of the verb 'do'. This means that the second clause of the new sentence has a different subject from the final clause of the preceding sentence.

- (40) ...ne o tang-it-ak is kora-kaim wē-*ën* apr-a.
 I up steep-sg.cl-loc go.up wait-cont stay-ds come.up-3.pst
 Pē-l *ë-ën* koir-ak im o kan kou-r-ak is
 that-way do-ds find-comp go up road side-cl-loc go...up
'...I went up the steep slope and waited and went on up, up that way, and waited and they came up. Then I met them and we went on, up along the track...'

2.3. REMOVAL OF PARTICIPANT

If there are no more than two participants, very often both remain on stage all the time. With the identification of each participant controlled almost exclusively through the different subject marker on the verb, there is no problem in clearly distinguishing two participants. Once a third participant is introduced, however, there is confusion. To maintain unambiguous identification when a third participant is introduced, one of the participants already on stage is expanded to include the newcomer (see section 3.1.) or one of the participants on stage is first taken off.

A motion verb is used to take a participant off stage, with the participant usually clearly identified by name, noun phrase or pronoun. In each of the following examples the participant going off stage is named and removed by a motion verb. Thus in example (41), the non-human participant *ngoonöp* 'moon', is taken off stage by the motion verb *yengma* 'went down', and in examples (42) and (43) the participants Maurice and Asi are respectively taken off stage by the motion verbs *saut* 'went' and *waisën* 'came'.

- (41) ...ngoon-öp kët-ëp-ë kasngaël ye-ngma.
 moon-sg.cl sun-sg.cl-pos behind pres-go.down
 '*...the moon went down behind the sun.*'

- (42) ...Moris w-ak s-aut.
 Maurice get-comp go-sg.pst
 '*...Maurice took it.*'

- (43) Asi wais-ën ne om kaaö ya-ë-ën...
 Asi come-ds I only dislike pres-do-ds
 '*Asi came but I didn't want to and...*'

Pronominal identification of the participant going off stage is also very common and is used when the person and/or number of the pronoun positively identifies which participant is going.

- (44) ...ëngk Wang-ë kou-t-ak un pit kau ya-ë
 along Wang-pos bank-cl-loc go-along they behind pres-do
 pityak ne o tang-it-ak is...
 conj.ds I up steep-sg.cl-loc go.up
 '*...we went along to the banks of the Wang River and they dropped behind but I went up the steep slope and...*'

In the above example, *pit* 'they plural' is enough to identify the participant going off stage, because the other participant is the narrator. The same is true in example (45), where *piarip* 'they dual' and the narrator are the only two participants involved.

- (45) Pë-l ë-ën pö-r-ek-aan koir-ak pö-r-ek plarip
 that-way do-ds that-cl-loc-from find-comp that-cl-loc they.dl
 kau ya-ë-ën ne...
 behind pres-do-ds I
'Then I met them there and while they stayed behind there I...'

The last two examples use a slightly different type of verb to take the participant off stage. It is a pseudo-motion verb. Actually it doesn't take the participant off stage but rather leaves him behind while the stage moves on with the remaining participant and the action. It is possible in Weri for the narrator to be left behind, and for action to be described from another participant's viewpoint. Thus in example (46) Asi leaves the narrator behind using another pseudo-motion verb, *ënëm rë noolëak* 'left me behind', and the stage and action goes on with him.

- (46) Asi Pol Këërak ënëm rë no-olë-ak s-aup.
 Asi Pol Kiirak behind break 1-throw-comp go-sg.pst
'Asi left me behind at Pol Kiirak and went on.'

Other examples of pseudo-motion verbs are *ënëm rë moolëak* 'I left him behind' as in examples (47) and (48), and *wet kaal ëak sa* 'he went ahead'. Sometimes, as in examples (47) and (48), two pseudo-motion verbs are used in combination, one dropping behind and the other participant leaving him behind, or leaving one participant behind and going on ahead.

- (47) ...o kan kou-r-ak is pit kau ya-ë-ën
 up road side-sg.cl-loc go.up they.pl behind pres-do-ds
 ënëm rë mo-olë-ak...
 behind break 3-throw-comp
'...we went up the track and while they dropped behind I left them behind and...'
- (48) Pë-l ë-ën koir-ak pi pö-r-ek kanglir ënëm
 that-way do-ds find-comp he that-sg.cl-loc exchange behind
 rë mo-olë-ak ne-mënt wet kaal ë-ak im...
 break 3-throw-comp I-only first first do-comp go
'Then I joined him and in turn left him behind and I went ahead and...'

2.4. RE-INTRODUCTION OF PARTICIPANT

Having removed a participant from the stage, it is not as major an operation to re-introduce him as it was to introduce him in the first place, since he has already been involved in the action and is only coming back from off stage. For this reason the cue for re-introduction is *wëën* 'stay' and not *itaangkën* 'see'. This is the cue which signals

that a participant will be re-introduced in the following clause, and he is brought back on stage with a motion verb. Participants being re-introduced may be identified but there is less pressure for it than with the removal of participant, presumably because it is usually clear from context, as normally only one participant is off stage at a given time. In example (49), the participant is not named in any way when re-introduced after wëën as the subject of apra 'came up'. This is possible because at that point in the narrative only two participants are involved.

- (49) ...o-ol koliii pö-r-ek së kora-kaim wë-ën
 up-way direction that-sg.cl-loc go wait-cont stay-ds
 apr-a.
 come-up-3.pst
 '...(I) went up there and waited and they came up.'

When more than one participant is off stage as in examples (50) and (51), the tendency is to identify the participant being re-introduced. Thus, in example (50), the pronoun pi 'he' identifies the participant being re-introduced and in example (51), ne 'I' identifies the narrator being re-introduced.

- (50) Pë-l ë-ën-ak ëngk Sakarla-ë Këra-ö-ök së wë-ën
 that-way do-ds-comp along Sakaria-pos wood-sg.cl-loc go stay-ds
 pi ëngk Enweröök wals...
 he along Enweruuk come
 'Then (I) went along to Sakaria's Timber and he came along to Enweruuk and...'
- (51) Së it-en-ak wë-ën ne wlap kan së...
 go eye-see-comp stay-ds I weak road go
 '(He) went and saw (him) and I came in the afternoon and...'

One exception to the use of wëën to signal re-introduction of participant has been observed. In this case the participants have been off stage for so long that their coming back is treated as an initial introduction rather than re-introduction. That is, itaangkën rather than wëën is used. Coupled with the use of itaangkën in this instance is the naming of the participant, Petoro and his wife and children, which is obligatory for introduction of participants.

- (52) ...o Sërëm-ë I-it-ak is it-aangk-ën Petoro-ore
 up Sirim-pos blood-cl-loc go.up eye-see-ds Petoro-and
 öng-re ru-ut Paiarö wlr...
 wife-and child-pl.cl Paiaru come.along
 '...we went up to the place of Sirim's Blood and saw Petoro and his wife and children come to Paiaru and...'

In a few cases, a participant has been re-introduced without the signal of *wëën* and without a motion verb. In each of these cases the participant was removed from the stage by a pseudo-motion verb and re-introduced by a pseudo-motion verb. In example (53), the narrator is taken off stage by the pseudo-motion verb *ënëm rë noolëak* 'left me behind' and re-introduced by the pseudo-motion verb *koirak* 'find'.

- (53) Asi Pol Këërak ënëm rë no-olë-ak s-aup. ...Pë-l
 Asi Pol Kiirak behind break 1-throw-comp go-sg.pst that-way
 ë-ën koir-ak...
 do-ds find-comp
 'Asi left me behind at Pol Kiirak and went on....Then I caught up and...'

Chart 1 illustrates introduction, removal and re-introduction of participants in the narrative discourse, 'To Sim and back', found in the appendix.

3. EXPANSION AND CONTRACTION OF PARTICIPANT

Related to the question of movement of participants on or off stage, is that of expanding the subject to include another participant as part of an enlarged subject, and contraction of the subject when one or more of a group leave. Expansion can only take place when both participants are already on stage, and the resultant expansion comprising a single group participant, is different from the two separate participants each maintaining his individual identity.

While investigating the mechanics of expansion and contraction of participant in one text, a recurring cycle of expansion, contraction and switch of participants was noticed. That is, subject A is expanded to AB by inclusion of B. Then it is reduced to either A or B as one of these participants goes off stage. Finally there is a switch to either B or A, whichever went off stage. This cycle repeats itself a number of times throughout the text.

This cyclic pattern was found to occur in other narrative discourses but not always as completely or as frequently because there was less interaction of participants. For ease of description all examples in this section are taken from the one text, though the pattern and the mechanics of change were found to be the same in all texts examined. The text used is 'To Sim and back', given in the appendix of this paper. Chart 2 shows the cycles of expansion, contraction and switch.

CHART 1

Movement of Participants in text 'To Sim and back'

Signal for Introduction	On Stage	Off Stage	Signal for Re-introduction
	Narrator (2)		
itaangkën (6)			
wëën (7)			
<u>Petoro & wife (8)</u> →			
	<u>they dropped behind (12)</u> →		
			wëën (18)
		← <u>came up (20)</u> =====	
	<u>they dropped behind (24)</u> →		
	I left them behind (25,26)		
wëën (29)			
Asi (30)			
		← <u>found (32)</u> =====	
		<u>they dropped behind (33)</u> →	
↓			
itaangkën (37)			
Asi (38)	→		
	<u>left me behind (38,39)</u> →		
		← <u>found (44)</u> =====	
	<u>I left him behind (45,46)</u>		
itaangkën (50)			
sun (51)	→		
		← <u>he came (55)</u> =====	
			wëën (54)
			itaangkën (66)
		← <u>Petoro, wife & children came (67)</u> =====	
wëën (74)			
quotation (75)	→		
	<u>he went first (77,78)</u> →		
			wëën (83)
		← <u>I went (84)</u> =====	
itaangkën (91)			
grass (92,93)	→		
wëën (100)			
conch shell (101)	→		
	<u>Asi came (110,111)</u> →		
	Narrator (114)		

Key: Narrator ———, Asi —————, Petoro, wife (& children) =====
 Background information

CHART 2

Expansion, Contraction and Switch of Participants

Clause	Participant involvement	Grammatical marker	Lexical signal	Identification
10 12 13	Expansion Contraction Switch	no ds no ds ds	-ring (9)	piarip (9) pit ne
22 24 25	Expansion Contraction Switch	no ds no ds ds	koirak (21)	-a (19) pit mo-(26)
32 33 34	Expansion Contraction Switch	no ds no ds ds	koirak	piarip ne
60 79 84	Expansion Contraction Switch	no ds no ds ds	koirak (59)	tenip pouwaar, -auwaar Asi pi; -a (80) ne; -aup (89)
108 110 112	Expansion Contraction Switch	no ds no ds ds	-iring (107)	pöaar (107) Asi ne; -aut (114)

3.1. EXPANSION OF PARTICIPANT

In the expansion of the participant, the different subject suffix never occurs on the verb of the preceding clause, because the expanded subject still contains the original participant.

Some specific means of incorporating another participant into the expanded subject is almost always used. In the text under consideration there is some means of incorporation used in each case, but in other texts this incorporating marker is sometimes missing. One incorporating device is the accompaniment marker -ring ~ -iring (clauses 9, 107) which is suffixed to the new participant in the clause preceding the expansion. Another means, and the most common, is the use of the verb *koir* 'find' which usually occurs in the clause preceding the expansion (see clauses 21, 59) though in clause 32 it is telescoped and occurs in the same clause in which the expansion is made. A third means noted in another text is that of motion towards a person so that that person is then incorporated into the expanded subject in the following clause:

- (54) *ten* *Moris-ë* *naë* *wais* *ngön* *kopëta* *wes-ak*
 we.pl *Maurice-pos* *near* *come* *talk* *prepare* *make-comp*
 'We came to Maurice and we (all) had a discussion and...'

That is, Maurice is approached and then he is incorporated into the expanded subject in the following clause, *ngön kopëta wesak* '*had a discussion*'.

Normally participants of the expanded subject are identified, usually by pronominal reference but sometimes by verb inflection for person and/or number. In the identification column for expansion of participant of Chart 2, three of the four means of identification involve pronouns: *piarip* '*they* dual', *tenip pouwaar* '*we both*' and *pöaar* '*those* dual'. Two of these, *piarip* and *pöaar*, occur on the clause preceding the expansion and identify the new participant about to enter into the expansion. The third, *tenip pouwaar*, a phrase, occurs in the expansion clause and identifies the expanded subject. In this case *pouwaar* '*both*' emphasises the expansion as the original individual participants were both singular in number. No pronominal identification of the new participant in the expansion of subject in clause 22 is given. However, clause 19 does give some identification in the verb suffix, *-a* '*third person past tense*'. At this stage of the discourse two participants have been introduced, the narrator and a man and his wife as a group, so that the identification, being third person, can only be of the latter pair. Clause 60, in addition to the pronominal identification of the expanded subject, also identifies the participant by means of *-auwaar* '*dual past tense*', the verb suffix. In one example, clause 33, no identification at all is given, and context is relied on. However, there is clear identification in the following clauses, 33 and 34, where the participants involved in the contraction of subject, *piarip* '*they* dual', and switch, *ne* '*I*', are named. Though no examples have been observed to date, it is to be expected that nouns and names could also serve as subject identifiers in expansion of a subject. They have been observed in contraction of subject.

3.2. CONTRACTION OF PARTICIPANT

In the contraction of the participant, as with the expansion of the participant, there is no different subject grammatical marker on the verb of the preceding clause, because the participant of the contracted subject was part of the expanded subject.

Unlike the expansion of the participant, however, no lexical signal is given to show that the contraction of the participant has occurred,

but the contracted subject is always clearly identified. This is by either noun or pronoun. In the identification column of contraction of participant of Chart 2, three of the five examples are pronominal, pit (clauses 12, 24) '*they* plural' and piarip '*they* dual' (clause 33). The other two involve a name, Asi '*Asi*' (clause 110) and Asi pi '*Asi, he*' (clause 79). Clause 83 gives supplementary identification by the verb suffix -a '*third person past tense*'.

3.3. SWITCH OF PARTICIPANTS

After contracting the participant, when the narrator wants to switch to the other participant of the original expanded subject, he must signal this by the different subject suffix -ën on the verb of the clause preceding the switch.

In addition, there is always some clear identification. The identification column of the switch of participant of Chart 2 shows that four of the five examples use the free form pronoun ne '*I*', and the fifth uses mo- a third person referent verb prefix. It is to be expected that names or nouns could also be used for the contraction of the participant, but they have not been observed to date. Clauses 89 and 114 also provide supplementary identification with the verb affixation -aup and -aut '*singular past*'.

APPENDIX

'To Sim and back'

Clause

Title: Attributive noun phrase

- 1 Ne-m Sim ka-k sē rē-ak wais-a ngön-te
 I-pos Sim village-loc go break-comp come-3.pst story-sg.cl
'The story of my going to Sim and back.'

Introduction: Narrative paragraph

- 2 Ne wangam kan rö-ök-ëër e wir
 I morning road night-loc-only here come.along
- 3 waur ë-ak
 work do-comp
- 4 peret iir
 plate wash
- 5 wi ulmë-ak
 put put-comp
- 6 it-aangk-ën
 eye-see-ds
- 7 omn-arö om wë-ën
 person-pl.cl only stay-ds
- 8 o Kasngar-aan omp Petoro-ore öng-öp ye-s-ën
 up Kasngar-from man Petoro-and wife-sg.cl pres-go-ds
- 9 piarip-ring s-aup./
 they-dl-with go-sg.pst
'I came here early in the morning and when I had worked and washed and put away the plates I saw that the people were there, and that Petoro and his wife, from up at Kasngar, were going, and I went with them.'

Episode 1: Narrative paragraph

- 10 Im im
 go go
- 11 ëngk Wang-ë kou-t-ak un
 along Wang-pos bank-cl-loc go.along

Clause

- 12 pit kau ya-ë pityak
 they behind pres-do conj.ds
- 13 ne o tang-lt-ak is
 I up steep-sg.cl-loc go.up
- 14 kora-kaim
 wait-cont
- 15 kaalak o sē
 again up go
- 16 o-ol koliil pō-r-ek sē
 up-way direction that-cl-loc go
- 17 kora-kaim
 wait-cont
- 18 wē-ën
 stay-ds
- 19 apr-a.
 come.up-3.pst
 'We went on and on, along to Wang River, and as they dropped
 behind I went up the steep slope and waited, and went on
 again, up the other side, and waited, and they came up.'
- 20 Pë-l ë-ën
 that-way do-ds
- 21 koir-ak
 find-comp
- 22 im
 go
- 23 o kan kou-r-ak is
 up road side-cl-loc go.up
- 24 pit kau ya-ë-ën
 they.pl behind pres-do-ds
- 25 ënēm rē
 behind break
- 26 mo-olë-ak
 3-throw-comp
- 27 im
 go
- 28 o Pol Këërak is
 up Pol Kiirak go.up
- 29 wē-ën
 stay-ds

Clause

- 30 Asi ənəm wais-a.
Asi behind come-3.pst
'Then I met them and we went up along the track, and as they dropped behind I left them and went up to Pol Kiirak and Asi came later.'
- 31 Pë-l ë-ën
that-way do-ds
- 32 pö-r-ek-aan koir-ak
that-cl-loc-from find-comp
- 33 pö-r-ek piarip kau ya-ë-ën
that-cl-loc they-dl behind pres-do-ds
- 34 ne wet kaal ë-ak
I first first do-comp
- 35 im im
go go
- 36 ĕngk un
along go.along
- 37 it-aangk-ën
eye-see-ds
- 38 Asi Pol Këërak ənəm rë
Asi Pol Kiirak behind break
- 39 no-olë-ak
l-throw-comp
- 40 s-aup./
go-sg.pst
'Then I met them there, and they dropped behind, and I went ahead, on and on, and saw that Asi had left me behind at Pol Kiirak and went on.'

Episode 2: Narrative paragraph

- 41 ĕngk Iil Urweri un
along Iil Urweri go.along
- 42 wë-a.
stay-3.pst
'He went along to Iil Urweri.'
- 43 Pë-l ë-ën
that-way do-ds
- 44 kolr-ak
find-comp
- 45 pi pö-r-ek kangiir ənəm rë
he that-cl-loc in.exchange behind break

Clause

- 46 mo-olë-ak
 3-throw-comp
- 47 ne-mënt wet kaal ë-ak
 I-only first first do-comp
- 48 im
 go
- 49 ëngk Paiaru un
 along Paiaru go.along
- 50 it-aangk-ën
 eye-see-ds
- 51 kët-ëp lup-t-ak wë-a-ap.
 sun-sg.cl middle-cl-loc stay-pst-sg.cl
 'Then I joined him and in turn left him behind, and I went
 along to Paiaru and saw that it was midday.'
- 52 Pë-l ë-ën-ak
 that-way do-ds-comp
- 53 ëngk Sakaria-ë Këra-ö-ök së
 along Sakaria-pos wood-sg.cl-loc go
- 54 wë-ën
 stay-ds
- 55 pi ëngk Enweröök wais
 he along Enweruuk come
- 56 es mer-eim wi-ak
 fire burn-cont put-comp
- 57 wir-a.
 come.along-3.pst
 'Then I went along to Sakaria's Timber, and he came along to
 Enweruuk, lit a fire and came.'
- 58 Pë-l ë-ën
 that-way do-ds
- 59 koir-ak
 find-comp
- 60 tenip pou-waar s-auwaar./
 we.dl both-dl.cl go-dl.pst
 'Then I met him and we both went.'
- Episode 3: Narrative paragraph
- 61 Öngk Sim-ë kou-t-ak së
 down Sim-pos bank-cl-loc go
- 62 ngenti-ak
 drop-comp

Clause

- 63 apr-ö koin pip-ö-ök s-auwaar./
come.up-pur grass that-sg.cl-loc go-dl.pst
'We went down to the bank of the Sim River and crossed and
went up the grassy area.'
- Episode 4: Narrative paragraph
- 64 Im
go
- 65 o Sërëm-ë i-it-ak is
up Sirim-pos blood-cl-loc go.up
- 66 it-aangk-ën
eye-see-ds
- 67 Petoro-ore öng-re ru-ut Paiaru wir
Petoro-and wife-and child-cl Paiaru come.along
- 68 es ye-mer-a.
fire pres-burn-3.pst
'We went up to Sirim's Blood and saw that Petoro and his wife
and children had come to Paiaru and were lighting a fire.'
- 69 Pë-l ë-ën
that-way do-ds
- 70 it-en-ak
eye-see-comp
- 71 im
go
- 72 ëngk ka-k së
along village-loc go
- 73 orö-ak
emerge-comp
- 74 wë-ën
stay-ds
- 75 wiap kan Karong ing-es-l këra kaö waal-a pë-l
weak road Karong leg-sg.cl-loc wood end pierce-3.pst that-way
y-a.
pres-say
'Then having seen (them) we went on along to the village, and
when we had arrived (someone) said, "Karong has pierced his
leg with a stake".'
- 76 Pë-l ë-ën
that-way do-ds
- 77 pö-r-ek-aan ten Asi-en ngon ë-akaim-ën
that-cl-loc-from we.pl Asi-lo talk do-cont-ds

Clause

78 *tenip s-auwaar.*
 we.dl go-dl.pst
 'Then when they had talked to us there, we went.'

79 *Asi pi wet kaal ë-ak*
 Asi he first first do-comp

80 *s-a./*
 go-3.pst
 'Asi went first.'

Episode 5: Narrative paragraph

81 *së*
 go

82 *it-en-ak*
 eye-see-comp

83 *wë-ën*
 stay-ds

84 *ne wiap kan së*
 I weak road go

85 *it-en-ak*
 eye-see-comp

86 *rö kan apr-ö wais*
 night road come.up-pur come

87 *o ka-k wais*
 up village-loc come

88 *ka ur-ak*
 sleep sleep-comp

89 *ëlpam-ök Sante-et-ak rö-ök-ëër ëlëöp*
 tomorrow-loc Sunday-cl-loc night-loc-only carefully
 apr-ö s-aup./
 come.up-pur go-sg.pst
 'He went and saw him, and in the afternoon I came and saw
 him, and came up at night, up to the village, and slept and
 early the next day, on Sunday, I went up quietly.'

Episode 6: Narrative paragraph

90 *O Moris-re Eren-ë ya kot-t-ak is*
 up Maurice-and Helen-pos garden small-sg.cl-loc go.up

91 *it-aangk-ën*
 eye-see-ds

92 *piarip-im omn-ant nön ngep ë-ak*
 they.dl-pos thing-cl grass cover do-comp

Clause

- 93 wë-a.
stay-3.pst
'I went up to Maurice and Helen's small garden and saw that it was covered with weeds.'
- 94 Pë-l ë-ën
that-way do-ds
- 95 së
go
- 96 it-en ulmë-ak
eye-see put-comp
- 97 wais
come
- 98 Kõnwi-in ök mē-a-k
Kunwi-io say 3-say-comp
- 99 ni wë pō-t kēt-ək sē kēa ti olē-ak ket
you.sg stay that-cl sun-loc go weed pull.up throw-comp make
ë mo-wi-im pë-l mē-a-k
do 3-put-sg.f that-way 3-say-comp
- 100 pō-r-ek wë-ën
that-cl-loc stay-ds
- 101 kuup ya-mëngk.
conch.shell pres-blow
'Then I went and having seen, came and said to Kunwi, "If you are here at midday, pull up the weeds and throw them away, and tidy up", and then someone blew the conch shell there.'
- 102 Pë-l ë-ën
that-way do-ds
- 103 së
go
- 104 sant ka ka-at-i ilē-ak
worship house house-cl-loc enter-comp
- 105 omn-arō won om kopēt naar.
person-pl.cl no only one two.cl
'Then I went and entered the Church, but there were only a few people.'
- 106 Pë-l ë-ën
that-way do-ds
- 107 pō-aar-iring sē
that-dl.cl-with go
- 108 ka ka-at-i ilē-ak
house house-cl-loc enter-comp

Clause

- 109 orö-ak
 emerge-comp
- 110 Asi wiap kan el wes-ak
 Asi weak road directly make-comp
- 111 kan wais-ën
 road come-ds
- 112 ne om kaaö ya-ë-ën
 I only dislike pres-do-ds
- 113 ka ur-ak
 sleep sleep-comp
- 114 ëlpam-ök wais-aut./
 tomorrow-loc come-pst
 'I went to Church with them, and when we came out Asi came
 straight away in the afternoon, but I didn't want to, but
 slept and came the next day.'
- Finis: Stative sentence
- 115 Yok pi tap-ët.
 right it same-sg.cl
 'Right, that's it.'

N O T E S

1. Werl is a non-Austronesian language of the Gailalan language family spoken by approximately 4,200 people living in the headwaters of the Waria River and in the Ono and Biarar valleys of the Wau Subprovince of the Morobe Province in Papua New Guinea. Material for this paper was collected under the auspices of the Summer Institute of Linguistics from 1962-1975.

The phonetic symbols for the orthography used throughout this paper are as follows: p [p], t [t], k [k], s [s], m [m], n [n], ng [ŋ], l [l], r [r], w [w], y [y], i [i], e [ɛ], a [a], o [o], ö [ʊ], u [u].

I am indebted to Marshall Lawrence of the Summer Institute of Linguistics for valuable assistance during analysis, especially for observations which resulted in section 2, and for helpful editorial comments.

2. The breakdown of discourse types is described briefly in Helen Boxwell, forthcoming.

3. The following abbreviations and symbols are used in this paper:

ag	agentive
cl	noun classifier
comp	completed action
conj	conjunction
cont	continuative aspect
dl	dual
ds	different subject
Ep	episode
f	future
im	imminent
Intro	introduction

io	indirect object
loc	locative
n	may occur any number of times
Narr	narrative
NarrD	narrative discourse
neg	negative
NP	noun phrase
Nuc	nucleus
Par	paragraph
pl	plural
pos	possessive
pres	present
pst	past
pur	purposive
sg	singular
ss	same subject
StatS	stative sentence
1	first person
3	third person
+	obligatory
±	optional
-	morpheme break
.	partmanteau morpheme (in literal translation)
.	sentence boundary in vernacular
/	paragraph boundary in vernacular

4. Background information is described in Joseph E. Grimes, 1971.

5. Many highland languages of Papua New Guinea manifest difference of morphology between verbs which occur sentence medially and those which occur sentence finally. In Weri, medial verbs have a minimum of affixation with the presence or absence of a morpheme signalling different subject in the following clause being its most significant feature. Final verbs carry person-number-tense affixation with the tense applying to all verbs of the sentence.

BIBLIOGRAPHY

BOXWELL, Helen

forth- Information Blocking in Werl.
coming

GRIMES, Joseph E.

1971 'Kinds of Information in Discourse', *Kivung* 4:64-74.

NOTES ON AGARABI GRAMMAR

JEAN GODDARD

ABBREVIATIONS AND SYMBOLS

abil	-	abilitative	neg	-	negative
adj	-	adjective	NP	-	noun phrase
app	-	appositional	nt	-	neutral
aux	-	auxiliary verb	pf	-	perfect
ax	-	axis	pl.	-	plural
bene	-	benefactive	poss	-	possessive
C	-	consonant	pro	-	pronoun
cl	-	clause	pst	-	past
com	-	comment	purp	-	purposive
cond	-	conditional	QW	-	question word
cont	-	continuative	R/A	-	Relator-Axis
desid	-	desiderative	re	-	relator slot
dir	-	directional	reas	-	reason
d.s.	-	different subject	sg.	-	singular
emph	-	emphasis	top	-	topicaliser
fin	-	final	vb	-	verb
fut	-	future	V	-	vowel
ger	-	gerundive	vbl	-	verbaliser
H	-	head (slot)	1p	-	first person
Impv	-	imperative	2p	-	second person
ind	-	indicative	3p	-	third person
int	-	interrogative	ʔ	-	glottal stop
juss	-	jussive	Y	-	nasalised vowel
med	-	medial	>	-	becomes
mod	-	modifier	Ø	-	zero allomorph
narr	-	narrative			

- (word) . (word) - indicates that two English words translate one Agarabi word/morpheme
- (word) - (word) - dashes separating words indicate separate words or morphemes in Agarabi
- (word) / (word) - portmanteau morpheme carrying two meanings

0. INTRODUCTION

0.1. THE AGARABI LANGUAGE¹

The Agarabi language is typical of those in the highlands, having a relatively simple phonetic inventory, but considerable complexity in the grammar. The only 'exotic' sounds to an English-trained ear are the glottal stops and tone. Even the latter is simple in Agarabi, having two level tones in contrast and glides occurring only on long vowels.

Grammatical complexity lies in the domain of verb and clause structure. Nominals and modifiers are relatively simple with little inflection. Verbs, however, are routinely inflected for voice, tense, aspect, number, mood, person subject and emphasis. In medial position they also carry suffixes which indicate whether the following verb will have the same or a different subject. If it will be different, the medial form indicates the person of its own subject as well as that of the following verb.

In common with other languages of this type Agarabi strings seemingly endless numbers of clauses together in a stream of speech. This presents the analyst with a problem in deciding what units there may be larger than the clause and on what basis to divide these longer strings.

One of the traditional marks of a sentence has been something which shows finality, such as falling intonation and pause. In Papua New Guinea Highland languages the 'final' verb (a particular form which can occur independently and usually in utterance-final clauses) is often accompanied by falling intonation and followed by pause. Thus the final verb has been interpreted as marking the end of a sentence by many analysts. However, this can result in extremely long and complicated sentences which may be difficult to describe or differentiate.

Some who have analysed Papua New Guinea languages have followed the 'traditional' interpretation; others, such as Healey², have posited intermediate levels. A third analysis followed by Scott³ is to postulate a seemingly lower level for sentences. In this case sentence terminus is marked by the clause in a string which is marked to show that it has a different subject from the one which follows it in the string. The clause, then, which has the final verb, falling intonation

and is followed by pause, marks the end of a paragraph. I followed this analysis in my study of the higher levels of Agarabi grammar.⁴

Though this paper does not include a discussion of the higher levels (sentence through discourse) the type of analysis does have some bearing on the clause level. It may be helpful to keep in mind that the final verb marks the end of a paragraph, the different-subject verb, the end of a sentence and the same-subject verbs are the true 'medial' verbs which in some sense depend on other verbs or clauses. These medials never occur independently and occur medially in strings of clauses.

This paper begins with a brief description of the phonemes of the Agarabi language to aid understanding. Then it progresses from the morpheme level through the word and phrase levels as far as the clause level.⁵ It treats many of the most common constructions at these levels but is, by no means, exhaustive.

1. THE PHONEMES OF AGARABI

1.0. PHONEME INVENTORY

The following chart is presented for a quick view of Agarabi phonology; a brief description follows.

CHART OF PHONEMES

Consonants					
	Bilabial		Alveolar		Velar
Oral					
Voiceless	p		t		k
Voiced	w		y		
Nasal	m		n		
Vowels					
	Front		Central		Back
High	i				u
Low	e		a		o
Neutral					
Glottal					
h					
Liquid					
r					

1.1. DESCRIPTION OF PHONEMES

Consonant phonemes divide into two contrastive classes: oral and nasal. Oral consonants divide into voiceless and voiced. Voiceless oral consonants contrast at bilabial, alveolar and velar points of articulation. Allophones occur as follows: [p^h], [t^h], and [k^h], occur initially and following complex vowel-nasal or vowel-glottal nuclei; fricative [ɸ], [s], [x], occur between oral vowels and may fluctuate with stop allophones. (The alveolar stop and fricative allophones fluctuate freely initially, the bilabials occasionally and velars rarely, but an unaspirated velar allophone [k] may fluctuate with the fricative between vowels.) An alveolar affricate allophone [ts] fluctuates occasionally with the aspirated stop.

- (1) initial: [p^hɔ] 'pig' [t^húsi] 'pumpkin' [k^húrú] 'fence'
 medial: [əpɔ] 'male' [fɛnə] 'bow' [əxo] 'his chest'
 [əmpe] 'let go' [əʔtɔ] 'tip' [yənke] 'stick'

Voiced oral consonants and nasal consonants contrast only at bilabial and alveolar points of articulation. Allophones of voiced oral consonants ([w] and [y]) occur as follows. Voiced stop allophones [b] and [d] occur initially and following complex syllable nuclei. These fluctuate with labialised stop [b^w], palatalised stop [d^y] and semivowels [w] and [y] respectively, with varying degrees of friction. A voiced bilabial fricative [ɸ] with or without labialisation may fluctuate with [w] between oral vowels. Nasal phonemes /m/ and /n/ occur without allophonic variation.⁶

- (2) initial: [bánté] 'man' [dɛnkə] 'stick'
 medial: [úwé] 'arrow' [fýɔ] 'cold'

Vowels /i/, /e/, /u/, and /o/ tend to be open rather than close. The central vowel /a/ is the close [ə] when it occurs singly and /aa/ the open, long [a:] when it occurs in sequence with itself.

- (3) initial: [a:mo] 'melon' [əmo] 'stem'
 medial: [-na:y] 'inside' [háú] 'string'

Front and back vowels contrast as to tongue height, and the higher vowels [i] and [u] tend to be shorter than the lower [e] and [o].

Two neutral phonemes, the liquid /r/ and the glottal stop /h/,⁷ vary allophonically as follows. The liquid phoneme may be either an alveolar flap [ɾ] or an alveolar trill [r]. These seem to fluctuate freely with some speakers using the flap exclusively and others the trill more frequently; still others fluctuate between the two. The glottal stop phoneme may, in limited environments, occasionally vary to a glottal fricative.

1.2. PROSODIC FEATURES

The two main prosodic features in Agarabi are tone and nasalisation. Stress is predictable.

There are two degrees of tone, high and low. These are primarily level tones though a slight glide on a phonetically short vowel may be perceived when there is a transition from one level to another in succeeding syllables. Otherwise, pitch glides occur only on phonetically long vowels and are interpreted as a sequence of low-high or high-low tones.⁸

Bee, Luff and Goddard (1973:416) suggested that treating nasalisation as a prosodic feature is the most satisfactory analysis:

Since there are two nasal consonants and since vowel nasalisation is in complimentary distribution with them, it would seem most economical to assign nasalisation as an allophonic variation of one of these phonemes.... An alternative interpretation, considering vowel nasalisation as a prosodic or supersegmental feature which may be manifested in specific environments as one or another nasal consonant, simplifies the statement of syllable structure, consonant distribution, and morphophonemic change.

- (4) [əme:] 'Give him', [əme:] 'his throat'
 (5) [əwi] 'poison', [əwɪ] 'illness'
 (6) [əro] 'side', [ərq] 'fin, tail of bird'

This nasal-oral vocalic contrast is replaced by a sequence of oral vowel plus nasal consonant when affixation occurs and when a word with final nasal vowel occurs non-finally in a close-knit phrase. The specific nasal consonant which may occur depends upon the shape of the affix or word immediately following. Within a word, before stops, a homorganic nasal consonant occurs; before high and back vowels (i, u, o) within a word and before bilabial consonants across word boundaries a bilabial nasal occurs; before either central or low front vowels (a, e) within a word and elsewhere across word boundaries an alveolar nasal occurs.

- (7) [una:] 'string bag'
 plus [iʔ] vbl [una:mɪʔ] 'it is a string bag'
 plus [e] indirect speech [una:ne] 'a string bag'
 plus [pɪ] 'in' [una:mpɪ] 'in a string bag'
- (8) [oɛ:] 'new'
 plus [una:] 'string bag' [oɛ:n ʔna:] 'a new string bag'
 plus [pɛ:kú] 'leg band' [oɛ:m pɛ:kú] 'new leg band'
 plus [tire:] 'corn' [oɛ:n tíré:] 'new corn'

In slow speech nasalisation may occur rather than the nasal consonant at morpheme junctures.

1.3. DISTRIBUTION OF PHONEMES

Consonants are very limited in distribution. All except glottal stop and liquid occur word initially, only glottal before pause. Only nasal consonants and glottal stop precede another consonant; only voiceless stops follow a nasal consonant within a word and such consonant sequences occur only medially.

One or two vowels may occur as the nucleus of a single syllable and two-syllable nuclei may occur in sequence with an intervening non-vocoid. All vowels may occur word finally, but only /e/, /o/ and /aa/ occur finally in verb stems. All combinations have been observed initially in stem morphemes though some are more frequent than others.

1.4. MORPHOPHONEMIC CHANGES

Agarabi morphemes end in either a nasal vowel, an oral vowel or glottal stop. These condition the shape of the following morphemes. An example of the three classes follows.

	'bank'	'beetle'	'root'
(9) stem	[əru]	[əry]	[əruʔ]
(10) vbl [iʔ]	[əruʔʔ]	[ərumʔʔ]	[əruʔiʔ]
(11) 'in' [pi]	[ərupʔ]	[ərumʔ]	[əruʔpʔ]
(12) 'on' [rəʔ]	[əruʔəʔ]	[ərumʔəʔ]	[əruʔkəʔ]
(13) indirect speech [e]	[əruə]	[əruə]	[əruʔə]

The morpheme shape which follows the oral vowel may be considered the basic form. The shapes which occur following nasal vowels and glottal stops are described as combinatory features of nasalisation and glottal, respectively, without having to postulate allomorphic forms. For example, V + r → Vnt; Vʔ + r → Vhk.

There are also other morphophonemic changes, especially in verb morphology. These will be discussed in the relevant sections (see section 3.2.1.).

2. STEM FORMATION

2.0. STEMS

Morphemes which may occur in isolation as complete, well-formed utterances are classed as stems. Verbal stems are those which also optionally occur with mood, tense and person-subject suffixes. Nominal stems are those which occur with a lesser range of mood suffixes and only those derived from verbs occur with tense suffixes. In the formation of a type of equational clause they may occur with person-subject

suffixes, (termed 'verbaliser' in this function). The nominal stems may be sub-divided into nouns, pronouns, modifiers and specifiers according to their syntactic function at the phrase and clause level.

Stems may be simple or complex with nominals exhibiting more complexities than verbals. Simple stems are roots composed of only one morpheme. Complex stems are composed of stem plus stem, stem plus affix or a combination of both.

2.1. NOMINAL STEMS

Nominal stems may be simple or complex:

Simple - monomorphemic stems

- (14) noun: aamo 'melon', wáántá 'man'
 (15) pronoun: téhi 'I', wéhi 'he, she, it'
 (16) modifier: káákan 'big', manaa 'one'
 (17) specifier: máí 'this'

Complex or multimorphemic stems, are stem and affix combinations.

2.1.1. Stem Plus Stem

These seldom occur with the stems in the same form as they occur in isolation. The stems may be shortened, there may be morphophonemic changes or affixes added to one or another, presumably prior to this stem formation.

Shortened stems:

- (18) íyámporíntá 'children' (íyámpón + ááríntá)
boy girl
- (19) wáánaati 'people' (wáántá + anaati)
man woman

Stems with morphophonemic changes:

- (20) yááenáá 'green' (yáá + anáá)
tree leaf

2.1.2. Stem Plus Affix

These are of several types; derivational affixes, personal-referent affixes and likeness. The first changes the class of the word as from verb to noun; the second occurs with kinship terms and body parts and identifies the person to whom they refer, either the speaker or someone else. The third, translated 'likeness' is most often used to form colour words from nouns.

(a) Derivational affixes

- (21) tááman 'preparation' (tááraa + n)
prepare
- (22) kuwin 'grown' (kuwo + n)
grow

(b) Personal-referent prefixes

- (23) anohé 'someone else's mother' (a + nohé)
non-lp.ref mother
- (24) tipohé 'my father' (ti + pohé)
lp.ref father

(c) Likeness

- (25) epantén 'white' (epan + tén)
cockatoo like
- (26) nááráréh 'red' (nááaré + réh)
blood like

2.1.3. Stem Plus Stem Plus Affix

- (27) ayókuwin 'grey-haired person' (ayó + kuwin)
his.hair grown
- (28) káánúhmanaaúh 'three' (káán + úh + manaa + úh)
two one
- (29) yaamanaahpáh 'five' (ayaan + manaah + páh)
his.hand one at

2.1.4. Reduplicated Stems

These form words which are semantically related to the stem from which they are derived. They may occur with or without morphophonemic changes in formation:

- (30) íneíne 'thought' from íne 'hear'
(31) éenaéena 'each, every' from éena 'other'

Note: there are quite a number of words which appear to be reduplicated stems but for which no single stem has been found.

- (32) karinkarin 'dazzle, glare'
 (33) károhkároh 'albino, red-skin'
 (34) kanihkanih 'pins and needles (sensation)'
 (35) awaanawaan 'conceited' (from awaan o 'overflow')
 (36) komenkaamen 'crooked'
 (37) iyanih aayanih 'very strong'

2.2. VERBAL STEMS

Verbal stems occur unaffixed as the 2nd person singular imperative and are divided into two morphological classes according to whether

the stems are reduced before certain suffixes. There are also some irregular verbs.

2.2.1. Reduced Stems

These stems drop the last syllable preceding the benefactive, narrative, past and perfect suffixes. Such verb stems divide into three subclasses according to morphophonemic changes that occur when the benefactive suffix is added to the stem. Examples of these stems follow.

(a) Subclass (a) adds the suffixes directly to the reduced stem:

- (38) apo 'put on top of'
- (39) kaao 'cut'
- (40) wáraa 'sleep'
- (41) wowo 'mumu, bake'
- (42) yíwo 'open'

(b) Subclass (b) with final syllable *raa* adds a nasal to the reduced stem preceding the benefactive suffix:

- (43) átéraa 'fell (tree)'
- (44) kúráraa 'stand (it) up'
- (45) úwáraa 'make'
- (46) púntáraa 'straighten'

(c) Subclass (c) adds a glottal stop preceding the benefactive:

- (47) fyáraa 'block'
- (48) kúpéraa 'pour in'
- (49) peraa 'smear, paint'
- (50) yápte 'look after'

2.2.2. Non-Reduced Stems

The majority of verbal stems do not reduce in any combination, although there are some stem-final vowel changes preceding suffixes. These will be discussed in the section of word formation. A sample of the verbs are:

- (51) ére 'come'
- (52) naa 'eat'
- (53) óro 'go'
- (54) púhte 'blow'
- (55) téteho 'wash'
- (56) pahkaa 'grab, hold'

2.2.3. Other Verb Stems

A third class of verbal stems are those which occur obligatorily with the personal referent prefix. When affixed to verbal stems these prefixes refer to the goal of the action - object, direct or indirect, occurring only with transitive verbs. As with the nominals, *ti-* refers to first person and *a-* to all others.

Preceding stems with initial vowels the first person form is *t-* and non-first coalesces with the initial vowel.

(57) *tíro* 'hit me' *áro* 'hit him/her/it/them'

(58) *time* 'give me' *ame* 'give him/her/it/them'

3. WORDS

3.0. WORD FORMATION

Some stems occur unaffixed as words, others seldom occur without some type of affix, while others occur unaffixed in some contexts and with affixes in others. Particles are examples of monomorphemic stems which are also words, some of which never occur affixed. Nominal stems can occur either with or without affixes; and verbals usually with affixes. The second person imperative has been interpreted as the stem for verbs because it occurs uninflected without further segmentation. If we were to suggest that a portmanteau affix is present in such cases then verbal stems could be said never to occur unaffixed.

3.1. NOMINAL WORDS

In the composition of words nominal stems divide into nouns, pronouns, modifiers and specifiers on the basis of affixation patterns and their potential occurrence in higher level constructions.

3.1.1. Nouns

Nouns occur as the head in noun phrases and function as subjects and objects in clauses. They may be subdivided on the basis of their occurrence with the personal referent prefixes. Some, as mentioned in 2.1.2., are obligatorily prefixed by the personal referents. A few optionally occur with them and others never.

(a) obligatorily prefixed:

(59) *ahnon* 'his head'

(60) *tinohé* 'my mother'

(b) optionally prefixed:

(61) *maah* 'house' *amaah* 'his house'

These are relatively few.

(c) obligatorily unaffixed by personal referents:

(62) áárfntá 'girl'

(63) iyan 'dog'

(64) yáá 'tree'

All nouns may occur with locational, instrument, accompaniment, object, reason, direction from, likeness and number suffixes. A few of these are illustrated below.

(65) tohpé 'machete' + póh 'instrument' > tohpépóh 'with a machete'

(66) waru 'village' + pín 'in' > warupín 'in the village'

(67) yaahun 'sweet potato' + námáh 'with' > yaahunámáh 'with sweet potato'

(68) yunáán 'food' + án 'reason' > yunáánán 'for food'

3.1.2. Pronouns

Pronouns are of three types, those that substitute for nouns and function as the subject or object in clauses, those that occur as modifiers in possessive phrases and interrogative pronouns which introduce one type of interrogative clause.

3.1.2.1. Personal Pronouns

(a) those which function as subject:

(69) téhi 'I' téhti 'we'

(70) éhi 'you (sg.)' tiréhtí 'you (pl.)'

(71) wéhi 'he, she, it, they'

(b) those which function as object:

(72) tén 'me, us'

(73) én 'you (sg. and pl.)'

(74) wén 'him, her, it, them'

3.1.2.2. Possessive Pronouns

(75) téti 'my' ténti 'our'

(76) éni 'your (sg. and pl.)'

(77) wéni 'his, hers, its, theirs'

3.1.2.3. Interrogative Pronouns

(78) iye 'who?'

(79) nahí 'what?'

(80) intépátáh 'where?'; intépáhkétáh 'from where?'

Pronouns can seldom be modified, but do occasionally occur affixed.

3.1.3. Modifiers

Modifiers are represented by either adjectives or adverbs; adjectives function as modifiers of nouns in noun phrases, adverbs as modifiers of verbs in verb phrases.

3.1.3.1. Adjectives

Adjectives occur in noun phrases, modifying nouns and may be affixed. They function as qualitatives or quantitatives:

- (81) káákan 'large'
- (82) auyén 'new'
- (83) nááráréh 'red'
- (84) káán 'two'

3.1.3.2. Adverbs

Adverbs occur in verb phrases, modifying verbs. They do not normally occur with affixes.

- (85) afne 'quickly'

3.1.4. Specifiers

Specifiers occur unaffixed as modifiers or pronouns. When affixed by -wan 'reason' or -pah 'at', they function as links in Reason sentences. The most common one is:

- (86) mái 'this'

3.2. VERBS

Verbs function as the Head in verb phrases and as the obligatory element of the predicate in clauses and, as such, are normally the last item in the clause. Verbs are affixed for mood, tense, aspect and person-subject.

3.2.1. Morphophonemics

Agarabi verbs exhibit several types of morphophonemic vowel changes. Two such changes, which have a wide occurrence, will be dealt with here. Other more restricted changes will be described in the section dealing with other morphemes.

All morphemes which occur immediately preceding vowel-initial aspect and tense/aspect suffixes drop their final vowel.

- (87) naa⁹ 'eat' + iyaa cont + h ind + ú lp.sg > niyaahú 'I am eating.'
 (88) naa + e nt + h + ú > nehú 'I eat/ate.'
 (89) naa + ra narr + e + h + ú > nárehú 'I ate.'

All non-reduced stems exhibit the following changes of stem vowels:

(a) stem-final -aa > -a; -e and -o > -i preceding -nte fut in 2nd and 3rd person forms; -Ø juss in 3rd person -nto purp and -ram desid in all forms:

- (90) naa + nte + m ind + ih 3p.sg > n^ántemíh 'He will eat.'
 (91) ére + nto + m + ih > é^{rí}ntomíh 'He intends to come.'
 (92) óro + ram + m + ih > ó^{rí}ramíh 'He wants to go.'
 (93) óro + no 2p.juss + no emph > ó^{rí}noóno 'You must go.'

The stem-final long vowel remains long preceding the future tense and jussive mood suffixes in 1st person forms.

- (94) naa + nte + h + ú > na^ántehú 'I will eat.'
 (95) óro + 'n lp.juss + u > ó^{rí}noónu 'Let me go.'

(b) preceding -tinta/anta bene, -ke past, -kaa pf and -ra narr stem-final -aa > -a; -e > -i; C(onsonant) + o > Ci; V(owel) + o > Vu; Vho > Vhu:

- (96) púhte 'blow' + anta > púhtí^ántaa 'Blow for him!'
 (97) téteho 'wash' + tinta > tétehú^ítintaa 'Wash for me!'
 (98) pahkaa 'hold' + tinta > pahká^átintaa 'Hold for me!'
 (99) naa + ke + h + ú > ná^ákehú 'I ate.'
 (100) óro + kaa + h + ú > ó^{rí}kaahu 'I have gone.'
 (101) ére + ra + e + h + ú > é^{rí}rehú 'I came.'

(c) The final -a of -tinta/-anta bene preceding the first person singular future suffix and the second person singular imperative becomes -aa:

- (102) púhte + anta + nte + h + ú > púhtí^ánta^ántehú 'I will blow for her.'
 (103) púhte + tinta púhtí^ítinta^á 'Blow for me.'

3.2.2. Affixation

Personal referent, tense, aspect, mood, voice, number and person-subject are expressed by affixation to the verb stem.

3.2.2.1. Prefixation

The Personal referent is the only order of prefixes which occurs with Agarabi verbs. This prefix occurs obligatorily with Class III verbal stems and optionally with some others. Other transitive verbs never occur with this prefix.

The forms of the prefix, as mentioned in 2.1.2., distinguish only between the speaker and non-speaker (person or thing spoken to or about) and remain the same for all tenses, aspects and numbers.

Speaker: t- ~ ti- 'me, us'

(104) ti + me 'give' > time 'Give me.'

(105) ti + aáraa 'call' > tiaáraa 'Call me.'

t- occurs before verbs with an initial vowel, ti- elsewhere.

Non-speaker: a- ~ Ø 'you, him, her, it, them'

(106) a + me ame 'Give him.'

(107) Ø + aáraa aáraa 'Call her.'

Ø occurs with vowel-initial stems, a elsewhere.

3.2.2.2. Suffixation

There are nine orders of suffixes which have been observed with Agarabi verbs, final and medial. This does not count those which occur in auxiliary constructions nor a few which seem to occur with all classes of words, such as the conditional, -ma.

The nine orders are as follows, benefactive, durative, narrative, tense/aspect, number, desiderative, mood, person-subject and emphatic. The Jussive mood has only been observed in final forms to date. There are also a few others which seem to occur only with medial forms, the function of which may primarily be to relate clauses in higher level units (sentences and paragraphs).¹⁰

With the exception of the second person singular imperative form all verbs occur affixed for tense and for person-subject. If time is recent or not in focus the neutral tense suffix will occur or, if the action is continuing, the continuative aspect suffix may occur; but these two do not co-occur. The desiderative and jussive suffixes occur with the benefactive, person-subject and emphatic suffixes, but not with other tense or aspect suffixes. All the others which are not in the same order can, potentially, occur together.¹¹

(a) Benefactive. The occurrence of the benefactive suffix is optional, restricted only by the semantic or cultural relevance of such a form. It expresses action done for or, in some cases, to another person. Like the personal referent prefixes, the benefactive suffix distinguishes only between the speaker, -tinta and non-speaker, -anta.

With reduced verbs:

(108) wuwo 'shave' + tinta wútinta 'Shave for me.'

(109) úwáraa 'make' + anta úwánantaa 'Make for her.'

- (110) peraa 'paint' + tinta peéhtintaa 'Paint for me.'

For the forms with non-reduced verbs see the section on Morphophonemics, 3.2.1., examples 96-98.

(b) Durative. The two members of this order of suffixes occur optionally indicating durative aspect.

Continuative: -iyaa ~ -inaa

- (111) naa + iyaa + h + ú > niyaahú 'I am eating.'

- (112) onaa + inaa + h + ú > oninaahú 'I am looking.'

-inaa occurs optionally with verbs stems in which the consonant of the final CV is a nasal; -iyaa occurs elsewhere.

This suffix never occurs contiguous to -e nt nor in combination with -kaa pf. When it occurs with no tense/aspect suffix following it, it indicates present continuous.

Completive: -we

- (113) óro + we + m + fh > órífwehf 'He went completely.'

This suffix is more common with medial verbs where it indicates that the action of the medial clause is completed before that of the following clause.

(c) Narrative. The single member of this order occurs optionally indicating narrative aspect, -ra. It occurs obligatorily with fourth order tense/aspect suffixes.

- (114) naa + ra + e + h + ú > nárehú 'I ate/eat.'

- (115) naa + ra + ke pst + h + ú > nárákehú 'I ate.'

(d) Tense/Aspect. Fourth order suffixes occur optionally indicating time and/or aspect. There are five members of this order.

Neutral: -e

- (116) naa + e + h + ú > nehú 'I eat/ate.'

This suffix occurs when neither specific time nor aspect is being stressed and may be translated as near past or present.

Future: -nte

- (117) naa + nte + h + ú > naánteuhú 'I will eat.'

Purposive (in future time): -nto

- (118) naa + nto + m + ih > nantomfh 'He intends to eat.'

Past: -ke ~ -te

- (119) naa + ke + h + ú > nákehú 'I ate.'

- (120) onaa + te + h + ú > oónteuhú 'I saw.'

-te occurs following a nasal, -ke elsewhere. The suffix refers to past time, either recent or mid-distance.

Perfect: -kaa ~ -taa

(121) naa + kaa + h + u > nákaahú 'I have eaten.'

(122) onaa + taa + m + ih > oóntaamíh 'He has seen.'

-taa occurs following a nasal, -kaa elsewhere. Several verbs, i.e. wowo 'mumu'; wuwo 'shave'; peraa 'paint', add an /a/ preceding the past and perfect suffixes.

(123) wuwo + kaa + h + ú > wuákaahú 'I have shaved.'

(e) Number. Fifth order suffixes occur optionally, although rarely, and indicate number of the subject. Singular is unmarked; dual is rare; plural is common for the first person, rare for second. No number marking has been observed for third person, duals and plurals being indicated by separate words where necessary.

Dual: First person: -nta

(124) naa + iyaa + nta + h + ú > niyaantaú 'We two are eating.'

(The glottal stop of the indicative suffix is dropped following the dual suffix.)

Second person: -nt

(125) naa + iyaa + nt + ó 2p > niyaantó 'You two are eating.'

Plural: First person: -hipe ~ -hipaa

(126) naa + iyaa + hipe + h + ú > niyaahipehú 'We are eating.'

-hipaa occurs before a nasal; -hipe elsewhere.

Second person: -r

(127) naa + iyaa + r + ó > niyaaró 'You all are eating.'

(f) Desiderative: These suffixes are optional and indicate desiderative mood.

Simple desire: -ram

(128) naa + ram + u > naramú 'I want to eat.'

This suffix has not been observed occurring with tense or aspect suffixes.

Immediate desire: -nowam

(129) naa + nowam + ú > naánowamú 'I want to eat right not.'

Sometimes this suffix expresses the idea 'about to'.

(130) ááh 'rain' + yaa 'do' + nowam + ih > ááh yaánowamíh 'It is about to rain.'

In medial clauses the -wam may drop. In forming the interrogative with this suffix, the nasal is replaced by the unidentified morpheme -ra which is then followed by the interrogative suffix.

(131) naa + nowam + p + ó > naánowarapó 'Do you want to eat now?'

(g) Mood: The suffixes which occur in this order express indicative, interrogative and jussive moods.

(i) Indicative -

First person - -h

(132) naa + e + h + ú > nehú 'I ate.'

Second person - Ø

(133) naa + e + Ø + ó > neó 'You ate.'

Third person - -m

(134) naa + e + m + fh > nemfh 'He ate.'

(ii) Interrogative:

First person - -rap

(135) naa + nte + rap + ú > naánterapú 'Shall I eat?'

Second person - -p

(136) naa + iyaa + p + ó > niyaapó 'Are you eating?'

Third person - -nap

(137) naa + nte + nap + fh > nántenapf 'Will he eat?'

(iii) Jussive: The jussive suffixes express exhortation or permission. In this latter sense they may often be translated by a polite question.

First and second person - -'n

(138) naa + 'n + u > naánu 'May I eat?'

(139) naa + 'n + o > naáno 'You may eat.'

Third person - 'Ø

(140) naa + 'Ø > ná 'Let him eat.'

In this third person form the subject marker -ih is lost.

(h) Person-subject: This order of suffixes occurs obligatorily in indicative and interrogative moods and also with first and second persons of the jussive. As noted above, it does not occur with the third person jussive nor with the imperative mood.

First person - -ú

(141) naa + iyaa + h + ú > niyaahú 'I am eating.'

Second person - -ó

(142) naa + iyaa + ó > niyaaó 'You are eating.'

Third person - -fh

(143) naa + iyaa + m + fh > niyaamfh 'He is eating.'

(1) Emphatic. The final order of suffixes occurs optionally and indicates degrees of emphasis.

Emphatic: -no ~ -nóo

(144) naa + e + h + ú + no > nehúno 'I ate!'

(145) naa + noo > naanóo 'Eat!'

-nóo occurs with the second person emphatic imperative and third person jussive; -nó elsewhere.

Certitive:

First and second persons: -mpo

(146) naa + e + h + ú + mpo > nehumpó 'I certainly ate!'

Third person: -po

(147) naa + e + m + fh + po > nemfpó 'He certainly ate!'

The final glottal stop of the person-subject suffix is dropped preceding -po.

3.3. PARTICLES

There is a small, closed class of monomorphemic words which are neither nominals nor verbals and have a very limited occurrence with affixes. I have termed these particles and they include the negative fhya which also occurs in a shortened form as f, and pára 'just' with its short form pá. They have been observed to occur with the conditional suffix -ma and the emphatic -wáh both of which can occur with almost all classes of words.

Also included in this category are the directionals. The most commonly used of these are o 'direction away' and e 'direction toward' which may have been derived from the verbs óro 'go' and ére 'come'. Other directionals are orun 'direction downward'; mun 'direction upwards'; me 'here' and mo 'there'. Exclamations such as aaf 'oh' may also be included in this category.

4. NOUN PHRASES

4.0. NOUN PHRASES

Agarabi noun phrases are of several types: modified, co-ordinate, possessive, appositional and relator-axis. All but the relator-axis phrases occur in clauses functioning as Subject or Object. The relator-axis phrases occur in lateral slots such as Location, Purpose, Reason and Instrument.

4.1. MODIFIED NOUN PHRASES

Formula: $\pm \text{Mod}_1$: particle/adj₁ $\pm \text{Mod}_2$: adj₂/phrase/clause + Head:
 NP $\pm \text{Mod}_3$: adj₂/adj₃/article.

The Mod₁ slot is filled by a limited class of particles, pára 'just' and íhyaa 'no, not' or the demonstrative adjective mái 'this, these'. The Mod₂ slot is filled by the adj₂ class, an open class which includes quantifiers and qualifiers. Phrases and clauses also may occur in this slot. Mod₃ slot, following the Head, may be filled by adj₂ class especially if there is already a pre-Head modifier slot filled. Otherwise this post-Head slot is filled by adj₃ or an article. Adj₃ includes a few adjectives which never occur pre-head such as anáá 'only' and some numerals which occur in slightly different form in this slot from the one that occurs in the Mod₂ slot. The article is ano 'a, the'.

Noun phrases that may occur as Head include any noun which is potentially a phrase and other kinds of expanded phrases other than modified phrases.

- (148) auyén káwé
 new clay.pot
 'New clay pot'
- (149) pára paaén yánááh
 just small thing
 'Just a small thing'
- (150) tiyaamíhkán tirantamíhkán yanka
 my-hands-two my-feet-two stick
 'Twenty sticks'
- (151) anaati káyo anáá
 woman group only
 'Only the group of women'
- (152) mái íráran iyaáhin wáántá
 this skirting being man
 'This skirting man'
- (153) káán wáántá
 two man
 'Two men'
- (154) mái wáántá kánán
 this man two
 'These two men'
- (155) yunáán nan wááyáá
 food eating talk
 'Talk of eating food'

- (156) káákan átíhma waain wáántá
big nose-cond staying man
'Man having a big nose'
(big nose-having man)
- (157) anaati ano
woman the
'The woman'
- (158) máhtáhemá eéhyanain yamúh
master-cond come up day
'The day the Master comes up'

4.2. SERIAL NOUN PHRASES

Serial noun phrases occur as Subject and Object in clauses and may fill nuclear or lateral slots in phrases. They are divided into two types, compound and alternate.

4.2.1. Compound

Formula: + H₁: NP + H₂: NP ± H₃: NPⁿ

There is no limitation on the number of Head slots nor on the nouns which may occur as fillers. The noun phrases which may occur as fillers are modified, possessor-item or relator-axis phrases.

- (159) íтана úwé
bow arrow
'Bow and arrows'
- (160) tinaahu tiraahó tikeko
my-grandfather my-grandmother my-great-grandfather
 tikaako
my-great-grandmother
'My ancestors'
- (161) manaa máhtáhe máhtáh Kétinámáh
one master master Casey-with
'One white man and Mr Casey'
- (162) anaati káyo áárlntá káyo
woman group girl group
'Women's group (and) girl's group'
- (163) tihkuru íyámpon anohé apohé
school child mother father
'School children's mothers and fathers'
- (164) mínoh wáántá púmaaraa
all man youth
'All the men and youths'

When the Head is filled by single nouns one or both may optionally occur with suffixes, -wáh, -námáh 'with/and'. When filled by phrases the nouns filling the Head slots in the phrase may take these optional suffixes.

- (165) íтана-wáh úwé-wáh
bow-and arrow-and
'Bow and arrows'
- (166) manaa máhtáhe-wáh máhtáh Ketí-námáh
one master-and master Casey-with
'One white man and Mr Casey'

There need not be the same suffix on each noun even when there is a long list (or, perhaps, especially when there is a long list). It does not seem to affect the meaning, with the possible exception of the context of a motion verb.

- (167) anaati wáántá óremíh
woman man go-nt-3p
'Men and women went'
- (168) anaati wáántá-námáh óremíh
woman men -with go-nt-3p
'The women went with the men'

4.2.2. Alternate

Formula: + H: int. com. sentence + H: int. com. sentence

These interrogative comment sentences occurring in clause level slots are normally minimal, consisting of one phonological word in each Head slot.

- (169) Ukarám - pát - apí Punaano - pát - apí
Ukaran - at - int Punano - at - int
'At Ukarumpa or at Punano?'

4.3. POSSESSIVE NOUN PHRASES

These may be just types of modified phrases; but are, at the moment, classes as a different type. There are several sub-types, possessor-alienable item, possessor-inalienable item and specifier-item phrases.

4.3.1. Possessor-alienable Item

Formula: +Poss: NP₁/Pro + H: NP₂/RAP

The nouns or pronouns occurring in Poss. slot are obligatorily suffixed by -i 'possessive'.

- (170) wé - i waru - páh
 he-poss village-at
 'At his place/village'
- (171) wáántá - i yoran
 man-poss work
 'Men's work'

4.3.2. Possessor-inalienable Item

Formula: + Poss: NP₁/Pro + H: NP₂

Nouns occurring in the Head slot are either those with an obligatory personal referent prefix or the limited group which occur with these prefixes in this construction only.

- (172) pon a - maah
 pig his-house
 'Pig's house'
- (173) té ti - waapu
 I my-husband
 'My husband'
- (174) pon a - yó
 pig his-hair
 'Pig's bristles'
- (175) Máhmúnínko a - nááyamun
 Matmuninko his - chin
 'Matmuninko's chin'
- (176) mai waanta a - wih
 this man his - name
 'This man's name'
- (177) tihkuru íyámpón a - nohé a - pohé
 school child his-mother his-father
 'School children's parents'

4.3.3. Specifier-item

Formula: + Spec:NP + H: NP

Fillers of Specifier and Item slots may be single nouns or expansions. No obligatory affixes occur but order is significant.

- (178) anaati kápínáá
 woman skirt
 'Woman's skirt'
- (179) uraa ánú
 pitpit hill
 'Pitpit hill'

- (180) yoran wáántá
work man
'Workman'
- (181) Punaano áárintá káyo
Punano girl group
'Punano girl's group'
- (182) káákan mónoh námún
big religion building
'Big church'

These phrases may be distinguished from serial noun phrases by intonation and by permutation possibilities. Serial phrases may change order without a corresponding change of meaning; possessive phrases change meaning when their order is changed. Possessive phrases normally have fewer nuclear items except in the more complicated kinship terms, whereas serial phrases have been observed to have up to 14 nuclear items.

- (183) yaahun tire araná aamo túti yááh katapéh
sweet potato corn cucumber melon squash sugarcane banana type
ayaaraan ampakuh apúáán mahyan yánááh umánti
banana type banana type banana type greens taro type taro type
owa
yam
'Sweet potatoes, corn, cucumbers, melons, squash, sugarcane,
banana types, greens, taro types and yams'

4.4. APPositionAL NOUN PHRASE

Formula: + App₁: NP/clause + App₂: NP/clause ± App₃:NP

When a single noun occurs in App₁, App₂ is usually filled by a phrase. Noun phrases which have been noted are the modified noun phrase, possessive, serial and Relator-Axis phrases.

- (184) ánú - páh, uraa ánú - páh
hill - at pitpit hill - at
'On the hill, Pitpit hill'
- (185) mínoh yánááh, yunáán
all thing food
'All things, food...'
- (186) wáántá íyámpon, káákan íyámpon, tíhtoh íyámpon
man boy big boy small boy
'Men (and) boys, big boys, small boys'
- (187) péépáh - ma érein mái kíyaahpe
before-cond coming this kiap (government officer)
'(The one) that came before, that officer'

Intonation, repetition of an item or the demonstrative, *mái* 'this/that', mark the occurrence of an appositional phrase. Occasionally the appositional phrase becomes quite complex.

- (188) *yunáán, yááh tápo, pon, mái yánááh*
food sugarcane greens pig this thing
'Food, sugarcane, greens, pork, those things'

The above is an example of double apposition. There is also the possibility of such a double apposition which refers back to yet another item.

- (189) *péépáh manaa wáántá amín waárehin mái wáántá nampitipáh*
before one man giving staying this man coast - at
o waáren érein mái wáántá ano
dir stay coming this man the
'Before they gave her to one man, staying this man (who) stayed at the coast and came, this man...'

4.5. RELATOR-AXIS PHRASE

Relator-Axis phrases in Agarabi are composed of a word, phrase or clause plus a clitic which relates to the whole phrase. They are more often composed of a single word plus clitic. The Time slot may be filled by a Relator-Axis phrase and Location, Instrument, Reason and Purpose slots are obligatorily filled by them.

4.5.1. Locational R/A Phrase

Formula: + Ax: NP/Pro/Clause/QW + Re: loc

These are the most common in occurrence and consist of an Axis slot filled by an included clause, noun phrase, noun or pronoun or question word and a Relator slot filled by a locative enclitic, *-páh* 'at/to/place', *-táh* 'on', *-pín* 'in', *-téh* 'from'. Location Relator-Axis phrases obligatorily fill the Location slot in a clause.

- (190) *waru - páh*
village-at
'At the village'
- (191) *nón aru - páh*
water bank-at
'At the river bank'
- (192) *tihtuaah woi waaih - páh*
store boy staying - at
'At the store clerk's place'
- (193) *inté - páh - két - áh*
where - at from -int
'From where?'

- (194) ti - rúh kaa - o - na - páh
 me hurt - pf - 2p - ger - at
'The place where you hurt me'

4.5.2. Temporal R/A Phrase

Formula: + Ax: NP/Pro/Spec + Re: loc

Temporal Relator-Axis phrases optionally fill the Time slot in clauses.

- (195) manaa órená - ráh
 one year - on
'For one year'
- (196) taréhaa téhtim - pín
 now our - in
'Now in our time'
- (197) Taararé - táh
 Saturday - on
'On Saturday'

4.5.3. Instrument R/A Phrase

Formula: + Ax: NP + Re₁: ins ± Re₂: loc

Instrument R/A phrases obligatorily fill the Instrument slot in clauses.

- (198) wítúkaa - póh
 small.knife - with
'With a small knife'
- (199) íтана - póh - kéh
 bow - with - from
'With a bow'

4.5.4. Reason R/A Phrase

There are three types of Reason R/A Phrases which fill the Reason slot in Intransitive Clauses.

4.5.4.1. The first type occurs with verbs of emotion. Formula: + Ax: NP/Pro + Reas: -án. -án occurs following a nasal; -nán elsewhere.

- (200) apaan - án peéh ye - n
 sorcerer - of fear do/nt - 3p
'They are afraid of the sorcerer'
- (201) a - nohe - nán ípíh y - iyaa - m - íh
 his - mother - for cry do - cont - ind - 3p
'He is crying for his mother'

4.5.4.2. The second type occurs with verbs of motion. Formula: + Ax: NP/Pro + Reason: -ron. -ron occurs following vowels, -kon following glottal stop and -ton following nasals.

- (202) wáá - rón ór - e - m - íh
 man - for go - nt - ind - 3p
'She went for a man'
- (203) írá - íh - kon ór - e - ó
 fire - top - for go - int - 2p
'Did you go for firewood?'
- (204) wéhi wén - tón ér - e - m - íh
 she him for come - nt - ind - 3p
'She came for him'

4.5.4.3. The third type occurs with the verb yote 'search'. Formula: + Ax: NP/Pro + Reas: -wán

- (205) taréhaa kómpa tohpe - wán yot - iyaa - m - íh
 today kompa machete - for search-cont - ind - 3p
'Today Kompa is searching for the machete'

4.6. NUMERAL PHRASE

Numbers higher than five are formed by phrases or clauses. The interpretation of some items is uncertain.

- (206) apah - pah o káh ye - n
 ? - at dir put do/nt - 3p
'Six'
- (207) tí - yaam - íh - kán tí - rantam - íh - kán
 my - hand - top - two my - foot - top - two
'Twenty'

5. VERB PHRASES

5.0. VERB PHRASES

Agarabi verb phrases are of two major types, modified and compound. There are also some close-knit phrases of verb plus verb. Verb phrases primarily fill the predicate slot in clauses, but may also occur as embedded modifications in other structures.

5.1. MODIFIED VERB PHRASES

Modified verb phrases consist of an obligatory Head slot filled by a verb and optional lateral slots, Manner and Direction.

- (208) ...ware mo a - me
 take there him - give
 '...take and give to him there'
- (209) yun waa - p - ó
 up.here stay - int - 2p
 'Are you up here?'
- (210) aíne óro
 quickly go/2p/impv
 'Go quickly'
- (211) tatoóre te náo
 slowly say - 2p/impv-emph
 'Say it slowly!'
- (212) aíne o waraa
 quickly dir take/2p/impv
 'Take it there quickly'

5.2. COMPOUND VERB PHRASES

Compound verb phrases consist of a verb plus an auxiliary, both being obligatory. There are several auxiliaries, which occur as main verbs in other constructions, though the meaning there is different. In the verb plus auxiliary sequence the meaning is carried by the main verb and the auxiliary carries the suffixes. The auxiliaries are yaa 'do', o 'be', also naa and paa of the unidentified meanings.

The four types of compound verb phrases which have been observed are Simple auxiliary, Abilitative auxiliary, Habitulative auxiliary and Contrary-to-fact auxiliary.

5.2.1. Simple Auxiliary

Formula: + H: vb₁ + Aux: yaa

The nucleus is filled by a verb which consists of a stem with appropriate vowel changes, plus a final glottal stop. The auxiliary which fills the Aux slot is the verb yaa 'do'. The main verb carries most of the lexical meaning, but no suffixes. The auxiliary carries the tense, aspect and person-subject suffixes. There often seems to be no difference in meaning from other non-auxiliary forms of the main verb, but this type of phrase is very common.

- (213) náh y - e - m - íh
 eat do - nt - ind - 3p
 'He ate'

5.2.2. Abilitative Auxiliary

Formula: + H: vb₂ + Aux: o

Any verb may fill the Head slot and the Aux. slot is filled by o 'be'. Here, too, the auxiliary is marked with tense, aspect and person-subject suffixes. The main verb consists of a stem plus the abilitative suffix, -ren, the whole phrase indicates the abilitative mood.

- (214) naa - rén e - m - fh
 eat - abil be/nt - ind - 3p
 'He is able to eat'

5.2.3. Habitutive Auxiliary

Formula: + H: vb₃ + Aux: o

The main verb fills the nuclear slot and consists of the verb in the neutral tense plus glottal stop. The auxiliary, o 'be', fills the lateral slot in the continuative aspect which replaces the stem-final vowel - in this case, the whole stem. The form consists of -iyaa 'cont' plus person-subject suffixes.

- (215) neh iyaa - m - fh
 eat be/cont - ind - 3p
 'He eats habitually'

5.2.4. Contrary-to-Fact Auxiliary

Formula: + H: vb₄ + Aux: na

The main verb fills the Head slot and consists of stem plus glottal stop with high tone on the final vowel. Na fills the Aux. slot and is affixed for narrative and person-subject. This phrase indicates contrary-to-fact mood.

- (216) úwáraáh na - ré - h...
 make eat - narr - lp
 'I would have made...'

5.3. CLOSE-KNIT PHRASE¹²

The close-knit phrase of verb plus verb also occurs commonly. In contrast to the auxiliary phrase both verbs add some lexical meaning in the close-knit phrase. One common phrase consists of ti, a form of the verb te 'say', plus ame 'give'. In combination the phrase means 'tell'.

- (217) éna - páh mo tí a - me - m - fh
 other - at there say him - give/nt-ind-3p
 'He told him at another place'

Another common close-knit phrase consists of waraa 'get, take' plus either ére 'come' or óro 'go'. With this combination the first verb is marked for person-subject (with the medial forms). The motion verb also carries the suffixes for person-subject and any others which may be appropriate. The only word which has been observed to come between the two verbs is one of the directionals, most often e or o.

- (218) íтана ware - n ér - e - m - íh
 bow get/nt - 3p come -nt- ind - 3p
 'He brought the bow'

- (219) yunáán ware - h ór - e - h - ú
 food get/nt - lp go - nt - ind - lp
 'I took the food'

6. CLAUSES

6.0. AGARABI CLAUSES

An Agarabi clause is a grammatical unit, the predicate of which is the nucleus and the minimum manifestation. The three basic types are transitive, intransitive and equative, each of which may occur as medial or final clause in a sentence or embedded in other clause-level slots. The type is determined by the verbs which may occur in the predicate slot and by which of the lateral slots are obligatorily present or absent.

6.1. Regular Transitive Clause

Formula: $\pm T: \text{temp. phr./temp. cl} \pm L: R/A_{loc}/cl \pm S: NP/Pro/cl$
 $\pm I.O.: NP/Pro/cl + Ins: R/A_{ins} \pm O: NP/Pro/cl \pm N: ihyaa + Pred: VP_{trans}$

The regular transitive clause consists of an obligatory predicate slot filled by a verb phrase which has an obligatory transitive verb. All other slots are optional and may vary some in order though that of the formula is typical.

It is rare to find all slots filled in any one clause. Three or four is more common and a clause may consist of just the Predicate.

The Subject, Object and Indirect Object tagmemes can be filled by the same types of constructions except that the Object word may have a final nasal as a marker. The Indirect Object and Instrument do not co-occur. The Negative slot is filled by the particle ihyaa 'no, not' or its shortened form, ih.

- (220) péepáh wááráh wáántá yunáán a - mi - kaa - m - íh
 before Barapa man food them-give - pf - ind - 3p
 'Before the Barapa men gave them food'

- (221) ándá - pín tápo kúh ya - n
bamboo - in greens cook do -nt/d.s.-3p.med
'She cooked greens in a bamboo...'
- (222) tohpe - pòh á - nkám - e - míh
machete - with it - hit - nt - 3p
'He hit it with a machete'
- (223) manaa wuhku wen a m - e - m - fh
one book him him - give - nt - ind - 3p
'She gave him one book'

6.1.2. Quotation Clause

This type of transitive clause is much more restricted. The Object slot is filled by the quote which may be any level from the word through discourse. The Predicate slot is filled by the verb *te* 'say' or some similar verb.

- (224) Téhi oén waah - ná tatoóreh waraá - nte - h - ú - no
I new stay - ger later get - fut - ind - lp - emph
Éhi waraa - nóo te - h - ú
You get/impv - emph say/nt - ind - lp
'"I, being young, will get (it) later. You get (it) now!" I said'

6.2. INTRANSITIVE CLAUSES

Intransitive clauses have an obligatory Predicate slot filled by a verb phrase with an intransitive verb as Head. Some of the same tagmemes occur as in Transitive clauses and have the same types of constructions as fillers. It should be noted, however, that the Object tagmeme is obligatorily absent from Intransitive clauses and the Reason tagmeme does not occur in Transitive clauses.

6.2.1. Type 1

Formula: $\pm T$: temp. phr/temp. cl $\pm L$: $R/A_{loc}/cl$ $\pm S$: NP/Pro/cl
 $\pm Reas$: R/A_{reas} $\pm Neg$: *ihyaa* $\pm Pred$: VP_{intr}
 (See section 5.5.4. for fillers of the Reason slot).

- (225) taréhaa kamani é - e - i - n
now government come -nt - 3d.s. - 3p.med
'Now the government came...'
- (226) ááríntá káyo írá - ih - kon ór - iyaa m - fh
girl group fire - top - for go - cont - ind - 3p
'The girl's group is going for firewood'
- (227) í óh - e - m - fh
not go.up - nt - ind - 3p
'He didn't go up'

6.2.2. Type 2

The Reason slot does not occur in this construction. Formula:

± T: temp. phr/ temp cl. ± L: R/A_{loc}/cl ± S: NP/Pro/cl ± Neg: *ihyaa*
+ Pred: VP_{intr}²

- (228) *mái - ráh kumáne*
this - on sit/2p.1mpv
'Sit down here'
- (229) *maah - naaum - pín waá - ke - n*
house - inside - in stay - pst - 3p
'It was in the house'
- (230) *wáántá kókon waá - re - m - fh*
man many stay - narr - ind - 3p
'Many men stayed'

6.3. EQUATIONAL CLAUSES

Equational clauses are of two types.¹³ One has an obligatory predicate filled by the verb *o* 'be'; the other, a minimal clause, has a noun, pronoun or modifier occurring with the verbaliser suffix *-ih*, except where the word ends in *ih*.

6.3.1. Type 1

Formula: ± S: NP/Pro/cl + Com: NP/Pro/Mod + Pred: *o*

- (231) *wáántá - ih e - m - fh*
man - vbl be/nt - ind - 3p
'He is a man'
- (232) *t - fh iyaa - h - ú - no*
my-sickness be/cont - ind - 1p - emph
'I am sick!'
- (233) *káákan - fh e - m - fh*
big - vbl be/nt - ind - 3p
'It is big'
- (234) *wéni pon káákan - fh e - m - fh*
his pig big - vbl be/nt - ind - 3p
'His pig is big'
- (235) *tétih - ná ih e - m - fh*
my - thing - vbl be/nt - ind - 3p
'It is mine'

6.3.2. Type 2

Formula: + H: NP/Pro/Mod + vbl: *-ih*

Though the verbaliser *-fh* is the most common, first and second person forms, *-ú* and *-ó*, also occur.

- (236) wáántá - ih
man - vbl
'He is a man'
- (237) káákan - íh
big - vbl
'It is big'
- (238) wéih - ná - ih
her - thing - vbl
'It is hers'
- (239) téhi - ú - no
I - vbl - emph
'It is I'

6.4. MOOD

Another dimension to be considered is that of mood. All three types of clauses may be marked for mood, but only those which occur finally in a string. Medial clauses whether the same or different subject do not normally occur with mood suffixes. Thus, in the present analysis, mood is marked only paragraph finally. Indicative mood is unmarked.

6.4.1. Imperative Mood

As mentioned earlier (see section 3.0.) the minimal form of the verb expresses imperative mood. An imperative clause usually occurs with fewer tagmemes than an indicative and may be either transitive or intransitive. It could, potentially, occur with the equational, as the verb *o* occurs as an imperative in auxiliary verb phrases; but I have not observed any.

(a) Transitive:

- (240) wuku ti - me
book me - give/impv
'Give me the book'
- (241) iyan pahkaa
dog hold/impv
'Hold the dog'

(b) Intransitive

- (242) waru páh óro nóo
village - at go/impv - emph
'Go to the village!'
- (243) táhkóh - káh kumáne
bench - on sit/impv
'Sit on the bench'

6.4.2. Interrogative Mood

Interrogative mood is signalled by the suffixes described in section 3.2.2.2. (g) and occurs on all clause types. There are three types of questions: the first expects yes/no answers; the second either yes/no or expansion; the third expects information. The first two require only interrogative suffixes, the third occurs with question words, too.

6.4.2.1. Yes/No Questions

(a) Transitive:

- (244) yunáán ná - nte - p - ó
 food eat fut int - 2p
 'Will you eat food?'

- (245) yohki tétehoó - nte - rap - ú
 dish wash - fut - int - 1p
 'Shall I wash the dishes?'

(b) Intransitive:

- (246) wáántá káyo ór - e - nap - í
 man group go - nt - int - 1p
 'Did the men go?'

(c) Equational. This mood often occurs with Type 2 in which the interrogative suffix occurs on the nominal word in the form of -p ~ -ap. -p occurs following vowel-final words; -ap elsewhere. First and second person forms have not been observed.

- (247) wáántá - p - í
 man - int - vbl
 'Is it a man?'
- (248) káákan - ap - í
 big - int - vbl
 'Is it big?'

6.4.2.2. Alternation

Alternation questions express alternatives and require two clauses, each occurring with interrogative suffixes. The second clause may have a full predicate or just the negative plus interrogative suffix.

- (249) órí - nte - p - ó pá wá nte p ó
 go - fut - int - 2p just stay - fut - int - 2p
 'Will you go? or will you just stay?'
- (250) ór - e - nap - i i - p - í
 go - nt - int - 3p not - int - 3p
 'Did he go? or not?'

6.4.2.3. *Information Question*

In this type of clause there is an obligatory question word as well as the interrogative suffixes.

- (251) inté - pah - két - ah ér - e - nap - í
where - at - from- int come - nt - int - 3p
'Where did he come from?'

- (252) iye ór - iyaa - nap - í
who go - cont - int - 3p
'Who is going?'

- (253) nahí - táh iyaa - p - ó
what - int cont - int - 2p
'What are you doing?'

In idiomatic speech a shortened form often occurs which omits the verb where óro 'go' is understood.

- (254) intéh - iyaa - p - ó
where - cont - int - 2p
'Where are you going?'

6.5. CO-ORDINATING CLAUSES

There are several types of co-ordinating clauses. Some express a time difference with the following clause; others express different kinds of dependence of one clause upon the other, such as condition or purpose.

All medial clauses express relationships between the subject of the medial clause and the one that follows it. This is indicated by the affixation of the verb in the first clause. The affixation differs depending on whether the subject of the two clauses is the same or different.

6.5.1. *Relationship of Subjects*

If the subjects are the same only one person-subject suffix occurs on the medial verb. These suffixes are a shortened form of those which occur on final clause verbs.

First person: -h (glottal stop)

Second person: # (unmarked)

Third person: -n

- (255) téhi ér - e - h te - h - ú
I come - nt - Ip say/nt - ind - lp
'I came and spoke'

- (256) éhi ér - e - te - ó
 you come-nt - 3p say/nt - 2p
'You came and spoke'
- (257) wéhi ér - e - n te m - íh
 he come - nt - 3p say/nt - ind - 3p
'He came and spoke'

If the subjects of the two clauses are different the medial clause has a verb which occurs with two person-subject suffixes, the first of which indicates the subject of that clause. The second suffix indicates the subject of the following clause. The following are those which occur with the neutral and future tenses.¹⁴

First person: -ké

Second person: -tí

Third person: -í

- (258) téhi ér - e ké éhi te - ó
 I come - nt - lp you say/nt - 2p
'I came and you talked'
- (259) éhi ér - e - tí - n wéhi te - m - íh
 you come - nt - 2p-3p he say/nt - ind - 3p
'You came and he talked'
- (260) wéhi érí - nt - í - h teé - nte - h - ú
 he come - fut - 3p - lp say - fut - ind - lp
'He will come and I will talk'

6.5.2. Time Relationships

These are indicated by the tense suffixes which occur with the verb in the medial clause. If neutral tense suffix occurs with the medial verb, it takes its tense from the following clause.

6.5.2.1. Close-knit sequences in which one action follows closely after another or are seen as a unit.

- (261) kur - e - n ná - nte - m - íh
 cook - nt - 3p eat - fut - ind - 3p
'He will cook and eat'
- (262) kur - e - tí - h náá - nte - h - ú
 cook - nt - 2p - lp eat - fut - ind - lp
'You cook, I will eat'

6.5.2.2. When two or more clauses are in loose-knit sequence, the actions occurring with a separation in time or unrelated, the medial verb will occur with some type of tense or aspect suffixes.

(a) Successive actions are indicated by the narrative suffix, -re.

- (263) waá - re - h ínt - e - h ér - e - h - ú
stay - narr - lp finish - nt - lp come - nt - ind - lp
'I stayed, finished and came'

(b) Actions separated in time.

(1) The action expressed in the first clause takes place first indicated by the past suffix -ke on the verb of the first clause.

- (264) órf - ke - n úwáh yá - ke - n ...
go - past - 3p make do - past - 3p
'They went, made...'

(11) The first action is completed before the second takes place. The verb of the first clause is marked with the suffix -we ~ -wi.

- (265) kíyaahe - má órf - wí - nt - í - h tí - rúwoó - nte -
kiap - if go - comp - fut - 3p - lp us - fight - fut -
h - ú
ind - lp
'If the kiap goes, we will fight'

(c) Simultaneous actions. Simultaneous actions are indicated by the suffixes -áne and -áke, the first occurring when the following verb is a verb of motion, -áke with others.

- (266) wano áátíyaan íní - áne - n éréín...
Jew's harp sounding hear-while-3p coming
'...while he was hearing the sound of the Jew's harp he was coming...'
- (267) ér - iyaa - áke - n te - m - íh
come-cont- while- 3p say-ind-3p
'...as he was coming he said...'

6.5.3. Purpose Clauses

The purpose of an action may be indicated by a medial clause in which the verb occurs with the purpose suffix, -nto.

- (268) wé ánkáán óri - nto - n úhtaa - iyaa - m - íh
they - all go - purp - 3p prepare - cont - ind - 3p
'They are all preparing to go'

6.5.4. Conditional Clauses

Conditional clauses occur medially and are marked by the suffix, -ma. This suffix occurs at least on the first word, but may be repeated on other words as well.

- (269) ááh - ma yá - nt - í - h í óroó - nte - h - ú
rain - if do - fut - 3p - lp neg go - fut - ind - lp
'If it rains, I will not go'

(Note also example 265 for a conditional clause.)

6.5.5. Paradigma

The following is just a sample of the combinations of co-ordinating clauses.

Neutral tense in medial clause, future or jussive in the final.

(a) Same subjects:

- 1-1 kureh naánte^{hú} 'I cooked and I will eat'
- 2-2 kure náno 'You cooked and you may eat'
- 3-3 kuren nántemíh 'He cooked and he will eat'

(b) Different subjects:

- 1-2 kureké náno 'I cooked, you may eat'
- 1-3 kurekén nántemíh 'I cooked, he will eat'
- 2-1 kuretíh naánte^{hú} 'You cooked, I will eat'
- 2-3 kuretín nántemíh 'You cooked, he will eat'
- 3-1 kuríh naánte^{hú} 'He cooked, I will eat'
- 3-2 kurí náno 'He cooked, you may eat'
- 3-3 kurín nántemíh 'He cooked and he will eat'

Future in medial, future and permissive in final.

(a) Same subjects:

- 1-1 kuroónte^{hú} naánte^{hú} 'I will cook and eat'
- 2-2 kuríntí náno 'You will cook and you may eat'
- 3-3 kuríntín nántemíh 'He will cook and eat'

(b) Different subjects:

- 1-2 kuroónteké náno 'I will cook, you may eat'
- 1-3 kuroóntekén nántemíh 'I will cook, he will eat'
- 2-1 kuríntetíh naánte^{hú} 'You will cook, I will eat'
- 2-3 kuríntetín nántemíh 'You will cook, he will eat'
- 3-1 kuríntíh naánte^{hú} 'He will cook, I will eat'
- 3-2 kuríntí náno 'He will cook, you may eat'
- 3-3 kuríntín nántemíh 'He will cook, he (another) will eat'

Neutral in both clauses.

(a) Same subjects:

- 1-1 kureh nehú 'I cooked and ate'
- 2-2 kure neó 'You cooked and ate'
- 3-3 kuren nemíh 'He cooked and ate'

(b) Different subjects:

- 1-2 kureké neó 'I cooked, you ate'
- 1-3 kurekén nemíh 'I cooked, he ate'

- 2-1 kureh nehú *'You cooked, I ate'*
2-3 kuren nemíh *'You cooked, he ate'*
3-1 kuríh nehú *'He cooked, I ate'*
3-2 kurí nepó *'He cooked, did you eat?'*
3-3 kurín nemíh *'He cooked, and he ate'*

N O T E S

1. The Agarabi language is spoken by about 15,000 people living in the area of the town of Kainantu in the Eastern Highlands Province of Papua New Guinea. It belongs to a group of languages in that area, including Tairora, Gadsup, Auyana and Awa, which form the Eastern Family of the East New Guinea Highland Stock. See Wurm 1961, Wurm 1975:467ff.

The material for this paper was gathered during the years 1960-1974. This was done primarily in the village of Punano which is located some six miles from Kainantu. I am especially indebted to Kómpa who worked faithfully as my language helper all that time.

This is a revision of a paper done as part of a study program at the University of Texas at Arlington. It was done under the supervision of Dr Karl Franklin to whom I also express my thanks. Miss Lorna Luff who worked with me during much of the time and contributed to the analysis has made many of the suggestions that went into this revision.

2. See Healey 1966.

3. See Scott 1973.

4. See Goddard 1976.

5. A phonemic analysis was done by Lorna Luff and is currently being revised. The grammatical analysis has been done by myself. We have had the help of colleagues of the Summer Institute of Linguistics, including Dr Darlene Bee, Dr Alan Healey, Dr Kenneth L. Pike and a few other consultants at workshops.

6. Other phonetic occurrences of nasal phonemes are analysed as features of the prosody of nasalisation to be discussed later.
7. The orthography in use will be used for examples throughout. Thus /h/ represents glottal stop; /n/ following vowels represents nasalised vowels; /w/ represents the voiced bilabial stop and /y/ the alveolar. Aspiration is not marked; other symbols are similar to those used in English.
8. Perturbation which occurs across word boundaries is marked only between phonetic brackets. Where it occurs within a word it is marked. Otherwise only the basic tones are marked.
9. Since /aa/ represents one segment both orthographical symbols are dropped before -iyaa.
10. The suffix, -waa 'repetitive', for example, occurs on medial forms plus a few unclassified ones. Perhaps the conditional, -ma, should be included here as well. Reduplication also occurs as a feature of intensification.
11. Verbs do not, however, normally occur with more than three or four suffixes. The examples presented are typical.
12. See Longacre 1972:4,27,39,48. Longacre refers to some similar constructions in other Papua New Guinea languages as 'stripped down verbs', but I do not believe that is what is happening here.
13. These two clauses could be combined if the predicate were to be interpreted as optional. However, it may be that the type which has the verb has more possibilities for expansion.
14. There seem to be other suffixes which may be portmanteau morphemes expressing relationships between clauses and subject of the first clause as well. More investigation needs to be done in this area.

BIBLIOGRAPHY

BEE, Darlene, Lorna LUFF and Jean GODDARD

- 1973 'Notes on Agarabi Phonology'. In Howard McKaughan, ed.
*The Languages of the Eastern Family of the East New Guinea
Highlands Stock*, 414-423. Seattle and London: University
of Washington Press.

GODDARD, Jean

- 1976 'Higher Levels of Agarabi Grammar'. WPNGL (*Higher Level
Studies of Two Papua New Guinea Related Highland Languages*),
5-72. Ukarumpa, Papua New Guinea: Summer Institute of
Linguistics.

HEALEY, Phyllis M.

- 1966 *Levels and Chaining in Telefol Sentences*. (Ph.D. thesis,
Australian National University, Canberra), PL, B-5.

LONGACRE, Robert E.

- 1972 *Hierarchy and Universality of Discourse Constituents in New
Guinea Languages, Vol. 1: Discussion*. Washington, D.C.:
Georgetown University Press.

SCOTT, Graham

- 1973 *Higher Levels of Fore Grammar*. PL, B-23.

WURM, S.A.

- 1961 'The Linguistic Situation in the Highlands Districts of
Papua New Guinea'. *Australian Territories* 1/2:14-23.

- 1975 'Eastern Central Trans-New Guinea Phylum Languages'. In
S.A. Wurm, ed. *Papuan Languages and the New Guinea Linguistic
Scene*. PL, C-38.

SOME ELEMENTS OF VANIMO, A NEW GUINEA TONE LANGUAGE

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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]
ɛ	[ɛ ~ 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'
dán 'hair'	lán 'south-east monsoon'	liŋ 'I gave'
pe 'you.s sit', ²	pé 'you.s see'	hú 'I remove'
peŋ 'bad'	pén '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 [pʷ]	t [t]		
vd	b [b]	d [d]	y [yʷdʷdʒ]	
Fricative	v [bʷ]	s [s]		h [h]
Nasal	m [m]	n [n]	ɲ [ɲ]	
Liquid		l [l]		

Glottal /h/ is voiced. Consonant clusters are /p1/, /b1/, /m1/, /hv/, /hm/, /hn/, /hɲ/, /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 /dúsɓ/ 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/	/dúsù/	
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	
hɔŋ	kö	'tooth'
hé	ke	'he'
né húŋ	ni kun	'I drink'
háŋ	kă	'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):

$\begin{bmatrix} + \text{ HIGH} \\ - \text{ LONG} \end{bmatrix}$	$\begin{bmatrix} - \text{ HIGH} \\ + \text{ LONG} \end{bmatrix}$	$\begin{bmatrix} - \text{ HIGH} \\ + \text{ LONG} \end{bmatrix}$
--	--	--

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'	ñén	'octopus'
vá	'person'	ñèn	'banana'
hé	'long'	hu	'sago-pancakes'
hè	'moon'	hú	'he removes'

1.3. WORDS

The canonic shape of the Vanimó 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 Vanimó 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?')
doen	'inside, interior'
áñhín	'under, underside'
táti	'tree'
vávòn	'woman' (vá 'person', vòn 'wife')
náhù	'nose' (ná 'voice')
ɔbè	'old'
lùndi	'road, path'
voná	'sweet potato'
vámó	'village' (vá 'person')
hévó	'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' + hvǝ → eŋhvǝ
 èŋ 'coconut' + mà 'ripe' → eŋmà
 èŋ 'coconut' + nè 'flesh' → eŋnè

Again:

nuplǝŋ 'finger' + hǝ → nuplǝŋhǝ 'fingernail'
 nǝǝ 'four' + mlè-o 'and one' → nǝomlèo 'five'

Across word boundaries we find:

musa hlǝ bǝ 'Musa is in the house'

but:

musa hlǝ lǝ 'Musa is in the garden'
 (hlǝ 3s. 'be-present', bǝ 'house', lǝ '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:

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

but:

nǝ ne né 'my brother' (nǝ '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 hɪɛ bɪ doɛŋ*
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 hɪɛ bɪ 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) // ^rmusa // hɪ̀ ^pbɪ̃ (ve) // (ba) ^pbɪ̃no (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 hɪ̀ 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) // ^rmusa // hɪ̀ ^rbɪ̃ (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
pig	black	many	bird
'(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>hvuŋ 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 dubebəpa
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 blŋ
she woman h-big that.f
'that big woman'

bé èŋ
she child
'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
head I
'my head'

bí dé
house they
'their house'

bé èŋ hé
she child he
'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 hèn hé
he father his.m he
'his father'

bé háŋ hè hé
she mother his.f he
'his mother'

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

hé á mè mì
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>
<i>'the man'</i>		<i>'his house'</i>		<i>'the man's house'</i>

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

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

+ hé hán 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 hán 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 hán 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 *mī 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'
noo mlè o	'five'
noo 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>
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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 tátl hè	'he chops wood'
hé dé hɪŋ	'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 hŋŋ 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 <hyà> té 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 <wóná> 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> bon 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 hù	'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 <tátí> hveŋ hyf	'he splits <wood>' ('he <wood> 3sm.split 3sm.hit')
hé <héwó> 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 <i>lonépa</i> 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 nú	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	Ø-	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	Ø-	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)	(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-	lání	-	liŋ	lón
2		ml-	mlání	mle	mlíŋ	mlón
3 m.		hl-	hlání	hle	hliŋ	hlón
f.		n-	nání	nó	níŋ	*sóŋ
Plur. 1		n-	nání	-	níŋ	nón
2		l-	lání	le	liŋ	lón
3		ñ-	ñání	ñe	ñíŋ	*sóŋ

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	m-	múŋ	ma	má	-	mò	mé
3 m.	h-	húŋ	ha	há	hùŋ	hòŋ	háŋ
	f. v-,b-	vúŋ	va	vá	*nùŋ	bùŋ	béŋ
Plur. 1	n-	nú	na	ná	nù	nò	né
2	h-	húŋ	ha	há	-	hòŋ	háŋ
3	d-,ñ-	ñú	ña	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:

$$\begin{aligned}
 b &\rightarrow \left\{ \begin{array}{l} p/_\text{a,u} \\ v/_\text{aŋ,uŋ} \end{array} \right\} \\
 d &\rightarrow \left\{ \begin{array}{l} t/_\text{a,u} \\ n/_\text{aŋ,uŋ} \end{array} \right\}
 \end{aligned}$$

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	m-	mʒŋ
3 m.	m-	mʒ
	f.	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 hlè '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	ʒŋ lɛ
2	mʒŋ blɛ
3 m.	mʒ to
f.	mú tɔ
Plur. 1	nʒŋ dɛ
2	ʒŋ 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 váyɔŋ dá pɛɔ hún-hún
he man water tomorrow 3sm.drink.fut
'The man will drink water tomorrow'

bé èŋvɔŋ danè hɔŋ-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 tɛdɔŋ hún	'he drank water <u>yesterday</u> '
hé dá hún hɔŋto	'he is drinking water <u>now</u> '
hé dá hún lɔ	'he has drunk water <u>already</u> '
hé dá hún lun	'he has <u>finished</u> drinking water'
hé dá hún ebe	'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 sf
 she herself 3sf.put 3sf.hit
 'She turned (herself) round'

Subj VP Adv
 bé vávòŋ vá-vu biŋ plè vámó 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 mǝ 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 1s.drink not
 'I'm not drinking water'

musa hìlè bí ñòŋò 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)?'

Commonly the second half of the disjunction is omitted:

hé dá húŋ me ?

Or again:

musa hɪ̀ɛ bɪ́ me
Musa 3sm.be house or
'Is Musa at the house?'

The reply to this question, with omissable parts bracketed, is:

(èò) hé hɪ̀ɛ (bɪ́)
(yes) he 3sm.be (house)
'(yes,) he is (in the house)'

Information questions are formed by using an interrogative word or phrase in one of the phrase-positions of the sentence:

Subj VP Adv	Subj Obj VP
vánu hɪ̀ɛ bɪ́	hé vánupa ha
who 3sm.be house	he who(m) 3sm.hit.him
'Who is in the house?'	'Whom did he hit?'
Subj Obj VP	Subj VP
hé yamupa sí hɪɛ	hé lùŋ ha lɛlɛnu
he what arrow 3sm.do	he walk 3sm.go where.to
'What is he hunting?'	'Where is he walking to?'

The interrogative words found in the data are formed from a noun, the interrogative particle nu, and (sometimes) the phrase-final particle pa:¹⁴

vá-nu-(pa)	human-interrogative-(particle)	'who(m)?'
ya-nu-(pa)	thing-interrogative-(particle)	'what?'
lɛlɛ-nu	destination-interrogative	'where to?'
me-nu-pa	quantity-interrogative-particle	'how many?'

2.4. COMPLEX SENTENCES

The only complex sentences in the data are sentences containing relative clauses:

Main clause			Relative clause		
Subj	Obj	VP	VP	Adv	
né	be	vávòŋ vé	mú	tó	tátɪ lu
I	she	woman ls.see	3sf.position	3sf.be	tree shade
'I saw the woman (who was) under the tree'					

Main cl. [Rel. cl.]

Subj [Subj VP]

VP

Adv

bé vávòŋ né vé biŋ-no mú tó tátì 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. vá mó	'village'	[mó]	?
f. vá móvǎ	'village headman'	vǎ	'person'

2. èŋ 'child'

a. èŋyòŋ	'boy'	[yòŋ]	see 1a
b. èŋvòŋ	'girl'	vòŋ	see 1b

3. tátì 'tree, wood'

a. tátidé	'tree'	[dé]	see 9
b. tátìè	'leaf'	è	see 7
c. tátimé	'bark'	[mé]	'skin, covering'
d. tátìne	'branch'	[ne]	?
e. tátìhlè	'fork in branch'	[nlè]	?

4. nǎ 'body'

a. nǎmé	'skin'	[mé]	see 3c
b. nǎlon	'cold(or person)'	[lon]	'cold'
c. nǎhli	'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'	[dáŋ]	?

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. hunè | 'throat' | hùn | 'drink' |
| c. aè | 'shoulder' | [a] | ? |
| d. hlénè | 'leg' | [hlén] | cf. hlénhǝ 'knee' |
| e. panè | 'arm' | [pan] | see 10 |
| f. danǝè | 'chest' | [da] | ? |
| | | nǝ | see 4 |
8. pé 'areca nut (betelnut)'
- | | | | |
|-----------|---|------|-------------------------------------|
| a. pédé | 'areca palm' | [dé] | see 9 |
| b. pǝǝ | 'betel chew' | o | 'sago-leaf' |
| c. hlí pé | '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. dánǝdé | 'calophyllum tree' | [dán] | cf. 5d |
| f. buhyí dé | 'coral tree' (Erythrina indica) | [bu], [hyí] | ? |
| g. dápù dé | 'pandanus tree' | dá | 'water' |
| | | [pù] | ? |
| h. ñénǝ dé | 'banana tree' | ñén | 'banana' |
10. [pan] 'arm, wing, frond'
- | | | | |
|-----------|-----------------|-----|----------------------|
| a. panè | 'arm' | è | see 7 |
| b. dǝnpan | 'wing' | dǝn | 'bird' |
| c. ènpan | 'coconut frond' | èn | see 13 |
| d. ñénpan | 'snake' | ñén | 'octopus' |
| e. yípan | 'sago frond' | yí | 'sago'pudding, food' |
11. [bon] 'intangible substance'
- | | | | |
|----------|----------------|------|-----------------|
| a. yabon | 'smell, odour' | ya | 'thing' |
| b. tébon | 'smoke' | té | 'fire' |
| c. óbon | 'dust' | ó | 'ground, earth' |
| d. hǝbon | 'fog' | [hǝ] | ? |
| e. ènbon | 'coconut milk' | èn | see 13 |
12. mun 'water creature'
- | | | | |
|----------|----------------|------|----------|
| a. munè | 'fishing line' | [è] | 'string' |
| b. munǝn | 'fish scale' | [ǝn] | ? |

- | | | | | |
|----|--------|-------------|-------|----------------------|
| c. | muŋme | 'eel' | [me] | ? |
| d. | muŋmo | 'shark' | [mo] | ? |
| e. | muŋnuŋ | 'crocodile' | [nu] | ? |
| f. | muŋyí | 'bait' | yí | 'sago-pudding, food' |
| g. | muŋhíŋ | 'turtle' | [híŋ] | ? |
13. èŋ 'coconut'
- | | | | | |
|----|--------|--------------------|-------|---------------|
| a. | eŋmà | 'eating coconut' | mà | 'sweet, ripe' |
| b. | èŋhvð | 'drinking coconut' | [hvð] | ? |
| 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. | èŋdáŋ | 'coconut blossom' | dáŋ | '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. | nuplòŋhè | 'fingernail' | [hè] | cf. 16a |
| c. | nuhoŋòŋ | 'thumb' | [hoŋ], [òŋ] | ? |
16. tùŋ 'hand'
- | | | | | |
|----|-------|------------------------|------|---------|
| a. | tùŋhè | 'brain' | [hè] | cf. 15b |
| b. | tùŋdè | 'side of head, temple' | [dè] | ? |
17. vu 'stomach'
- | | | | | |
|----|------|--------------|------|---------|
| a. | vuya | 'food' | ya | 'thing' |
| b. | vutð | 'intestines' | [tð] | ? |
18. [pɛ] 'morning'
- | | | | | |
|----|-------|----------------------|------|---------|
| a. | pɛɛ | 'this morning' | [ɛ] | ? |
| b. | pɛò | 'tomorrow' | [ò] | ? |
| c. | pɛóhé | 'day after tomorrow' | [hé] | cf. 20c |
19. táŋ 'sun'
- | | | | | |
|----|--------|-----------|-------|--------------------|
| a. | táŋbi | 'daytime' | [bi] | 'time'(?); cf. 20c |
| b. | táŋdòŋ | 'evening' | [dòŋ] | '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.

PHONOLOGY OF THE KAMASAU LANGUAGE

ARDEN G. SANDERS and JOY SANDERS

0. INTRODUCTION

The Kamasau language is a group of approximately 800 speakers located in the Turubu division of the East Sepik Province of Papua New Guinea. The language group is divided into seven villages distributed mainly along a road which runs from Wewak to Angoram. The language has been classified as part of the Marienberg Stock/Family within the Torricelli Phylum (Laycock 1973). This phonological analysis is based on nine months living in the village of Tring under the auspices of the Summer Institute of Linguistics.¹

The analysis is from the viewpoint of there being several hierarchical levels within the phonology and usually contrastive units on each level. The number of levels is language specific and therefore not a language universal. Features of a higher level have an effect on the lower levels, e.g. a discourse feature of laryngealisation is going to have an effect on the phonemes. Much insight was gained from Multilevel - Multiunit phonology as developed by Dr Marvin Mayers (1975) of the Summer Institute of Linguistics, Dallas, Texas.

1. DISCOURSE

There are five contrastive discourse types whose features are evident through to the word level and to the phoneme level in the case of discourse type two. (See Appendix I for short examples of these discourse types.)

/Narr-Exp/ The narrative or expository discourse is characterised by slowly falling pitch over a phonological clause or sentence. During the introduction and close of the discourse the rate of speech is reasonably slow. As the grammatical peak is neared the rate of speech

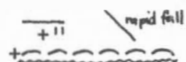
becomes more rapid. Also, the general range of the pitch tends to be higher in the vicinity of the peak than the introduction or close. All the discourse types are closed by a discourse-level pause and an oral release.²

/Narr-Exp/ =  ///R

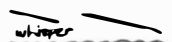
/Sorrow/ The discourse expressing sorrow and/or sympathy is chiefly characterised by a low-level pitch. The rate of speech is quite slow and soft compared to /Narr-Exp/. Many of the syllables are lengthened. The speech is often laryngealised although this is optional.

/Sorrow/ =  ///R

/Imp/ The imperative discourse is characterised by heavy stress and rapidly falling pitch. It is generally loud aside from the extra strong stress on the word in focus (usually the imperative verb). The speech is rapid.

/Imp/ =  ///R

/Fear/ The discourse used in fear or in the presence (nearness) of an enemy is fairly rapidly spoken. The major characteristic is soft speech, sometimes a whisper. The intonation pattern closely resembles that of /Exct/ and /Narr-Exp/ except that it is not raised, and the breath spans are generally shorter than those of /Narr-Exp/.

/Fear/ =  ///R

/Exct/ The discourse of excitement is particularly characterised by high pitch and rapid, loud speech. The pitch contour somewhat resembles /Narr-Exp/, however, like /Fear/, the breath spans are shorter. Also the pitch level is raised and much louder than /Narr-Exp/. Phonological sentences in /Exct/ are shorter than those in the other discourse types.

/Exct/ =  ///R

2. SENTENCE

There are five phonological sentence types which group into two semantic categories. These are interrogative and non-interrogative. A sentence is an intonation span which receives one heavy stress and possibly one or more secondary stresses, depending on how many clauses

are incorporated in that sentence. The non-interrogative sentence type is characterised by a heavy stress occurring on one word within the sentence. The placement of heavy stress serves the function of semantic focus on the word receiving the heavy stress.

The heavy stress of the sentence is accompanied by the highest pitch occurring within the sentence. If it is the initial word of the sentence the pitch tends to fall from there. If it is on a non-initial word the pitch begins at a mid level, rises sharply at the stressed word then undergoes a gradual fall. The pitch falls to a low level with a medium length pause and an oral release. This is contrastive with the non-final clause which falls in pitch from a secondary stress until it reaches the final word of the clause at which time it rises sharply.

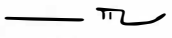
sentence - /./ =  //R or  //R

The interrogative sentence has four sub-types.

The first interrogative sentence sub-type is the yes/no question which uses either the word *ye*, *Irrealis*, or the word *bu*, *Realis*. In this question type the pitch tends to rise until the verb is reached. One of the two above mentioned particles then occurs with pitch rapidly falling to a low level. The sentence is followed by a medium length pause and an oral release (as are the other interrogative sentence types).

/ʔ₁/ =  //R
 ['nu 'muʔdi 'kwo 'bu //R]
 you now go Realis
 'Are you going now?'

The second interrogative sentence sub-type is a yes/no question which requests permission. Following the verb occurs the word 'tuʔwi with stress and accompanying high pitch on the first syllable. The pitch of the first part of the sentence remains fairly level. The pitch on the second syllable of the word 'tuʔwi begins low and rises to a high pitch.

/ʔ₂/ =  //R
 ['ŋe 'ren 'ke 'tuʔwi //R]
 I these eat permitted
 'May I eat these?'

The third sub-type of interrogative sentence is the request for information. As in the non-interrogative sentence type, the heavy

stress is accompanied by high pitch. The heavy stress marks the word in semantic focus. The verb though, rather than continuing the fall of the pitch, begins with a renewed high pitch then falls.

/ʔ₃/ = " ——— //R
 ['nu "tugɛ 'kwɛo //R]
 you who give
 'To whom did you give it?'

The fourth sub-type is a self-evident question functioning semantically as a greeting. The pitch is level until the verb, when it begins high and rapidly falls to a pitch lower than the first part of the sentence. It is often accompanied by a sentence initial exclamation which is lengthened and carries rapidly falling pitch.

/ʔ₄/ = (^) ——— " ——— //R
 [(^ ʔo:) 'nu "kwɛo //R]
 Oh you go
 'Oh, you're going?'

3. CLAUSE

There is one clause type. It is marked by a secondary stress on one word within the clause and a level or rising pitch contour. A brief pause occurs clause final. In a clause occurring sentence final the brief pause and level pitch are masked by the sentence-level pause and pitch contour.

clause - /,/ = ——— / or ——— /

Lengthening of a vowel can occur on the clause level with secondary stress to provide additional focus on the word which is lengthened and stressed. Lengthening can also function on the discourse level as mentioned in /Sorrow/.

4. WORD

Phonological words are composed of from one to four syllables. However, only a small minority have three or four syllables. Many of these may prove to be compounds of lexical words receiving one primary stress.

Stress tends to occur in one of the two first syllables of a word. Stress is not contrastive between words. When the stress occurs on the second syllable, the initial (unstressed) syllable has a tendency

to be reduced. For example, /nitaʔi/ becomes [n̩'taʔi], /metaʔwi/ becomes [m̩'taʔwi], and /duwongi/ becomes ['dwongi].

Stress in disyllabic words tends to occur on the initial syllable. However, stress may occur on the final syllable under the following conditions:

(1) An open syllable involving a complex nucleus occurring as the final syllable and one of the elements of the nucleus being a back vowel.

/t̩reo/	[t̩'reo]	'moon'
/momoɪ/	[mo'moɪ]	'to swing'
/undau/	[u'ndau]	'a fence'

(2) A word final closed syllable, in which the final consonant is a bilabial, velar or glottal consonant.

/sungrum/	[su'ngrum]	'type of grass'
/surog/	[su'rog]	'a caterpillar'
/karaʔ/	[ka'raʔ]	'I carry (fem. obj)'

BUT

/keri/	['keri]	'I carry (masc. obj)'
--------	---------	-----------------------

The words of three and four syllables have not fallen into a distinct pattern at this stage of analysis. One rule may be that stress occurs on the initial syllable unless the second syllable is a back vowel in which case the stress shifts to that syllable. This holds true unless all the syllables contain back vowels. Then the stress again occurs on the first syllable.

/ʔurupwi/	[ʔu'rupwi]	'new'
/kutunu/	['kutunu]	'I hear'

The second syllable when closed draws the stress to itself.

/sumanyi/	[su'manyi]	'down'
-----------	------------	--------

There are a few lexical items which do not follow these rules. Some examples of these are:

/kumunge/	['kumungeʔ]	'sister'
/suʔwewe/	[suʔwewe]	'hidden'
/mamoge/	['mamogeʔ]	'hornbill'
/bɪjeyi/	[bɪ'dʒeyi]	'proud'

Word final, voiced stops tend to have a nonphonemic, vocalic release of central quality. When spoken in isolation the release is generally absent. However, it may be present in deliberate pronunciation. Whenever the word occurs within a phrase or clause the release is present and is invariably of mid, central quality.

/wand/	['wandʌ]	'talk'
/tamb/	['tambʌ]	'string'
/yeng/	['yɛŋgʌ]	'fight'

Geminate clusters tend to coalesce to a single segment. This happens both within a word and across a word boundary.

/mɪr rimbiʔ/	['mɪrimbiʔ]	'they are full'
/wub bis/	['wubɪs]	'garamut stick'
/kw-waʔ/	['kwaʔ]	'you put down'

Within verbs, the prefixes are voiceless but become voiced when there is a voiced stop following within the word. The following stop may be the close of that syllable or in the following one.

/kat/	['kat]	k-at I-fill
/gad/	['gad]	g-ad I-do
/pəp/	['pəp]	p-ap we-do
/bab/	['bab]	b-ab we-do/are

5. SYLLABLE

There are five syllable types: V(C), CV(C), CCV(C), CVV(C), and CCVV(C). Of these, CV(C) is the most widely used. The accompanying arrays show the five syllable types plus the phoneme distribution within them.

Within syllable types which begin with a consonant cluster, the second consonant is limited in distribution to /w/, /r/ and /y/. All the syllable types with a simple nucleus incorporate any of the phonemic vowels.

Figure 1
Syllables with Simple Nuclei

	V (C)		C	V	(C)	C	C	V	(C)
p	i		X	i	X	X		i	X
t	e		X	e	X	X		e	X
ʈ	ɨ		X	ɨ	X	X		ɨ	
k	a		X	a		X		a	X
ʔ	u		X	u	X	X		u	X
b	o		X	o	X	X		o	
d			X		X				X
j			X		X				
g			X		X	X			X
mb			X		X	X			
nd			X		X				
nj			X						X
ŋg			X		X	X			X
ɓ			X		X				
s			X		X	X			X
ʒ			X		X				X
m		X	X		X	X			X
n			X		X				X
ɲ		X	X		X				X
ŋ			X		X				X
w			X				X		
r		X	X		X		X		X
y			X				X		

The final consonant does not include /w/ or /y/ as these have been interpreted as the complex nuclei V_u and V_i respectively. There are a few other holes in the distribution. It is expected that these holes may eventually be filled with a larger corpus of data.

Figure 2
Syllables with Complex Nuclei

	C	V	V	(C)	C	C	V	V	(C)
p	X								
t				X					
ʈ	X								
k	X				X				
ʔ	X			X	X				X
b	X								
d									
j									
g	X				X				
mb	X								
nd	X								
nj									
ŋg					X				
ʈ									
s	X				X				
ʒ	X								
m	X			X					
n	X				X				
ɲ	X								
ŋ									
w	X					X			
r	X					X			
y						X			

Syllables with a complex nucleus have the following sequences of vowels.

Figure 3
Arrangement of Vowel Clusters³

	i	u	a	e	o	ɤ
Initial i	-	iu	ia	ie	io	-
u	ui	-	ua	ue	uo	-
a	ai	au	-	-	ao	-
e	ei	eu	ea	-	eo	-
o	oi	ou	-	-	-	-
ɤ	-	-	-	-	-	-

Only the consonant /ʔ/ occurs to close the CCVV(C) type syllable.

/wiye kraiʔ/ ['wiye 'kraiʔ] *'it rained on me'*
 /niŋgraiʔ/ [ni'ŋgraiʔ] *'fly'*

The clusters which begin with [u] and [i] have been reinterpreted as wV and yV respectively. To maintain them as a sequence would result in a more complete matrix of patterns. However, to do so rather than interpret them as semivowels has its difficulties. There are words such as ['kieo] which are phonemicised as /kyeo/. A native speaker of the language will react to this as a single syllable rather than two (e.g. *kie.o or *ki.eo). That leaves the alternative of calling this a *CVVV syllable with a complex nucleus composed of three vowels. That interpretation would result in the sequences *ieo, *ueo, *iea and *uea. This is a quite limited number of sequences out of the total number possible. Also they each begin with either [u] or [i]. The interpretation of uV and iV as semivowel plus vowel is thus the most feasible and is supported by the analogy of the sequence /Cr/.

Figure 4
Distribution of Semivowels in Clusters

	/w/	/y/	/r/
p	X	X	X
t	X	X	X
ʔ	X		X
k	X	X	X
ʔ	X		
b	X	X	X
d		X	X
j			
g	X	X	X
mb	X		X
nd			
nj			
ŋg	X	X	X
b			
s	X		
ʃ			
m	X	X	
n	X	X	
ñ			
ŋ	X		X
w			
r	X	X	
y			

In addition there is some evidence from the grammar which would indicate that these are sequences. The person prefixes on verbs are k, kw, n, w(u), p, w, m, and r(ɨ). So the paradigm for the verb 'eat' is:

	sg.	pl.
1st	ka	pa
2nd	kwa	wa
3rd masc.	na	ma
3rd fem.	wu	rɨ

The word meaning 'to put down' follows this pattern except for the addition of a labial following the prefix. This is interpreted as a consonant sequence with the /w/ being the first phoneme of the verb stem.

	sg.	pl.
1st	kwaʔ	pwaʔ
2nd	kwaʔ	waʔ
3rd masc.	nwaʔ	mwaʔ
3rd fem.	waʔ	rwaʔ

Another verb of 'putting' follows the same pattern except for the initial phoneme of the stem being the palatal, /y/.

	sg.	pl.
1st	kyeʔ	ɸyeʔ
2nd	kweʔ	weʔ
3rd masc.	nyeʔ	myeʔ
3rd fem.	weʔ	ryeʔ

The two semivowels, /w/ and /y/, appear to be ranked, with /w/ being of higher rank. This would explain why three of the forms in the last verb have a labial rather than a palatal or a sequence of the two. Also, when the labial of the prefix comes contiguous to the initial labial of the verb stem the two coalesce to one segment in timing according to the rule previously given in section 4.

The four prenasalised stops, [mb], [nd], [ɲj], and [ŋg], have been interpreted as single segments. There are various reasons for this interpretation. The first is that whenever a nasal precedes a stop it is almost always homorganic with the stop. A second reason for this interpretation is the patterning of some words like ['mbre tiwumb], 'she sweeps'. To interpret the nasal sound, [m-], as a consonant in sequence with [-br-] goes against the fact that there is no clear *CCCV pattern to be found elsewhere in the language. To interpret it as a syllabic nasal is rejected because of timing and careful speech

of speakers of the language (see discussion about reduced syllables under section 4).

The prenasalised stops are found occurring word initially, medially and finally. Speakers of the language, when speaking Pidgin, pronounce gorgor, 'wild ginger plant', as ['ŋgorŋgor].

6. PHONEME

Figure 5
Phonemes

Vowels			Consonants				
i	ɪ	u	ɸ	t	ʔ	k	ʔ
e	a	o	b	d	j	g	
			mb	nd	nj	ŋg	
			ɓ	s		ʒ	
			m	n	ñ	ŋ	
			w	r	y		

6.1. VOWELS

There are six vowels, two each at the front, central and back points of articulation. At each point there is a high versus low contrast. All six vowels are contrastive.

/iri kati/	['iri 'kati]	'I fall'
/eri/	['ɛri]	'Tahitian chestnut'
/ɪri/	['ɪri]	'one'
/ari gad/	['ari 'gad]	'I urinate'
/ʔuri/	['ʔuri]	'ripe'
/ori/	['ori]	'wild yam'
/ñiŋg/	['ñi^ŋk]	'grass skirt'
/ñeŋg/	['ñeŋk]	'plate'
/ñɪŋgu gad/	['ñɪ^ŋgu 'gad]	'I steal'
/ñaŋg gab/	['ñaŋg 'gab]	'I rub'
/ñuŋgu/	['ñuŋgu]	'grass'
/ñoŋg wumb/	['ñoŋg 'wumb]	'it is tasty'
/ni/	['ni]	'he, she, it'
/ne/	['nɛ]	'yet'
/ŋɪʔ gad/	['ŋɪʔ 'gad]	'agree'
/na/	['na]	'he eats'
/nu/	['nu]	'you'
/no/	['no]	'he goes'

/i/ The high-front vowel has three allophonic variations. When occurring between consonants, neither of which are palatal, the vowel is pronounced as a high, front, open vocoid, [ɪ]. Between consonants, when either of them is a palatal, the vocoid is raised to some degree, [i̟]. In all other environments it is a high, front, close vocoid, [i].

/ɪmbiri/	[ʔɪmbiri]	'kind of fungus'
/wiye/	[ʔwɪ̟ye]	'water'
/suŋi/	[ʔsuŋi]	'mat'
/kiseyu/	[kɪ̟'se̟yu]	'oldest sibling'
/yine/	[ʔyɪ̟ne]	'in-law'
/iya/	[ʔiya]	'coconut'

/e/ The low, front vowel has the following three allophonic variations. Contiguous to a palatal it is a front, close vocoid, [e]. This variation may occur within a word or across a word boundary. Word finally, following a velar consonant the vowel is backed, [ɛ̠]. Elsewhere this vowel occurs as a front, open vocoid, [ɛ].

/ŋe ye kawo/	[ʔŋɛ̠ ʔye ʔkawo]	'I go first'
/wane/	[ʔwane]	'banana'
/beryi/	[ʔbɛ̟yi]	'bean'
/te tige/	[ʔtɛ̠ ʔtɛ̟ɛ̠]	'Who is that?'
/wane yam/	[ʔwane ʔyam]	'banana leaf'
/kunuŋe/	[ʔkumuŋɛ̠]	'sister-in-law'

/ɪ̟/ The high, central vowel has two allophonic variants. Contiguous to a palatal consonant it is fronted, [ɪ̟̟]. Otherwise it is not fronted, [ɪ̟].

/mɪ̟̟/	[ʔmɪ̟̟̟]	'breast/milk'
/mɪ̟/	[ʔmɪ̟]	'mouth'
/ŋɪ̟̟/	[ʔŋɪ̟̟̟]	'sun'
/tɪ̟e/	[ʔtɪ̟ɛ̠]	'two days from tomorrow'

/a/ The low, central vowel has three allophonic variants. It occurs as a mid, central vocoid, [ʌ], in an unstressed syllable. It becomes a glide, [a̟̟], when preceding the palatal semivowel, /y/. This is distinct from the complex vowel nucleus /ai/. The latter is of longer duration with the /i/ aspect being as much a vowel as the /a/. Also, in very deliberate speech the allophonic variant [a̟̟] is not spoken. Otherwise /a/ occurs as a low, central vocoid, [a].

/aya/	[ʔa̟̟ya]	'another'
/pate/	[ʔpate]	'bottom, source'

/anga/	['aŋɡʌ]	'ear'
/kas/	['kas]	'I sit'
/wayeʔu/	[wa ⁱ 'yeʔu]	'never mind'

/u/ The high, back vowel has two allophones. The high, back, open vocoid, [ʊ], occurs preceding the consonant /r/. It occurs as the high, back, close vocoid, [u], elsewhere.

/ur gidiʔ/	['ʊr ɡi'diʔ]	'I write/mark'
/simiʔu/	['simiʔu]	'woven blind'
/burye gidiʔ/	['burye ɡi'diʔ]	'I open'
/puwo/	['puwo]	'betel nut'

/o/ The low, back, rounded vowel does not have allophonic variation.

Sequences of two vocoids are interpreted as being a sequence of vowel phonemes rather than a vowel glide phoneme or a vowel followed by semivowel. There are a few words with a sequence of vocoids which are non-suspect in nature, e.g. /iʔreo/ [iʔreo] 'moon', /wet ñao/ ['wet 'nao] 'small stone', and /kweo/ ['kweo] 'you give to her'. Because of these the sequences are interpreted as being vowel sequences. (See discussion of syllable.)

6.2. CONSONANTS

Bilabials

There are six consonants at the bilabial point of articulation. The inventory of bilabial consonant is:

/p/	voiceless, bilabial fricative, [p];
/b/	voiced, bilabial stop, [b];
/mb/	voiced, prenasalised, bilabial stop, [ᵐb];
/ɸ/	voiced, bilabial fricative, [ɸ];
/m/	voiced, bilabial nasal, [m]; and
/w/	voiced, bilabial semivowel, [w].

Although the phonemes /p/ is actually a bilabial fricative it is here treated as filling the position of the bilabial stop *p. The bilabial consonants are contrastive.

/wapi/	['wapi]	'bird'
/ʔwabe/	['ʔwabe]	'wild ginger plant'
/wabe/	['wabe]	'inside'
/kambe/	['kambe]	'yesterday'
/yabe/	['yabe]	'long ago'
/yabɪ/	['yabɪ]	'blood'
/yami/	['yami]	'a boy's name'

/tebe/	['tebe]	'alright'
/tebi/	['tebi]	'two (neut.)'
/temi/	['temi]	'two (masc.)'
/pwaʔ/	['pwaʔ]	'we put'
/paʔ/	['paʔ]	'opened'
/baʔ gad/	['baʔ 'gad]	'I hit'
/mbaʔi gab/	['mbaʔi 'gab]	'I carry with rope over my head'
/mwaʔ/	['mwaʔ]	'they put'
/wand/	['wand]	'speech'
/band/	['band]	'smoke cure/dry'
/mand/	['mand]	'chest'
/paŋg/	['paŋk]	'egg shell'
/wagi/	['wagi]	'quietly'
/bag/	['bag]	'all'
/mbaʔi gab/	['mbaʔi 'gab]	'I carry with rope over my head'
/paʔi/	['paʔi]	'upturned'
/pu/	['pu]	'pig'
/bu/	['bu]	realis
/wuʔ/	['wuʔ]	'knot'

/b/ - /w/ In general the phoneme /b/ occurs contiguous to an /t/ or word finally, and /w/ does not occur in those environments. However, there are several examples in which /b/ occurs in other environments.

/tebi/	['tebi]	'two (neut.)'
/tuwi kap/	['tuwi 'kap]	'I am hot'
/wapi ʔiñaibi/	['wapi ʔi'ñaibi]	'white cockatoo'
/ambo mawi/	['ambo 'mawi]	'hibiscus'
/band/	['band]	'smoke cure/dry'
/wand/	['wand]	'speech'
/ben/	['ben]	'this (neut.)'
/wen/	['wen]	'this (fem.)'

Also, to eliminate either the /b/ or the /w/ would result in a hole in the pattern which is unnecessary.

Alveolars

There are six consonant phonemes at the alveolar point of articulation, all are contrastive.

/t/	voiceless, unaspirated, alveolar stop, [t];
/d/	voiced, alveolar stop, [d];
/nd/	voiced, prenasalised, alveolar stop, [ⁿ d];
/s/	voiceless, alveolar sibilant, [s];
/n/	voiced, alveolar nasal, [n]; and
/r/	voiced, flapped, alveolar liquid, [ɾ].

The consonant /r/ has a more lenis flap when occurring word finally.

/gati yi/	['gati 'yi]	'come down'
/gadi/	['gadi]	'I come'
/gandi/	['gandi]	'come (imp)'
/gas/	['gas]	'sit (imp)'
/gat/	['gat]	'salt'
/gad/	['gad]	'I do'
/gand/	['gand]	'you do (imp)'
/gar/	['gar]	'(water) hole'
/no/	['no]	'he goes'
/ndoʔ/	['ndoʔ]	'look (imp)'
/dogri/	['dogri]	'crab'
/torbiŋ/	['toɾbiŋ]	'mouth harp'
/sosi gad/	['sosi 'gad]	'rub between hands'
/rong/	['roŋk]	'cheek'
/wet/	['wet]	'stone'
/bed/	['bed]	'level place'
/pend/	['pend]	'cut'
/wen/	['wen]	'these'
/wes wiyo/	['wes 'wiyo]	'she gets up'
/ber/	['ber]	'year'

Alveopalatals

The following five alveopalatal consonants occur:

/ɟ/	voiceless, alveopalatal affricate, [tʃ];
/j/	voiced, alveopalatal affricate, [dʒ];
/nj/	voiced, prenasalised, alveopalatal affricate, [ⁿ dʒ];
/ñ/	voiced, alveopalatal nasal, [ɲ]; and
/y/	voiced, alveopalatal semivowel, [ɣ].

/ɟ/ and /j/ The affricates [tʃ] and [dʒ] respectively, are interpreted as single segment phonemes. There is some possibility that they might be interpreted as the phonetic realisation of the phonemes *tʰ and *dʰ

respectively. A second alternative interpretation is to interpret them as portmanteau phones of the sequences *ty* and *dy* respectively.

The latter interpretation has been rejected because of words like [*tʃwagi*], '*bast tissue of the coconut palm*', in which to interpret the affricate as a sequence of phonemes would result in a *CCCV syllable pattern or a *tʃ^w unit phoneme, neither of which clearly occurs elsewhere in the language. The second interpretation, palatalised segments, was rejected as all other palatalised sounds have been reinterpreted as sequences on the basis of syllable patterning (see syllable section). Also /ɟ/ is not interpreted as the sequence [tʃ] as that would result in a word-final cluster in [*tʃatʃ*] when word-final clusters do not occur.

The phonemes /ɟ/, /j/, and /nj/ are interpreted as filling the alveopalatal position of the stop series. The presence of nasals in four points of articulation, including the alveopalatal, would tend to force the affricates to fill the alveopalatal position of the stop series.

The alveopalatal series of consonants is contrastive within itself.

/jamb/	[<i>dʒamb</i>]	' <i>palm</i> '
/ɟamb/	[<i>tʃamb</i>]	' <i>woven sago leaves</i> '
/ñamb/	[<i>ɲamb</i>]	' <i>name</i> '
/yamb/	[<i>yamb</i>]	' <i>tomorrow</i> '
/ɟe/	[<i>tʃɛ</i>]	' <i>edge</i> '
/njeʔ/	[<i>ndʒɛʔ</i>]	' <i>incorrect</i> '
/ye/	[<i>ye</i>]	<i>realis</i>
/njoʔu/	[<i>ndʒoʔu</i>]	' <i>black palm</i> '
/ñoʔ/	[<i>ɲoʔ</i>]	' <i>egg</i> '

The series is also contrastive with the alveolar consonants.

/gat/	[<i>gat</i>]	' <i>salt</i> '
/ɟat/	[<i>tʃatʃ</i>]	' <i>type of lizard</i> '
/baj/	[<i>badʒ</i>]	' <i>house</i> '
/bad/	[<i>bad</i>]	' <i>we do</i> '
/bañ/	[<i>baɲ</i>]	' <i>sugar</i> '
/wand/	[<i>wand</i>]	' <i>talk</i> '
/yiwanj/	[<i>yi'wandʒ</i>]	' <i>fly</i> '
/te/	[<i>tɛ</i>]	' <i>that</i> '
/ɟe/	[<i>tʃɛ</i>]	' <i>edge</i> '
/dig/	[<i>dig</i>]	' <i>broken</i> '

/jig/	['dʒɪg]	'leftover'
/niŋg/	['niŋk]	'one's own'
/ñiŋg/	['ñiŋk]	'grass skirt'

Back

There are six back consonants at the velar and glottal points of articulation. These six phonemes are:

/k/	voiceless, unaspirated, velar stop, [k];
/g/	voiced, velar stop, [g];
/ŋg/	voiced, prenasalised, velar stop, [ŋg];
/ɣ/	voiced, velar fricative [ɣ];
/ŋ/	voiced, velar nasal, [ŋ]; and
/ʔ/	voiceless, glottal stop, [ʔ].

/kat/	['kat]	'I fill'
/ʔat/	['ʔat]	'thorn'
/gad/	['gad]	'I do'
/gat/	['gat]	'salt'
/segi/	['segi]	'no'
/begi/	['begi]	'we'
/ʔaʔi/	['ʔaʔi]	'left (hand)'
/matuki/	['matuki]	'centipede'
/praŋgi/	['praŋgi]	'tomorrow'
/maŋi/	['maŋi]	'count'
/taʔ gab/	['taʔ 'gab]	'I tie'
/sɪɣ/	['sɪɣ]	'rotten'
/bag kare/	['bag 'karɛ]	'I cover'
/ʔwaŋg/	['ʔwaŋk]	'hanger'
/maŋ/	['maŋ]	'uncle'

It is interesting to note that the phoneme /k/ does not occur word finally. Also the phoneme /ŋg/ has the allophone [ŋk] word-finally.

7. ORTHOGRAPHY

The following set of symbols are recommended for the orthography of the Kamasau language.

Figure 6
Orthographic Symbolisation for Phonemes

i	ɪ	u	p	t	ch	k	ʔ
e	a	o	b	d	j	g	
			mb	nd	nj	ŋg	
			v	s		gh	
			m	n	ñ	ŋ	
			w	r	y		

In the discourse level the contrastive discourse types need not be orthographically distinguished. There are sufficient grammatical markers for contrastive orthographic representations to be redundant.

The non-interrogative sentence is marked by a full stop, /./, and the clause by a comma, /,/. Interrogative sentences are orthographically symbolised by a question mark, /?/. These are not symbolised contrastively as there are grammatical clues as to the subtype used.

The symbolisation for the majority of the unit phonemes is straightforward so only the ones where there may be some controversy will be discussed.

The symbol p is used for the voiceless, bilabial fricative. The fricative is filling the position of a bilabial stop. Also, in speaking Pidgin the speakers of the language use a fricative when reading a p.

ch is chosen for the voiceless affricate, primarily for transfer purposes. This sound occurs word finally so that the symbolisation ty would lead to confusion during transfer to English (in which it would be pronounced [ti]).

ʔ is the symbolisation for the glottal stop. Other symbols, e.g. c and q, were rejected due to transfer to English. Also, one of the dialects drops the word final glottal stop. It would be easier for readers to ignore the apostrophe than a q. When glottal occurs word initially there should be no difficulty in capitalisation in that the following segment can be capitalised.

'at 'prawn' - 'At
'wat 'thorn' - 'Wat

The prenasalised stops have been symbolised as digraph. Being contrastive with the voiced stops they could not be symbolised by a simple stop.

The bilabial fricative, /ɸ/, is symbolised by v. The two sounds are quite close. Also there is not this contrast in the language or in English, so that transfer should present no problems.

gh is used for /g/ as opposed to h. The major motivation for this is that one of the dialects has /h/ corresponding to the /s/ and /t/ of the major dialect.⁴

The alveopalatal nasal is symbolised with a diacritic, ñ, rather than a digraph, ny. The digraph presents difficulty in transfer to English as the word final ny is pronounced [ni], in English, rather than [ñ].

ŋ is the symbol used for the velar nasal, [ŋ]. It is preferred to ng, as /ŋ/ contrasts with /ŋg/. The symbolisation ngg is of questionable value for the phoneme /ŋg/, so for consistency's sake the velar nasal is symbolised ŋ.

N O T E S

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2. The following symbols are used for discourse and sentence level symbolisation.

a) Symbolised above the line:

pitch = 	or 	stress - primary = '
breath - inhale = (		heavy = "
exhale =)		secondary = ^

b) Symbolised on the line:

oral release = R	length - brief = '
pause - brief = /	longer = :
medium = //	longer yet = ::
long = ///	longest = :::

c) Symbolised below the line:

soft speech = 	slow speech = 
loud speech = 	fast speech = 

d) Modifications:

increase of a feature = +
decrease of a feature = -

3. The /ɨ/ does not occur in any sequences at this stage of analysis. The phoneme /ɨ/ may prove to be a recent introduction to a historically five vowel system or it may be that the sequences are phonetically reduced to a single segment in present speech patterns but were historically present.

4. The dialectal differences are discussed in *Dialect Survey of the Kamasau Language*, by the same authors.

APPENDIX I

Following are short examples of the five discourse types.

/Narr-Exp/

('ŋɛ 'ruʔo 'k-asɛ :/) ('k-i 'k-aga 'k-o/)
I sleep I-lie I-get.down I-go.down I.go

('k-utuŋu 'pɛ:/) ('ʔmune 'ruʔo 'k-asɛ//R)
I-hear finish again sleep I-lie

'I was sleeping. Then I got up and listened. After listening I went back to sleep.'

/Sorrow/

(- 'moyu 'ware 'dzuʔa: //) (- g-u'doʔ g-u'doʔ/) (- 'segi 'ne)
mother I'm sorry I-look I-look not yet

('w-utl//) ('uʔ ///) ('u:: ///) ('o 'moyu:://) ('o 'moyu:://)
she-die oh mother oh mother oh mother

(- 'o:: 'moyu 'ware 'dzuʔa ///R)
oh mother I'm sorry *laryngealised*

'Mother, I'm sorry. I hadn't seen her yet and she died.
 Oh mother, oh mother, oh mother. I'm sorry.'

/Imp/

('nu "w-o // ('bɛgi "yɛmbɛ 'b-ad // ('nu +"kriŋ 'w-o ///R
you you-go we work we-do you clear you-go
 'Go! We're working so you clear out!'

/Fear/

('wute "tumo nɛ 'm-andi // ("mai 'p-o //
~~whisper~~
men close now they-come where we-go

('wu 'p-asɛ 'p-o ///R
~~whisper~~
hide we-lie we-go

'The men have come close now. Where will we go? Let's
 sneak away.'

/Exct/

No short example available.

APPENDIX II

The following list of Pidgin words is included as a guide to their pronunciation by speakers of the Kamasau language. These are of phonological interest as well as serving as a guideline for symbolisation of introduced terms in a vernacular literacy program.

[apɪ'nun]	apinun	['gʁoʁi]	glori
['bagaʁap]	bagarap	['gʁeʁe]	grille
['baim]	baim	[gu'ʔiʌ]	guria
['bakɛt]	baket	[ŋgoʁŋgoʁ]	gorgor
['binatan]	binatang	[ʔat]	hat
['boʃ]	bal	[ʔɛt]	het
['basket]	basket	[ʔan]	han
['biʌ]	bia	['ʔaptumoʁʌ]	haptumora
['biʁɛt]	bikhet	[l'nap]	inap
[bi'ʔain]	bihain	[kaʃ]	ka
['bʁaŋɛt]	blanket	[ʃɛg]	lek
['mbombom]	bombom	['kʁaut]	klaut
['patɛn]/	baten	[mun]	mun
['spatɛn]		['natnat]	natnat
['daka]	daka	[pik]	pik
['taunbilo]	daunbilo	[pʁɛt]	plet
['dina]	dinau	['pɛnsɛʃ]	pensil
['dʁiŋ]	dring	['araŋ]	arang
['dʒuti]	dutl	[ʁɛn]	ren
['epʁiʃ]	Eprii	['suʌ]	sua
['gadɛn]	gaden	['sʁip]	slip
['galɪp]	galip	['tambu]	tambu
['gabman]	gavman	['tiŋlm]	tingim
['gitʌ]	gita	[wot]	vot
['gʁasɪm]	glasɪm		

BIBLIOGRAPHY

LAYCOCK, D.C.

- 1973 *Sepik Languages - Checklist and Preliminary Classification.*
 PL, B-25.

MAYERS, Marvin K.

- 1975 Multilevel and multiunit phonology. MS.

SANDERS, Joy and Arden G. SANDERS

- 1980 'Dialect Survey of the Kamasau Language'. See pp.137-170
 in this volume.

DIALECT SURVEY OF THE KAMASAU LANGUAGE

JOY SANDERS and ARDEN G. SANDERS

0. INTRODUCTION

This paper gives the findings of a dialect survey in the Kamasau language. The data collected is being considered in two ways - the lexicostatistical relationships, and sound correspondences and differences. The purpose of the paper is to utilise information about the dialects to formulate a multi-dialectal orthography.

The Kamasau language is one of six languages in the Marienberg language family which is a part of the Torricelli Phylum (Laycock 1973: 15-17). The seven villages of the Kamasau language group are located between Wewak and Angoram. There are about 800 speakers residing in the area.

The village of Samap is now a separate language in the Marienberg language family.¹ The reason it was included in this survey is that the only feasible way of reaching this village with literature in the vernacular will be for them to read material in the Kamasau language. Therefore we wanted to know which sound differences we might need to take into consideration in designing an alphabet that would be usable by the people from Samap.

1. METHODOLOGY

The majority of the data for this paper was collected in March 1978 after eight months of residence in the village of Tring under the auspices of the Summer Institute of Linguistics. A 179 item word list was collected from seven villages by Arden Sanders. In all but two cases we collected the lists from speakers of the language residing in their home villages. The Kenyari list was collected from a 50 year old

man who now lives in Tring but lived in Kenyari as a boy and visits there often. The list from Samap was collected from a man living in Wau. Its reliability was confirmed by comparison with a list collected during our initial language survey of the Marlenberg family in 1977. A short list from Paruwa village, elicited by Phil Staalsen in 1977, has also been included. Although the people rarely include this village as belonging to the same language, it appears to be linguistically a part of the Kamasau language. It may later prove to be a 'mixed' village with some speakers from the Kamasau language and some from the neighbouring Urimo language.

The basic wordlist suggested by Bryan Ezard (1978:55-59) was used. This includes 73 words from the Swadesh 100 wordlist. Two items were deleted: '*heart*' because it is difficult to elicit reliably, and '*rain*' because it and '*water*' constitute a doublet. The other items were selected because they included sounds and verb prefixes which we wanted to compare with those of other villages. Some of these sounds do not occur very frequently in Tring, and so we used all of the words that we thought we could easily elicit with these less common sounds. We wanted a sufficiently wide base of data to allow a margin for variation as we knew all of the words would not be cognate. Sounds of special interest initially were the affricates and palatalised sequences, and glottal stops. Other words were added to be sure that all the common sounds were represented as well (see Appendix for data).

Following the survey a few items were eliminated from the cognate scoring as they did not seem to get a consistent response. This brought the total number of items down to 175. Two of these were the term for '*it is thundering while the sun is shining*', and '*a type of lizard*'. The remaining items were marked as cognate or non-cognate. Cognates are here being defined as phonetically similar words for which cognate sets have not yet been determined. In order to be considered cognate, items had to be 50 percent or more similar. If two phonetic segments differed by only manner of articulation or a slight shift in the point of articulation, the segments were considered to be the same. Consonants were given more weight than vowels in making the decisions.

Since one of the main purposes of our survey was to discover the sound correspondences between various villages, in some cases when we were not given a cognate form we then asked if they also used the term found in Tring. There were cases where this resulted in additional forms which we feel are historical cognates, whereas the forms elicited initially are synchronic cognates. In these cases, if that meant that there were two sets of cognates in the data, then they were all included

in the scoring. Two items ('star' and 'lice') were included that were marginally cognates in Kenyari, but were clearly cognate in the other villages. These were included because sound correspondences would indicate that they were historical cognates. In the words that were considered cognate, correspondence sets were drawn up for all seven villages.

2. RESULTS

2.1. LEXICOSTATISTICS

The lexicostatistic data collected resulted in the following percentages.

Figure 1
Cognate Percentages

Paruwa									
93	Kenyari								
80	84	Kamasau							
93	90	91	Tring						
84	83	89	94	Wau					
76	78	80	86	86	Yibab				
69	76	77	84	83	95	Wandomi			
54	54	57	61	60	59	61	Samap		

The method used to determine the significant differences between these percentages was the method outlined by Gary Simons (1977c:75-106). He stated that since "each cognate percentage indicates a range rather than a specific value, the ranges of two different cognate percentages may overlap. If the amount of overlap is great enough, we cannot say with confidence that the two different percentages represent different degrees of relationship" (1977c:75). Therefore some technique is needed to make sure that two different percentages actually represent different degrees of relationship. This can be done by using confidence tables to take into consideration the amount of probable error, and compute averaged percentages. By this method the percentages were grouped after being charted on a number line (Figure 2).

of Kamasau and Wau with Kenyari and Paruwa it is seen that they are only 84% cognate or lower. The probable reason for the high cognate figures of Tring with Kenyari and Paruwa is the method of counting cognates, where multiple cognates were allowed. Therefore, Kamasau is grouped with Tring and Wau, whereas Paruwa and Kenyari are grouped separately.

The optimisation model proposed by Joseph Grimes (1974) was applied to the raw cognate percentages.² The purpose is to combine the villages into groupings as well as defining the center of each grouping. A matrix of 'cost' figures is formed by subtracting the cognate percentage from 100. Different threshold values are applied, as described by Grimes, until all the villages combine into one group. A contour map is then drawn with one line representing each threshold level. The number of lines between two villages indicates the distance between them. More lines indicate a greater distance.

Optimisation Matrix

	Pr	Kn	Km	Tr	Wu	Yb	Wn	Sm
Pr	0	7	20	7	16	24	31	46
Kn	7	0	16	10	17	22	24	46
Km	20	16	0	9	11	20	23	43
Tr	7	20	9	0	6	14	16	39
Wu	16	17	11	6	0	14	17	40
Yb	24	22	20	14	14	0	5	41
Wn	31	24	23	16	17	5	0	39
Sm	46	46	43	39	40	41	39	0

Figure 4

Optimisation Matrix and Contour Map

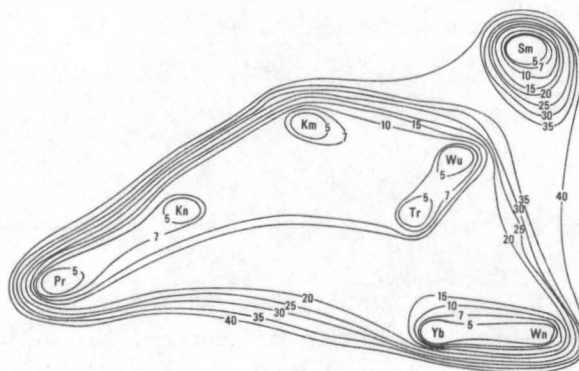


Figure 3 shows the optimisation matrix and contour map for the Kamasau language. Samap is quite separate from the other villages. This conclusion agrees with the findings of the other methods that it is a separate language. Yibab-Wandomi form a group at the beginning of operating the optimisation matrix (threshold of 5). Paruwa-Kenyari and Tring-Wau form two separate groups at a threshold of 7. These two groups combine with Kamasau at 10. Then Yibab-Wandomi combine with the others at 20. Samap is not included until a threshold of 40 is reached. This is in basic agreement with the phonological data in its groupings. The only discrepancy is that it would group Paruwa-Kenyari and Kamasau with Tring-Wau at the same time. This is due to Tring's high percentages with Paruwa-Kenyari.

2.2. PHONOLOGICAL COMPARISONS

Lexicostatistics is a convenient way of measuring relationships between languages at a language-family level. When dialects are being considered, phonological comparisons can give a more accurate picture of dialect borders. When languages become more separate the value of the phonological considerations becomes less (cf. Howard McKaughan 1964:118).

As the phonologies were studied, the villages seemed to divide into four groups: Paruwa-Kenyari, Kamasau-Tring-Wau, Yibab-Wandomi and Samap. Tring, Wau and Kamasau seem to group into one dialect with one basic set of phonemes (Arden Sanders 1980). These include three sets of stops at bilabial, alveolar, alveopalatal and velar points of articulation, fricative [ɸ] patterning as a voiceless stop, voiced bilabial and velar fricatives, a sibilant, four nasals, two semi-vowels, a liquid ([r]) and six vowels.

Figure 5

Phonemes of Tring, Kamasau and Wau

ɸ	t	tʃ	k	ʔ		i	ɨ	u
b	d	dʒ	g			e	a	o
mb	nd	nj	ŋg					
ɸ	s		g					
m	n	ɲ	ŋ					
w	r	y						

Between the three villages of Tring, Kamasau and Wau there are a few words which have one phoneme changed to another, but we did not find that these changes occurred in more than one word, so they would not be considered to be regular correspondences. There is one case of

regular loss of a phoneme from the verb root in Kamasau only. This occurs when the root of the verb begins with the symbol *y*. For example:

Tring	Kamasau	English
k-ye-o <i>I-give-you</i>	k-e-o <i>I-give-you</i>	'I give to you'
k-yes k-yewo <i>I-get.up I-go.up</i>	k-es k-ewo <i>I-get.up I-go.up</i>	'I get up'
n-ye? w-uge <i>he-puts she-go.down</i>	n-e? w-uge <i>he-puts she-go.down</i>	'he puts a feminine object down'
m-yes m-yewo <i>they-get.up they-go.up</i>	m-es m-ewo <i>they-get.up they-go.up</i>	'they (men) get up'

In other cases where the phoneme /*y*/ occurs it is not lost but is maintained as /*y*/. An exception to this is the /*y*/ in /*iye*/, 'coconut', which becomes /*tʃ*/, /*tʃi*/.

The other interesting change is that two Kamasau words had voiceless stops changing to voiced ones: *ipiky* to *mbiriki* ('rat'), and *tomingyi* to *domingi* ('star'), and in one case to a homorganic nasal: *kambe* to *ɲambe* ('yesterday').

Yibab and Wandomi villages make up a separate dialect, based on their phonological variations. The phonemes are basically the same as Tring except that the phoneme /*s*/ is replaced by a palatal *t* /*tʃ*/. It appears that palatal *t* is in contrast to alveolar *t*.

There is a tendency to voice and prenasalise some of the stops which are voiceless in Tring.

Tring	Yibab/Wandomi	English
te tuge <i>that who</i>	de ndige <i>that who</i>	'Who is that?'
pu <i>pig</i>	mbu <i>pig</i>	'pig'
puwo <i>betel.nut</i>	buwo <i>betel.nut</i>	'betel nut'

In one instance a prenasalised stop becomes a regular voiced stop.

Tring	Wandomi	English
tami mbaʔi gamb <i>string.bag on.head put</i>	tami bai yage <i>string.bag on.head put</i>	'Put the string bag on your head'

In all the verbs elicited, the first person singular prefix *k* and plural prefix *ɲ* are voiced.

Tring	Yibab/Wandomi	English
p-o we-go	b-o we-go	'we go'
k-o I-go	g-o I-go	'I go'
ʔuwi k-ati cold I-die	ʔuwi g-ati cold I-die	'I feel cold'

Also, the consonant cluster /ky/ becomes /tʃ/ and /dʒ/.

Tring	Yibab/Wandomi	English
ipikiy	ɪmbiritʃi	'house rat'
k-ye-o I-give-you	dʒ-e-o I-give-you	'I give to you'
k-yes k-yewo I-get.up I-go.up	dʒ-et dʒ-awo I-get.up I-go.up	'I get up'

The /dʒ/ seems to result from the voicing of the /k/ in the verbs to become gy. The gy then is realised as the unit phoneme /dʒ/, in this dialect. The word *dagi* ('cassowary') in Tring, is spoken as *dwadʒi*. The ny cluster is retained in this dialect:

Tring	Yibab/Wandomi	English
n-yes n-yewo he-get.up he-go.up	n-yet n-yawo he-get.up he-go.up	'he gets up'

So the /dʒ/ seems to be a portmanteau phone of /gy/ in this dialect. The unit phoneme /dʒ/ in Tring is also /dʒ/ in Yibab-Wandomi. The unit phoneme /tʃ/ is either /tʃ/ or /dʒ/ in Yibab-Wandomi, again a voicing difference.

Data about glottal stop did not present a consistent pattern. Yibab and Wandomi appeared to lose the word final glottal stops. Wandomi lost some glottals that Yibab speakers retained. Word initially and medially, some were retained, but most changed to a /w/ or /y/ or other consonant.

Tring	Yibab	Wandomi	English
ʔwaiyi	ʔwaiyi	ʔwaiyi	'man'
mweʔ	mweʔ	mwe	'earthern saucepan'
n-uʔond he-sees.him	n-uʔondʒ he-sees.him	n-uwondʒ he-sees.him	'he sees him'
njoʔu	jewu	njewu	'black plam'
simiʔu	timiyu	timiyu	'woven sago palm'
ʔusing	yuting	yuting	'comb'
ʔinap	kiñap	kiñap	'ashes'
ʔɪ	ʔɪ	gɪ	'ground'

Vowel correspondences agree with Tring, except for a few irregular changes. Only one correspondence set, /e/ to /a/, had three examples:

Tring	Yibab/Wandomi	English
tšetše	džadže	'older sibling'
k-yewo I-go.up	dž-awo I-go.up	'I get up'
bwede	bwiyade	'ridge cap'

In all of these examples the change comes following a palatalised sound on a stressed syllable. However there are other words where a palatalised sound is not followed by a change:

Tring	Yibab/Wandomi	English
yenu	yenu	'he stands'
wiye	wiye	'water'

Therefore the change does not seem to be predictable.

The phonemes of Kenyari and Paruwa³ are the same as those of Tring except that /t/ and /s/ phonemes in Tring are both /h/ in Kenyari and Paruwa. The only two occurrences of /t/ found in Kenyari data were *te tuge*, 'Who is this?'. Because the speaker from whom we got the word list lives in Tring village, he may have incorporated these terms into his idiolect. In two other words /t/ corresponded with /m/ in Kenyari.

Tring	Wau	Kenyari	English
teri	treri	merayi	'two (fem)'
temi	tremi	meremi	'two (masc)'

In one word /t/ corresponded with /p/:

Tring	Kenyari	English
tomingi	pomiʔi	'star'

As well as /t/ and /s/ being replaced by /h/, there were several other cases in which otherwise contrastive phonemes were also /h/.

Tring	Kenyari	English
p-h urupwi	uruhwi	'new'
y-h yuwon	hwan	'good'
payi	pwaha	'short'
maiye	mai h	'heavy'
?-h muʔdi	muhdi	'now'
tš-h putš	puhi	'piece/part'

Devoicing of Kenyari consonants occurred as often as did voicing.

Tring	Kenyari	English
tʃetʃe	dʒedʒe	'older sibling'
dʒari	tʃire	'shelf in house'
mbiski	pindʒi	'louse'

Some of the voiced velar fricatives became /w/ and /y/.

Tring	Kenyari	English
begi	bewi	'we'
gimbi	wumbi	'body'
gawo	yawo	'you do it'

but in wand gand, 'you talk', the velar fricative remains unchanged.

The most frequent vowel changes were /o/ and /e/ being replaced by /a/.

Tring	Kenyari	English
o-a tʃongo	tʃangwo	'skin'
moyu	mawo	'mother'
yuwon	hwan	'good'
e-a wase	waha	'fire'
nase	naha	'he lies down'
paye	pwaha	'short'
segi	hagi	'no'
but teti pu yenu	hehi pu yenu	'he is standing'

In Kenyari the sequence /ky/ is realised by either /tʃ/ or /dʒ/.

Tring	Kenyari	English
k-ye-o I-give-you	tʃ-e-o I-give-you	'I give you'
k-ye? w-uge I-put she-go.down	tʃ-e? w-uge I-put she-go.down	'I put a feminine object down'
k-yes I-get.up	tʃ-eh I-get.up	'I get up'
k-yi r-ige I-put they-go.down	tʃ-i r-ige I-put they-go.down	'I put them down'
mbisk(y)i	pindʒi	'louse'

Samap, although lexicostatistically a different language, has phonological similarities with villages of the Kamasau language. In terms of the voicing of consonants, it follows the pattern of Yibab-Wandomi much of the time, especially in regard to the verb person-number prefixes.

Tring	Samap	Yibab	English
k-o <i>I-go</i>	g-o <i>I-go</i>	g-o <i>I-go</i>	'I go'
k-ye-o <i>I-give-you</i>	g-ya-o <i>I-give-you</i>	dž-e-o <i>I-give-you</i>	'I give to you'
tšar	tšar	džar	'dense bush'
tšwagi	tšuwange	džagi	'bast of coconut'

However, as is seen, some of the words voiced in Yibab-Wandomi are not voiced in Samap.

The Tring phoneme /s/ corresponds to Samap /t/ and Yibab-Wandomi /t̚/. Between /s/ and /t/ there is one difference in the manner of articulation: fricative versus stop, whereas between /t/ and /t̚/ there is only a difference of point of articulation. Both are minor differences.

Glottals in Samap pattern more like Tring and Wau, not changing to /y/, /w/ or other consonants, nor being deleted as frequently as in Yibab-Wandomi (see examples in Section 3).

The vowel change, /e/ to /a/, also occurred in Samap. There are nine examples in which this change occurred, and seven examples in which it stayed the same. There were four examples in which /o/ changed to /a/. Some examples of both of these changes are:

Tring	Samap	English
ʔwemye	ʔwemya	'white'
ŋe	ŋa	'I'
bire	mbara	'full'
ñombwi	ñamp	'dog'

We have already considered the most frequently occurring correspondence sets in the data. In order to quantify the correspondence sets and get a broader picture of the phonological differences and similarities a statistical method is helpful. The phonostatistic method proposed by Grimes and Agard (1959) was applied to the data.⁴ It is based on the concept of rank of stricture. Grimes and Agard distinguish sounds on the basis of six parameters. Correspondence sets are used and the degree of difference between two languages calculated according to the formula

$$\frac{m \times 1 + m \times 2 + m \times 3 + \dots + m \times n}{s} = N$$

In this formula m is the number of sets which show 1, 2, 3...n degrees of difference. The sum of these is divided by the total number of sets compared, s, to give the mean degrees of difference, N.

3. ORTHOGRAPHY

A major value in doing a dialect survey is to determine at an early stage what the differences are in the dialects which will be using one orthography. In a language with only 800 speakers, this is of utmost importance in constructing materials which will be acceptable to all the readers involved. By being able to test the acceptability of several solutions at an early stage, much time can be saved when materials are produced later.

The symbolisation of the vocoids will probably have to be done on the basis of the Tring dialect, as the changes which occur in the surrounding villages do not occur with regularity, but on a variety of words with vowels changing in various directions. The major area in which testing will be needed is with the consonants. Of importance in this area is going to be the ability of the people to transfer into English, as there are an increasing number who are becoming literate in English.

The biggest problem is in the representation of /s/ and /t/, as in Kenyari these are both /h/, and in Yibab-Wandomi these are /ʈ/ and /t/.

Tr-Wu-Km	Sm	Yb-Wn	Kn	Pr
n-as he-sits	n-at	n-aʈ	n-ah	
wase fire	wate	waʈe	waha	waha
sawo tooth	tawo	ʈawo	hawo	hawo
swai junction	twai	twai	hwai	

The solution that most probably will be adopted is to retain the symbols, s and t, teaching Yibab-Wandomi speakers that the symbol, s, represents a /ʈ/, and Kenyari speakers that they both represent /h/. For purposes of transfer to English, use of any other letters would cause confusion for Tring speakers. The people who will have the greatest difficulty will be the Kenyari speakers who will have to learn to distinguish between the symbols, s and t, or memorise the spelling when they write. These speakers would already be familiar with the phonemes /s/ and /t/, from their knowledge of spoken Pidgin. So this would be helpful in their acceptance of the symbols, s and t.

Because /h/ occurs in the Kenyari dialect, this symbol could not be used to symbolise the velar fricative. However, because of the fricative quality, the symbol, gh, was chosen. This occurs in very few words in English. When shown to one speaker he seemed very happy at

this choice, as he recognised that the symbol, h, indicated that the 'wind' was coming out on that sound.

Another major problem area is the voiced, voiceless and prenasalised stops. In all dialects these series of stops are definitely in contrast. However, there is some overlap between the dialects, with a much higher percentage of voiced and prenasalised stops in Yibab, Wandomi and Samap villages.

Tr	Km	Sm	Yb-Wn	Kn	Pr
pu <i>pig</i>	pu	mbar	mbar	pu	pu
ipiki <i>rat</i>	mbiriki	-	ɪmbiritʃi	ipi	-
puwo <i>betel.nut</i>	puwo	buwo	buwo	puwo	-
p-o <i>we-go</i>	p-o	b-o	b-o	p-o	-
k-o <i>I-go</i>	k-o	g-o	g-o	k-o	-
k-ati <i>I-die</i>	k-ati	-	g-ati	k-ati	-

Since only three villages voice many of the stops, it seems that those speakers will have to make some adjustment to reading voiceless stops in part of the literature. However the verb prefixes will need special testing, since Yibab-Wandomi and Samap voice all first person singular and plural stops, whereas Tring and the other villages voice only those stops where there is a voiced stop in the verb root. Suggested orthography is to use the symbols, k and g, corresponding to the Tring phonemes /k/ and /g/. But to make a separate set of initial primers for Yibab and Wandomi seems to be best so that as the people are learning to read they will have a phonemic alphabet to begin with. This would be necessary as most of the intransitive and most common verbs use /k/, e.g., 'eat', 'go' and 'carry'. The other alternative would be to see if the people, women especially, are familiar enough with the Tring dialect to recognise that the symbol, k, represents the way that the people in Tring say these words. As it appears that the phoneme /k/ is actually the underlying form, and the people in these villages have just generalised the rule to voice all the verb prefixes, it seems best to stick with the representation k.

The sequence /ky/ occurs initially in some first person singular verbs. Some examples of changes in various villages are:

Tr-Wu	Km	Sm	Yb-Wn	Kn
k-ye-o <i>I-give-you</i>	k-e-o	g-ya-o	dž-e-o	tš-e-o
k-ye? <i>I-put</i>	k-e?	-	dž-e?	tš-e?
k-yes <i>I-get.up</i>	k-es	-	dž-eŋ	tš-eh
k-yewo <i>I-go.up</i>	kewo	-	džawo	-

Because of the constancy of the change to /dž/ in Yibab-Wandomi the sequence /ky/ could be taught to the people as the unit phoneme /dž/, along with an explanation that people in Tring say it [ky]. The sequence /ky/ is realised as [tš] in Kenyari, and as [k] in Kamasau so adjustments in primers could be made here as well. It would be best to leave this sequence to be taught later in the primer series, until new readers have become somewhat more fluent.

There are some words in Tring, which we suspect, but do not always hear, actually have a /gy/ or /ngy/ sequence in them. These sequences always precede an /i/, and have sometimes been heard by us in Tring as [dž] and [ndž]. These words are:

Tr-Wu	Km	Sm	Yb-Wn	Kn
seg(y)i/sedži <i>no</i>	segi	-	gini	hagi
tomɪŋ(y)i/tomindži <i>star</i>	domɪŋgi	mutomi	tem	pomi?i
dag(y)i/dadži <i>cassowary</i>	dagi	dagi	dwadži	dwagi
?oŋg(y)i <i>spoon</i>	?oŋgi	-	?oŋgi	?ondži
teng(y)i/tendži <i>two (class 3)</i>	tengi	-	-	merendži

Therefore, since it might make it easier for people from the other villages to be given a clue that they should pronounce the Tring sequence /gy/ as [dž] it might be best to write the symbol, y, in for now. For example ['dagi] would be written dagyi. Then, if people object it would be easy to remove it. Alternately, speakers from Kenyari, Yibab, and Wandomi might be tested to see what their reaction would be to how they would spell these words, after they have already learned to spell some words with /ky/ sequences in them. This might be the better alternative. The sequences /ky/ and /gy/ would not be a problem when

it came to transferring to English, as in the Kamasau language they only occur word initially and medially, and in English they occur word finally.

Glottal stop is phonemic in all dialects, although it is often deleted word finally in Yibab and Wandomi, and sometimes in Kamasau and Samap. There are a few examples of its being changed to other consonants in Yibab-Wandomi, as discussed in Section 2.2. Also, in some words we sometimes are aware of the glottal stop and at other times do not hear it. So some of our words will need to be sorted out by the people themselves. But because some of the villages delete the glottal stop or change it into another consonant in some positions, we favour symbolisation by an apostrophe, rather than 'on the line' symbolisation by either of the symbols, q or c, which would later cause troubles in transfer to English. Those speakers who do not have the glottal stop in their dialect would then find it easier to ignore it.

N O T E S

1. Samap village has been referred to by D.C. Laycock as the Elepi language. He states that "Elepi is closely related to Kamasau but seems to be more than just a dialect. However, it must have been a dialect of Kamasau in the not too distant past" (1973:16). Our findings presented in this paper concurred with Laycock that Samap (Elepi) is closely related to the Kamasau language.
2. This model has been applied to lexicostatistics by Arden Sanders (1977).
3. The Paruwa data was collected during a 1977 survey of two weeks in the area. The list taken was only 52 items but of these there were 44 words in common with the 1978 survey. This was adequate to determine the phonological similarity to Kenyari, as compared to other Kamasau language villages.
4. The methodology proposed by Grimes and Agard was reviewed, along with others, by Gary Simons (1977a).

APPENDIX

The items used in scoring cognates for this study are as listed below. All the data are phonetically transcribed.

	'hair' (1)	'head' (2)	'mouth' (3)
Tr	yu	ɲawo	mɪm
Wu	yu	ɲawo	mɪm
Km	yu	ɲawo	mɪm
Yb	yu	ɲawo	kwowi
Wn	yu	ɲawo	kowi
Kn	yu	ɲawu	mɪm
Pr	yu	ɲau	mɪm
Sm	---	yu iɟ	tigir
	'nose' (4)	'eye' (5)	'neck/nape' (6)
Tr	kɪme	rar	sumbut
Wu	kɪme	rar	sumbut
Km	kɪme	rar	mintɛŋk
Yb	kɪme	rar	numbut
Wn	kɪme	rar	numbut
Kn	kɪme	raʔ	rohu
Pr	kɪmʌ	raʔ	---
Sm	kɪme	rar	tumbut
	'throat' (7)	'belly' (8)	'skin' (9)
Tr	gɪbe	ʔumbo	tʃɔŋgo
Wu	---	umbo	tʃɔŋgo
Km	---	umbo	tʃɔŋgo
Yb	---	ʔumbo	tʃango
Wn	gɪbe	umbo	---
Kn	gɪbe	ʔumbo	tʃaŋgwo
Pr	gɪbe	umbo	tsaŋgwa
Sm	gɪbe	yaŋ	dʒogo

	'man' (10)	'woman' (11)	'bird' (12)
Tr	?waiyi	ñumbweg	wapi
Wu	?waiyi	ñumbweg	wapi
Km	?waiyi	ñumbweg	wapi
Yb	?waiyi	ñumbweg	wapi
Wn	?waiyi	ñubweg	wapi
Kn	?waiyi	ñumbweg	wapi
Pr	waiyi	ñimbweg	wapi
Sm	?waiyi	nuñumbu	ñiñ
	'dog' (13)	'mankind' (14)	'he sits' (15)
Tr	ñombwi	wuti	nas
Wu	ñombwi	wuti	nas
Km	ñombwi	wuti	nas
Yb	?eɟ	wutʂi	naɟ
Wn	yet	wutʂi	naɟ
Kn	ñombwi	---	nah
Pr	ñombwi	---	---
Sm	ñamp	---	nat
	'they bite' (16)	'he stands' (17)	'path' (18)
Tr	riri	yenu	ɣim
Wu	ritʂ	yenu	ɣim
Km	rit	yenu	ɣim
Yb	ritʂ	yenu	mañe
Wn	ritʂ	yenu	mañe
Kn	---	yenu	mañerɪŋk
Pr	---	---	myerɪŋk
Sm	ritʂ	---	ɣim
	'stone' (19)	'big' (20)	'small' (21)
Tr	wet	yumbwi	wokwandi
Wu	wet	yimbwi	wokwandi
Km	wet	yumbwi	wodʒidʒu
Yb	weɟ	?imbede	kwandiwo
Wn	weɟ	umbete	kwandi
Kn	weh	yumbwi	kwotʂihwo
Pr	wa	yumbwi	kwandʒi
Sm	---	yutuwa?	imbara

	'fire' (22)	'smoke' (23)	'ashes' (24)
Tr	wase	wasebo	ʔñap
Wu	wase	wasesoʔi	ʔñap
Km	wase	suwoʔi	ñap
Yb	wate	ʔigaiyi	kiñap
Wn	wate	gaiyi	kiñap
Kn	waha	hubo	ʔñap
Pr	waha	obo	---
Sm	wate	yaʔo	ñap

	'ear' (25)	'tongue' (26)	'tooth' (27)
Tr	ange	mindžu	sawo
Wu	anga	mindžu	sawo
Km	ange	mindžu	sawo
Yb	mange	mindžu	ʔawo
Wn	mange	mindžu	ʔawo
Kn	ange	ɲari	hawo
Pr	angʌ	ɲari	hawo
Sm	maʔanj	mindžu	tawo

	'breast' (28)	'hand' (29)	'sun' (30)
Tr	miñ	suram	ɲiñ
Wu	miñ	timi	ɲiñ
Km	miñ	suram	bogi
Yb	miñ	ʔuram	ɲiñ
Wn	miñ	ʔuram	ʒiñ
Kn	miñ	hura	ɲiñ
Pr	miñ	hiŋapʔ	ɲeni
Sm	miñ	turambi	bwog

	'moon' (31)	'star' (32)	'cloud' (33)
Tr	ireo	tomingi	ɲiñ tu
Wu	gangu	tomingi	ɲeri
Km	ming	domingi	ɲiñ
Yb	gangu	tem	ɲiñ
Wn	gangu	tem	ɲiñ
Kn	ireo	pomiʔi	ɲiñ hu
Pr	ieu	---	ɲiñ hu
Sm	nangu	mutami	ɲeri

'lightning' (34)			'water' (35)			'tree' (36)		
Tr	pris		wiye			ñumo		
Wu	pris		wiye			ñumo		
Km	pris		wiye			ñumo		
Yb	prɪt		wiye			ñumo		
Wn	priɟ		wiye			ñumo		
Kn	prih		wiye			ñumo		
Pr	---		wiye			ñimer		
Sm	prɪt		wiye			yuma		
'rope' (37)			'leaf' (38)			'meat' (39)		
Tr	sare		raʔe			ʔumo		
Wu	sare		raʔe			ʔumo		
Km	sare		raʔe			umo		
Yb	ɬare		yam			mbutʃ		
Wn	ɬare		ra			mbutʃ		
Kn	hare		ndʒau			ʔumo		
Pr	---		mane			umo		
Sm	tere		reʔe			wutiŋe		
'fat' (40)			'egg' (41)			'he eats' (42)		
Tr	ʔuye		ñoʔ			naʔ		
Wu	ʔuye		ñoʔ			naʔ		
Km	miñan		no			na		
Yb	ñoŋg		ño			na		
Wn	ñoŋg		ño			na		
Kn	ʔuye		ʔuye			naʔ		
Pr	giye		wiye			na		
Sm	---		---			---		
'he gives me' (43)			'he sees me' (44)			'they come' (45)		
Tr	nɪeg		nuʔond			mandi		
Wu	nɪeg		nuʔondʒ			mandi		
Km	nɪeg		nuʔond			mandi		
Yb	nɪeg		nuʔondʒ			mandi		
Wn	nɪeg		nuwondʒ			mandi		
Kn	nɪeg		nuʔond			mandi		
Pr	---		noand			mandi		
Sm	yau		nuʔondʒ			maŋ		

	'louse' (46)	'one' masc (47)	'two' masc (48)
Tr	ɪmbiski	iri	temi
Wu	mbiski	iri	tremi
Km	mbiski	iri	temi
Yb	mbiɕ	iri	temi
Wn	mbiɕ	iri	temi
Kn	pindʒi	iri	meremi
Pr	pindʒi	ri	mremi
Sm	mbite	ki	meremi
	'two' fem (49)	'back' (50)	'backbone' (51)
Tr	teri	dob	gori
Wu	teri	---	gori
Km	teri	dob	gori
Yb	teri	---	gori
Wn	teri	dob	gori
Kn	mereyi	dobuhi	---
Pr	---	---	---
Sm	merere	---	gori
	'leg/calf' (52)	'bone' (53)	'blood' (54)
Tr	mitu	ŋape	yabɪ
Wu	mitu	ŋape	yabɪ
Km	mitu	ŋape	yabɪ
Yb	miɕu	ŋape	yabu
Wn	rimtu	diage	wunande
Kn	mihu	ŋape	yabi
Pr	---	ŋape	yabi
Sm	bua	---	ŋainde
	'wing' (55)	'fingernail' (56)	'tail (of dog)' (57)
Tr	nimbɾeʔe	suʔ	tumo
Wu	nimbɾaʔa	suʔ	tumo
Km	nimbɾeʔe	suʔ	tumo
Yb	mindara	ɕu	tumo
Wn	mindara	ɕu	ɕumo
Kn	nimbɾeʔe	huʔ	humo
Pr	---	---	---
Sm	nimbɾa	tuʔo	tumo

	<i>'his father'</i> (58)	<i>'his mother'</i> (59)	<i>'my mother'</i> (60)
Tr	kiyi	kumo	moyu
Wu	kiyi	kumo	maiye
Km	kiyi	kumo	moiyu
Yb	kiyi	kumo	maiye
Wn	kiyi	kumo	maiye
Kn	nuyi	kumo	mawo
Pr	---	---	---
Sm	kiye	kerene	nen
	<i>'my older sibling'</i> (61)	<i>'name'</i> (62)	<i>'pig'</i> (63)
Tr	tʃetʃe	ñamb	pu
Wu	tʃetʃ	ñamb	pu
Km	tʃetʃ	ñamb	pu
Yb	dʒadʒe	ñambu	mbar
Wn	dʒadʒe	ñamb	mbar
Kn	dʒedʒe	ñamb	pu
Pr	---	---	---
Sm	dʒedʒ	ñamb	mbar
	<i>'cassowary'</i> (64)	<i>'rat'</i> (65)	<i>'snake'</i> (66)
Tr	dagi	ipikyi	gati
Wu	dagi	ipikyi	gati
Km	dagi	mbiriki	gati
Yb	dwadʒi	ɬmbiritʃi	gati
Wn	dwadʒi	mbiritʃi	gati
Kn	dagwi	ipi	gahi
Pr	---	---	---
Sm	dagi	umb	gatu
	<i>'fish'</i> (67)	<i>'banana'</i> (68)	<i>'house'</i> (69)
Tr	umo	wane	badʒ
Wu	?umo	wane	badʒ
Km	umo	wane	ñongo
Yb	?umo	wane	badʒ
Wn	umo	wane	badʒ
Kn	?umo	wane	badʒ
Pr	---	---	---
Sm	?uma	wana	badʒ

	'earth' (70)	'sand' (71)	'mountain' (72)
Tr	ʔɪ	dʒɪdʒɪ	rand
Wu	ʔɪ	dʒɪdʒɪ	rand
Km	ɪ	dʒɪdʒɪ	rand
Yb	ʔɪ	dʒɪdʒɪ	rand
Wn	gɪ	dʒɪdʒɪ	randɪg
Kn	ʔɪ	dʒɪdʒɪ	randɪ
Pr	---	---	---
Sm	yita	dʒɪŋa	pang
	'wind' (73)	'night' (74)	'white' (75)
Tr	numorigi	bur	ʔwemye
Wu	numorigi	bur	ʔwemye
Km	numorigi	bur	ʔwem
Yb	numorigi	bur	ʔwemye
Wn	numorigi	bur	ʔwem
Kn	numorigɪ	wungɪ	ʔwemye
Pr	---	---	---
Sm	nare	wunga	ʔwemya
	'black' (76)	'red' (77)	'good' (78)
Tr	ʔwari	ʔamboye	ogi
Wu	ʔwari	ʔamboye	ogi
Km	ʔwari	ambo	ogi
Yb	ʔwariye	ʔamboye	---
Wn	ʔwariye	amboye	---
Kn	ʔwari	amboye	---
Pr	---	---	---
Sm	ʔubya	amboya	---
	'nice' (79)	'long' (80)	'short' (81)
Tr	yuwon	dobwi	bwog
Wu	---	dobwi	bwog
Km	---	dobwi	paɪɪ
Yb	yuwon	dobwi	bwogi
Wn	yuwon	dobwi	bog
Kn	hwan	dobwi	pwahaʔ
Pr	---	---	---
Sm	yuwon	buŋaŋ	bwog

	'heavy' (82)	'cold' (83)	'hot' (84)
Tr	maiye	?uwi	sunguwe
Wu	mai	?uwi	sungo
Km	mai	?uwi	sunguwe
Yb	mai	wem	tinguwe
Wn	mai	wem	tinguwe
Kn	maih	?uwi	hunduwe
Pr	---	---	---
Sm	mai	?usa	tinge
	'old (man)' (85)	'old (house)' (86)	'new' (87)
Tr	gaŋ	wuri	urupwi
Wu	gaŋ	ñipɪ	?urupwi
Km	gaŋ	wuri?i	?urupwi
Yb	gaŋ	ñipɪ	tiŋeye
Wn	gaŋ	ñipɪ	tineye
Kn	merimbo	wuri	uruhwi
Pr	---	---	---
Sm	gaŋ	nipe	ndʒi?iñe
	'many' (88)	'what is that?' (89)	'who?' (90)
Tr	?wan	te puge	tuge
Wu	?wan	te puge	tige
Km	?wan	te puge	tuge
Yb	?wan	de buge	dige
Wn	wan	de buge	ndige
Kn	?wan	te pwe	tuge
Pr	---	---	---
Sm	?wan	bure	---
	'why?' (91)	'she carries' (92)	'full' (93)
Tr	puge niŋk	wure	bire
Wu	puge niŋk	wure	bire
Km	puge niŋk	wure	bire
Yb	buge niŋk	wure	bire
Wn	buge niŋk	wure	bire
Kn	pwi ki	wuro	bire
Pr	---	---	---
Sm	bwe riŋk	wure	mbara

	'with' (94)	'no' (95)	'drink' (96)
Tr	pu	segyi	ne
Wu	pu	segi	na
Km	pu	segi	ne
Yb	pu	gini	na
Wn	pu	gini	na
Kn	pu	hagi	ne
Pr	---	---	---
Sm	---	garebi	da
	'he lies' (97)	'he dies' (98)	'he laughs' (99)
Tr	nase	nati	wure na?
Wu	nase	nati	wure na?
Km	nase	nati	wuru na
Yb	nate	naʔi	wur na
Wn	nate	nati	wuru na
Kn	naha	nahi	wuru na?
Pr	---	---	---
Sm	nate	gureŋ nand	wure na?
	'I' (100)	'you' (sg) (101)	'he' (102)
Tr	ŋe	nu	ni
Wu	ŋe	nu	ni
Km	ŋe	nu	ni
Yb	ŋe	nu	ni
Wn	ŋe	nu	kegi
Kn	ŋebi	nu	ni
Pr	---	---	---
Sm	ŋa	ninde	ninde
	'we' (103)	'jungle' (104)	'sago (cooked)' (105)
Tr	begi	tʃar	gos
Wu	begi	tʃar	gos
Km	begi	tʃar	uge
Yb	ŋebewu	dʒar	uge
Wn	ŋebegi	dʒar	wuge
Kn	bewi	tʃar	wuge
Pr	---	---	---
Sm	ŋanungu	tʃar	giri

	'I put' (106)	'I give you' (107)	'I am happy' (108)
Tr	kye? wuge	kyeo	tšimbai gad
Wu	kye? wuge	kyeo	tšimbai
Km	ke? wuge	keo	si?i gad
Yb	dže? wuge	džeo	tšumbai gad
Wn	dže? wuge	džeu	džimbaiya gad
Kn	tše? wuge	tšeo	yawo dare wige
Sm	gai wa	guao	wori ti
	'knife' (109)	'I peel it' (110)	'bast of coconut' (111)
Tr	gebitš	ño? gidi?	tšwagi
Wu	gebis	ño? gad	tšwagi
Km	tšo?i	soro gad	tšagi
Yb	gebitš	ño gidi	džwagi
Wn	gebitš	ño gidi	džowagi
Kn	mame	ño? gad	tšagi
Sm	gebitš	džogo gad	tšwange
	'morning' (112)	'he gets up' (113)	'she goes up' (114)
Tr	bur?ane	nyes	wiyo
Wu	bur?ane	nyes	wiyo
Km	bur?ane	nes	wiyo
Yb	bur?ane	nyet	wiyo
Wn	bur?ane	nyet	wiyo
Kn	yamb	nyeh	wiye?u
Sm	---	---	---
	'part/piece' (115)	'ridge cap' (116)	'long way' (117)
Tr	putš	bwede	wondži
Wu	putš	bwede	wondži
Km	put	?wag	wondži
Yb	mbutš	byade	wondži
Wn	bid i	bwi yade	wondži
Kn	puhi	bwede	wondži
Sm	mbus	?wag	wondž

	'black palm' (118)	'shelf' (119)	'I die' (120)
Tr	ndžo'u	džari	kati
Wu	ndžo'u	budžari	kati
Km	ndžo'u	napiri	kati
Yb	džewu	are	gati
Wn	ndžewu	are	gati
Kn	ndžo'u	tšire	kahi
Sm	moti	budžari	nita
	'now' (121)	'yesterday' (122)	'day before yesterday' (123)
Tr	mu'di	kambe	kei
Wu	mu'	kambe	kei
Km	mu'di	ŋambe	kei
Yb	mundi	ŋambe	kei
Wn	mo	ŋambe	kei
Kn	muhdi	kambe	kei
Sm	ma'	ŋamba	bidže
	'tomorrow' (124)	'day after tomorrow' (125)	'two days after tomorrow' (126)
Tr	praŋgi	yamb	iwe
Wu	praŋgi	---	iwe
Km	praŋgi	yamb	iwe
Yb	yambugri	yamb	yambe
Wn	yambogri	yamb	yamb aiya
Kn	praŋgi	yamb	iwe
Sm	ñumbwand	nebidže	---
	'I carry male' (127)	'I carry female' (128)	'I carry two' (129)
Tr	keri	kara?	kare
Wu	keri	kara?	kare
Km	keri	kara?	kare
Yb	geri	gara?	gare
Wn	geri	gara	gare
Kn	keri	keri	keri
Sm	neri	neri	neri

	<i>'sago stem'</i> (130)	<i>'she hears'</i> (131)	<i>'my ancestor'</i> (132)
Tr	kwawu	wutuŋu	koku
Wu	kwawu	wutuŋu	koku
Km	kwawu	wutuŋu	koku
Yb	kwawu	wutuŋu	koku
Wn	kwawu	wutuŋu	koku
Kn	kwawu	wuhun̄u	koku
Sm	powi	wutu?	kwok
	<i>'chin'</i> (133)	<i>'fish hook'</i> (134)	<i>'again/back'</i> (135)
Tr	kowisambe	?mosun̄go	?mune
Wu	kowisambe	?mosun̄go	?mune
Km	kowisambe	?mosun̄go	?mune
Yb	kowitšambe	?umotun̄go	?mune
Wn	kowitšambe	?motun̄go	mune
Kn	kowihambe	?mohun̄go	?mune
Sm	get	matukwa	?mune
	<i>'woven blind'</i> (136)	<i>'food'</i> (137)	<i>'betet nut'</i> (138)
Tr	simi?u	m̄r	puwo
Wu	simi?u	m̄r	puwo
Km	simi?u	---	puwo
Yb	ʃimi?u	m̄r	buwo
Wn	ʃimi?u	m̄r	buwo
Kn	himuri	nimiri	puwo
Sm	wet rau	wum	buwo
	<i>'you give me'</i> (139)	<i>'speech'</i> (140)	<i>'put on head'</i> (141)
Tr	yeg	wand	mba?i
Wu	yeg	wand	mba?i
Km	yeg	wand	mba?i
Yb	yeg	wand	barige
Wn	yeg	wand	bai
Kn	yeg	wand	ba?i
Sm	yan	wand	mba?i

	'string bag' (142)	'saucepan' (143)	'coconut' (144)
Tr	tami	os	iye
Wu	tami	os	iye
Km	tami	os	tʃi
Yb	tami	ot	dʒi
Wn	tami	ot	dʒi
Kn	hami	oh	iye
Sm	tami	ot	tʃi
	'rotten' (145)	'taro' (146)	'comb' (147)
Tr	sɪŋ	yaŋ	ʔusiŋk
Wu	tʃiŋi	yaŋ	ʔusiŋk
Km	sɪŋ	ñaʔ	isiŋk
Yb	tʃiŋ	yaŋ	tʃiŋk
Wn	tɪŋ	yaŋ	tʃiŋk
Kn	ñuʔo	yaŋ	---
Sm	---	yau	ʔusiŋk
	'spoon' (148)	'grass skirt' (149)	'fasten' (150)
Tr	ʔoŋgi	ñiŋk	taʔ
Wu	ʔoŋgi	ñiŋk	taʔ
Km	ʔoŋgi	ñiŋk	taʔ
Yb	ʔoŋgi	ñiŋk	ta
Wn	ʔoŋgi	ñiŋk	ta
Kn	ʔondʒi	ñiŋk	haʔ
Sm	---	ñiŋgi	taʔ
	'leg' (151)	'caterpillar' (152)	'garden' (153)
Tr	ñiŋge	surog	wuñ
Wu	ñiŋga	surog	wuñ
Km	ñiŋge	surog	wuñ
Yb	ñiŋge	turog	wuñ
Wn	mange	turog	wuñ
Kn	ñiŋga	hurog	wuñ
Sm	ŋam	turog	wuñ

	<i>Gnetum</i> (species of tree) (154)	'young woman' (155)	'scrape' (156)
Tr	miñe	ambonye	gri?
Wu	miñe	ambonye	gri?
Km	miñe	ambonye	gri?
Yb	miñe	ambonye	gri
Wn	miñe	abonye	gri
Kn	miñe	ambonye	kirabi
Sm	miñuŋk	ambonya	eren
	'dump (water)' (157)	'middle' (158)	'ginger plant' (159)
Tr	gro?	mingi	?wabe
Wu	gro?	mingi	?wabe
Km	gro?	mingi	tʃu?wam
Yb	gro	mingi	ñuam
Wn	gro	mingi	ñuwam
Kn	gro?	mingi	?wabe
Sm	gro?	ming	wiyege
	'inside' (160)	'signal drum' (161)	'stick for signal drum' (162)
Tr	wabe	wub	bɪs
Wu	wabe	wub	bɪs
Km	wabe	wub	simb
Yb	wuyi	wub	tutu
Wn	wuyi	wub	tutu
Kn	wabe	wub	bɪh
Sm	---	wob	tu
	'I need' (163)	'earthern saucepan' (164)	'torch' (165)
Tr	kreg	mwe?	soi
Wu	kreg	mwe?	soi
Km	kreg	mwe?	---
Yb	natʃ	mwe	---
Wn	natʃ	mwe	---
Kn	kreg	mwe?	hoi
Sm	nat	mwe?	---

	'fly' (166)	'torch for light' (167)	'we get wet' (168)
Tr	ningrai?	sinde	parai?
Wu	puro	sinde	parai?
Km	ningrai?	sinde	parai?
Yb	prik	eñ ?wari	bra?
Wn	prik	eñ ?wari	bra?
Kn	ningrai?	---	parai?
Sm	piri	wote	wari wumb
	'thorn' (169)	'prawn' (170)	'thumb' (171)
Tr	?wat	?at	tumbo?
Wu	?wat	as	tumbo?
Km	?wat	?at	tumbo
Yb	?wat	?at	tumbo
Wn	yuwo	at	tumbo
Kn	?wat	waha?	humbo?
Sm	yo?o	?at	kubo
	'junction' (172)	'hand' (173)	'right (hand)' (174)
Tr	swai	si	ñañe/twan
Wu	swai	si	tan
Km	swai	si	twon
Yb	ɬwai	ɬi	ñañe
Wn	ɬwai	ɬi	ñañe
Kn	hwai	hi	ñañe
Sm	twai	katu	man
	'left (hand)' (175)		
Tr	?a?i		
Wu	?abi		
Km	tenga?i		
Yb	?a		
Wn	?a		
Kn	?a?a		
Sm	tu?a		

BIBLIOGRAPHY

EZARD, Bryan

- 1977 'A Basic Word List for Papua New Guinea'. *Workpapers in Papua New Guinea Languages* 21:45-74.

GRIMES, Joseph E.

- 1974 'Dialects as Optimal Communication Networks'. *Language* 50:260-9.

GRIMES, Joseph E. and Frederick AGARD

- 1959 'Linguistic Divergence in Romance'. *Language* 33:598-604.

LARSEN, Robert E.

- 1977 'Multidialectal Orthographic and Lexical Adjustments for Orokaiva'. *Workpapers in Papua New Guinea Languages* 21: 343-8.

LAYCOCK, D.C.

- 1973 *Sepik Languages - Checklist and Preliminary Classification*.
PL B-25.

McKAUGHAN, Howard

- 1964 'A Study of Divergence in Four New Guinea Languages'.
American Anthropologist 66/4:98-121.

SANDERS, Arden G.

- 1977 'Some Synchronic Analysis Procedures for Language Survey Data'. *Workpapers in Papua New Guinea Languages* 21:295-315.

SANDERS, Arden G. and Joy SANDERS

- 1980 'Phonology of the Kamasau Language'. See pp.111-135 in this volume.

SIMONS, Gary

- 1977a 'Phonostatistic Methods'. *Workpapers in Papua New Guinea Languages* 21:155-85.
- 1977b 'Principles of Multidialectal Orthography Design'. *Workpapers in Papua New Guinea Languages* 21:325-42.
- 1977c 'Tables of Significance for Lexicostatistics'. *Workpapers in Papua New Guinea Languages* 21:75-106.

DEFINING THE CENTRES OF THE MARIENBERG LANGUAGE FAMILY

ARDEN G. SANDERS and JOY SANDERS

0. INTRODUCTION

This paper demonstrates the centrality of the Kamasau language to the language family and discusses the factors which have been considered in making that decision. Also the central dialect and village (where applicable) for each language is investigated. The factors which are considered are linguistic centrality, geographic centrality, demographic importance, presence of institutions and social factors (Sanders 1977). Data was collected from 33 villages in a two week period.¹

The Marienberg language family consists of six languages located in the East Sepik Province between Wewak and Marienberg. The languages are: Kamasau, Muniwara, Urimo, Buna, Elepi and Mandi.² The latter two languages consist of one village each, Samap and Mandi respectively. They will be included in discussions of the language family as a whole, but usually omitted under discussions of individual language centres.

1. METHODOLOGY

1.1. PILOT SURVEY

A brief pilot survey was conducted along the coast east of Wewak, collecting wordlists from five villages. The basic wordlist used was the Standard S.I.L. list with some additions and deletions. These lists were then used to identify: words that were difficult to elicit reliably, words with multiple cognates (synonyms), words where the vernacular term was the same for two words on the list (e.g. 'water' and 'river'), and words not found in the culture (e.g. 'canoe' and 'paddle'). Such words were then eliminated from the list for the

remainder of the survey. Also some preliminary hypotheses were formed regarding the classification of Bungain and Mandi languages. The pilot survey lists were also included in the calculations of cognate percentages.

1.2. CONDUCTING THE SURVEY

During the main part of the survey, lists from 28 villages were collected in the languages of Bungain (3), Buna (10), Kamasau (5), Muniwara (3), Samap (1), Urimo (6). In the village of Tring (Kamasau language), three lists were taken: two from men, and one from a group of women. These were to serve as a control. How the scores were used is discussed in section 1.4. Six of the 35 collected lists were from women and the rest from men.

As well as linguistic data, a sociological questionnaire was utilised (Appendix B). The answers to this were usually obtained from one person in the village, generally a woman, while the men were giving a wordlist. Where time was limited, the main items collected were those concerning marriage exchanges and sociolinguistics. It was generally found that women did not readily answer questions about singsings and traditional enemies, perhaps since these are men's domain. Also the women's responses indicated they have less contact than men outside a very close circle of villages. Thus in future it would seem best to interview a man and a woman in each village, or a mixed group of men and women.

1.3. RELIABILITY

In order to give the reader an idea of the reliability of the data, we want to make it clear that the data was not phonemicised. Throughout the survey it was necessary at times to use an informant living outside his home village. When this was the case, care was taken to ensure that his home was indeed the village concerned. Also the length of time he has been absent from his village was ascertained. If he had been absent for some time, his degree of contact with his home village was determined. Twenty-two lists were taken from persons living in their home villages and nine were elicited from individuals who were living away from their home villages at the time. Most of the latter were living within easy walking distance from their home village.

There were four lists which were taken from people who had lived for some time in a different place than their home village. The Samap list was taken from individuals who have been living in Wewak, although

the primary informant was an older man who had come from Samap to visit his relatives. The Ariapan list was collected from a man whose father was from Gavien, where he was then living, and whose mother was from Ariapan. He had evidently lived there for some time and pointed out distinctions between Gavien words and those of Ariapan. The Mansep list was collected from a group of families who are living at Marienberg Mission Station so that their children can attend school. The list for Waskurin was elicited from a woman living with her husband in Angoram. The only list we would find of questionable reliability is the Samap list. The rest we consider to be quite reliable.

1.4. ANALYSING THE DATA

Following the survey a few further items were eliminated as some words did not seem to get a consistent response. For example, in the village of Tring, where three wordlists were taken, three different words were given for the item 'yes'. So this term was eliminated in the calculations. The remaining words were marked as being 'cognate' or 'non-cognate'. It should be noted that the term 'cognate' is here used to mean items which are phonetically similar (synchronously). The items compared had to be at least 50% similar if they were to be called cognate. If two phonetic segments differed by only manner of articulation (or a slight shift in the point of articulation) the segments were considered to be the same. Consonants were given more weight than vowels in making the decisions.

The three wordlists taken in Tring served as a control. These scored 90% cognate between them. So this score was adjusted to 100% on the assumption - perhaps fictional - that a village should be 100% cognate with itself. The other scores were also adjusted on the assumption that the factors which affected the lists in Tring also affected the other lists elicited. So they were adjusted according to the formula

$$s = 100/90 \times rs$$

where s is the adjusted score and rs is the raw score.

The cognate percentage for a pair of languages was obtained by calculating the mean score of the percentage scores between those languages. Thus the percentage score for Urimo (6 lists) and Kamasau (5 lists) is the mean of the thirty individual percentage scores.

2. LINGUISTIC CENTRE

2.1. LANGUAGE FAMILY

On the basis of lexicostatistic data,³ Kamasau is the more linguistically central language (Figure 1). Kamasau has the highest average percentage of the group, thus indicating its lexicostatistic centrality. After the cognates have been adjusted it shares 49% cognates with Elepi, 50% with Urimo, 22% with Mandi and 21% with Buna. Although the percentage with Buna is not high, it is slightly higher than any of the percentages between Buna and the other languages. The other close relationships in the family are between Mandi and Muniwara (41%). The people in Mandi said they spoke the same as the people in the Muniwara language, and some of them had parents from that language. So it could be that this was once a dialect of Muniwara that has become isolated. Bungain language shows consistently low percentages of cognates with all the languages except Mandi (27%). This could be due to recent borrowing as Mandi is geographically surrounded by the Bungain language.

Figure 1
Cognate Percentages for the Language Family

Mandi = 25% average cognates						
20	Elepi = 27%					
22	49	Kamasau = 30%				
41	26	24	Muniwara = 24%			
20	31	50	21	Urimo = 26%		
19	20	21	16	18	Buna = 18%	
27	14	16	16	17	16	Bungain = 18%

Of the four major languages, Kamasau appears typologically most conservative as it has probably retained the most of the original features of the language family. It has at least three noun classes, while the others have only two that could be readily identified. It also has agreement in number, which only Muniwara has as well. It would appear that the languages at one time had even more noun classes than they do now. Father Kirschbaum wrote in 1926 that at that time Buna had evidence of twelve noun classes (Laycock 1973) (and nine noun classes in an earlier note published in 1922 - Laycock 1975). However, we found only two classes (gender), so it may be that some of the noun classification has been lost due to contact. Therefore, it would appear that Kamasau has the most conservative form of grammar. Once again, this could be due to its relative isolation until recently, and the fact that it is surrounded by the other languages of the family.

Other typological features which we studied were actor pronouns, verb prefixes, object markers, number systems and tense indication. The findings on actor pronouns and verb prefixes are listed in Appendix C. It is to be noted that all of the languages had the third singular feminine verb prefix *w-* which is supposed to be almost diagnostic of the Torricelli Phylum (Laycock 1975). The word order is generally subject-object-predicate, with only two languages indicating a possible object marker, Urimo and Muniwara. The counting systems were all basically the same with counting by 'hands', except for Buna which had a distinct term for each number from one to ten. Tense indication was generally a free time word.

A sociolinguistic questionnaire (Appendix B) showed that most of the people are unable to understand any of the other languages in the family. The exceptions are villages on the edge of a language which can sometimes understand the speech of neighbouring villages, e.g. Kamasau and Yaugiba, Mandi and the Bungain village of Maur, and Elepi and Kamasau. Some of what is learned may be a result of contact because of intermarriage between nearby villages. Some of the older leaders in the language groups can understand the surrounding languages. This was reported to us in Urimo and Buna, 'big men' of these villages being able to understand some of Kamasau and Muniwara. Therefore, the sociolinguistic data seemed to confirm that Kamasau, or perhaps Muniwara would be most central, in that more persons might be able to understand it.

2.2. INDIVIDUAL LANGUAGES

2.2.1. Kamasau

This language appears to have two dialects which are mutually intelligible. (These were indicated by responses to the question, "Who speaks a little differently than you do?") Wandomi and Yibab were consistently considered as a little different, by the people themselves, and by the villages of Kamasau, Tring and Wau as well. Also, they had about 20% lower cognates than most of the other villages.

Figure 2
Cognate Percentages for Kamasau Language

Wandomi	=	71%	average cognate
71	Wau	=	81%
78	90	Tring	= 85%
73	88	92	Kamasau = 84%
62	74	80	84
			Paruwa = 75%

Another village which was not even mentioned by any of the other Kamasau villages was Paruwa. This is a village located less than a mile from the Urimo village of Samowia (fourteen miles from Tring). The wordlist collected from that village had 80% cognates with Tring, and 71% with Samowia, so it may also be a part of the Kamasau language.

2.2.2. Muniwara

This language appears to have only one dialect from the data we collected. Everyone in the language said that they spoke the same, and their cognate percentages ranged from 90 to 100%.

2.2.3. Urimo

The data we collected would support one dialect for Urimo. The cognate percentages between villages ranged from 76 to 100%, and the people said that everyone spoke exactly the same.

2.2.4. Buna

There is data to support two dialects for this language: a northern dialect including the villages Ariapan, Waskurin, Boig and Kasiman, and a southern dialect including Suk, Masan, Bonam, Mansep, Mambel, Gavien and Mangen. The cognates within each dialect ranged from about 80 to 100%, whereas between villages of the two dialects they ranged from 50 to 80% (Figure 3). This was in agreement with the socio-linguistic response of the people, who grouped themselves into two main speech communities. There was further distinction noted within the southern dialect, as people stated that Masan spoke just a little differently from the others. This was stated by Masan as well.

Figure 3
Cognate Percentages for Buna Language

Mambel = 83% aberage cognates									
90	Mangen = 86%								
91	100	Suk = 91%							
98	92	100	Bonam = 82%						
89	97	100	91	Mansep = 87%					
86	96	100	97	100	Gavien = 89%				
87	92	100	81	92	94	Masan = 83%			
78	77	81	77	80	84	74	Ariapan = 82%		
68	70	78	52	71	77	66	99	Waskurin = 74%	
64	59	68	50	66	67	60	86	89	Kasiman = 68%

Although the cognate percentages were not very low (ranging from 81 to 100%), the Masan speech is intelligible to all the southern villages, the attitude of the people showed that they felt themselves to be different.⁴

Intelligibility between the northern and southern dialects seemed rather varied. The dialects are sufficiently different that most of the women from the south are unable to understand the other dialect readily, and the women in Mambel said that they use Melanesian Pidgin when talking with the women from Ariapan. The older men, especially the 'big men', are able to understand the speakers from the other dialect, probably as a result of more travel and contact. The village of Gavien, which is a three hour walk from Ariapan, has some inter-marriage with that village. The people there said that some of them could understand the Ariapan dialect. One man was bilingual since his mother was from Ariapan. It may be that the southern dialect, being more prestigious, may not be able to understand the northern dialect, as much as persons from the northern dialect would understand them. Our questioning about intelligibility was done mainly in the south so we have no data to confirm this hypothesis.

3. GEOGRAPHIC CENTRE

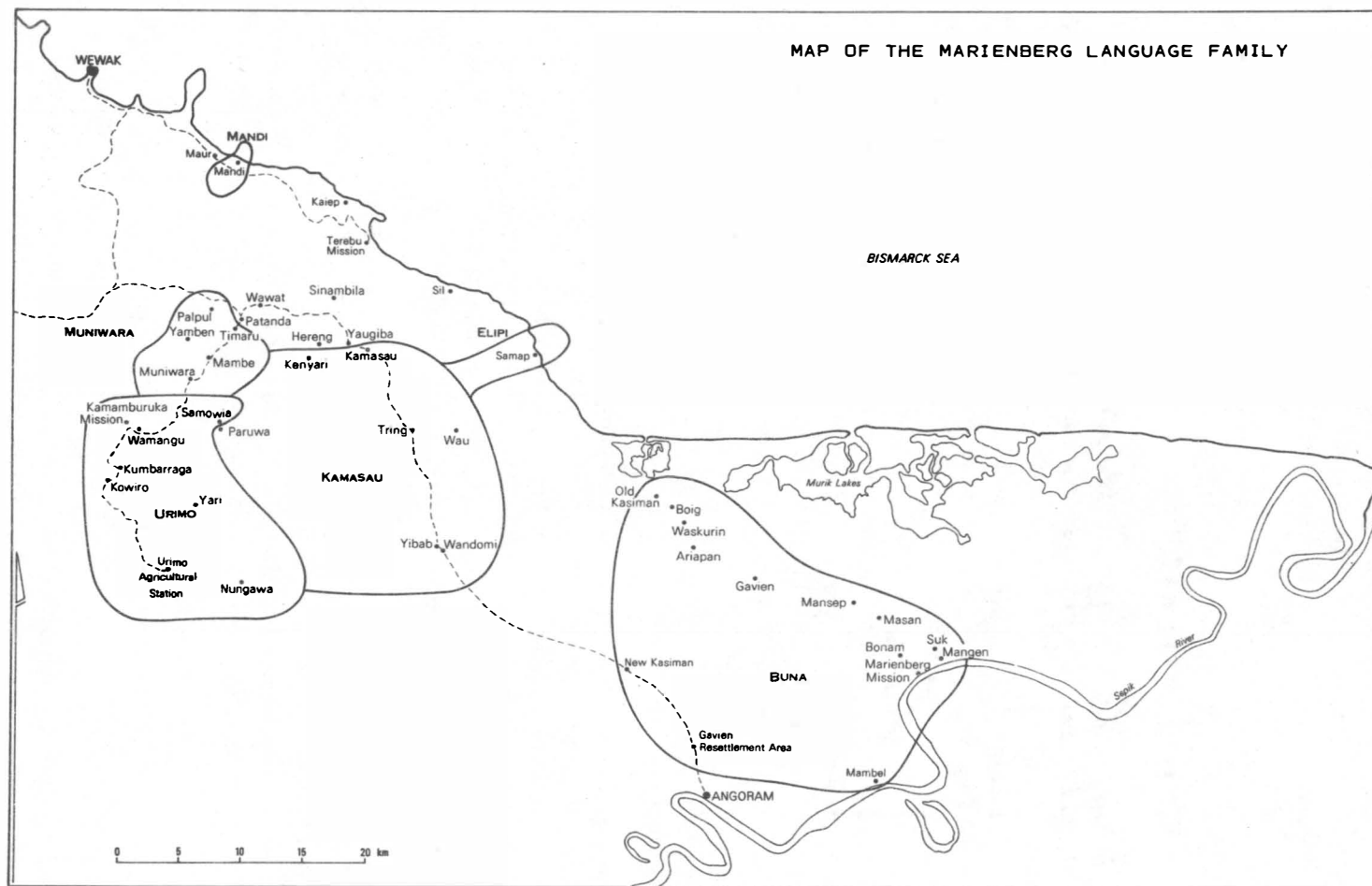
3.1. LANGUAGE FAMILY

The geographic centre of the Marienberg language family is the Kamasau language. Twelve miles to the east of it is Elep1, on the coast. The Buna language group begins twelve miles east and extends about 25 miles south to the Sepik River. Ten to fifteen miles directly west is the Muniwara language, and south of it the Urimo language. To the north about twenty miles is Mandi, surrounded by the Bungain language,⁵ which stretches from Mandi down to the Kamasau and Muniwars languages. When midpoints of various parts of the family are taken into account, the group of midpoints marked forms a band extending from just west of the Kamasau language, through the centre of it, and continuing just east of it (see Map). All the languages may be reached by road from Kamasau, except Elep1 and Buna which are now accessible by foot or boat.

3.2. INDIVIDUAL LANGUAGES

3.2.1. Kamasau

The geographic centre of the Kamasau language is Tring. A road extends north to the village of Kamasau (five miles) and south to Yibab and Wandomi (seven miles). The other villages are accessible



by trail only: Wau (two miles east), Kenyari (two miles west of Kamasau), and Paruwa (fourteen miles west).

3.2.2. Muniwara

The geographic centre of the Muniwara language is Mambe. Timaru (two miles north) and Muniwara (three miles southwest) are on a road, Palpul (three miles north) and Yamben (two miles southwest) are both accessible by trail. These villages are sufficiently close for geographic centrality to be less important than other factors.

3.2.3. Urimo

The geographic centre is Yari, which is five miles from the nearest road. Extending in a semi-circle around it are: Nungawa (seven miles southeast), Kowiro (seven miles west), Kumbaragga (seven miles northwest), Wamangu (eight miles northwest) and Samowia (six miles northeast). The village which is most centrally located on the road is Kowiro. From this village it is five miles to the furthest northern village on the road and seven miles south to the other end of the road. The most distant village is Nungawa, thirteen miles southeast.

3.2.4. Buna

The geographic centre of Buna is either Gavien or Mansep. These two villages are about two miles apart. If the half-way point between them as they are located on the map is used, the following distances for surrounding villages result: eight - twelve miles northwest for the villages of Ariapan, Waskurin, Boig and Kasiman; seven - thirteen miles southeast for the villages of Masan, Bonam, Suk and Mangen; eighteen miles south to Mambel, located on the Sepik River; and about fifteen miles to the Gavien and Kasiman resettlements which are located near the road from Angoram to Wewak.

4. DEMOGRAPHIC CENTRE

4.1. LANGUAGE FAMILY

Demographically, Buna is the most important language in the Marienberg family with a population of 1,300.⁶ However it is also geographically the most distant. Its isolation would detract from its overall centrality in spite of its large size. Of the remaining languages, Muniwara (954) ranks first, Kamasau second (802), then Urimo (534), Mandi (212) and Elepi (179).

4.2. INDIVIDUAL LANGUAGES

4.2.1. Kamasau

The demographically important villages of the Kamasau language are Kamasau (150), Tring (140) and Paruwa (140). The remaining four villages have from 80 to 100 persons each.

4.2.2. Muniwara

In the Muniwara language the demographically most important villages are Yamben (250) and Palpul (240). Muniwara is next with 186 people and the other three villages have 150 or less.

4.2.3. Urimo

The demographically most important villages are Wamangu, Kowiro and Kambaragga, each with between 130 and 150 people. The other three villages have less than 70 people each.

4.2.4. Buna

The southern dialect makes up 65% of the language's population. The two largest villages, Mansep and Mangen, are also in the southern dialect, each with a population of about 220. Mambel, Waskurin, Gavien and Boig are also fairly large with 130 to 160 people. Since Mansep has almost 100 persons more than Gavien this might indicate its greater importance, and perhaps increased demographic centrality.

5. INSTITUTIONS: MISSION AND GOVERNMENT

5.1. LANGUAGE FAMILY

All the languages in the Marienberg family have at least one primary school in their area except for Elepi and Kamasau, the latter having only recently been made more accessible by the presence of a road from Angoram to Wewak.

There is only one hospital in the language family, located at the Marienberg mission. Other hospitals are located in Wewak and Angoram, which are outside the actual language family borders, but are used by the people. Aid posts are also located at Tring, Mambe, Wawat and Wamangu.

Muniwara and Buna have Catholic priests living within the language group at mission stations. This gives additional prestige to these languages. Villages in the other languages are visited periodically by a priest.

5.2. INDIVIDUAL LANGUAGES

5.2.1. Kamasau

The Kamasau language seems to be the least affected by institutions. The government contact has been mainly through schools which are located outside the Kamasau language area. The schools attended are Badjiman primary, two - three miles north of Kamasau village, and Kaup primary school, a sixteen mile walk from Kamasau and twelve miles from Tring. Kamasau and Tring have several children in school whereas Yibab and Wandomi have very few children who have continued in school.

The council representative for the villages of Kamasau, Wau, Yibab, Wandomi and Tring is now located in Tring. This is also the site of an aid post. The Kamasau language village of Kenyari, is in the Yaugiba council area.

It appears that mission contact has not been as great as for other languages, a priest occasionally visiting and staying short periods. The nearest Catholic mission station is Mambe, eleven miles by road.

5.2.2. Muniwara

The Catholic mission station is located at Mambe, giving prestige to the villages there. A priest makes his base there, going out regularly to the villages in this language. The majority of the people are baptised Catholics. The Mambe primary school is located at the mission, with pupils coming from all the surrounding villages. There is also an aid post at Mambe. Therefore, it would appear that Mambe is the institutional centre of the Muniwara language.

5.2.3. Urimo

There are several schools in this language area. The Swiss mission has a primary school near Wamangu, the Catholic Church had one in the past near their Urimo station, and the Seventh Day Adventists have one near the Nagam River. These are well spread out, and attended quite well by those living on the roads. The most isolated villages, Nungawa and Yari, have few pupils. They would seem to be the least prestigious villages. Kowiro, site of the council for this area, would seem to be quite prestigious. Wamangu has a medical aid post. The Agricultural Stock and Fisheries Station is not located at any traditional village site but is central to three. So the institutions in this language are much more spread out. Kowiro, as site of the council would perhaps be among the most prestigious villages.

5.2.4. Buna

The Buna villages are a part of four separate councils: Suk +, Bonam and Mangen; Mansep +, Gavien and Masan; Waskurin +, Ariapan, Boig, and Kasiman; Imbuando + (another language group) and Mambel. (+ indicates that the councillor in these sets of villages is from the village thus marked.) Thus the villages of Suk, Mansep, and Waskurin might be more prestigious because of the presence of the councils.

The Catholic mission at Marienberg gives prestige to the villages nearby. There is a primary school which several children from each of the surrounding villages attend. Some parents from villages too far to walk to each night have come to live with their children at Marienberg. Thus there is a small Mansep settlement close to the river. The priests regularly travel to distant villages to have Mass: the closest villages come to Marienberg each Sunday.

The government now has schools at Taway (1952) and Angoram. These schools are attended mostly by those from the northern villages of Kasiman, Ariapan, Gavien and Mansep, as well as Mambel near the Sepik River.

5.2.5. Elepi

Samap villagers send their children to one of two schools: Kaup primary school and Balik primary school.

5.2.6. Mandi

Mandi has a primary school located there, and is near Brandi High School. Being near Wewak, the percentage of children attending school is a good deal higher.

6. SOCIAL FACTORS

6.1. LANGUAGE FAMILY

Social factors seem to be most important in showing relationships and prestige within one language. Trade exchanges can lead to regular patterns of interaction between people from different languages, but no such patterns were discovered in the Marienberg family. This does not mean there were not trade routes used by the ancestors, but none are presently apparent. Now people seem to sell market products in towns (Wewak, Angoram), at mission stations and school sites (Marienberg, Mambe, Urimo), or along the road at roadside markets.

The remaining social factors seem to be most important within the language group itself. Rather than present one aspect at a time, an attempt will be made to show how attitudes and relationships of various villages within a language are reflected in marriage, singsings, stated enemies, and a feeling of village proximity. Origin stories where collected, will be given as well since marriage ties with the ancestral village appear to remain very strong.

6.2. INDIVIDUAL LANGUAGES

6.2.1. Kamasau

The closest relationships between villages in this language appear to be between Wandomi and Yibab, Wau and Tring, and Tring and Kamasau. As well as being geographically close, the close relationship between Wandomi and Yibab is shown by the fact that they intermarry almost exclusively.

Tring and Wau are also geographically close, only a one hour walk apart. Tring has received most of its wives from Wau, and a few from Kamasau and Kenyari. They have sent wives to Sinambila (Bungain language), Chimbu (Highlands), and Kubalia. Although it is a two to three hour walk from Tring to Kamasau, the distance does not seem as great to the people as the distance down to Yibab and Wandomi. Tring has also had contact with Kenyari, Hereng and two Bungain villages through singsings. It is interesting to note that Tring also named Kenyari, Hereng and Kamasau as enemies of their ancestors.⁷

Kamasau receives wives from Tring, but not Wau, Yibab or Wandomi (the latter two they claim were ancestral enemies). Kamasau also sends wives to Bungain villages as well as to Tring. Kamasau stated that they had singsings with all the other Kamasau villages as well as Yaugiba (Bungain). Either Kamasau or Tring would appear to be the most prestigious village because of their widespread contact through intermarriage and singsings.

6.2.2. Muniwara

The only information collected about social factors in this language was the marriage ties that Timaru has. They receive wives from Palpul and Mambe, and send wives to Mambe, Wawat and Patanda, the latter two villages being in the Bungain language.

6.2.3. Urimo

The villages in this language seem to be quite unified. Their origin story is that the ancestors of the Urimo language group came

from Perliwari or Tunanumbi (west of the Urimo language), and then founded Urimoragwa, near the present village of Wamangu. All the other Urimo villages originated from this primal village.⁸

Kowiro seems to be somewhat central and prestigious in this language, sending and receiving wives from Kamaragga, Wamangu and Yari. Yari claimed that they did not send their women to any other village, which conflicted with Kowiro's statement that one wife came from there. A man from Yari also said that some men get their wives from other places - if they are important men. Nungawa said that they had sent one woman to Kowiro, and received one from there as well. Singsings seemed to be attended reciprocally between all the villages within the Urimo language as well as with the nearby Muniwara. None of the villages named any of the other Urimo villages as ancestral enemies, although they did mention Boiken villages and Angoram as past enemies. Kowiro mentioned Kamaragga, Wamangu and Yari as close villages, while Nungawa mentioned Yari as close but gave no walking time. The data collected would suggest that Kowiro is the prestige center of the language, having the councillor from that village, as well as marriage ties with many of the surrounding villages.

6.2.4. Buna

This language divides quite readily into two groups: north and south. None of the northern or southern villages listed the other as ancestral enemies, but there seems to be a lack of contact, also reflected in the two separate dialects previously mentioned. The only intermarriage between villages between the south and north appears to be Gavien with Ariapan and Kasiman, and then Masan with Waskurin. Otherwise, the north and south do not appear to intermarry.

In the north there are four villages: Kasiman, Waskurin, Boig and Ariapan. Most of the people from Kasiman have reportedly moved to the Kasiman resettlement which is a two hour walk from Angoram, leaving only a few old people in the original village. The original Kasiman village feels Kis village (Austronesian language) to be close and exchanges wives with the villages of Kaup (Austronesian language), Boig and Ariapan. Boig also sends wives to Kis, while Ariapan sends them to Waskurin and Gavien. We did not gather enough data from the northern group to be able to tell which is the most prestigious village.

In the south are seven villages: Gavien, Mansep, Masan, Bonam, Suk, Mangen and Mambel. Mansep and Masan both claim Gavien as their 'brother', although Masan did not claim any marriage ties to Gavien. Gavien sends wives to Mansep. The strong tie between them was also

confirmed by the presence of men from Mansep who were helping to build a house at Gavien the day we visited. Mansep sends wives to Bonam too, although both stated that their ancestors were enemies and we heard that there had recently been a fight between people of these villages. Mansep and Masan named each other's ancestors as enemies, although Masan sends wives to Mansep.⁷ Three of the southern villages, Mansep, Masan and Suk, intermarry with villages from other language families - the former with Murik Lakes, and the latter with Bien. Mambel, although living very close to Imbuando village, stated that they did not intermarry there.

So most of the southern villages seem to intermarry with each other, even with Masan, which everyone said spoke a bit differently. Mambel intermarries with everyone as well, being a long way by foot, but only one and one-half hours by motor canoe. The people from Mambel told us that they used to live about five hours from Mambel by trail. Then in 1949 they moved to the new site on the river. Because of their marriage ties with Mansep, Gavien, Masan and Mangen we would hypothesise that their old village site was about half way between Marienberg and Gavien, a place where we saw a few houses left from a deserted village. Therefore, the southern villages seem to function as a unit, while the northern villages are felt to be distinctly different. The southern dialect appears to be more prestigious.

6.2.5. Elepi

The people from Samap said that their place of origin is the village of Wau. They separated due to fighting among themselves. There is an exchange of wives between these two villages.

7. CONCLUSIONS

7.1. LANGUAGE FAMILY

The central language in the Marienberg language family appears to be the Kamasau language. Geographically it is the most central, being surrounded by the other languages. Linguistically it is central in that it has the highest average cognate percentage of the six languages in the family. After cursory study it also appears to have the most conservative form of the grammar. Sociolinguistically either Kamasau or Muniwara seem most central in that the most persons from other languages might be able to understand them.

Two factors do not support Kamasau as the most central language: demography and institutions. Buna and Muniwara both exceed Kamasau

in population. Kamasau does not have the institutions, and so would probably not have as much prestige from that source as some of the surrounding languages. However, these factors need to be considered against the total picture. Buna, with the greatest population is geographically isolated from the rest of the language family, and shows less close linguistic relationships. The population of Muniwara is only about 100 more than that of Kamasau, so that would not be as great an influencing factor.

The presence of institutions is an indication of development in an area. In determining the central language in a language group for a vernacular literature program there would be two choices on the basis of institutions:

1. Choose the most developed language group, as they are probably the most prestigious; or
2. Choose the least developed group, as they may be least qualified to work as national authors and literacy supervisors.

It is vital to centre a literature program in the prestigious dialect of a language so that it will be acceptable to the largest number of people. However, in a language family, where individual editions of vernacular literature will need to be produced in surrounding languages anyway, the education factor needs to be taken into account.

Languages which have individuals who are highly educated may be able to provide better educated authors. In this case it might be an advantage to choose the language which is least developed to begin the work, in the hope that it would be possible to work with national authors from the other languages. In the Marlenberg family, it appears that Kamasau may have the lowest rate of educated persons at present, as a result of less contact. Therefore, on this basis it seems that Kamasau would be the most likely language in which to begin such a work. This would concur with the linguistic and geographic centrality.

7.2. INDIVIDUAL LANGUAGES

In this section, although a central village will in some cases be chosen, the emphasis will be upon the central dialect. It would be important to have any vernacular literacy materials prepared in the most central dialect. The availability of persons who were willing and able to work as authors would probably be more important than which village a person was from.

7.2.1. Kamasau

The central dialect includes the villages of Tring, Wau and Kamasau. Wandomi and Yibab are less prestigious as shown by their lack of education, lack of intermarriage with the rest of the villages in the group, and smaller population.

The central village within the most prestigious dialect could be either Kamasau or Tring in terms of population and high prestige as demonstrated through intermarriage and linguistic similarity. However, Kamasau is a border village and it seems better to choose a village which is more geographically central. Therefore Tring appears to be the best choice. Also the council representative is from Tring, and this might increase its prestige.

7.2.2. Muniwara

Mambe seems to be the geographically central village in Muniwara, which has only one dialect. Not only is this the geographic centre but also the institutional centre. Yamben and Palpul have the largest population so it may be that one of these villages is the traditional centre of the language. This would need to be confirmed.

7.2.3. Urimo

The Urimo language seems to have one dialect. Kowiro is the centre, as it is centrally located on the road, has marriage ties with most of the villages in the language, and has the councillor for that area.

7.2.4. Buna

The language consists of northern and southern dialects divided by a geographical barrier of a three hour walk through sword grass. The southern dialect seems to be the most prestigious as it contains 65% of the population, is closer to the Marienberg mission with its prestige, and is nearer the river which offers a route of communication to the rest of the Sepik. The advent of the road from Angoram to Wewak could cause changes in prestige in the future.

The central village in the language appears to be Mansep, which is centrally located within the language, and is also a member of the more prestigious dialect. It is one of the largest villages, has a councillor, and the people intermarry with most of the other southern villages.

N O T E S

1. The survey was done by Phil Staalson, Arden and Joy Sanders, members of the Summer Institute of Linguistics, from January 26 to February 5, 1977.
2. Names used for these languages are those used by D.C. Laycock (1973:15-17).
3. There is danger in placing too much weight on lexicostatistical data, especially at the language family level (Sanders 1977). However, typological features are much more difficult to quantify, so lexicostatistical data are being included as well.
4. This village is located in a more swampy area than the rest of the villages, and the people have more interaction with the Murik Lakes people (Nor language family), so this might be part of the reason for their feeling of being different.
5. Laycock (1973) classifies the Bungain and Gapun languages as the Gapun Stock/Family, in the Gapun Sub-Phylum of the Sepik Ramu Phylum. We would hypothesise that it may actually belong in the Torricelli Phylum (as a separate family) on the basis of the subject marking by prefix, especially the third feminine w- prefix which is almost diagnostic of the Torricelli Phylum.
6. Population figures for this paper were acquired at the Wewak Provincial headquarters, November 1976 figures.

7. This might represent a typical pattern in Papua New Guinea where villages were enemies, intermarried to establish peace, but continued to fight.

8. This would support the theory that when the Ndu Family came north they split the Torricelli Phylum, as Tuanumbi is west of the Urimo language. The language family could then have been forced to move eastward.

APPENDIX A

Basic Wordlist

The majority of these items were elicited in each village. The items listed were taken mainly from the Standard S.I.L. Wordlist, with changes as indicated under Methodology (Section 1).

Nouns:

Body Parts:

head, lip, nose, eye, neck (throat), belly (outside), skin, knee, ear, tongue, tooth, breast, hand, foot, shoulder, elbow, thumb, bone, blood

Animals:

man, woman, bird, dog, boy, girl, baby +, feather, wing, pig, cassowary, wallaby, flying fox, rat, frog, fish, egg, meat, fat of meat, louse, crocodile, turtle

Other nouns:

road, stone, firewood, smoke, sago, sun, moon, star, cloud, rain, water, tree, leaf, grass skirt, sago thatch, lime, mosquito, father, mother, older brother (of a man), name, taro, yam, banana, betel nut, axe, knife, arrow, net bag, house, earth, mountain, ocean, beach, swamp, bark (tree), seed, morning, afternoon, night, garden, green coconut

Pronouns:

I, you, he, we two (excl), you two, they two, we (excl), you (pl), they

Numbers:

one, two, three, four, five, ten

Adjectives:

good, bad, long, short, heavy (stone), light (stone), cold (water),
hot (water), old (clothing), new (clothing), black, white, all,
wet (firewood), dry (firewood), full +, big, little (small), old
(man)

Adverbs:

yesterday, tomorrow, yes, no

Verbs:

a dog bites a man, he sits, he stands, he eats sago, he sees +,
he comes, he drinks water, he sleeps, he kills, he dies, fire burns,
a bird flies, he runs, he falls down, he hits a dog, he coughs, he
laughs, he is hungry

Note: + indicates words which should be either eliminated in future or made more specific.

Items 174 to 186 on the Standard S.I.L. Wordlist were gathered in one or two villages in each language. These items are phrases and sentences designed to give a sample of the grammar. They include time words, number (of men), objects, indirect objects, negatives, and adjectives.

APPENDIX B

Sample Sociological Questionnaire and Discussion of Questions

This sociological questionnaire was developed after a workshop on Language Variation and Survey Techniques directed by Gary Simons at Ukarumpa, Eastern Highlands Province in December 1976. At this time it was pointed out that sociological information can give many clues to attitudes towards neighbouring villages and languages, and probably intelligibility. A negative attitude towards a neighbouring village may mean that the people will express difficulty in understanding them, even if they speak a linguistically close dialect.

Although there were more questions on the questionnaire than listed here some of them were rarely asked, so will not be mentioned. Questions will be presented in sections, with discussion of each set of questions following. It was found that some questions were not important for this area, although they might be for another area.

I. **MARKETS:** *Where are the markets in this area? When are they held?*

These questions are designed to find out what contact the people have with surrounding villages, and especially language groups. Other good questions to ask would be, *With whom did your ancestors trade? What did they trade?* For this area trade did not seem to be very important.

II. **SINGSINGS:** *When you have a singsing who comes? Do you go to singsings in other places? With whom did your ancestors have singsings?*

We found it best to begin with the question of ancestors' singsings first, as some people were reluctant to admit that they still had singsings. Another alternative would be to use the term 'party', as they may be more common now in some areas than the traditional singsings.

III. ENEMIES: *Who were your ancestors's enemies?*

Here it is important to stress 'ancestors' so that the person does not feel defensive about their present attitudes toward their 'ancestors' enemies'. Men are more likely to give a response to this question than women.

IV. SCHOOL: *Where do your children go to school? How many go from this village? How many years do they go to school?*

These questions are designed to evaluate the educational level of the people. They are an indication of outside contact and initiative. If there are people with higher education these will be mentioned proudly by them.

V. GEOGRAPHIC: *What are the three closest villages? How long a walk is it to these?*

These were collected to compare distances according to the map with attitudes about distance. A friendly neighbouring village will be considered to be 'close' regardless of the distance. On the other hand, enemies will be a 'long' distance despite possible geographic proximity.

VI. MARRIAGE: (1) *Where were you born? Where was your spouse/mother/father born?* (2) *From where do the men here get their wives? How many have come from each of these places?* (3) *Where do the women in this village go as wives? How many have gone to each of these villages?*

The first two questions were intended as census type data, to find out from one or more persons specific information. Sometimes this shows up interesting relationships with other villages which are not mentioned in question sets two or three. These questions show up patterns of exchange of wives: what the direction of flow is, by an indication of relative numbers. For example, in the village of Tring, ten wives were said to come from Wau and none went there.

VII. SOCIOLINGUISTICS: *What is the name of your language? Who (which villages) speak this language? Who speaks a little differently? Are you able to understand and reply? What other languages are around here? Are you able to understand these? If so - are you able to reply?*

The focus here is to determine whom they consider speak exactly the same as themselves, and whom they consider speak somewhat differently. We found that when we asked in the first village of a language, we got a rather general response. But once we had asked questions in a couple of villages, we seemed to get more specific information. Generally we

found concurrence between villages as to who spoke exactly the same, who spoke somewhat differently, and who spoke very differently. The village of Mandi was the only one in which different people said that the village belonged to different languages. This may be because the village is a mixture of two languages living together.

If the people did not volunteer other languages that were around them, we suggested nearby villages which we thought might be a different language. We found it best to ask men questions about other languages, and especially if they can understand them, as they are more likely to have outside contact than woman. This can give an idea of the prestigious language, if there is a large amount of bilingualism in one direction. We found claim to mutual understanding in both directions by some villages where women from different languages had intermarried.

There are some questions which we did not ask regularly, but which could be helpful:

1. What villages are included in the local council? Where is the council located?

This gives an idea of the structure of the local government, and which villages may have more prestige by having the presence of the council.

2. Where did your ancestors come from? Where did the people in this village come from originally?

We found that there were places where people just told us where the village had come from, and this was helpful in checking hypotheses about historical migrations. The lexicostatistics usually confirmed their origin story, so we feel it would be valuable to include these queries more systematically.

3. Where are your gardens?

This question would confirm data collected in number two above, as a recent movement of a village to a new site could mean that their gardens are quite a distance. This is the case with Yaugiba who moved onto Kamasau land after World War II. Their gardens are still located near Namareb, their ancestral location.

APPENDIX C

Typological Features - Actor Pronouns and Verb Prefixes

	Actor Pronouns				Verb Prefixes		
	singular	dual	plural		singular	dual	plural
Buna	na no din un	na nu nun in	nam(bu) nu(m) nun in	1 2 3masc 3fem	k- kw- n- k/w-	b- kw- m- k-	b- kw- m- k-
Bungain	na nu ni wi	na(we) nu(wi) mi(ye)	na(yip) nu(yip) mi(yip)	1 2 3masc 3fem	k- y/kw- n- w-	b- w- m- s-	p- w- m- s-
Kamasau	ne nu ni ni		begi nu ni ni	1 2 3masc 3fem	k- y/kw- n- w-	p- w- m- r-	p- w- m- r-
Mandi	nak nok na(k) wo(k)	nau nu ma ko	nam nom mak kok	1 2 3masc 3fem	n- w-		
Muniwara	nak nok na (k)wo	na nu man kwo	nam nom mak kwo	1 2 3masc 3fem	ø ø n- w-	m- m- m- k-	p- p- m- k-
Elepi	na nu			1 2 3masc 3fem	n- ø n- w-	b- m- m- w-	b- m- m- w-
Urimo	yi nu ni ni		ibem nu ni ni	1 2 3masc 3fem	k- k- n- w-	p- w- m- r-	w- w- m- r-

BIBLIOGRAPHY

LAYCOCK, D.C.

1973 *Sepik Languages - Checklist and Preliminary Classification*.
PL, B-25.

1975 'The Torricelli Phylum'. In S.A. Wurm, ed. *New Guinea Area Languages and Language Study*, vol.1: *Papuan Languages and the New Guinea Linguistic Scene*, 767-80. PL, C-38.

SANDERS, Joy

1977 'On Defining the Center of a Linguistic Group'. *Workpapers in Papua New Guinea Languages* 21:263-94.

THE PHONOLOGICAL STATUS OF THE SEMIVOWEL IN KOBON

H.J. DAVIES

Symbols

Phonetic and phonemic transcriptions are in the International Phonetic Alphabet with the following exceptions:

- l̥ - retroflexed flapped lateral
- [tɕ], /c/ - voiceless alveopalatal affricate
- [dʒ], /j/ - voiced alveopalatal affricate
- h - pharyngeal fricative
- s - grooved fricative
- ʃ - alveolar flapped vibrant
- y - palatal semivowel
- ɱ - voiceless bilabial semivowel
- ɪ - lowered and retracted high close front unrounded vocoid
- ʊ - lowered and advanced high close back rounded vocoid
- ʌ - mid open central spread vocoid
- - voicelessness of consonants
- # - word boundary
- \$ - syllable boundary

Purposes:

1. To investigate whether the reanalysis of /ai/ and /au/ as /ay/ and /aw/ would enable further generalisations to be made in statements of distribution of segments.
2. To investigate whether /i/ and /u/ may be reanalysed as /y/ and /w/ as in Kalam - a language of the same family as Kobon.
3. To consider analyses of semivowels in related languages and possible implications for the analysis of Kobon semivowels.

In *Kobon Phonology* (Davies 1977, to be published shortly as *PL*, B-68, referred to as KP throughout the rest of this paper), I attempt a segmental analysis of Kobon, which is spoken in the Bismarck-Schrader Ranges on the border of the Madang and Western Highland Provinces of Papua New Guinea. The location can be seen in Maps 1-3, which are taken from KP. A full description of the nineteen consonant and seven vowel phonemes posited can be seen in KP 3.3. For the convenience of the reader some charts from KP showing phonemes and their allophones are reproduced here as Charts 1 and 2.

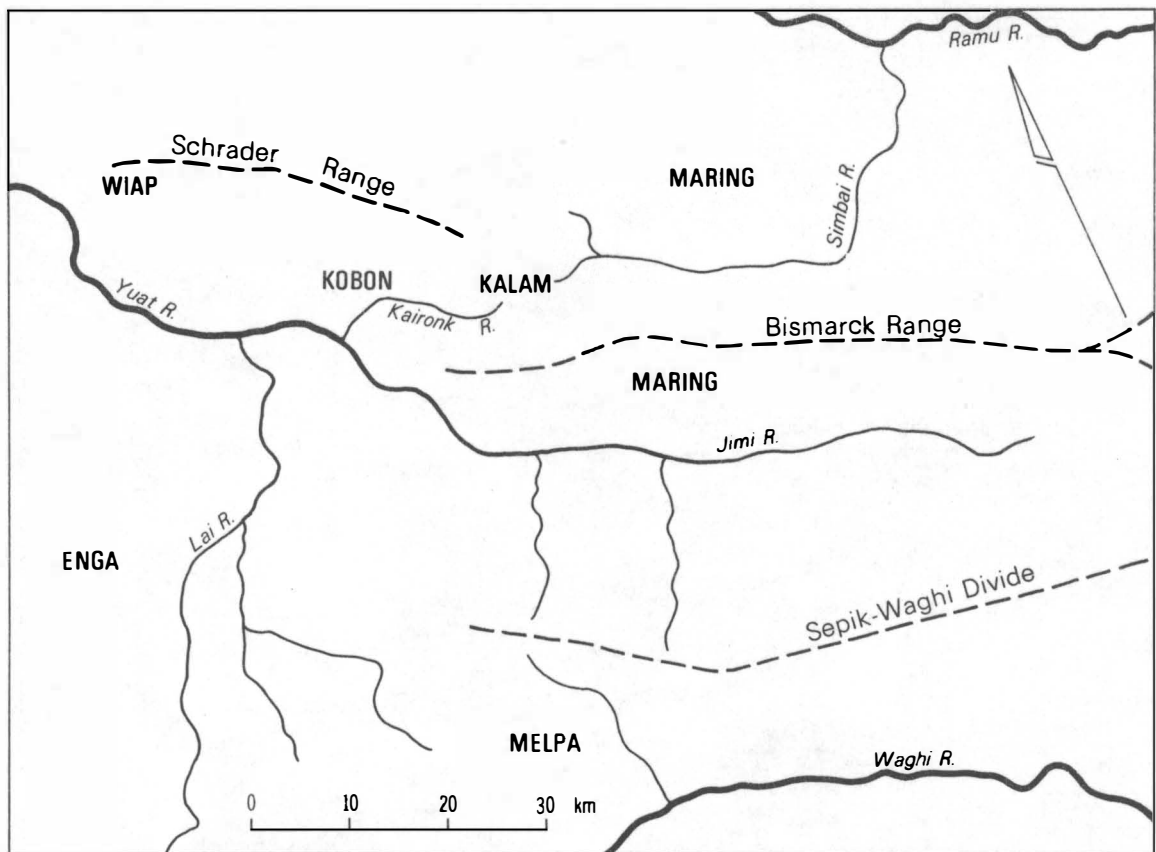
Chart 1
The Consonantal Phonemes

	Bilabial	Alveolar	Retro- flexed	Alveo- palatal	Velar	Pharyngeal
Fortis obstruents	f	s		c	x	h
Lenis obstruents	b	d		j	g	
Nasals	m	n		ɲ	ŋ	
Laterals		l	ɭ	ʎ		
Vibrant		r				
Semivowels	w			y		

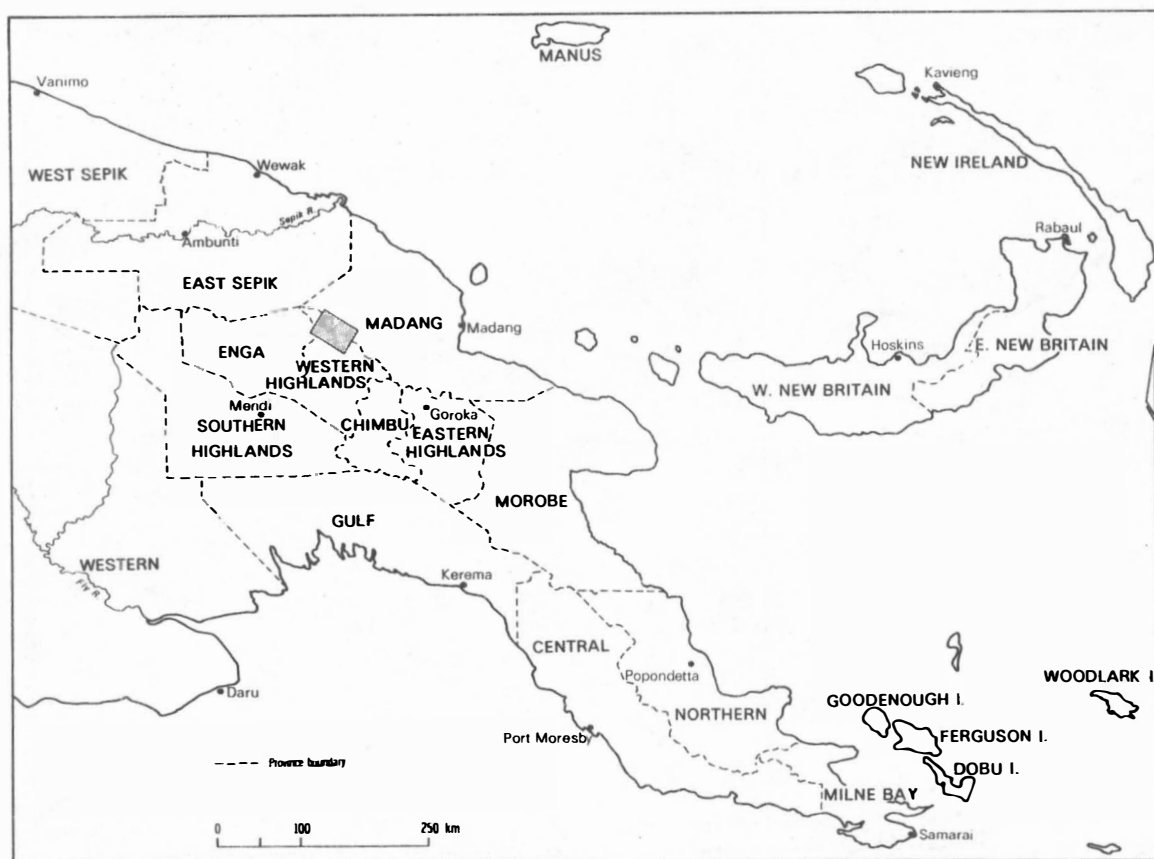
Chart 2
The Vocalic Phonemes

	Front	Central	Back
High	i	ɨ	u
Mid	e	ə	o
Low	a		

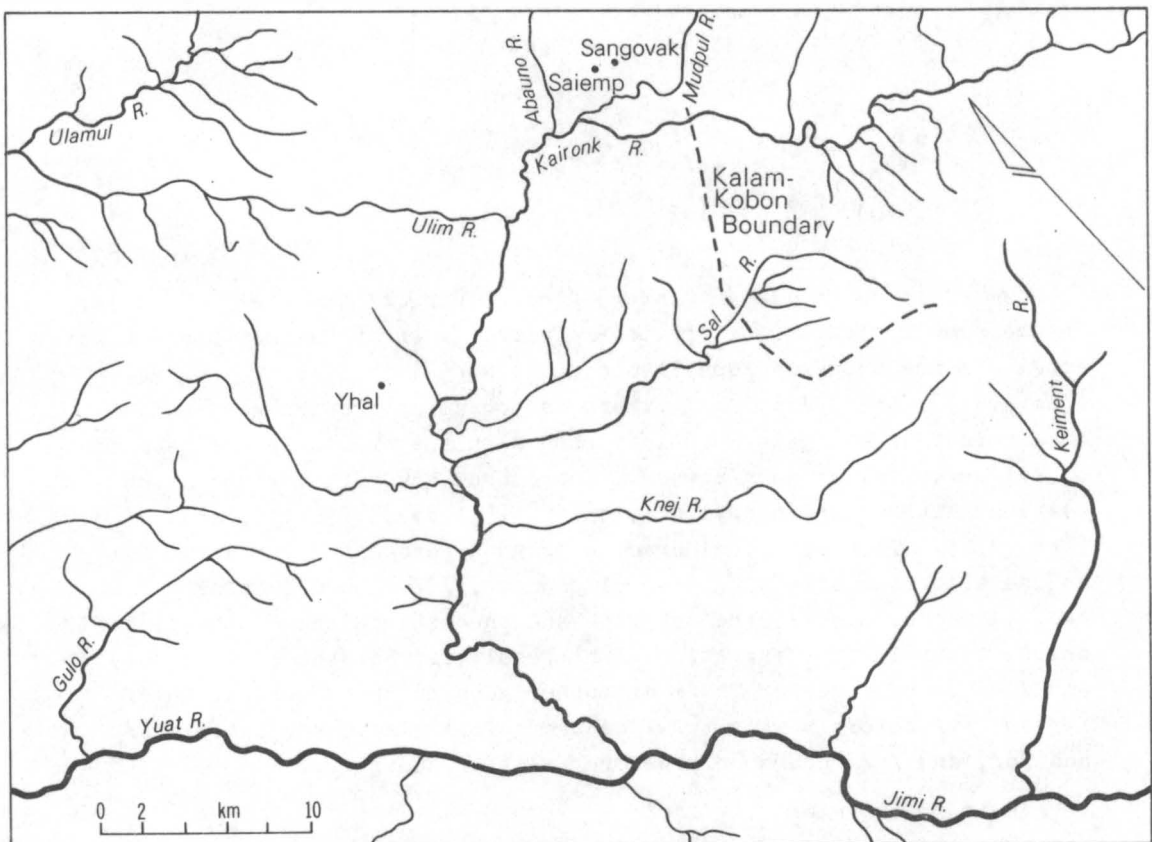
In KP 3.2.2., the status of items which may be either a consonant or a vowel is discussed. The premise applied is that "the dichotomy between vowel and consonant is not strictly an articulatory one, but is in part based on distributional characteristics" (Pike 1947:62). Greenberg (1962:73) supports the "terminological distinction first suggested by Pike between vowel and consonant defined by syllabic function, and vocoid and contoid defined by purely articulatory or acoustic criteria without reference to function in the syllable".



MAP 1: GEOGRAPHICAL LOCATION OF THE KOBON (BASED ON JACKSON 1975)



MAP 2: PAPUA NEW GUINEA (THE SHADED AREA IS THAT COVERED BY MAP 1)



MAP 3: THE KAIRONK VALLEY (BASED ON JACKSON 1975)

He illustrates the distinction: "Thus, in some languages, the vocoid *i* might be a vowel in some occurrences, [i], and a consonant in others, [y]." In KP syllabic high front and back vocoids [i] and [u] are interpreted as vowels as they occur as the nucleus of the syllable. Nonsyllabic high front and back semivowels [y] and [w] are interpreted as consonants as they occur as prenuclear syllable margins.

[i]	[i]	/i/	'here'
	[ɸint ^h]	/fid/	'banana'
	[ɸi]	/fi/	'offspring'
[y]	[yu]	/yu/	'you throw-imperative'
	['yambo]	/yabo/	'taro species'
	['k ^h ayaŋ]	/xayaŋ/	'again'
[u]	[u]	/u/	'there'
	[k ^h ump ^h]	/xub/	'big'
	[mu]	/mu/	'blue'
[w]	[wim]	/wim/	'a bow'
	[a'wan]	/awan/	'a wing'

However in cases like ['yɪdam] /ɪdam/ 'parrot' and ['wuɪim] /uɪim/ 'place name', clearly the premise referred to above has not been strictly applied since there is nonsyllabic onset word-initially. Likewise in ['ba.wunt^h] /baud/ 'tapioca', there is nonsyllabic onset word medially. An alternative analysis more in accord with the premise would seem to be /yɪdam/, /wuɪim/ and /bawud/. There are, however, variant pronunciations without the nonsyllabic onset - ['ɪdam], ['uɪim], and ['ba.unt^h]. This was considered to be good reason for analysing [yɪ] as one allophone of a single vowel phoneme, /i/. Word-initially the two allophones of /i/, the one with and the other without nonsyllabic onset, occur in free variation. The result is that the sequences /yi/ and /wu/ do not occur. There are other gaps in the distribution of /w/ and /y/ before vowels. /w/ occurs before all vowels except /u/ and /o/, and /y/ occurs only before /a/, /ɪ/ and /u/.

[wim]	/wim/	'bow'
[we]	/we/	'blind'
[wam]	/wam/	'bind-imperative'
[wʌŋk ^h]	/wæg/	'garden'
[wɪŋ]	/wɪŋ/	'hair'
[yam]	/yam/	'kin group'
[yɪk ^h]	/yɪk/ ¹	'at a little lower level'
[yump ^h]	/yub/	'place name'

/w/ and /y/ occur word-medially in a few cases, e.g.,

['naiwΛΛ]	/naiwəΛ/	'wife's sister'
['k ^h ayaŋ]	/kayaŋ/	'again'

but neither occurs syllable-finally.

In KP 3.2.3.1. vocoid clusters [ai] and [au] are interpreted as complex syllable nuclei (Pike 1947:62) since they each form the nucleus of a syllable of one mora timing, one pitch and stress occurs over the whole cluster, and neither vowel of the cluster is generally more dominant than the other.

/ai/	['naiwΛΛ]	/naiwəΛ/	'wife's sister'
	[Φai]	/faj/	'girl'
	[k ^h ain]	/kajn/	'dog'
/au/	['aubin]	/aubin/	'I have come'
	[gau]	/gau/	'there'
	[yaur]	/yaur/	'bird'

Wherever sequences of vocoids occur as the nucleus of two adjacent syllables, there are two pitches and stress falls on only one nucleus. Here and elsewhere in this paper . separates two vocalic segments (vowel or semivowel) where the second is syllabic.

/u.ə/	['!u.Λ!]	/!uə!/	'horizontal timbers'
/i.e/	['k ^h i.e lΛΦ]	/xie ləf/	'hungry'
/i.ə/	['wi.Λr]	/wiər/	'mango'
/i.a/	['gi.aŋ]	/gian/	'below'
/o.u/	['mo.u]	/mou/	'there'
/ai.a/	[wuhai.'ambin]	/uhaiabin/	'I laugh'
/ai.ə/	['ai.Λn]	/aiən/	'witch'
/au.a/	[lau.'ambin]	/lauabin/	'I cook'
/au.o/	['dau.o]	/dauo/	'bird species'
/au.u/	['dau.ump ^h]	/dauub/	'he brought'

In KP it is recognised that if the criterion of syllabic function is applied strictly, then [ai] and [au] should be analysed as /ay/ and /aw/ since the second vocoid in each case is in a nonsyllabic position. But this analysis is rejected in KP on the grounds that it would result in a new syllable pattern CVCC. The same reasons leads Luzbetak (1956) to analyse Wahgi² diphthongs [ei], [ai], [oi], [eu], [au] and [ou] as /ei/, /ai/, /oi/, /eu/, /au/ and /ou/. "It is true that /wai/ if written /way/ would parallel such words as /wal/ 'thing', but we also have

words like /kaɪm/ 'true, genuine', which would have to be written as /kaym/ with a CVCC pattern and therefore inadmissible". (Luzbetak 1956:39).

It is possible that in both Luzbetak's Wahgi analysis and in the analysis of Kobon in KP, too much emphasis is being attached to the necessity for the 'suspicious' data to conform to structural patterns established on the basis of clear nonsuspicious sequences. It may be that some of the 'suspicious' cases will be accounted for more convincingly by the existence of some regularity shared by and peculiar to these 'suspicious' cases, which are then seen to constitute a class. Its members do not conform to the general pattern but exhibit regularity vis-a-vis other members of the class. If this solution were adopted for Kobon a new syllable pattern, CVCC, would result in which the first consonant of the cluster must be /y/ or /w/, and the class of consonants which may occur as the second consonant of the cluster has a restricted membership. These would be a number of advantages in adopting this analysis for Kobon:-

1. The distribution of /w/ and /y/ would be more symmetrical. They would now occur syllable finally, as, e.g. in /naywəʔ/, /fay/, /awbiʔ/, and /gaw/. /w/ would occur before /u/ and /o/ as in

['auʊmp ^h]	/awub/	'he came'
['dau.o]	/dawo/	'bird species'

and /y/ would occur before /i/, /e/ and /ə/ as in

[wu'hai.im]	/uhayim/	'let us laugh'
['ai.e gamp ^h]	/aye gab/	'he is surprised'
['wai.ʌŋ]	/wayəŋ/	'cassowary'

The only restriction on the occurrence of /w/ and /y/ before vowels on this revised analysis would be that /y/ does not occur before /o/, which has a low frequency of occurrence anyway.³

2. The distribution of /u/ and /i/ would be more symmetrical. They would only occur as syllabics.
3. The number of vowel clusters would be greatly reduced. All clusters of three and four vowels would be eliminated and reanalysed as VCV(C) so that /aiu/, /aia/, /aiə/, /auɪ/, /aue/, /aua/, /auu/, /auə/, /eia/ and /auai/ become /ayu/, /aya/, /ayə/, /awi/, /awe/, /awa/, /awu/, /awə/, /eya/ and /away/. The only remaining clusters of vowels would be:

Word-medially	/ia/, /iə/, /ui/, /ua/, /uu/, /uə/
Word-finally	/ie/, /ia/, /ou/, /ua/, /uə/.

In each of these cases there are two syllables, each of the vowels carrying a different degree of stress and a different level of pitch. A word may not begin with a sequence of two vowels. As regards a comparison with related languages, E. Pike (1964:124) writes:

Of the eighteen languages of the East Highlands Stock (East New Guinea Highlands Stock - HJD) for which I have data, all have sequences of at least two diverse vowels. Four have sequences of three diverse vowels Awa, Usarufa, Agarabi (rare), Chauve (rare). Mikaru and Fasu also have sequences of three. Pavaia and Kunimaipa have sequences of four diverse vowels.

However the relationship of Mikaru, Fasu (Foi), and Pavaia (Pawaia) to the East New Guinea Highlands Stock is uncertain (E. Pike 1964:131, note 1, Wurm 1971:548) and Wurm places Kunimaipa in the Gollala Family of the South-East New Guinea Phylum (Wurm 1971:658). Thus the elimination of clusters of three and four vowels in Kobon would seem to be consistent with the typology of the languages of the East New Guinea Highlands Stock.

4. The reduction of possible vowel clusters would in turn reduce the possible consonant-vowel patterns for the syllable and word. In KP 3.4.1. the possible syllable patterns are V, CV, VC, CVC, CCV, CVV, VVC, CCVC, CVVC and VV. Of these CVV, VVC, CVVC, and VV would be eliminated. However a new pattern must be added - CVCC.

5. Some apparent exceptions to the distribution of allophones of lenis stops are explained. ['aubin] 'I came' analysed in KP as /aubin/ is now reanalysed as /awbin/. The absence of prenasalisation of the lenis bilabial stop is accounted for by its being the second consonantal element of a consonant cluster (KP:75). For /aubin/ the rules in KP would predict a nonoccurring ['aumbin].

Thus the reanalysis of [ai] and [au] as /ay/ and /aw/ leads to a more symmetrical distribution of /y/, /w/, /i/ and /u/ and to a simplification of the statement of distribution of vowels in clusters and of consonants and vowels in syllables and words. In short, it leads to greater generalisations on the distribution of segments. The cost is an extra syllable pattern and some complication in the statement of distribution of consonants in clusters. [k^hain] 'dry' and ['baunt^h] 'tapioca' which were analysed as /kain/ and /baud/ with the pattern /CVVC/ in KP, are reanalysed as /kayn/ and /bawd/ with the pattern /CVCC/.

I would now like to consider some analyses of languages to which Kobon is believed to be related. Kobon's closest linguistic relative

$$\begin{array}{l}
 [y] / \quad \$ ___ C \\
 \\
 [i] / \quad \left[\begin{array}{c} \# ___ \\ ___ \# \\ C ___ V \\ \#C ___ C\# \end{array} \right] \\
 \\
 [ɨ] / \quad \left[\begin{array}{c} C \\ + \text{ high} \\ - \text{ low} \\ - \text{ back} \end{array} \right] ___
 \end{array}$$

The vowel phoneme inventory of Kobon would then correspond to that of Kalam except for the central vowels. The question whether KP /i/ and /u/ should be reanalysed as /y/ and /w/ will be returned to below, since the analysis of schwa, which will be discussed now, is relevant to the argument. Biggs (1963:14) finds six phonetic vowel types in Kalam, two front unrounded, two back rounded, one low central rounded and one mid central rounded. He notes certain phonetic and distributional features which invite questioning of the phonemic status of schwa although it contrasts with the other five vowel types: it is always short, it is quite variable in quality, and it does not occur utterance initially or finally. Biggs finds that in minimal utterances of Kalam, schwa is completely predictable. It occurs between every two consonants that are not separated by one of the other vowel types or by a diphthong. If a consonant is the only phoneme in a minimal utterance, as /b/ 'man' and /m/ 'taro', schwa occurs after the consonant [mbé], [mé]. However there are in nonminimal utterances some

true phonetic consonant clusters... characterised by the articulatory organs shifting from one contoid position to another contoid position without allowing any escape of the airstream, either nasally or orally until the shift is completed. In most, possibly all, of the clusters a schwa can occur between the two members, in free, or stylistically determined variation with its absence.

But the converse does not hold. Every occurrence of schwa is not in alternation with its absence. In order that occurrences of schwa might be fully predictable, Biggs posits a junctural phoneme /+/- between the members of all phonetic consonant clusters (other than homorganic nasals plus stops which are regarded as unit phonemes). Schwa is regarded as the release of the preceding phoneme. Every consonant has an allophone

with vocoid release and one with zero release. Zero release occurs, e.g., where the consonant is followed by a vowel. On this interpretation words containing no vowels but up to eight consonants occur, e.g., /kgrp/ 'personal name', /mk/ 'liquid', /brd/ 'white man', /krb/ 'woman's skirt', /srk/ 'banana variety'. Five syllable shapes occur: C, CV (both phonetically CV), CC, CVC (both phonetically CVC), and VC. Biggs states that "Every vowel, every consonant between silence and/or juncture, and every consonant not followed by a vowel or juncture, is a syllable nucleus". Parts of the meaning of this do not come across too clearly but what is clear is that on his analysis a consonant phoneme may function as the nucleus of a syllable.

In Kobon there is a tendency for a very short vocoid to occur between two consonants, as is the case in Kalam. In KP consonant clusters only occur across syllable boundaries, with the exception of /fr/ and /k!/ which occur word initially. Under the revised analysis of [ai] and [au] as /ay/ and /aw/, clusters of two consonants of which the first must be /y/ or /w/ occur word finally. There is usually close transition between two consonants of a cluster occurring across syllable boundaries where the first consonant is /m n ŋ f s/ and the second /b d j g f s l/. If Biggs' junctural phoneme were adopted it would be inserted between all such 'true phonetic consonant clusters'. But this would not be sufficient to predict all schwa occurrences in Kobon. In Kobon not only does schwa contrast in minimal utterances with the other vowels (as in Kalam), but one schwa contrasts with another:

Set 1	[mʌŋ]	/mən/	'rain'
	[mɪŋ]	/mɪŋ/	'downstream'
Set 2	[bʌŋ]	/bən/	'one side of'
	[bɪŋ]	/bɪŋ/	'strongly'
Set 3	[bʌ]	/bə/	'clitic-with'
	[bɪ][bw]	/bɪ/	'man'
Set 4	[nʌɸ]	/nəf/	'you'
	[nɪɸ]	/nɪf/	'him'
Set 5	[ʔɪmʌn]	/rɪmən/	'waist-cane'
	[ʔɪmɪn]	/rɪmɪn/	'edible greens'
Set 6	[ʔɪramʌ]	/ramə/	'river junction'
	[mɪ]	/mɪ/	'taro'

/ə/ contrasts with Ø in e.g. [waŋ] /waŋ/ 'penis' and ['waŋʌ] /waŋə/ 'pool' and /i/ contrasts with Ø in e.g. [aŋ] /aŋ/ 'sister' and ['aŋi] /aŋi/ 'one'. Thus /i/ and /ə/ have phonemic status, and at least some occurrences of mid and close central vocoids are phonemic. The problem now arises as to which are phonemic and which are not. The rule which I posit for Kobon is that a central vocoid is not phonemic if it is following a morpheme which occurs elsewhere without a following central vocoid.

Thus there is not the proliferation of consonant clusters in Kobon that there is in Kalam. The only clusters which occur other than across syllable boundaries are /fr/ and /k!/ word initially and /y/ or /w/ followed by a sonant or lenis stop word finally. Words consisting only of consonants do not occur. This becomes a significant factor in considering whether /i/ and /u/ should be reanalysed as /y/ and /w/. Such an analysis would result in words consisting entirely of consonants and a proliferation of consonant clusters. I therefore prefer to posit /y/, /w/, /i/ and /u/ as in KP on the basis of syllabic function.

As stated above, Wurm (1971:548, 551) includes the languages of the Kalam Family in the East New Guinea Highlands Stock. There are phonological correspondences between languages of the Kalam Family and other languages of the Stock, e.g., like the Kalam Family most of the other languages have two series of stops, one series including phonemes in which each has at least one voiceless allophone, and the other being a voiced series which may have prenasalisation. There are also, however, significant differences. Syllable-tone and word-tone systems are very common in languages of the East New Guinea Highlands Stock, but do not occur in the Kalam Family. The Kalam Family differs from most languages of the East New Guinea Highlands Stock in having alveolopalatal articulation, which increases the inventory of stops to two sets of four. Concerning nasals, the majority of the languages of the East New Guinea Highlands Stock have only /m/ and /n/. The languages of the Kalam Family have /m/, /n/, /ɲ/ and /ŋ/.

If we turn our attention from the South-easterly to a North-westerly direction, it is very interesting to see that the languages of the Kalam Family share some remarkable correspondences with some languages belonging to the Ndu Family of the Middle Sepik Stock of the Middle Sepik Phylum (Laycock 1965, 1968). Wosera is a dialect of Abelam, one of the languages of the Ndu Family. The four lenis stops, four fortis stops and four nasal phonemes all correspond with those of Kobon. What is more, Wosera has a close parallel to the intriguing

feature of Kobon whereby a prenasalised lenis stop 'loses' its prenasalisation following a nasal or prenasalised consonant in the preceding syllable (Laycock 1965:33). Kobon and Wosera both have /r/, /ʌ/, /w/ and /y/. Wosera has /v/, which Kobon does not have, and Kobon has /l/, /ɬ/ and /h/, which Wosera does not have. Since Kobon also differs from Kalam by /h/ and two lateral phonemes, this is really an amazing correspondence.

Wosera has three vowel phonemes, /a/, /ʌ/ and /ə/. The following phoneme sequences occur:

Phonemic Sequence	Phonetic Value	In Environment
/ə/ + /w/	[u(w)]	in all occurrences
/ə/ + /y/	[ɪ(y)]	in all occurrences
/ʌw/	[ʌ ^u (w)]	in all occurrences
/ʌy/	[ɛ ⁱ (y)]	in all occurrences
/aw/	[æ ^u (w)]	in all occurrences
/ay/	[æ ⁱ (y)]	in all occurrences

(Laycock 1965:39)

It is possible that the noncentral vowels of Kobon are derived from sequences of central vowel and semivowel just as in Wosera, as illustrated in the examples above. The following combinations could be posited in Kobon:

Phonemic Sequence	Has Phonetic Value
/ɪ/ + /y/	[i]
/ɪ/ + /w/	[u]
/ə/ + /y/	[e]
/ə/ + /w/	[o]

This would result in the following reanalyses:

Phonetic Value	KP	Reanalysis	
[wim]	/wim/	/wɪym/	'bow'
[ɛi]	/fi/	/fɪy/	'offspring'
[k ^h ump ^h]	/kub/	/kɪwb/	'big'
[mu]	/mu/	/mɪw/	'blue'
[lel]	/lel/	/ləyl/	'quickly'
[we]	/we/	/wəy/	'blind'
[dauo]	/dauo/	/dawew/	'bird species'
[ɛo]	/fo/	/fəw/	'ripe'

Some independent evidence for such analyses might be:

1. In Kobon when /ɨ/ precedes /y/ across a morpheme boundary they combine to form [i], as in [bi.'ant^h] /bɨ yad/ 'my man'. When /ɨ/ precedes /w/ across a morpheme boundary they combine to form [u], as in mu.'ʌŋk^h] /mɨ wəg/ 'taro garden'.
2. Variant pronunciations ['amwʌl mə'hau] ['amoɪ mə'hau] 'man and wife's father'.
3. Kobon ['amɨ] /amɨ/ 'mother' is cognate with Kalam ['ami]. Manambu, another member of the Ndu Family with same phonemes as Wosera except for the absence of /ɨ/ and /ŋ/, has /amay/ 'mother' (Laycock 1965:151).

This statistical and independent evidence suggests that the front and back vowel phonemes may be derived diachronically from sequences of central vowel phoneme and semivowel. This raises the possibility that these derivations are part of the synchronic grammar, that [i], [u], [e] and [o] are derived from sequences of central vowel and semivowel at an abstract underlying level. Such an abstract analysis in the synchronic grammar is considered to be unwarranted on the basis of the evidence presently available and further evidence will be sought on this question.

Summary

1. Void clusters [ai] and [au] are reanalysed as /ay/ and /aw/ as this results in further generalisations in statements of the distribution of segments.
2. /ɨ/ and /ə/ contrast with other vowels and with their absence and are therefore unpredictable and phonemic.
3. /i/ and /u/ are not reanalysed as /y/ and /w/ as this would result in an unprecedented proliferation of consonant clusters and vowelless words.
4. Correspondences with Wosera, statistical evidence and some independent evidence points to the possible diachronic derivation of non-central vowels from sequences of central vowel and semivowel. Further evidence needs to be sought for or against the possibility that such a derivation is part of the synchronic grammar.

N O T E S

1. This was analysed in KP as /ik/. The reanalysis is based upon the parallelism with /l+k/ '*at a little higher level*', /d+k/ '*a little across*', /laŋ/ '*higher up*', /daŋ/ '*across*', and /yaŋ/ '*lower down*'.
2. Wahgi is one of the member languages of the Wahgi Subfamily of the Central Family of the East New Guinea Highlands Stock, posited by Wurm (1971:550).
3. According to the count made as part of a computer project at the University of Oklahoma, 0.975% of all phoneme occurrences across text were /o/, as compared with /a/ 16.021%, /i/ 3.178%, /e/ 1.734%, /u/ 4.431%, /ɨ/ 9.572% and /ə/ 5.271%.

BIBLIOGRAPHY

BIGGS, B.

- 1963 'A Non-phonemic Central Vowel in Karam, a "Pygmy" Language of the Schrader Mountains, Central New Guinea'. *Anthropological Linguistics* 514:13-17.

DAVIES, H.J.

- 1977 Kobon Phonology. M.A. thesis, University of Texas at Arlington. [To be published in *PL*, Series B-68.]

GREENBERG, J.H.

- 1962 'Is the Vowel-consonant Dichotomy Universal?'. *Word* 18:73-81.

JACKSON, G.

- 1975 The Kopon: Life and Death of the Fringes of the New Guinea Highlands. Ph.D. dissertation, University of Auckland.

LAYCOCK, D.C.

- 1965 *The Ndu Language Family (Sepik District, New Guinea)*. *PL*, C-1.
- 1968 'Languages of the Lumi Subdistrict (West Sepik District, New Guinea)'. *Oceanic Linguistics* 7/1:36-66.

LUZBETAK, L.J.

- 1956 *Middle Wahgi Phonology*. *Oceania Linguistic Monographs* 2.

PAWLEY, A.K.

- 1966 The Structure of Karam: A Grammar of a New Guinea Highlands Language. Ph.D. dissertation, University of Auckland.

PIKE, E.V.

- 1964 'The Phonology of New Guinea Highlands Languages'. *American Anthropologist* 66/4 (special publication)

PIKE, K.L.

- 1947 *Phonemics: A Technique for Reducing Languages to Writing*. Ann Arbor: University of Michigan Press.

SCHOLTZ, L.

- 1973 Kalam Phonemics. MS. Papua New Guinea: S.I.L.

WURM, S.A.

- 1971 'The Papuan Linguistic Situation'. In T.A. Sebeok, ed. *Current Trends in Linguistics*, vol.8:541-657.