

THE STRUCTURE OF KARAM:

a grammar of a New Guinea Highlands language

by

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CONTENTS

1. Introduction.	1
1.1 Location	1
1.2 External relationships of Karam	1
1.3 Dialects	5
1.4 Karam ecology and social organization	6
1.5 Details of research	9
1.6 Acknowledgements	11
2. Summary.	14
2.1 Phonology	14
2.2 Grammar	15
3. Phonology.	21
3.1 Inventory of phonemes	21
3.2 Distribution of segmental phonemes	21
3.3.1 Allophones of consonants	25
3.3.2 Oral obstruents /p, t, s, c, k/	25
3.3.3 Prenasalized obstruents /b, d, j, g/	27
3.3.4 Nasals /m, n, ñ, ñ/	28
3.3.5 Oral resonants /l, w, y/	29
3.4 Allophones of vowels	31
3.5 Non-phonemic vocoids	33

3.6	Juncture and intonation	37
3.7	Stress and phonological words	42
3.8.1	Discussion	43
3.8.2	Homorganic nasal plus obstruent clusters	43
3.8.3	/+/ juncture and non-phonemic (consonant release) vowels	46
3.8.4	/w/ and /y/	48
4.	Classification of morphemes and expanded bases.	53
4.1	Morpheme classification	53
4.1.1	Bases and minor morphemes	53
4.1.2	Minor morpheme classification	54
4.1.2.1	Segmental and non-segmental minor morphemes	54
4.1.2.2	Segmental minor morphemes	54
4.1.2.2	Non-segmental minor morphemes	59
4.2	Classification of base morphemes	62
4.2.1	Verb and nominal bases	62
4.2.2	Verb (V) class base morphemes	63
4.2.3	Nominal (N) class base morphemes	73
4.3	Expanded bases	84
4.3.1	The internal structure of expanded bases	84
4.3.2	Expanded base classes	85

5. Phrases	92
6. Verb phrases	96
6.1 Constituents of the verb phrase	96
6.2 The verb phrase nucleus	96
6.3 The inflectional constituent	100
6.3.1 Classification of inflectional suffixes	100
6.3.2 Classification of inflectional constituents and verb phrases	104
6.3.3 Type 1 inflectional constituents	104
6.3.4 Type 2 inflectional constituents	105
6.3.5 Type 3 inflectional constituents	106
6.3.6 Subclassification of VP1, VP2 and VP3 phrases	107
7. Nominal phrases	110
7.1 Constituents of the nominal phrase	110
7.2 The internal structure and classification of nominal phrase nuclei	110
7.3 The internal structure and classification of nominal phrase peripheries	111
7.4 Classification of nominal phrases	112

8. Phrase groups.	123
8.1 Phrase group classification	123
8.2.1 NG1 phrase groups	124
8.2.2 NG2 phrase groups	124
8.2.3 NG3 phrase groups	126
8.2.4 NG4 phrase groups	127
8.2.5 NG5 phrase groups	128
8.2.6 NG6 phrase groups	128
8.2.7 NG7 phrase groups	129
8.2.8 NG8 phrase groups	129
8.2.9 VP phrase groups	129
8.2.10 Unclassified nominal phrase groups	129
9. Clauses.	130
9.1 Classification of clauses	130
9.2 The internal structure of simple verbal clauses	131
9.3 Verbal clauses consisting of a verb phrase plus one nominal phrase group	137
9.4 Verbal clauses containing two nominal phrase groups	142
9.5 Verbal clauses containing three or more nominal phrase groups	147
10. Arrangements of verbal clauses in sentences.	151
10.1 Classification of simple verbal clauses	151

10.2 Sentences consisting of one or more verbal clauses	152
10.2.1 Sentences	152
10.2.2 Two-clause sequences	154
10.2.2.1 C2 + C1	154
10.2.2.2 C3 + C1	156
10.2.2.3 C1 + C1	160
10.2.3 Sequences of three or more clauses	161
10.2.3.1 Two or more C2 class clauses preceding a C1 class clause	161
10.2.3.2 Two or more C3 class clauses preceding a C1 class clause	164
10.2.3.3 Sequences of C2 and C3 clauses preceding C1	165
Appendix A. On the typological comparison of Karam and East New Guinea Highland Stock languages	167
Appendix B. Verb phrase paradigms	179
Appendix C. N6, N7 and N14 bases in sequence with verb stems	196
Bibliography	211

1. Introduction.

1.1 Location.

Karam is spoken in the Bismarck-Schrader Ranges on the northern border of the Western Highlands District of Australian New Guinea. Karam speakers, numbering some 10,000 to 14,000, occupy several valleys both on the Ramu and the Jimi falls of these ranges. On the Ramu fall they occupy the Aiome-Ramu slopes, the Asai Valley, and the Upper Simbai Valley as far east as Songuvak on the northern side and Tembiamp on the southern side. On the Jimi fall they occupy the Aunjang and Kaiment Valleys, and the Upper Kaironk Valley as far west as Aynong Resthouse.

1.2 External relationships of Karam.

Wurm states that Karam is related to but is not a member of his East New Guinea Highlands Stock, a stock to which he assigns 50 of the 60-odd languages spoken in the three Highlands districts of Australian New Guinea. On the basis of lexicostatistical and typological evidence (see Appendix A) Wurm claims that Karam, together with the East New Guinea Highlands Stock and several other languages spoken in Australian Highlands form a micro-phylum which he calls the East New Guinea Highlands

Micro-phylum.¹

Wurm tentatively posits a still more distant relationship between the members of this micro-phylum and certain other New Guinea languages spoken outside of the Australian Highlands districts, including the Ndani languages of the Baliem Valley in West Irian, the Binandere (or Orakaiva) and the Huon Peninsula (or Kâte) families of the north east coast, and possibly the Ndu family of the Sepik area. This wider group, which if proven will be by far the largest non-Austronesian linguistic group in New Guinea, he calls the Central and North-East New Guinea Phylum.²

Karam's closest linguistic relatives are probably two languages spoken adjacent to Karam territory in the Bismarck-Schrader Ranges. These languages, Gaj (or Gants) and Kobon, are

1. Wurm 1961, 1962, 1964, 1965.

2. Wurm 1964: 80 ff., 90-91, 96, n.d.:9.

It is possible that at least some minor modifications will have to be made in Wurm's pioneering classification of East New Guinea Highlands languages - a classification based largely on lexicostatistical data - when the comparative method is applied in detail to these languages. Within the East New Guinea Highlands Stock Wurm distinguishes 5 families and notes that "languages belonging to

known only from limited unpublished materials.³

Gaj is spoken on the north side of the Simbai Valley below Songuvak. Kobon is spoken in the Kaironk Valley below Aynong Resthouse and Blm ford, in the Upper Sal and the Knej Valleys, and in the Sangapi Valley east of the Arami River.

different families of the Stock largely show an agreement in basic vocabulary of between 15% and 25%" (Wurm 1964:78). Karam, in his results, shares an average of 12% of basic vocabulary with members of the Stock (the highest figure being 19% with a dialect of Maring, a neighbouring language) and thus falls narrowly outside of the lower range of agreement between members of the Stock.

Wurm considers that this later typological comparison in general supports his earlier lexico-statistically-based classification of East New Guinea Highland languages (1964:95-97), and in particular his placement of Karam outside of the Stock (1964:88-89). But Wurm's typological characterization of Karam, based on necessarily brief field research, contains several inaccuracies; it now appears that at least on typological grounds Karam has strong claims for inclusion in the Stock. (See Appendix A).

3. In the case of Gaj (called [gá^ynt^y], phonemically

Kobon and Karam are mutually unintelligible and probably share less than 50 percent of basic vocabulary, but are structurally very similar. The Karam of the Upper Kaironk call all the Kobon dialects spoken in the Lower Kaironk, Sal and Knej Valleys by the name *won hagal* (meaning in Kobon 'they speak won'), but they recognize that there are several dialects of Kobon, of which the Sangapi dialect is probably the most divergent. Many of the Karam living in the Upper Kaironk Valley, adjacent to Kobon territory, are competent but not native speakers of Kobon. On the other hand, I met and worked with several Kobon men who had native fluency in both Kobon and Karam.

/gaj/, by the Karam), the material is extremely limited. B.G. Biggs, while accompanying a government patrol of the north wall of the Jimi Valley in 1959, obtained a basic vocabulary from a Gaj speaker; in this Gaj exhibits a number of obvious similarities to Karam, but rather fewer than does Kobon.

Kobon is spoken less than an hour's walk below the Kaironk resthouse, where Biggs camped in 1960 and 1963-64, and where I camped in 1963-64 and 1965, and we were able to obtain a considerable amount of lexical and grammatical material in the Kobon dialects spoken in the Sal, Lower Kaironk and Sangapi Valleys.

1.3 Dialects.

There are two main dialects of Karam, called by the Karam of the Upper Kaironk Valley *ty mnm* and *etp mnm*.⁴ *Etp mnm* is spoken in the Lower Simbai and the Kaiment valleys, and by the Pdwm, Alpan, Pgoy and Kaytog territorial groups of the Upper Kaironk. *Ty mnm* is spoken in the Upper Kaironk below Pgoy by the Womk and Gobnem territorial groups, in the Asai valley, and by some of the Karam living in the Aunjang valley. (The Aunjang settlement represents a recent movement of Karam migrants mainly from Gobnem and Womk in the Upper Kaironk, and from Asai Valley groups).⁵

Ty mnm and *etp mnm* are mutually intelligible, but exhibit a number of non-cognates in lexicon and in forms marking certain structural categories which are semantically and distributionally equivalent.

4. The Karam terms *ty* and *etp* are respective words for 'what?' in these two dialects (*mnm* meaning 'speech' or 'language'). These same dialects are sometimes referred to as *ty apal* 'they speak *ty*' and *etp apa^y* 'they speak *etp*'. *Bok* in *bok mnm* (see below in 1.3) is the demonstrative in this dialect which corresponds to *ok* 'this, that' in other Karam dialects.

5. I owe this information to R.N.H. Bulmer.

The present grammar is a description of the *etp mnm* dialect spoken by members of the Kaytog territorial group of the Upper Kaironk Valley (see 1.5).

The Karam of the Upper Kaironk recognize further regional differences in dialect, which are, however, much slighter than those distinguishing *ty mnm* and *etp mnm*. The dialect of Kubtp and the Kaiment valley is called by them *bok mnm* or *kambok mnm*, but is recognized to be a sub-dialect of *etp mnm*. The variant of *ty mnm* spoken in the Asai is called *gay mnm* by some of the Upper Kaironk Karam.

It seems likely that the Upper Kaironk was once peopled by Kobon speakers, and that within the last few generations first *ty mnm* speakers from the Asai and later *etp mnm* speakers from Lower Simbai displaced the Kobons in the Upper Kaironk.⁶

1.4. Karam ecology and social organization.

Prior to the establishment of a patrol post at Simbai in May 1959 the Karam-speaking population was in no sense a social or political unit, but members possessed a fairly homogeneous culture and contrasted with most adjacent linguistic

6. This is the opinion of R.N.H. Bulmer, based on his inquiries into the folk history and prehistory of the area.

groups in the Bismarck-Schrader Ranges in their generally short stature. An average height of 5'1" was obtained in 1960 from a sample of Kaironk men⁷; other authors have noted that Karam of the Lower Asai valley fall into the pygmy range, with males averaging less than 4' 10½".⁸

In technology and economy the pre-contact Karam closely resembled other New Guinea Highlands groups. Gardening, mainly in a zone between 5,000 and 6,500 feet, was and remains the basis of Karam economy, although hunting and gathering were more important than any other Highland economies. On first contact with Europeans the Karam had already obtained steel tools and a few crops of European origin including *Xanthosoma taro*. Their staple subsistence crop, however, was the sweet potato, estimated to comprise some 80% of the bulk of food consumed. This was supplemented in the Upper Kaironk valley by taro, yams, *Pueraria*,

7 B.G. Biggs (personal communication) obtained this figure in measuring 100 adult males of the Upper Kaironk in 1960.

8 Gusinde, 1958:504

sugar cane, bananas, edible pitpits (*Saccharum edule* and *Setaria palmaefolia*), beans, gourds, cultivated greens, and, since European contact, by pumpkin and corn. Pigs are kept, and together with taro are the most important items in the ceremonial economy.

Karam live in dispersed homesteads, each homestead housing a family or extended family of some 5 to 30 people. Several related households, occupying adjacent areas, together form a named territorial group (cf. discussion of dialect areas in 1.3). Discussing the social organization of the Karam, Bulmer states that these "named localized kin-groups or 'ramages', though possessing a genealogical structure and related to each other, like lineages, in terms of common descent, are non-unilineal, non-exogamous and non-exclusive to the extent that individuals can claim land rights and residential membership in two or more groups. There is, however, an expectation that post-marital residence will be virilocal, and there is a strong tendency for men to associate themselves primarily with the groups with which their fathers were primarily associated Marriages between distant cousins are favoured as a means of renewing and retaining links with other localized kin-groups and rights to continue utilizing land",⁹

9. Bulmer, n.d.:5.

The precontact system of land use "normally involved the circulation of families or extended families between three or four residential localities, often in contrasting ecological situations and sometimes on territories associated with different ranges The shift from one locality to another normally took place with the building of ceremonial houses and preparation of special gardens in anticipation of an extended family's sponsorship of a *smy* festival. At these festivals *rites de passage* are performed for youths and girls, pigs are ritually killed and cooked, gifts of pork, vegetables, shell ornaments and other valuables are made to affines, and a public, all-night dance is held."¹⁰

1.5. Details of research.

The present study is part of a wider program of field research in the linguistics and ethnography of the Karam and Kobon peoples of the Bismarcks and Schraders begun late in 1959 by a linguist, Dr. B.G. Biggs, and a social anthropologist, Dr. R.N.H. Bulmer, of Auckland University.

Bulmer has spent some 12 months in the field with the Karam, during the course of 4 field trips between 1959 and 1966. Biggs spent 4 months in the Bismarcks and Schraders in 1959-60, and a further 2 months in 1963-64 during which he made both a linguistic

10. Bulmer, n.d.:5.

survey of the area, in particular of the Kaironk, Simbai, Sangapi and Asai Valleys, and along the north wall of the Jimi River, and a preliminary analysis of the *etp mnm* dialect of Karam spoken in the Upper Kaironk Valley. Following his first field trip Biggs published a paper on Karam phonology dealing in particular with non-phonemic vowels in Karam.¹¹

A first dictionary of Karam, by Biggs, Bulmer and myself is now in its second draft.

My fieldwork amongst the Karam was carried out in two spells, the first from August 1963 to January 1964, and the second from January to May 1965, a total of 9 months. I resided during most of this period with the Kaytog territorial group of the Upper Kaironk Valley, but spent short periods with the nearby Gobnem group, and in the Upper Sal Valley.

Among Karam informants I am chiefly indebted to two very alert young men, Kiyas of Kaytog and Gi of Skow (a division of the Gobnem territorial group) for patient and skilful assistance. Kiyas speaks *etp mnm*; Gi's native dialect is *ty mnm* but he is unusual in being equally proficient in both *ty mnm* and *etp mnm*. These two young men spent 6 months in Auckland from May to November 1965, permitting valuable additions to be made to information obtained in the field, and in particular in allowing Biggs, Bulmer and

11. Biggs, 1963.

myself to check completely, revise and enlarge the first draft of the dictionary of Karam.

During the early stages of fieldwork my inquiries were conducted mainly in New Guinea Pidgin (Neo-Melanesian), the lingua franca of the North Coast and the Highlands of Australian New Guinea. Ability to speak Pidgin amongst the Karam of the Upper Kaironk, however, was at this time (1963) restricted to a minority of the children and to a very few young men, and later, as my competence in Karam increased, an increasing proportion of data was obtained by listening to and taking part in Karam conversation. Some 30 - 40 hours of material in Karam were taped, chiefly myths, narratives, short elicited texts and verb paradigms.

During March 1965 I spent 4 days in the Upper Valley of the Sal River, a tributary of the Lower Kaironk, making preliminary inquiries into the dialect of Kobon spoken there. A more detailed study of Sal Kobon was begun in April 1965, when a young man, [antma^w], from the Upper Sal, spent 3 weeks at my camp in the Kaironk Valley.

1.6. Acknowledgements.

I owe a very great debt to my teacher, Dr. Bruce Biggs, who gave me his 1959-60 field notes and recordings of

Karam and other assistance facilitating my initial fieldwork in 1963, and who has always given freely of his time and knowledge in providing advice, and criticism tempered with encouragement.

From August 1963 to January 1964 I was in the field with Dr. Ralph Bulmer, whose camp in Gobnem territory was about 40 minutes walk away (and across the dialect boundary noted in 1.3) from my camp in Kaytog territory. Dr. Bulmer's research was primarily sociological but I am indebted to him for much help in the field, both in practical matters of living and working in field conditions, and for the insights he supplied into the Karam language, particularly in the analysis and interpretation of text and lexical materials.

I was fortunate also in having the co-operation of Mr. and Mrs. Lyle Scholz, linguists of the Summer Institute of Linguistics, stationed at Gapn in the Upper Simbai Valley, and benefited from the exchange of materials and from many discussions with them. For hospitality and help in the field I am grateful to the Rev. and Mrs. Peter Robin and other members of the Anglican Mission at Simbai, and to Messrs. Gavin Carter and Tony Noblett, Patrol Officers at Simbai.

I wish to thank Gi and Kiyas for their co-operation in our project, and those friends who extended hospitality to them

during their stay in Auckland.

To my wife I am grateful for her patient help throughout the preparation of this thesis and for typing the manuscript.

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2. Summary.

The following is a summary of the main features of the description presented in chapters 3-10.

2.1 Phonology.

The phonemic inventory of Karam consists of 19 segmental and 6 supra-segmental phonemes.

The segmental phonemes are divided on the basis of distributional differences into *consonants* and *vowels*. There are 16 consonants and 3 vowels. Consonants occur initially, medially and finally in minimal utterances; vowels occur initially and medially but not finally. No vowel clusters occur, but many minimal utterances consist of consonants alone.

Consonants contrast in manner of articulation as *oral obstruent*, *prenasalized obstruent*, *nasal*, *lateral* and *semi-vowel*. Oral obstruent, prenasalized obstruent and nasal series contrast in point of articulation as *bilabial*, *dental-alveolar*, *palatal*, and *velar*. Obstruent consonants have both voiced and voiceless allophones, and in some cases both stopped and fricative allophones. Vowels contrast with each other as *front* (palatal), *mid* (neutral) and *back* (velar), and contrast with the semivowel consonants /w/ and /y/ in their lower tongue height.

A non-phonemic vocoid occurs *between every two adjacent consonants* in minimal utterances. This vowel is regarded as the release of the preceding consonant.

The supra-segmental phonemes consist of *contour stress* /v/, four *contour terminal junctures* / . , ? !/ and *contour medial juncture* /+/. /+/. occurs only at morpheme boundary and its occurrence allows (a) prediction of consonant release vocoids (b) prediction of consonant and vowel allophones (c) treatment of homorganic nasal plus obstruent sequences within minimal utterances as unit phonemes (d) prediction of stress (e) treatment of the contrast between short and long consonants as a contrast between single phonemes and geminate clusters (f) explanation of an otherwise unique contrast between voiced and voiceless (oral obstruent) phones as a contrast following /+/. between an oral obstruent allophone and an allophone of a phoneme which is elsewhere realized as a pre-nasalized obstruent.

2.2 Grammar.

Morphemes are divided exhaustively into *bases* and *minor morphemes*.

Bases, which carry lexical meaning, number several thousands. They are divided into two major classes, *verb* and *nominal* bases, and into a number of subclasses, on the basis of their combi-

natorial possibilities within phrases and/or within certain longer stretches. Most bases belong the nominal class; many of the 22 nominal base subclasses are open. Verb bases, on the other hand, constitute a small closed class; most of the 100 members recorded to date are highly recurrent and their function borders on the lexical and the grammatical.

Minor morphemes, which divide into *segmental* and *non-segmental minor morphemes*, are few, carry grammatical meaning, and are highly recurrent. Segmental minor morphemes, which consist of segmental phonemes only, fall into two major classes: *nuclear* and *peripheral* minor morphemes.

Peripheral minor morphemes distribute around (i.e. follow) the nucleus of a phrase, and are subclassified as *verbal* or *nominal*. Verbal minor morphemes (which mark categories such as tense, aspect, mood, and subject person-and-number) are compatible in the phrase with verb bases but not with nominal bases. Nominal minor morphemes, on the other hand, are compatible in the phrase with nominal bases but not with verb bases.

Nuclear minor morphemes distribute around (i.e. occur prefixed or suffixed to) individual bases in the nucleus of a phrase. A sequence consisting of a base morpheme plus a nuclear minor morpheme is classified as an *expanded* base, since it has the same com-

binatorial possibilities as a base morpheme of the same class except that of further expansion.

All segmental minor morphemes are divided, finally, into position classes and substitution classes according to their distribution in the phrase.

Non-segmental minor morphemes, which are not treated exhaustively here, consist of certain associations of supra-segmental phonemes with morphemes or morpheme sequences.

Within short stretches called *phrases* a number of fixed distributional relations hold between bases and minor morphemes which permit their classification into position and substitution classes. Many morphemes and morpheme classes are incompatible within phrases, and those which are compatible occur in fixed relative order, and in many cases exhibit relations of dependent occurrence. Few base or minor morpheme classes can recur within a phrase.

Phrases consist of a nucleus position filled by one or more bases, and a *postposed peripheral* position filled by peripheral minor morphemes. The composition of the phrase is described by stating first, the combinatorial possibilities of bases within the nucleus and those of peripheral minor morphemes within the postposed periphery, and second, the combinatorial possibilities of nuclei

withⁱⁿ peripheries.

Phrases fall into two classes, *verb* and *nominal* phrases. Verb phrases contain only verb bases in the nucleus and only verbal minor morphemes in the periphery. Nominal phrases contain only nominal bases in the nucleus and only nominal minor morphemes in the periphery. In verb phrases both the nuclear and peripheral constituents are obligatory. In nominal phrases only the nuclear constituent is obligatory.

Verb phrases are divided into three major classes and some 18 subclasses according to the composition of their peripheral constituent and their distribution. Nominal phrases fall into eight classes according to the composition of their nucleus and their distribution.

Phrases distribute with *phrase groups*. A phrase group consists of a single phrase or of a sequence of phrases which will substitute in the clause for a single phrase of a given class. Phrase groups fall into the same two classes (*nominal* and *verbal*) and the same subclasses as phrases.

Phrase groups distribute within *clauses*. Clauses are classified in the first place as *nominal* and *verbal*. Nominal clauses consist of a single nominal phrase group, and have no combinatorial possibilities in sentences. Verbal clauses contain at

least one verb phrase group, and may contain nominal phrase groups.

Verbal clauses are either *simple* or *complex*.

Complex verbal clauses consist of a discontinuous simple verbal clause in sequence with one or more included simple verbal clauses.

Simple verbal clauses consist of a verb phrase group optionally flanked by certain arrangements of nominal phrase groups.

Within simple verbal clauses certain rules of agreement in the form of selectional restrictions hold between constituents of the verb phrase group and constituents of certain nominal phrase groups. These rules of agreement correlate with the semantic relations subject-predicate, object-predicate, time-predicate, etc.

Simple verb clauses fall into three major classes, C1, C2 and C3, according to the class of the verb phrase group they contain. C1 clauses can occur alone as minimal verbal sentence. C2 and C3 clauses always occur in sentences in sequence with a C1 clause.

Any stretch between pre-utterance silence or terminal juncture / . ! ? / and / . ! ? / is a *sentence*. Any sentence containing a verbal clause is a *verbal sentence*, any sentence containing a nominal clause is a *nominal sentence*. Nominal sentences in all cases consist of a single nominal clause. Verbal sentences

can consist of one or more C1 clauses, of one or more C2 or one or more C3 clauses preceding a final C1 clause, or of certain combinations of C2 and C3 class clauses preceding a C1 clause.

3. Phonology.

3.1. Inventory of phonemes.

The segmental phonemes of Karam, consisting of 16 consonants and 3 vowels, are listed in Table I.

The supra-segmental phonemes, consisting of 5 junctures and contour stress, are detailed in 3.6 and 3.7.

Table I.

consonants

	bilabial	dental-alveolar	palatal	velar
oral obstruents	p	t s	c	k
prenasalised obstruents	b	d	j	g
nasals	m	n	ɲ	ŋ
laterals			l	
semivowels			y	w

vowels

	front	central	back
mid	e		o
low		a	

3.2. Distribution of segmental phonemes.

Segmental phonemes are divided on the basis of their distribution into two classes, consonants and vowels (listed in 3.1).

Consonants occur initially, medially and finally in minimal utterances and phonological words (see 3.7), vowels occur initially and medially only, 'Initial' refers to position following juncture or silence, 'medial' refers to position between segmental phonemes, and 'final' to position preceding juncture (see 3.6 for description of juncture).

Consonant clusters occur, but not vowel clusters.

Consonant clusters are in fact very frequent, and many minimal utterances occur which contain no vowels but up to 8 consonants.

Minimal utterances of the following shapes have been recorded:

C, CC, VC, CCC, VCC, CVC, CCCC, CVCC, VCCC, CCVC, VCVC, CCCCC, VCCCC, CVCCC, CVCVC, CCCVC, CCVCC, VCVCC, CCCCCC, VCCCCC, CVCCCC, VCVCCC, CCVCCC, CCCVCC, CCCCVC, CVCVCC, CVCCVC, CCVCVC, VCVCVC, CCCCCC, VCCCCC, CVCCCC, CCCCCVC, CCVCCCC, CVCVCCC, CCCCCCCC, VCCCCCCC, CVCCCCC. (See below for examples).

The division between consonants and vowels on distributional grounds accords with the subclassification of segmental phonemes based on morphophonemic and other grounds. For example, verb bases with initial consonant select the allomorph *ma-* of the negative prefix **ma-*, while verb bases with initial vowel select the allomorph *m-* (see 3.8.4 and 6.2); consonant phonemes condition predictable vocoid release of the preceding consonant, vowel phonemes, on the other hand, condition zero release of the preceding

consonant (see 3.4).

Given the restriction that no vowel clusters occur, other restrictions on combinations of consonants, and consonants and vowels, are few. Preliminary study indicates that following restrictions apply to sequences of consonants:

Except preceding juncture or across juncture there is probably no contrast between a palatal consonant /c, j, ñ, l, y/ and the corresponding palatal consonant plus /y/, or between a palatal consonant and the corresponding obstruent plus /y/, i.e., between /c/ and */cy/ or */ty/, between /j/ and */jy/ or */dy/, between /ñ/ and */ny/, between /l/ and */ly/, and between /y/ and */yy/. The starred forms do not occur. /ñan/ occurs, but not */nyan/, /yan/ occurs but not */yyan/, and so on.

There are no contrasts between VC^p and VyC^p (where C^p is any palatal consonant). For example, between /maj/ and */mayj/, between /abañ/ and */abayñ/, between /poj/ and */poyj/, etc. (See discussion of allophones of vowel phonemes preceding palatal consonants in 3.4).

Only nasals and prenasalized obstruents occur alone in minimal utterances, i.e. utterances of the form #C#. The following single-phoneme morphs occur in isolation: /b/ 'man', /m/ 'taro', /d/ 'hold', /g/ 'do', /ñ/ 'fit, give', /n/ 'join'.

The following are further examples of minimal utterances containing no vowels: [mʃs] 'outside' /ms/, [tʰɛm] 'bow' /cm/, [lɛl] 'having placed' /ll/, [kɪmbɛtʰ] 'inner leaf of bamboo' /kbc/, [ngɪndʰɛr] 'we two should do it' /gjt/, [ndɪnɛk] 'I held' /dnk/, [kiʰɛk] 'they' /kyk/, [nɪnɪnɛk] 'I saw' /nɪnk/, [kɪndʰɪɣɛl] 'tattoo' /kɟkl/, [gɪnɪnɛn] 'you should do' /gnmn/, [ɸɪɣɪβɪnɛp] 'I might have hit' /pkpnp/, [wundʰɪmbɪlɛp] 'bird' /wɟblp/; [nɪnɪnɪɣɪnɛn] 'while I was **looking**' /nɪnɪnɪɣ/, [mɪndiʰɪngɪβɪn] 'I used to be' /mdɪɣpɪn/, [kɪrɪngɪnɪɣɪnɛn] 'when I was leaving' /ktgɪnɪn/.

The following are examples of non-minimal utterances without vowels: [mbɪsɛnkɪndiβɛm] 'you have sat' /bsg+mdpm/, [mbɪsɛnkɪndiʰɪngβɪn] 'we used to sit' /bsg+mdɪɣpwn/, [nʰɪn:ɪpdɪβɪnɛp] 'I could touch his hand' /ɪn+nwɪp+dpnp/.

Certain restrictions apply to combinations of consonants and vowels. As noted above, no vowel can occur in final position, i.e. before juncture, /y/ and /w/ can precede any vowel, but follow vowels in only the following sequences: /aw, ay, ow, oy, ey/. (See 3.8.4 for a detailed discussion of /w/ and /y/).

As noted above, vowel phonemes occur both initially and medially. /e/ and /o/, however, occur initially in only a few morphs.

The following are examples of minimal utterances containing both consonants and vowels: [ɔk] 'that' /ok/, [án] 'who?'

/an/, [erɛp] 'what?' /etp/, [á^y] 'sister' /ay/, [wón] 'remainder' /won/, [wél] 'oil' /wel/, [owúp] 'he has come' /owp/, [nóp] 'his father' /nop/, [náp] 'your father' /nap/, [téb] 'good' /tep/, [nínák] 'he perceived' /nnák/, [mosák] 'Giant Rat' *Mallomy's rothschildi* /mosak/, [koyímp] 'witch' /koyb/, [ngemboγóp] 'he could have done' /gebkop/, [mínde^ynd^yɛr] 'while he remained' /mdejt/, [ambâγóp] 'he could have gone' /abkop/, [awayínɛŋ] 'while he was coming' /awaknɛŋ/, [kíneyayínɛŋ] 'while they slept' /kneyaknɛŋ/.

3.3.1 Allophones of consonants.

The consonants form a fairly symmetrical system, with 5 oral obstruents, 4 prenasalized obstruents, 4 matching nasals, and 3 other resonants. It is notable that there is non-contrastive variation between stopped, fricative and affricative allophones of oral obstruents, and between voiced and unvoiced allophones of both oral and prenasalized obstruents.

Allophones of consonants are described here without reference to following non-phonemic vowels which are predictable feature of consonant release in certain environments. Consonant release is described in 3.5.

3.3.2 Oral obstruents /p, t, s, c, k/.

/p/ is a bilabial obstruent, initially fricative and unvoiced [ɸ], medially fricative and voiced [β], and finally

stopped and either voiced [b] or unvoiced [p]. E.g. [φár] 'long' /pat/; [aβí^y] 'having come' /apy/; [ngiβán] 'you have done it' /gpan/; [táp] 'thing' /tap/. Some speakers have a final allophone for /p/ which is fricative and either voiced or unvoiced, e.g. [táβ] 'thing' /tap/.

/s/ is an alveolar rill fricative, initially unvoiced [s], medially and finally either voiced [z] or unvoiced (usually unvoiced), e.g. [sambí^y] 'pitpit category' /saby/; [ðsá^w] or [ðzá^w] 'he is coming' /asaw/; [φís] 'half' /ps/. Some speakers have [s] and [z] in stylistic variation with a glottal fricative [h]. [h] occurs mainly in very rapid speech.

/t/ initially is an unvoiced dental stop [t], and medially and finally a voiced or unvoiced dental or alveolar flap [r]. E.g. [téβ] 'good' /tep/, [teβíréb] 'very good' /teptep/, [erɛβ] 'what?' /etp/, [wurír] 'bull roarer' /wtt/, [kúr] 'stick' /kwt/.

/c/ has a dental stop onset with simultaneous palatalization, followed by affricative release. It is unvoiced [t^y] initially, and either voiced [d^y] or unvoiced (usually unvoiced) medially and finally. E.g. [t^yíp] 'corpse' /cp/; [at^yímp] 'short' /acb/; [kú^ty] 'bustle of dried leaves' /kwc/; [t^yét^y] 'clothes' /cec/.

/k/ is a velar obstruent, stopped and unvoiced [k] initially, fricative and voiced [ɣ] medially, and stopped and either voiced [g] or unvoiced (usually unvoiced) finally. E.g. [kántʲ] 'pig' /kaj/; [aɣáʲ] 'where?' /akay/; [φθɣák] 'he hit' /pkak/, [ók] 'that' /ok/.

3.3.3 The prenasalized obstruents /b, d, j, g/.

Except after any consonant /p, c, k, b, d, j, g/ plus /+/, each prenasalized obstruent consists of a short homorganic nasal plus an obstruent. Following /p, c, k, b, d, j, g/ plus /+/, /b, d, j, g/ are realized as voiced obstruents without preceding homorganic nasal, e.g. [yĩrúkgɛp] 'lethargic' /ytwk+gp/; [tápdawán] 'bring the food' /tap+dawan/. (Cf. (1) in 3.6, and (f) in 3.8.3).

/b/ is bilabial, and the obstruent segment is voiced and stopped initially and medially (giving [mb] except initially after /p, c, k, b, d, j, g/ plus /+/ where the allophone is [b]), and unvoiced and stopped [mp] finally. E.g. [mbín] 'woman' /byn/; [ambáy] 'they have gone' /abay/; [kámp] 'stone' /kab/; [kámpɛsβín] 'I am sitting on a stone' /kab+bspyn/.

/d/ is dental, and the obstruent segment is stopped and voiced initially and medially (giving [nd] except after /p,c,k,b, d,j,g/ plus /+/, where the allophone is [d]), and stopped and unvoiced [nt] finally. E.g. [ndán] 'hold it!' /dan/; [mɛndɛp] 'it is' /mdp/;

[túnt] 'white' /twd/; [wántdɪβín] 'I have got the bag' /wad+dpyn/.

/j/ has dental onset [nt] or [nd], with palatalization and affricative release of the obstruent member. The obstruent is voiced and affricative initially (giving [nd^y] except after /p, c, k, b, j, g/ plus /+/ where the allophone is [d^y]) and medially (giving [nd^y]), and unvoiced and affricative finally (giving [nt^y]). E.g. [nd^yɛnt^y] 'root, base' /jj/, [ámnd^yáp] 'he is going' /am+jap/, [sánt^y] 'compensation' /saj/, [áb^yd^yayǝp] 'he has arrived hither' /ap+jakp/.

/g/ is velar, and the oral segment is voiced and stopped initially (giving [ŋg] except after /p, c, k, b, j, g/ plus /+/ where the allophone is [g]) and medially (giving [ŋg], and unvoiced stopped [ŋk] finally. E.g. [ŋgón] 'trap, snare' /gon/, [ŋgís] 'brown' /gs/, [angíp] 'he has sounded' /agp/, [sánk] 'cucumber' /sag/, [n^yɪnk] 'water' /ñg/, [yirúkgíp] 'he is lethargic' /ytwk+gp/.

3.3.4 The nasals /m, n, ñ, ŋ/.

The four nasals match the oral obstruents /p,t,c,k/ and the prenasalized obstruents /b, d, j, g/ in point of articulation.

/m/ is bilabial [m] in all positions. E.g. [mám] 'brother' /mam/, [ami^y] 'mother' /amy/, [tóm] 'lie' /tom/.

/n/ is dental [n] in all positions. E.g. [núk] 'he,

she' /nwk/, [mban^yf] 'brother-in-law' /bany/, [t^yɛn] 'we' /cn/.

/ñ/ is dental with simultaneous palatalization [n^y] in all positions. E.g. [n^yán] 'give!' /ñan/, [n^yəmbém] 'cross-cousin' /ñbem/, [ambán^y] 'platform' /abañ/, [n^yi^yyánt] 'my son' /ñy+yád/.

/ŋ/ is velar [ŋ] in all positions. E.g. [nán] 'child' /ŋan/, [ɸun^yi] 'fix in position' /pwŋy/, [anɛnt] 'left hand' /and/, [sán] 'women's festival' /san/, [ɸɪlɛŋ] 'place name' /plŋ/.

3.3.5 The oral resonants /l, w, y/.

/l/ is a palatal lateral, with apical and retroflex allophones [l] and [ɭ] in free variation. E.g. [ɭúm] 'soil' /lwm/, [mɪlém] 'saliva' /mlem/, [kAlám] 'Karam' /klam/, [angɛɭ] 'pronged arrow' /agl/.

There are two semivowels /w/ and /y/, which are classified as consonants for reasons outlined in 3.2 and stated in detail in 3.8.4.

/w/ is a high back (velar) rounded vocoid. Initially and in the environment C-V /w/ is realized as a short unsonorous vowel [w] with high tongue position and close lip rounding. Medially before a palatal consonant the allophone is high central rounded [ü], and medially before other consonants it is lower, moderately rounded, longer and more sonorous [ú]. Between identical vowels /w/ is sometimes realized as hiatus [-] between the pre-

ceding vowel rearticulation of the following vowel, but this allophone is in free or stylistic variation with [^W] a glide to high back position with moderate lip rounding. This glide also occurs elsewhere after vowels, and finally after consonants. See 3.5 for description of consonant release vocoids which occur preceding or following /w/. E.g. [wónk] 'garden' /wog/, [wundɤn] 'eye' /wdn/, [kúy] 'odour' /kwy/, [mo^Wúp] 'he has not come' /mowp/, [ku^Wúr] 'Cuckoo Dove' /kwwt/, [kúr] 'stick' /kwt/, [mba^Wúnt] 'cassava' /bawd/, [tú^W] 'axe' /tw/, [sa-án] or [sa^Wán] 'personal name' /sawan/, [mbú^W] 'exploding' /bw/.

/y/ is a high front (alveo-palatal) unrounded vocoid. Initially and in the environment C-V /y/ is realized a short and unsonorous [y], with high tongue position. Medially between consonants the allophone is lower, longer and more sonorous [i]; before palatal and velar consonants this vowel is followed by a glide to palatal position, giving [i^y]. Medially in the environment V-C, V-V, and finally, /y/ is realized as a glide /^y/ to high front position. See 3.5 for description of consonant release vocoids which occur preceding or following /y/. E.g. [yánt] 'I' /yad/, [yu^Wúr] 'pain' /ywt/, [yímp] 'name' /yb/, [yím] 'down valley' /ym/, [mbím] 'position down valley' /bym/, [mbiyán] 'down yonder' /byan/, [ko^yímp] 'witch' /koyb/, [kú^y]

'stink' /kwy/, [yɪngén] 'cold' /ygen/, [yðɣóp] 'nothing' /ykop/, [mbi^y] 'here' /by/, [ki^y] 'excrete' /ky/, [kiyɛk] 'they' /kyk/.

3.4. Allophones of vowels.

/e/ is an unrounded front vowel ranging freely over the mid and lower mid position. Initially it is sometimes preceded by a non-contrastive onset [y] and medially before palatal^a and velar consonants it is followed by a non-contrastive glide [ʷ]. (Cf. 3.3.5). E.g. [yerɛp] or [erɛp] 'what?' /etp/, [ndén] 'I hold' /den/, [mɪné^yk] 'next day' /mnek/, [gé^yk] 'he did' /gek/, [ndé^y] 'you hold' /dey/, [meyók] 'that one' /meyok/, [ge^ynd^yɛt] 'if we two should do' /gejt/.

/a/ is a low to mid central unrounded vowel. In a stressed position (i.e. before a final consonant) it is low central [a]. Elsewhere it varies freely between low central [a] and mid central [ə]. Before palatal consonants /c, j, ñ/ it is sometimes followed by an anticipatory glide to high front alveo-palatal position, as [a^y]. E.g. [ánk] 'to make a sound' /ag/, [mbánt] 'portion, several' /bað/, [mánt^y] or [má^ynt^y] 'sweet potato' /maj/, [əmbá^yn^y] 'platform' /abañ/, [mbá^y] 'fungus' /bay/, [əsáw] 'he is coming' /asaw/, [yuwán] 'hunger' /ywan/, [mbawúnt] 'cassava' /bawd/, [pəɣák] 'he hit' /pkak/, [əmbámp] 'he has gone' /amb/.

/o/ is a mid back rounded vowel. Before a palatal consonant it is sometimes followed by an anticipatory raised glide

Table II. Allophones of segmental phonemes.

phoneme	initial	medial	final
/p/	p	β	p/b
/s/	s	s/z	s/z
/t/	t	r	r
/c/	t ^y	t ^y /d ^y	t ^y /d ^y
/k/	k	γ	k/g
/l/	l/l̥	l/l̥	l/l̥
/m/	m	m	m
/n/	n	n	n
/ñ/	n ^y	n ^y	n ^y
/ŋ/	ŋ	ŋ	ŋ
/b/	mb/b	mb	mp
/d/	nd/d	nd	nt
/j/	nd ^y /d ^y	nd ^y	nt ^y
/g/	ng/g	ng	ŋk
/w/	w	u/w/ ^w	w
/y/	y	i/y/ ^y	y
/a/	a/a ^y	a/a ^y	
/e/	e/ye	e/e ^y	
/o/	o/o ^y	o/o ^y	

The sign / between symbols indicates that the preceding and following phones are in free variation. The sign , between symbols indicates that the phones represented occur in complementary distribution in environments not distinguished in this table (but stated in 3.3 and 3.4). Raised ^y following [t], [d] and [n] indicates simultaneous palatalization of the stopped or nasal component.

Allophones of consonants are shown here without indicating those consonant release vocoids which are a predictable feature of consonants in certain environments. Consonant release is described in 3.5.

[^y] to high front (alveo-palatal) position. E.g. [wón] 'remainder' /won/, [oβín] 'I have come' /opyn/, [nóp] 'father', /nop/, [sθγóy] 'small' /skoy/, [mbuwów] 'mother's brother' /bwow/, [mowún^y] 'personal name' /mowñ/, [sθγów] 'name of a local group' /skow/, [ko^yímp] 'witch' /koyb/, [φónt^y] or [φó^ynt^y] 'hat' /poj/.

3.5 Non-phonemic vocoids.

A vowel occurs predictably between all adjacent consonant phonemes not separated by juncture, of following any consonant which occurs between junctures. Such vowel is regarded as the release of the preceding consonant. Elsewhere, i.e. in the case of a consonant followed by a vowel, or a final consonant which is not preceded by juncture, consonant release is realized as zero.

In most environments the consonant release vocoid is a short high central to mid central unrounded vowel [ɨ] or [ə] but in certain environments specified below it is realized variously as [o], [e], [i], [u], etc. The treatment of consonant release vowels as non-phonemic is justified in more detail in 3.8.

The form of consonant release is predicted by the rules given below. (In these rules, C = any consonant other than /w/ or /y/, and V = any vowel /a, e, ə/, and # = any juncture, or pre-utterance silence.

In the environment C-CoC# or C-CCoC# consonant

release is realized as a short mid central slightly rounded vowel [ə] or a short mid back rounded vowel [o]. E.g. [yoɣóp] 'nothing, without cause' /ykop/, [kongón] 'garden' /kgon/, [mbokondón] 'yonder across valley' /bkdon/.

In the environment C-CaC# or C-CCaC# consonant release varies freely between mid and low central vowels, [ʌ] and [ə]. E.g. [yʌɣám] or [yəɣám] 'arrow', 'group of people' /ykam/, [kʌrám] or [kərám] 'way' /ktam/, [pʌɣák] or [pəɣák] 'he hit' /pkak/.

In the environment C-CeC# or C-CCeC# and C-Cy# consonant release is realized as [e], [ɛ] or [ə]. E.g. [mbenép] or [mbənép] 'a man only' /bnep/, [mbembé^yk] or [mbəmbé^yk] 'a certain man' /bbek/, [mbembí:y] 'the man here, this man' /bby/, [n^yembém] or [n^yəmbém] 'cross-cousin' /ñbem/, [teméy] or [təméy] 'bad' /tmey/.

In the environment C-CwC# and C-w, consonant release is realized as a short high back rounded vowel [u]. E.g. [mulúk] 'nose' /mlwk/, [ɸundúm] 'place name' /pdwm/, [mbukúmp] 'big man' /bkwb/, [tumúnt] 'ear' /tmwd/, [muwónk] 'taro garden' /mwog/, [mbuwó^w] 'mother's brother' /bwow/, [sú:^w] 'to bite' /sw/.

In the environment #w-C (where C is any back consonant /k, g, ŋ /) consonant release is realized as a high back rounded vowel [u]. E.g., [wukʃp] 'it has cracked' /wkp/, [wunɪ:y] 'personal name' /wŋy/.

In the environment #w-C (where C is any front consonant /p, t, s, c, b, d, j, m, n, ñ, l/ consonant release varies freely between [u] and a high central rounded vowel [ʊ]. E.g. [wúr] or [wúr] 'cluster' /wt/, [wusɛn] or [wusɛn] 'sleep' /wsn/.

In the environment Cw-C or Vw-C consonant release is realized either as zero or as a high central to high back rounded vowel [u] or [ʊ]. By zero release is meant here movement from [w] to following consonant position which is so rapid that no transitional vocoid is heard. The tendency is for zero release to occur in fast speech, and for [u] or [ʊ] to occur at all other times. E.g. [owp] or [o^wɔp] 'he has come' /owp/, [yúr] or [yu^wúr] 'pain' /ywt/, [sɔŋ] or [su^wɔŋ] 'in good condition' /swŋ/.

In the environment C-y consonant release is realized as a high front and rounded vowel, either short [i] or long [i]. E.g., [wɪ^y] 'here' /wy/, [mbiyánt] 'my husband' /byad/, [ŋgiyák] 'they did' /gyak/.

In the environment #y-C consonant release is realized as a high front unrounded vowel, somewhat backed [ɨ] before back consonants /k, g, ŋ/. E.g. [yɪmp] 'name' /yb/, [yinɛmp] 'it is burnt'

/ynb/, [yɿŋgɛn] 'cold' /ygen/.

In the environment Cy-C or Vy-C consonant release is realized either as zero, or as a high central unrounded vowel [ɨ], somewhat fronted before front consonants and somewhat backed before back consonants. The tendency is for zero release to occur before front consonants in fast speech, and for [ɨ] release to occur elsewhere. E.g. [mbɪn] or [mbi^yɿn] 'woman' /byn/, [a^yn] or [a^yɿn] 'lower' /ayn/, [kɪk] or [ki^yɿk] 'they' /kyk/, [sɪŋ] or [si^yɿŋ] 'snake' /syn/.

In the environment #C# consonant release is realized as a short mid central vowel [ə]. E.g., [mbɔ̃] 'man' /b/, [mɔ̃] 'taro' /m/.

In the environments C-V, w-V, y-V, VC-# and CC-# consonant release is realized as zero. That is, movement from contoid position to the position characterizing following V or # is so rapid that no transitional sound is heard. E.g. [mbák] 'bank', 'that man' /bak/, [mbomɔ̃nɔ̃l] 'two men' /bomɔ̃nɔ̃l/, [yánt] 'I' /yad/, [wánt] 'string bag' /wad/, [wél] 'oil, grease' /wel/, [kɪl] 'mark' /kl/.

Elsewhere, consonant release is realized as a short high central to mid central unrounded vowel [ɨ] or [ə], somewhat fronted before front consonants, somewhat backed before back con-

sonants. E.g. [mɪlɸp] 'dry' /mlp/, [kɪndɸl] 'sinew' /kdl/,
 [mɪŋgɸn] 'vulva' /mgn/, [ŋgɪβɪnɸp] 'I might have done' /gpnɸ/.
 (See also examples in 3.2 and above).

3.6. Juncture and intonation.

5 junctural phonemes / , . ? ! + / are posited.
 / , . ? ! / are (contour) terminal junctures. The material between
 silence and terminal juncture or terminal juncture and terminal
 juncture is called a contour span. / , . ? ! / always mark the
 end of a contour span; /+/, on the other hand, occurs only contour
 span medially.

/+/ is posited in the following positions:

(1) Between the members of all phonetic consonant
 clusters other than the homorganic nasal plus stops. Excepting
 the homorganic nasal plus stops, no phonetic consonant clusters
 occur within morphemes or within minimal utterances; /+/ thus
 occurs only at morpheme boundary. E.g. [kɔɪɸbnɪk] 'his house'
 is phonemically /kɔɪɸ+nɪk/, and [ámndðwán] 'go and fetch it' is
 phonemically /am+dawan/. In the first case /+/ is marked by (among
 other things) the realization of the final phoneme in /kɔɪɸ/
 'house' plus the initial phoneme of /nɪk/ '3rd person singular' as
 a phonetic cluster [bn]. In the second case /+/ is marked by
 (among other things) the realization of the final phoneme of /am/

'go' plus the initial phoneme of /dawan/ 'fetch' is a phonetic cluster [mnd].

(2) Long consonants, which contrast with short consonants, are regarded phonemically as C_1+C_1 , i.e. as geminate clusters whose members are separated by /+/. E.g. [mbin:^vnt] 'senior wife' /byn+n^vnk/, [am^vi:^vnt] 'my mother' /am^vy+y^vad/. These contrast with [mbi^vn^vnt] 'here first' /by+n^vnd/, and [mám^vyant] 'my brother' /mam+y^vad/, respectively. Probably in fast speech all sequences consisting of / C_1+C_1 / (realized as a long consonant) are in stylistic variation with C_1 (realized as a short consonant), e.g. [mbin:^vnk] 'his wife' /byn+n^vwk/ occurs in stylistic variation with [mbin^vnk], and the latter is phonemically /byn^vnk/.

(3) Before a consonant or vowel which follows the final allophones of /p, c, k, s, t, b, d, j, g, w, y/, and after a consonant which precedes the initial allophones of these same phonemes and of /a, e, o/. E.g. /kot+pagp/ 'the stick is broken' differs from /kotp+agp/ 'he spoke at/about the house' in (among other things) the allophones of /p/ which occur in these utterances. The former is realized as [kór ϕ ang $\#$ p], with initial allophone [ϕ] in [ϕ ang $\#$ p] 'it is broken' /pagp/, the latter is realized as [kor $\#$ bang $\#$ p], with final allophone [b] in [kor $\#$ b] 'house' /kotp/.

The initial, medial and final allophones of consonants and vowels (stated in detail in 3.3 and 3.4) are shown in Table II.

1 (4) Between the first and second segmental phonemes following a stressed phoneme. By positing /+/, all stresses (except contour stress) become predictable. As noted in 3.7, in all minimal utterances consisting of two or more segmental phonemes, stress occurs on the second phoneme before juncture; in all minimal utterances consisting of a single segmental phoneme this phoneme is stressed. E.g. [mbíni^ˈmbá] 'people' /byn+b/ (where the constituents are /byn/ 'woman', /b/ 'man'), [símí^ˈkorɪb] 'singsing house' /smý+kotp/; [ánkɛɪp] 'he scolded' /ag+gp/, [mín^ˈmasáp] 'he is talking' /mnm+asap/, [mbə^ˈAsáw] 'a man is coming' /b^ˈ+asaw/, [mbínt^ˈɛb] 'good woman' /byn+t^ˈɛp/, [mbət^ˈɛb] 'good man' /b+t^ˈɛp/.

Any single instance of /+/ is likely to be marked by the occurrence of several of these features in association. E.g. in [ayá^ˈtasáp?] 'where is he returning from?' /akáy+tasap/, /+/ is marked by the occurrence of three features: (a) the consonant cluster [y^ˈt] (b) the occurrence of stress on the penultimate phone of [ayá^ˈ] 'where' /akáy/ and (c) the occurrence of the initial allophone of /t/ in [tasáp] 'he is returning' /tasap/. In [kámpdɪβín] 'I have taken the stone' /kab+dpyn/, /+/ is marked by (a) the occurrence of a consonant cluster [mpd], (b) the occurrence of the final allophone of /b/ in [kámp] 'stone' /kab/ preceding an initial allophone of /d/ in [dɪβín] 'I have taken' /dpyn/, and (c) the occur-

rence of stress on the penultimate phone of [kám̩p] 'stone' /kab/.

In the case of homorganic nasal plus obstruent clusters /+/ can be posited between the members of the cluster only if features (3) and (4) are present. E.g. [mbjnt̩éb] 'good woman' contains such a cluster [nt], but without knowledge of the position of stress and the distribution of allophones of consonants relative to /+/, this utterance could be phonemicized as /bydép̩/, /byn+tép̩/, /by+dép̩/ or /byd+ép̩/. Knowledge that the allophone [t] of /t/ occurs only in initial position, i.e. after silence or juncture, and that the allophone [nt] of /d/ occurs only in final position, i.e. preceding juncture, narrows the choice down to /byn+tép̩/ or /byd+ép̩/. The occurrence of stress on the penultimate phones of both constituents [bín] and [téb], indicates that /byn+tép̩/ is the correct choice. In 4-10, /+/ is represented by space rather than by + between segmental phonemes.

Intonation is not contrastive for lexical items, but contrastive intonation contours occur and (in combination with certain other features) distinguish completed statements, incomplete statements, commands and questions or exclamations. These intonation contrasts and their associated features are accounted for by setting up four terminal juncture phonemes /, . ? !/. Precise detailing of the acoustic features characterizing these junctures

awaits further study. The following is a preliminary and tentative description. (Pre-utterance silence is here written #, and slowing rate of speech by space between symbols).

/,/ , non-final juncture, is marked by pitch rise on the final stressed phoneme of the utterance, with slowing rate of speech over the final phoneme or final few phonemes. It is sometimes followed by pause. E.g. [wónkg̃nd̃ ɪ̃ ỹ ɔ̃w̃ñng̃ ǎ̃ ʒ̃ñ] 'I will come after finishing work' #wog+gd̃ỹ, owngayn.

/./ , final juncture, is marked by slowing rate of speech, fading volume and absence of any pitch rise over the final several phonemes of the utterance: pitch level may be sustained or may fall. E.g. [yántwí̃ ỹ m̃d̃ñng̃ ǎ̃ ʒ̃ñ] 'I will stay here' #yad+wý+mdengayn. and [m̃d̃p̃k̃õt̃p̃bỹǎ̃] 'it is in the house down yonder' #mdp+kotp+byǎ̃.

/?/ , question juncture, is marked in utterances of more than two phonological words (see 3.7 for definition of phonological words) by rise in pitch on the stressed syllable of the penultimate phonological word, followed by sustained or slight falling pitch level, and often by slowing rate of speech and fading volume. In utterances of a single phonological word pitch rise occurs on the stressed phoneme. E.g. [ǎ̃ ʒ̃ñ ǎ̃ m̃d̃ ʒ̃ ǎ̃] 'Where are you going?' #akáy+am+jpan?, [yántd̃ñ ʒ̃ñ] 'Should I take it?' #yad+d̃ñm̃? , [nd̃ñ ʒ̃ñ] 'Should I take it?' #d̃ñm̃?

/!/, exclamation juncture, is marked by sustained pitch level over the final several phonemes of the utterance, with increasing rate of speech and increasing volume. E.g. [$\bar{a}m\bar{n}o_{\eta}$] 'go!'
 #am+n^yo_η!

3.7. Stress and phonological words.

The stretch between successive junctures is called a phonological word. (Juncture here includes pre-utterance silence, here written #, and the 5 junctures defined in 3.6). Stress falls on the final phoneme of all single-phoneme phonological words; in all other phonological words it falls on the penultimate phoneme. In the case of a stressed consonant phoneme, stress is heard on the consonant release vowel. See 3.5 and 3.6 for examples of stress.

Stress is not phonetically uniform. Over stretches of several phonological words between successive terminal junctures (i.e. over a contour span), certain stress contours are distinguishable. Within such stretches each phonological word contains one predictable stress, but not all of these stresses are equally loud. These stress contour patterns are not contrastive, but further study is required before they can be described in detail.

Certain louder stresses, however, occur independently of contour stress. These louder stresses, called contour stresses, are contrastive, and are written /r/. E.g. [$k\acute{a}nt^y k\acute{o}m\acute{a}n\acute{d}\acute{a}t$] 'the

pig is in the house' /kaj+kotp+mdp/ contrasts with [kant^vkor#bmind#p]
 'there is a pig-house' or 'it is at the pig-house' /kaj^v+kotp+mdp/.
 [yibmã^v#imbã^v] 'you didn't give me any!' /yp+mã^vban/ contrasts with
 [yibmã^v#imbã^v] 'you didn't give me any!' /yp+mã^vban/.

3.8.1 Discussion.

Several features of the phonemicization described in the foregoing sections merit fuller discussion and justification than given there. In particular the following: (1) the treatment of homorganic nasal plus stop clusters in certain positions as unit phonemes (2) the grounds for setting up /+/ and for treating certain vowel segments as non-phonemic (3) the treatment of /w/ and /y/ as consonants.

3.8.2. Homorganic nasal plus ^{obstruent}~~stop~~ clusters.

It is notable that apart from the homorganic nasal plus stops, no true phonetic consonant clusters occur within morphemes or within minimal utterances. Biggs defines a true consonant cluster as "characterized by the articulatory organs shifting from one contoid position to another contoid position without any escape of the airstream, either nasally or orally, until the shift is completed. Thus in pygmy and bigamy the former contains a consonant cluster, the latter does not, for in the transition from g to m in bigamy the velum is lowered allowing nasal passage to the airstream while the

shift from nasal to bilabial occlusion is being effected".¹²

There are several compelling reasons for treating homorganic nasal plus obstruents as unit phonemes when they occur in minimal utterances. This solution (a) allows consonant release vowels to be predicted (b) means that /+/ need be posited only at morpheme boundary and not within morphemes and (c) results in a more patterned distribution of consonants. As noted in 3.5, 3.6 and by Biggs above, all adjacent consonant phonemes within morphemes, minimal utterances, or phonological words, are separated by a vowel; true consonant clusters occur only across morpheme boundary in non-minimal utterances of two or more phonological words, and /+/ is posited in these cases as occurring at morpheme boundary between members of the cluster (see 3.6).

If the prenasalized ~~clusters~~^{obstruents} were treated as phonemic clusters the phonemic analysis would be complicated in several ways. The cluster solution would mean that (a) if 'consonant release' vowels are to be predicted, /+/ must be posited between all homorganic nasal plus obstruent clusters - undesirable because /+/ would then occur within minimal utterances and morphemes, and because it would greatly complicate the prediction of consonant initial, medial and final allophones at present based on the occurrence of /+/ only at minimal

¹²Biggs 1963: 15.

utterance and morpheme boundary (see 3.3 and 3.7) or (b) if /+/ is not posited between members of phonetic consonant clusters, 'consonant release' vowels cannot be predicted, and in the absence of /+/ at minimal utterance boundary as a point of reference consonant allophones cannot be assigned to phonemes as in 3.3. E.g. in phonemicizing [nʌntmndɪp] 'he remains' it will no longer be possible to talk of [nt] as the final allophone of /d/ in /nwd/ 'he', and of [nd] as the medial allophone of /d/ in /mdp/ 'remains'; rather than /nwd+mdp/, the phonemization will have to be something like /nʌntmndɪp/; [nt] and [nd] could only be assigned to the same phoneme on the basis of a relatively complex set of rules in which consonant allophones are predicted in relation not to /+/ but in relation to a stress phoneme or to some other point of reference not known at present.

The cluster solution with consequent treatment of 'consonant release' vowels as phonemic would result in a distributional pattern for segmental phonemes completely different from the present one. As noted in 3.2, at present almost any consonant phoneme can occur in sequence with almost any other consonant phoneme within minimal utterances. If the cluster solution for homorganic nasal plus stop sequences were to be chosen the result would be an asymmetrical distributional pattern in which *no* phonemic consonant clusters occur in minimal utterances, with the sole exception of the homorganic nasal plus obstruent clusters /mp, nt, nc, nk/.

3.8.3 /+/- juncture and non-phonemic (consonant release) vowels.

By positing /+/- when certain phonetic conditions are met (see 3.6) the phonemic statement may be simplified in a number of ways.

(a) A high proportion of vowel segments become predictable, and can be regarded as the release of the preceding consonant (see 3.5)

(b) All stresses (except contour stress) become predictable (see 3.7).

(c) Initial, medial and final allophones of segmental phonemes can be economically predicted (see 3.3, 3.4, 3.6).

(d) Phonetic consonant clusters consisting of a homorganic nasal plus ~~obstruent~~^{obstruent}, the only phonetic consonant clusters to occur within minimal utterances, can be treated as unit phonemes whose distribution parallels that of all other consonants (see 3.2, 3.3, 3.8.2, and below).

(e) A contrast between short and long consonants can be explained as a contrast between single consonants and geminate clusters occurring only at morpheme boundary (see 3.6).

(f) An otherwise unique contrast between voiced and voiceless oral phones, namely, the contrast between voiced and voiceless oral obstruents following another obstruent belonging to

the preceding morph, can be explained as a contrast following /+/
between an obstruent which is elsewhere prenasalized and an oral
obstruent. E.g. [tábta^wán] 'you buy the stuff' /tap+tawan/, versus
[tábda^wán] 'you fetch the stuff' /tap+dawan/, (see 3.3.3).

As noted above, it is necessary to posit /+/
in order to predict the allophones of most segmental phonemes, and for
a number of other reasons. It turns out that having thus set up /+/,
many vocoid segments become predictable, namely, those treated in
3.5 as the release of the preceding consonant. Elimination of con-
sonant release vocoids from the inventory of phonemes is no minor
gain. Such vocoids occur between all consonant phonemes not sepa-
rated by juncture or by /a, o, e/, and if regarded as phonemic
would constitute by far the most frequently occurring phoneme.

The main disadvantage of treating consonant release
vowels as non-phonemic is that it increases the number of conso-
nant allophones. Every consonant now has allophones with both zero
release and vocoid release (see 3.5).

The advantages of the present treatment of predictable
vocoids as consonant release, other than eliminating what would other-
wise be a highly recurrent phoneme, are that (a) it reduces morpho-
phonemic alternation, (b) it regularizes the distribution of conso-
nants and vowels.

If consonant release vowels were regarded as phonemes,
almost every morpheme in the language would have at least two al-

ternants, one (or more) with final consonant release vowel and one (or more) without. Generally speaking, the alternants with consonant release vowel **would** occur whenever the morpheme occurs followed by a suffixed morpheme with initial consonant.

Vowels and consonant in the present solution have the following distributional features: vowels occur initially and medially but not finally; any consonant can occur in initial, medial and final position, and can precede or follow almost any other consonant. If consonant release vowels are treated as phonemic, there will be at least two irregularities introduced into the distributional structure of segmental phonemes: (1) no consonant clusters will occur within minimal utterances, excepting homorganic nasal plus obstruent sequences (this was noted in 3.8.2 above) (2) consonant release vowels of the type [ɨ] and [ə] will occur finally after certain consonants, and medially. No other consonant or vowel has a comparable distribution.

3.8.4 /w/ and /y/.

In addition to phones assigned to /a, o, e/ there are certain other vowel-like phones. These other phones comprise high front unrounded vowels (both long and sonorous [i] and short unsonorous [y]), and high back rounded vowels (both long and sonorous [u] and short unsonorous [w]).

These high front and high back vocoids can be phonemized in at least three different ways, as follows:

(1) Two phonemes can be recognized. All high front vocoids can be assigned to one phoneme (written either as /i/ or /y/), and all high back vocoids to another phoneme (written either as /u/ or /w/).

(2) Four phonemes /i, y, u, w/ can be recognized, with phones of the type [i] or [i^y] assigned to /i/, those of the type [y] or [y^y] to /y/, those of the type [u] or [u^w] to /u/, and those of the type [w] or [w^w] to /w/.

(3). Four phonemes /i, y, u, w/ can be recognized, but segments such as [i^y], [u^w] and perhaps [yi] and [wu] can, in certain circumstances be treated as phoneme sequences /iy/, /uw/, etc. rather than as a single phonemes.

It should be noted that the choice here concerns only distributional patterning, and not the number of phonemic contrasts present. It is clear that only two phonemes are needed to account for the contrasts which occur. Phones of type [y] and [i] are in complementary distribution or free variation. The same is true of phones of type [w] and [u]. (See 3.3.5).

The choice here (see 3.3.5) is to set up two phonemes. These are written /w/ and /y/, and classified as consonants because they resemble consonants in the following respects:

(1). Distribution. /w/ and /y/, like all consonants, occur initially, medially and finally. The vowels /a, o, e/ occur initially (although /o, e/ occur initially only in a few lexical items) and medially, but not finally. If /w/ and /y/ are classed as consonants, no vowel clusters occur. If, on the other hand, they are classified as vowels then an irregular distributional structure is introduced in which a limited set of vowel clusters occur, namely, /ay, oy, ey, aw, ow, ya, yo, ye, wa, wo, we/, but not */ae, ao, aa, ea, eo, ee, oa, oe, oo/.

(2). Selection of morpheme alternants. E.g. while verb stems initial with vowel /a, o, e/ select allomorph *m-* of the negative prefix **ma-*, verb stems with initial consonant including /w/ or /y/ select the allomorph *ma-*. E.g. /ynb/ 'it is cooked' /maynb/ 'it is not cooked', /wkp/ 'it is cracked' /mawkp/ 'it is not cracked', /pkp/ 'it has struck' /mapkp/ 'it has not struck', /owp/ 'he has come' /mowp/ 'he has not come'.

(3). Allophones. All consonant phonemes, including /w/ and /y/, in certain environments are realized phonetically as [CV], i.e. as a consonant with vocoid release (see 3.5). Vowel phoneme allophones exhibit no comparable features.

The arguments for setting up both /y/ and /i/, and both /w/ and /u/, are weak. In the first place the recognition of

a pair of consonants /y/ and /w/ and a pair of vowels /i/ and /u/, in complementary distribution or (in certain environments) in free variation, cannot be justified by drawing a parallel with the distribution of other consonants and vowels, because in Karam consonants and vowels are *not* in complementary distribution with each other.

The four-phoneme solution, in fact, has just one advantage. Provided that initial [ʏi] and [ʷu] are written /yi/ and /wu/, and final [iʏ] and [uʷ] are written /iy/ and /uw/, it results in a slightly more symmetrical pattern of diphthongs, by adding initial /yi/ and /wu/ and final /iy/ and /uw/ to those cited above and in 3.2.

However, a phonemicization which admits both /i/ and /y/, and /u/ and /w/, and sequences such as /iy/ and /uw/, must result in a great deal of morpheme alternation which is avoided by the two-phoneme solution. For example, the morpheme which in the present two-phoneme solution always has the shape /ym/ 'down-valley', in the four-phoneme solution would have at least two and probably three alternants: it would be written /im/ in e.g. [mbim] ~ [mbiʏim] 'position down valley' /bim/, /yim/ in [kaʏim] 'down valley in your direction' /kayim/, and /ym/ or /yim/ in [yim] 'down valley'. In the present phonemicization these three utterances are written /bym/,

/kaym/ and /ym/.

The sum of the evidence thus strongly favours the two-phoneme solution. By assigning all high front vocoid phones to /y/ and all high back vocoid phones to /w/ the phonemic inventory is reduced by two, the overall distributional structure is made more symmetrical, and the morpho-phonemic statement is considerably simplified.

4. Classification of morphemes and expanded bases.

4.1 Morpheme classification.

4.1.1 Bases and minor morphemes.

Morphemes are divided exhaustively into bases and minor morphemes.

Minor morphemes are few, highly recurrent, and carry grammatical meaning. Base morphemes, on the other hand, number several thousands, occur less frequently than minor morphemes, and carry lexical meaning. Most bases but few minor morphemes are isolable.

Bases fall into two major substitution classes, verb and nominal bases, and into a number of subclasses, enumerated in 4.2. Minor morphemes fall into a large number of substitution classes, (none of which has more than eight members) enumerated in 4.1.2 and 6.3.1.

It may be noted here that where a morpheme has more than one alternant the morpheme itself is represented by an asterisked shape, while its member morphs are represented by unasterisked shapes, e.g. **am-* 'to go', represents the morpheme whose members are *am-* ~ *amn-* ~ *a-*.

In quoted utterances morpheme boundary is marked within phonological words or free forms (see 3.7) by \sim , and elsewhere by one or more spaces between morphs, e.g. *kyk a-b-ay* 'they

have gone'

4.1.2 Minor morpheme classification.

4.1.2.1 Segmental and non-segmental minor morphemes.

Minor morphemes fall into two major classes: segmental and non-segmental. Segmental minor morphemes consist of segmental phonemes alone. Non-segmental morphemes consist of certain sequences or features of arrangement, order, etc. of segmental morphs occurring in combination with supra-segmental phonemes.

4.1.2.2 Segmental minor morphemes.

Segmental minor morphemes are classified in the first place as nuclear and (postposed) peripheral minor morphemes. Nuclear minor morphemes distribute around (i.e. occur prefixed or suffixed to) individual bases within the nucleus of a phrase. A nuclear minor morpheme can thus occur as many times in the nucleus as there are bases which can select it.

Postposed peripheral minor morphemes distribute around (i.e. follow) the nucleus of a phrase rather than around individual bases within the nucleus. No peripheral minor morpheme can recur within a phrase.

Peripheral minor morphemes fall into two classes: verbal and nominal. Verbal minor morphemes are compatible in the phrase with V-class nuclei only (i.e. with nuclei consisting of a verb base or bases - see 6.2). Nominal minor morphemes are compatible in the phrase with N-class nuclei only (i.e. with nuclei consisting of a nominal base or bases - see 7.2).

Segmental minor morphemes are listed exhaustively in 4.1 and 6.3.1. Nuclear minor morphemes consist of the members of decade classes 100 - 120. Nominal minor morphemes consist of the members of decades 130 - 200. Verbal minor morphemes consist of the members of decades 10-50. The distribution of nuclear minor morphemes is specified in 4.3, that of verbal minor morphemes in 6., and that of nominal minor morphemes in 7.

Each morpheme is assigned an index number within ^aposition (decade) class. Morpheme alternants are given decimal point numbers following their index numbers, e.g. morpheme 102 has allomorphs 102.1 *nw-* and 102.2 *no-*.

In the case of peripheral minor morphemes (decades 10-50, 130-200), members of the same decade class are mutually exclusive within the phrase. Occurrence in a different decade class does not necessarily imply compatibility within the phrase. In the case of nuclear minor morphemes (decades 100-120), members of the same decade class are mutually exclusive with respect to individual base morphemes. Within decade classes morphemes are further classified into substitution classes. Members of the same substitution class are given consecutive numbers within the decade.

Decade 100 contains nuclear minor morphemes which occur prefixed to a base, decades 110-120 contain nuclear morphemes which occur suffixed to a base. As noted above decades 130-200 contain nominal minor morphemes. Verbal minor morphemes (decades 10-50) are listed in 6.3.1.

Decade 100

- | | | |
|-----|-------------|--|
| 101 | <i>na-</i> | 2nd person possessive |
| 102 | <i>*nw-</i> | 3rd person possessive 102.1 <i>nw-</i> 102.2 <i>no-</i>
<i>no-</i> occurs before 5 bases listed in 4.3.5,
<i>nw-</i> occurs elsewhere. |
| 104 | <i>b-</i> | direction marker |
| 105 | <i>ka-</i> | 'in the direction of person addressed' |
| 106 | <i>bk-</i> | 'a short distance away in a third person direction' |

- 107 *ok-* specified direction (pointed out)
- 108 *ak-* specified direction (distant or in sequence)
- Decade 110
- 111 *-p* object marker
- 112 *-pey* object marker, emphatic
- 114 *-sek* 'possessing'
- 116 **-ep* characteristic or function marker 116.1 *-ep*
 116.2 *-eb* 116.2 occurs following /ñ/ or /m/
 and in free variation with 116.1 following /n/
 or /n/. 116.1 occurs elsewhere.
- 117 *-yjsek* adjective derivative 3 'stability'
- 119 **-nen* purposive, goal-marker. 119.1 *-nen* 119.2 *-en*
 119.2 occurs after /n/, 119.1 occurs elsewhere.
- Decade 120
- 121 **-may* dual. 121.1 *-may* 121.2 *-mnał* 121.3 *-mnaŋ*
 121.4 *-mał* All alternants are stylistic variation.
- 122 *-ykan* plural
- Decade 130
- 131 *-ket* 'own, belonging to'

Decade 140

141 **ok* demonstrative, specified. 141.1 *ok* 141.2 *o-*.
 141.2 occurs before 151, 161 and 201,
 141.1 occurs elsewhere.

142 **ak* demonstrative, sequential. 142.1 *ak* 142.2 *a-*.
 142.2 occurs before 151, 161 and 201,
 142.1 occurs elsewhere.

Decade 150

151 *nb* origin or cause marker.

Decade 160

161 *nep* restrictive, 'precisely, only, just, exactly,
 very'.

Decade 170

171 *yp* concomitative, 'together with, and'.

Decade 180

181 *abey* additive, 'plus, also, in addition to'.

Decade 190

191 -*tek* yes-or-no interrogative, similitive: 191 has the
 first meaning in association with minor morpheme
 301 'question', the second meaning elsewhere.

Decade 200

201 *akan* whether-or-not interrogative.

4.1.2.3 Non-segmental minor morphemes.

Non-segmental minor morphemes cannot be detailed exhaustively at this point; only those to which reference is made in later sections are noted here. Non-segmental minor morphemes are given index numbers for ease of reference, but in this case the numbers have no distributional significance, i.e. do not indicate relative order, incompatibility, substitutability, etc.

301-304 are realized by the occurrence of a terminal ~~marker~~ juncture (see 3.7) with a morpheme sequence which is a potential sentence, i.e. a grammatical phrase, phrase group or clause.

- 301 'question'. Realized by the occurrence of /?/ terminating a morpheme sequence which is a potential sentence.
- 302 'insistence'. Realized by the occurrence of //! terminating a morpheme sequence which is a potential sentence.
- 303 'sentence completed'. Realized by the occurrence of ./ terminating a morpheme sequence which is a potential sentence.
- 304 'sentence not yet completed'. Realized by the occurrence of /,/ terminating a morpheme sequence which is a

potential sentence.

A number of other non-segmental morphemes are realized by the occurrence of supra-segmental phonemes in combination with particular morpheme sequences, including the following.

305 'focus, dominance, emphasis'. Realized by the co-occurrence of contour stress /v/ and a particular morpheme or morpheme sequence. E.g. *yady^v ma-g-p-yn!* 'I did^{nt} do it.'

306 'possessor-possessed relation'. Realized by the arrangement (a) $N1-3 + (N5^v \text{ or } N11^v)$, where $N5^v$ or $N11^v$ refers to the possessor and $N1-3$ to the thing possessed. E.g. *kotp y^vad* 'my house' in *kotp y^vad am-jp-yn*. 'I am going to my house' (contrasting with *k^votp yad am-jp-yn*. 'I am going to a/the house').

(b) $N4^v + N1-3$, where $N4^v$ refers to the possessor and $N1-3$ to the thing possessed. E.g. *wpc^v kotp* 'Wpc's house' in *wpc^v kotp am-b*. 'he has gone to Wpc's house' (contrasting with *wpc kotp^v am-b* 'Wpc has gone to the house').

(c) certain other arrangements which cannot be stated in detail at this point.

307 'modifier-modified relation'. Realized by the occurrence of (a) $N1-3 + N1-3$, where the first $N1-3$ refers to the modifier and the second $N1-3$ to the thing modified. E.g.

smj kotp 'singsing-house', *kaj kotp* 'pig-house'. E.g.
kdj kotp mdp. 'It/he/she is in the pig-house.' contrasts
 with *kaj kotp mdp.* 'The pig is in the house.'

(b) N1-3 + N16-19, where N16-19 refers to the modifier and
 N1-3 to the thing modified. E.g. *kotp yob* 'big house'
kotp omndil 'two houses'.

(c) Certain other arrangements which cannot be stated in
 detail at this point.

308 'subject-predicate relation'. Realized by the occurrence of a
 nominal phrase group of class NG1, NG2 or NG7 in sequence
 in the clause with, and agreeing in person and number
 with, a verb phrase. (See 9.2 for more detailed discussion).

309 'object-predicate relation'. Realized by the occurrence of an
 NG3-6 or NG8 class phrase group in sequence in the clause
 with a verb phrase, or by the occurrence of an NG1 class
 phrase group in sequence in the clause with, and dis-
 agreeing in person and number with, a verb phrase. (See
 9.2 for more detailed discussion).

310 'time-predicate relation.' Realized by the occurrence of an
 NG6 class phrase group in sequence in the clause with
 a verb phrase (see 9.2 for more detailed discussion).

$-\emptyset-$ (zero) 'hortative' is realized by the *non-occurrence* of a segmental morpheme in the environment $V \pm 10 \text{ --} 30\#$ (where $\#$ marks verb phrase boundary, V is a verb base, and 10 and 30 refer to the members of decade classes 10 and 30). In all other cases a morph marking tense, tense-aspect, mood or some other inflectional category occurs in this environment. $-\emptyset-$ 'hortative' is assigned to the class of verbal minor morphemes, substitution class 21-26, since it substitutes for other members of this class (see 6.3.1).

4.2 Classification of base morphemes.

4.2.1 Verb and Nominal bases.

Base morphemes are divided into two major classes: verb and nominal bases.

Some subclassification of bases is attempted here. It should be noted that in certain specified cases subclasses are not mutually exclusive, i.e. the same base may be a member of more than one subclass.

The combinatorial possibilities of base classes and subclasses with nuclear minor morphemes are defined in 4.3, their combinatorial possibilities in the phrase and other bases and with peripheral minor morphemes are stated in 6-7, and their combinatorial possibilities across phrase boundaries are stated in 8-10. Base morpheme subclasses are

are enumerated (and in some cases all members are listed), and some informal and illustrative discussion of their distributional and semantic characteristic is attempted in 4.2. It should be understood, however, that this informal discussion of the distributional characteristics of base subclasses is not exhaustive but is supplementary to the formal statement of base morpheme distribution detailed in 4.3 and in chapters 6-10.

4.2.2 Verb (V) class base morphemes.

Verb bases can occur in sequence in the phrase with verbal minor morphemes but with no nominal minor morphemes other than 116-117. The class of verb bases (henceforth called verb *stems*) is a small closed class. About 100 members have been recorded to date, and these are listed below.

Verb stems are subclassified into both morpho-phonemic and syntactic subclasses. Subclassification on syntactic grounds is limited here to the distinction between personal and impersonal stems.

Personal verb stems can occur in sequence with any member of decade 30 (i.e. with a suffix marking 1st, 2nd or 3rd person, and singular, dual or plural numbers subject - see 6.3.1); impersonal verb stems occur in sequence with *-a- 33 'third person singular' but with no other member of decade 30.

Morpho-phonemic subclasses are distinguished on the basis of (a) stem selection of verbal minor morpheme alternants, and (b) stem alternation patterns.

In the list of verb stems which follows, classes labelled I-VII represent morpho-phonemic subclasses. The distribution of alternants is stated following the list. Impersonal class stems are marked V. imp., personal class stems (which are the large majority) are unmarked. As noted in 4.1.1, morphemes which have more than one alternant are represented by an asterisked shape while the allomorphs are represented by unasterisked (phonemic) shapes.

Verb class stems.

Class I.

	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	
*am-	am-	am-	am-	a-	'to go, move away'
*kn-	kn-	k-			'to recline, sleep, lie down'
*tan-	tan-	ta-			'to ascend, rise up from a surface'
*n-	n-	ϕ- (zero)			'to come to join others come into the company'
*yn-	yn-	y-			V. imp. 'to be heated, cooked, burnt, ignited'

Class II

*an-	an-	a-	ab-	'to copulate'
*dan-	dan-	da-	dab-	= *an-

	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	
*gom-	gom-	go-			'to sling a bag from the forehead'
*kw̃m-	kw̃m-	kw-			'to be non-functioning, die'
*ñ-	ñ-	ñ-	ñb-		'to bring something into legitimate and lasting contact with another object or surface', to fit, apply, give, transfer, etc.'
*ññ-	ññ-	ñ-	ñb-		'to consume, eat, drink, smoke, (tobacco)'
*tgom-	tgom-	tgo-			(ritual language only) =*ag-, *taw-3, *wk-
*tm-	tm-	t-			1. to don arm and leg bands' 2. 'to perch'
*ym-	ym-	y-			'to plant'
*yom-	yom-	yo-			'to point out, show'

Class III

*ag-	ag-	a-			'to make a sound, to sound, utter',
*bsg-	bsg-	bs-			'to sit'
*cg-	cg-	c-			'to adhere'
*ktg-	ktg-	kt-			'to leave, ignore, stop (an action)'
*lwg-	lwg-	lw-			'to slide, sweep, brush'
*lpg-	lpg-	lp-			'to abduct, pull from a fixed position'
*meg-	meg-	me-			'to call domestic pigs'
*ñag-	ñag-	ña-			'to force or project against or into, shoot, fire, pass a needle through, etc.'

*pag-	pag-	pa-		'to disturb the shape of, bend, dent, break, shatter, ripple, collapse, etc.'
*plg-	plg-	pl-		'to secure by fastening, sewing, etc.'
*pwg-	pwg-	pw-		'to force air through a passage, blow, inhale, exhale'.
*swg-	swg-	sw-	V. imp.	'to be extinguished'
*sog-	sog-	so-		'to pour, spill'.
*tag-	tag-	ta-		1. 'to have been away on an excursion'. 2. '(ritual language only) = *am-, *ap-, *tag-1.
*tg-	tg-	t-		'to roll string'
*weg-	weg-	we-		'to hide, conceal'
*yg-	yg-	y-		'to fill up (with solids, esp. foods)'

Class IV.

*ap-	ap-	a-	ow-	aw-	o-	'to come, move towards'.
*yap-	yap-	ya-	yow-			V. imp. 'to fall'.

Class V.

*ady-	ady-	ad-		'to put on, don'.
*agy-	agy-	ag-		'to heat'
*any-	any-	an-		'to open up, to empty out (contents of a bag)'

*ay-	ay-	a-	'to stabilize, put, set, become, turn into, etc.'
*dagy-	dagy-	dag-	'to heat'
*kby-	kby-	kb-	'to leave, release'
*ky-	ky-	k-	'to excrete'
*many-	many-	man-	'to warm oneself'
*pwny-	pwny-	pwn-	'to place or force something firmly in position, pierce, fix in, alight, etc.'
*tegy-	tegy-	teg-	'to carry on the shoulders'
*yepy-	yepy-	yep-	'to release, let go of, e.g. a bow'

Class VI.

*pyow-	pyow-	pyo-	'to search for'
*taw-	taw-	ta-	1. 'to fill with solids' 2. 'to exchange for goods or money, buy, sell, pay' 3. 'to apply pressure to a rigid surface in order to gain leverage' 4. 'to draw back and forth across a surface, as in fire-making with saw and thong'
*tow-	tow-	to-	= taw- ~ ta-
*tgaw-	tgaw-	tga-	1. 'to draw a bow'

‡.(ritual language)=*aŋ-, *dan, *ñag-, *pk-, *pwny-

Class VII. Members of this class occur in only one phonemic shape.

<i>ad-</i>	'to cook in an earth oven'
<i>adk-</i>	'to turn around, reverse'
<i>ak-</i>	'to whittle'
<i>ask-</i>	'to free from restriction, avoid ritually restricted people or things, be affinally related to'
<i>blok-</i>	'to distribute'
<i>d-</i>	'to hold'
<i>g-</i>	'to do act, work, make'
<i>glk-</i>	'to be startled'
<i>jak-</i>	'to rise up, reach an elevated position'
<i>kw-</i>	'to withdraw, jerk back'
<i>katk-</i>	'to conceal, block up'
<i>klwk-</i>	'to grate bananas'
<i>kod-</i>	'to prepare garden land by clearing trees, undergrowth, etc.'
<i>lak-</i>	'to cut longitudinally, split'
<i>lalk-</i>	'to tear, rip'
<i>lek-</i>	'to thread beads, sew bark cloth together (in making a hat)'
<i>lk-</i>	'to remove something from under the ground or from an earth oven, to exhume.'

<i>maɭ-</i>	'to fill with liquid'
<i>mok-</i>	'to take care of, tend, raise (domestic animals)'
<i>mɔk-</i>	'to hold between the lips'
<i>nɲ-</i>	'to perceive'
<i>ɲetk-</i>	'to follow someone's tracks'
<i>pɔk-</i>	'to reheat food, esp. food believed to be ritually contaminated'
<i>pɔ-</i>	'to harvest taro'
<i>plk-</i>	1. 'to propel over water, paddle, row, swim' 2. 'to pull out of something growing in the ground, to pluck'.
<i>pk-</i>	'to strike'
<i>ptk-</i>	'to be afraid of'
<i>pwk-</i>	'to pound, to hammer'
<i>sab-</i>	1. 'to husk sugarcane' 2. 'to cut up cassowary flesh'
<i>sand-</i>	'to depart, go beyond'
<i>sbk-</i>	V. imp. 'to be burnt, scorched'
<i>sk-</i>	'to enter'
<i>talk-</i>	'to break down a fence'
<i>tb-</i>	'to cut'
<i>tbk-</i>	'to hold by exerting pressure from two sides, as by vice, thongs, clamp, thumb and finger, etc.'

<i>tlak-</i>	'to jump over'
<i>tob-</i>	'to put on, e.g. hat'
<i>tk-</i>	'to create a discontinuity, divide; cut across, tattoo, give birth, part in the middle, etc.'
<i>tol-</i>	'to dress up, put on a hat'
<i>wk-</i>	'to crack, break up'
<i>wlek-</i>	'to rub the skin off shrub sinew from which cord is made'
<i>wlk-</i>	1. 'to meet, come into contact with someone' 2. 'to flood, rise high (of tide of water-level)'
<i>wok-</i>	'to vomit'
<i>wsb-</i>	<i>fsk-</i> , <i>ask-</i> (used only in ritual language)'
<i>wsk-</i>	'to undo'
<i>yk-</i>	'to open'
<i>yok-</i>	'to move something out of a constricted position, dislocate, get rid of, remove from a legitimate position'
<i>ypok-</i>	'to close, to bring back to a level position, to retaliate, to equalize'
<i>ywk-</i>	'to chase or pursue an intended victim'

In the following discussion of stem alternant distribution the arabic numerals quoted (e.g. 25.1) refer to verbal minor morphemes (inflectional suffixes) listed in 6.3.1.

It will be seen that, for the most part, alternants of classes I to IV divide into those which occur before 24 *-sp- 'present progressive' (which has alternants 24.1 -sp-, 24.2 -jp-, 24.3 -sw-, 24.4 -s..p, 24.5 -j..p, 24.6 -s..w), 25 *-p- 'present perfect-iterative' (which has alternants 25.1 -p-, 25.2 -b-) and 42 *p..p 'non-future subjunctive' (which has alternants 42.1 -p..p, 42.2 b..p), and those which occur elsewhere.

Class I stems select alternants 24.2 and 24.5 of 24, 25.2 of 25 and 42.2 of 42. Alternants Id occurs before 25 + 33. Alternants Ic occur before 26 and before 30 + 40. Alternants Ib occur before 24. Alternants Ia occur elsewhere.

Class II stems select alternants 24.1 and 24.4 of 24, 25.2 of 25, and 42.2 of 42. Alternants IIc occur before 24, and in free variation with IIa when not followed by a verbal minor morpheme. Alternants IIb occur before 25 + 31-32, 34-38 and 30 + 42. IIa occur elsewhere.

Class III stems select alternants 24.1 and 24.4, 25.1 and 42.1 of 24, 25 and 42, respectively. Alternants IIIb occur before 24, 25 and 42. IIIa occur elsewhere.

Class IV stems select alternant 24.3 and 24.6 of 24, 25.1 of 25 and 42.1 of 42. Alternants IVc occur before 22, 23, 25 + 33 and 30 + 41. IVe occur before 25 + 31-32, 34-38, and in free variation with IVb before 24. IVd occur before 26. IVb occur

before 24. IVa occur elsewhere.

Alternants of class V divide in those which occur before suffixes with initial /y/, and those which occur elsewhere. Vb occur preceding 21b, 23b, 21a, 26 + 31, 26 + 35, 26 + 38, 38 + 41, and 117. Va occur elsewhere.

Alternants of class VI divide into those which occur before suffixes with initial /w/ and those which occur elsewhere. VIb occur before 26 + 34 and 26 + 26. VIa occur elsewhere.

nŋ- 'to perceive' selects alternant 25.3 of 25 and 42.2 of 42. In all other cases members of classes IV-VII select alternants 24.1 and 24.4 of 24, 25.1 of 25 and 42.1 of 42.

The following table briefly illustrates some of the patterns of verb stem morpho-phonemic alternation. These are illustrated more completely in paradigms 1-25 in Appendix B.

	V + 22 + 31	V + 24 + 31	V + 25 + 31
Stem class			
I	<i>kn-ygp-yn</i>	<i>k-jp-yn</i>	<i>kn-b-yn</i>
	'I used to sleep'	'I am sleeping'	'I have slept'
II	<i>ym-ygp-yn</i>	<i>ym-sp-yn</i>	<i>y-b-yn</i>
	'I used to plant'	'I am planting'	'I have planted'
III	<i>ag-ygp-yn</i>	<i>a-sp-yn</i>	<i>a-p-yn</i>
	'I used to say'	'I am saying'	'I have said'

IV	<i>ap-ygp-yn</i>	<i>o-sw-yn</i>	<i>o-p-yn</i>
	'I used to come'	'I am coming'	'I have come'
V	<i>a-ygp-yn</i>	<i>ay-sp-yn</i>	<i>ay-p-yn</i>
	'I used to put'	'I am putting'	'I have put'
VI	<i>pyow-ygp-yn</i>	<i>pyow-sp-yn</i>	<i>pyow-p-yn</i>
	'I used to search'	'I am searching'	'I have searched'
VII	<i>d-ygp-yn</i>	<i>d-sp-yn</i>	<i>d-p-yn</i>
	'I used to get'	'I am getting'	'I have got'

4.2.3 Nominal (N) class base morphemes.

Nominal class base morphemes number several thousands. 22 subclasses, labelled N1-22, are distinguished on the basis of distributional differences within the phrase or within longer stretches. These distributional differences are discussed briefly below but are stated more exhaustively in 4.3 and chapters 7-9.

Subclasses N2-4, N8, N12, N17, and N20-24 are open classes, the rest are closed.

It will be noted below that certain subclasses of N are set up on the basis of their occurrence or non-occurrence as subject or object of a simple verbal clause, or on the basis of their selection of subject-marking suffixes in the verb phrase when they occur as subject. The formal bases of the relations subject-predicate, object-predicate, etc. are discussed in 9.2.

N1-N6 and N14 together constitute a class which can occur as the subject of a simple verbal clause.

N1 consists of some 20 morphemes which can occur following 101 *na-* '2nd person possessive' or 102 **nw-* '3rd person possessive'. All members of N1 are kinship terms (though not all kinship terms belong to this subclass), and are listed exhaustively in 4.3.2. It will be seen there that most N1 members have two alternants, one of which occurs after 101-102, the other elsewhere.

N2 consists of bases which, when they occur as subject, always select a third person singular, dual or plural subject-marking suffix (i.e. verbal minor morphemes 33, 35 or 38 but no other member of decade 30) in the verbal phrase. N2 includes all N1 members but not the members of N3-6 and N14. In most cases the referents are either people or important types of animals.

E.g.	<i>as</i>	'frog, frogs'	<i>kaj</i>	'pig, pigs'
	<i>ay</i>	'sister, sisters'	<i>kayn</i>	'dog, dogs'
	<i>b</i>	'man, men'	<i>koyb</i>	'witch, witches'
	<i>byn</i>	'woman, women'	<i>yakt</i>	'bird, birds'
	<i>man</i>	'brother, brothers'	<i>ykam</i>	'group, groups (of people)'

N3 consists of bases which, when they occur as subject, select only the third person singular subject suffix (i.e. 33 **-a-*

but no other member of 30) in the verb phrase. This class includes names of insects, unimportant animals, plants and many inanimate entities. Some speakers treat unimportant animals as N2 rather than N3.

E.g. <i>kan</i>	'beetle, beetles'	<i>kaŋm</i>	'banana, bananas'
<i>gam</i>	'sugar cane'	<i>kotp</i>	'house, houses'
<i>maskw</i>	'flea, fleas'	<i>kabgol</i>	'fly, flies'
<i>mon</i>	'tree(s), wood, fire'	<i>tap</i>	'thing(s), stuff, food'
<i>klap</i>	'tree category (<i>Casuarina oligodon</i>)'		

N1-3 together form a subclass which can occur phrase initially preceding N5, N11 or N15-18, i.e. can occur as the possessed or modified base in the construction which realizes minor morphemes 306 and 307 (see 4.1.2.3).

N4 bases consist of *an* 'who?' (singular), *anan* 'who?' (plural), and names of individual people, animals, rivers, and objects (but not place names). Their distribution in the phrase parallels that of N5 bases (person-markers), except (a) N4 bases do not occur preceding the nuclear minor morphemes 111-112 and 121-122, (b) when they occur as possessor (in minor morpheme 306) they precede rather than follow the base or bases possessed, (c) when they occur as subject of a verbal clause all N4 bases other than *anan* 'who? (plural)' are compatible with the third person singular subject-

marking suffix but not with other members of decade 30, i.e. are also members of subclass N3. *anan* is compatible only with third person non-singular subject-markers (minor morphemes 35, 38).

N5 bases consist of the following nine person-markers.

<i>yad</i>	<i>y-</i>		'1st person singular'
<i>nad</i>	<i>n-</i>		'2nd person singular'
<i>nwk</i>	<i>nwd</i>	<i>nw-</i>	'3rd person singular'
<i>ct</i>	<i>ctk</i>	<i>ct-</i>	'1st person dual'
<i>nt</i>	<i>ntk</i>	<i>nt-</i>	'2nd person dual'
<i>cn</i>	<i>cnk</i>	<i>cn-</i>	'1st person plural'
<i>nb</i>	<i>nbk</i>	<i>nb-</i>	'2nd person plural'
<i>ky</i>	<i>kyk</i>	<i>kwy-</i>	'3rd person plural'
<i>yk</i>	<i>yady-</i>		'1st person singular emphatic'.

Alternants followed by hyphen occur preceding 111 *-p* object marker and 112 *-pey* 'object marker, emphatic' (see discussion of N11 expanded bases in 4.3.2). Other alternants are in free or stylistic variation.

N5 members are characterized by a number of distributional features, certain of which they share with N4 members. Like N4 bases, they can mark possessor (i.e. can occur as part of the construction which realizes minor morpheme 306 - see 4.1.2.3), and are incompatible with bases of classes N15-18 except when a base of

class N1-3 is also present in the phrase, i.e. phrases such as *kotp yob yad* 'my big house' (N3+N16+N5) are possible, but **yob yad* (N16+N5) 'big I' and **yad yob* (N5+N16) 'I big', for example, are not. Only N5 bases can occur preceding nuclear minor morphemes 111-112 and 121-122 (see discussion of N5 expanded bases in 4.3.2). N5 members can be further subclassified according to their selection, when they mark subject, of subject-marking suffixes in the verb phrase; each base selects that member of decade 30 with which it agrees in person and number.

N6 members, most of which refer to bodily processes and conditions, always occur in subject (never in object) relation to verb phrases in the clause. N6 bases are incompatible in the phrase with bases of all classes other than N16. Each N6 base is incompatible in the clause with all but a few verb bases, in many cases with all but one verb base, and N6 bases can thus be further subclassified according to their combinatorial possibilities with individual verb bases. Such subclassification is not attempted here, but a partial list of N6 bases and the verb bases with which they are compatible in simple verb clauses, is given in Appendix C.

N7 members, most of which refer to types of action or eventation, always occur in direct object (never in subject) relation to

verb phrases, and are incompatible in the phrase with bases of all classes other than N16. Unlike other object-marking phrases, phrases containing N7 bases cannot follow the verb phrase in a clause. N7 bases are incompatible in the clause with all but a few verb bases, in many cases with all but a single verb base, and thus can be further subclassified according to their combinatorial possibilities with individual verb bases. Such subclassification is not attempted here, but a partial list of N7 bases and the verb bases with which they are compatible in simple verb clauses, is given in Appendix C.

N8 members consist of place names. The distribution of N8 in the phrase is similar to that of N4 except that N8 bases can occur in sequence with bases of class N9 and N10. Like N4, N8 members are incompatible in the phrase with bases of classes N15-18 except when the phrase also contains a base of class N1-3, i.e. sequences such as *kaytōg ñ skoy* 'Kaironk boys, boys of Kaironk' (N8+N2+N16) are possible, but not for instance **kaytog skoy* 'small Kaironk' (N8+N16). The distribution of N8 bases within stretches longer than the phrase (see chapters 8-9), however, differs from that of N4 bases in a number of features. E.g. N8 bases alone do not occur as subject of a verbal clause.

Certain place names consist of more than one morpheme. These are discussed in 4.3.2.

N9 comprises the following highly recurrent bases indicating direction:

<i>don</i>	'across valley, opposite and at roughly the same elevation'
<i>nen</i>	'up-valley, up-river, towards the head of the valley'
<i>ym</i>	'down-valley, down-river, towards the lower end of the valley'
<i>yan</i>	'down, downwards'
<i>yon</i>	'up, upwards'
<i>wy</i> ~ <i>-y</i>	'here' (The alternant <i>-y</i> occurs following 104, <i>wy</i> occurs elsewhere).

N9 bases can occur following 104-108, as e.g. *b-y* 'here in this direction', *b-nen* 'up-valley direction', *ka-nen* 'in your direction up-valley', *bk-nen* 'just a short distance up-valley', *ak-nen* 'there up-valley'. N9 members are incompatible in the same phrase with bases of all classes other than N8 and N9.

N10 members refer to relative location and include the following:

<i>akay</i>	'where?, place of origin' (<i>akay</i> has the meaning 'where?' only when it occurs with 301 'question').
<i>at</i>	'top, upper, roof, on top'
<i>ayn</i>	'lower'
<i>ben</i>	'underneath, floor'

<i>got</i>	'beside'
<i>kā</i>	'back, reverse, other side of'
<i>mǵan</i>	'interior, inside'
<i>mǵem</i>	'interior, interior'
<i>man</i>	'nearby (place)'
<i>molwk</i>	'lower, under, bottom, floor'
<i>ms</i>	'exterior, outside'
<i>pat</i>	'distant (place)'
<i>taw</i>	'opposite (place)'
<i>tdon</i>	'corner'

N10 members are incompatible in the phrase of bases of all classes other than N8 and N9. N10 differs from N9 in that (a) N10 members cannot follow nuclear minor morphemes 104-108, and (b) N10 bases precede N9 bases when they occur in sequence in the phrase. E.g. *kotp āt* 'top of house, roof', *kotp mǵān* 'inside of house, room' (N8+N10), *kā b-yōn* 'up there on the other side', *taw b-yōn* 'opposite on the other side' (N10+104+N9) are possible phrases but **kaj ms* 'outside the pig' (N2+N10) or **ms skōy* 'small outside' (N10+N16), **b-yon kā* (cf. *kā byōn*) are not.

There are no N11 class base morphemes, but certain expanded bases are classified as N11 (see 4.3.2).

N12 bases are incompatible in the phrase with bases of all classes except N13 and N16-18. N12 members all refer to time or to time-indicating things. E.g. *takn* 'moon, month', *ɪn* 'day', *omɪnɔp* 'time, period', *pub* 'sun', *lotw* 'church, week, Sunday', *kɪsmas* 'year, christmas'. N12 is an open class, and new members have been borrowed or are being borrowed from English and Melanesian Pidgin, e.g. *madey* 'Monday', *twedeɪ* 'Tuesday', *trydeɪ* 'Wednesday', *podeɪ* 'Thursday', *ptaydeɪ* 'Friday', *satteɪ* 'Saturday', *janwatɪ* 'January', *juw* 'June', etc. are now used by some speakers.

N13 is a small closed class consisting of time-marking bases. N13 members are incompatible in the phrase with bases of all classes other than N12. N13 bases are as follows:

<i>akay</i>	'when?'
<i>atk</i>	'before the present'
<i>btet</i>	'formerly, at some previous time'
<i>ason</i>	'three days from now'
<i>ksen</i>	'later, after, at some future time'
<i>kysm</i>	'dusk, night'
<i>mdak</i>	'later in the day, shortly'
<i>mdatk</i>	'earlier in the day, already, just a while ago'
<i>menk</i>	'two days from now'
<i>mnek</i>	'next day, the following day'

<i>nd</i>	'formerly'
<i>ps</i>	'permanently, for ever'
<i>pet</i>	'regularly, constantly, every day'
<i>toy</i>	'tomorrow'
<i>toytk</i>	'yesterday'
<i>wostey</i>	'formerly, long ago'

N14 is a small closed class consisting of bases whose distribution overlaps both N6 and N7. E.g. *ywan* 'hunger', *slk* 'skin irritation, itchiness, tinea', *wsn* 'sleep', *swk* 'laugh, shout'. (See App. C)

N15-18 together constitute a class which can occur following bases of classes N1-3 as modifier in the construction which realizes minor morpheme 307 'modifier-modified relation' (see 4.1.2.3 for examples).

N15 consists mainly of colour terms, e.g. *twđ* 'white', *waln* 'yellow', *mosb* 'brown, black', *lkañ* 'red', *mwk* 'blue'. N15 bases can precede but cannot follow N16-18 bases in the phrase. E.g. *b mosb yob* 'big brown man' (N2+N15+N16), *yakt twđ omđl* 'two white birds' (N2+N15+N18) are possible phrases, but **b mosb yob* 'brown big man' is not.

N16 members mainly refer to qualities other than colour, quantity, or number. When they occur in sequence in the phrase, N16 follow N15 but precede N17-18 bases. E.g. *tep* 'good', *tmeý* 'bad,

evil', *yob* 'big', *skoy* 'small', *saky* 'uncomprehending, stupid, deaf, untamed, forgetful', *sayn* 'weak', *kls* 'strong'.

N17 members refer to number, sequence, identity or quantity, e.g. *bap* 'a certain one, another', *gwap* 'some, an amount, some others', *konay* 'many', *magysek* 'all', *kagol* 'six, wrist', *wajtem* 'ten, shoulder', *agp* 'eleven, clavicle', *nd* 'first, senior, prior', *nab* 'middle', *ksen* 'latter, junior, younger'. N17 members are mutually exclusive of each other and of N18 members in the phrase, and follow but do not precede N15-N16 in the phrase. E.g. *b-bap* 'a certain man' (N2+N17), *b-gwap* 'some other men' (N2+N17), *b y^ob b^ap* 'a certain big man' (N2+N16+N17), *b twd y^ob gw^ap* 'some other white men' (N2+N15+N16+N17) are possible phrases, but not **b konay omnal* 'many two men' (N2+N17+N18) or **b konay yob* 'big many men' (N2+N17+N16).

N18 members consist of *nokom* 'one' and *omnal* ~ *omnay* ~ *omal* ~ *omay* 'two'. N18 bases are mutually exclusive in the phrase with N17 bases, but unlike N17 they can occur one or more times in a phrase, e.g. *b omnal omnal omnal nokom* 'seven men'.

N19 bases can occur reduplicated or partially reduplicated. N19 includes some members of N16, N18 and N22. E.g. *tep-tep* 'very good' (N16+N16), *nokom nokom* 'one by one, dispersed, few' (N18+N18), *key key* 'each' (N22+N22), *skoy skoy* or *s-skoy* 'very small' (N16+N16).

N20 consists of bases which can occur preceding nuclear minor morpheme 114 *-sek* 'possessing, intensive, covered with, etc.', and contains most members of N1-3, N12, N15-17. E.g. *gunap-sek* 'some more, additional' (N17+114), *saky-sek* 'very uncomprehending, stupid, forgetful' (N16+114), *twd-sek* 'very white' (N15+114), *am-sek* 'bow-possessing' (N3+114), *lkañ-sek* 'bloody, bloodshot' (N3+114).

N21 consists of those members of N1-3 and N12 which can occur preceding nuclear minor morpheme 119 'purposive'. E.g. *kmn* 'game mammal', *mon* 'wood', *kobty* 'Cassowary' (*Casuarinus* spp.), *ñg* 'water', *etp* 'what?', as *kmn-en* 'after game mammal, to get game mammal', *mon-en* 'after fire-wood, to get wood', *ñg-nen* 'after water', *etp-nen* 'why?, for what reason?'.

N22 members are incompatible in the phrase with bases of all other classes. E.g. *kapkap* 'slowly, gently, carefully, stealthily, silently', *kasek* 'quickly, forcefully, intensely', *pen* 'reciprocally', *key* 'self, by oneself', *awsek* 'alone, unaccompanied'.

4.3 Expanded bases.

4.3.1 The internal structure of expanded bases.

Certain morpheme sequences which will substitute for single base morphemes are classified as expanded bases. Expanded bases have the same combinatorial privileges as base morphemes of the

same class, except that of further expansion.

Expanded bases consist of a base morpheme plus a nuclear minor morpheme or morphemes, or of certain sequences of base morphemes. Nuclear minor morphemes of decade class 110 have transformative function, i.e. the class of an expanded base containing a member of decade 110 is not necessarily the same as that of the base morpheme it contains. E.g. occurrence of a V class base preceding 114 *-ep 'function or characteristic marker' results in an expanded base of class N16, as *tb-* 'to cut' (V), *tb-ep* 'associated with cutting, that which cuts, one who cuts, cutter' (V+114.1)^{N16}.

In formulaic representations in 4.3.2 below the material belonging to each expanded base cited is enclosed in brackets with class label appended (as in the example above). In later chapters, however, the boundaries and class of expanded bases are shown in formulae only where the class of the expanded base differs from that of the base morpheme it contains, i.e. where the expanded base contains a transformative nuclear minor morpheme.

4.3.2 Expanded base classes.

N1 class expanded bases consist of a base morpheme of class N1 preceded by nuclear minor morpheme 101 *na-* '2nd person possessive' or 102 **nw-* 'third person possessive'. N1 members (both base morphemes and expanded bases) are listed below. It can be seen

that most N1 base morphemes have two alternants, one of which occurs following 101 *na-* and 102 **nw-*, and the other of which occurs elsewhere. 102 **nw-* 'third person possessive' has alternants *no-* ~ *nw-*. *no-* occurs before five of the N1 members listed below, *nw-* occurs elsewhere.

In the following list the 'elsewhere' (free form) alternants of N1 appear in the left hand column; the two right hand columns contain the alternants which follow *na-* and **nw-*. Hyphen separates the prefixed possessive morph from the N1 base morph.

N1 bases

N1 base morphemes		N1 expanded bases	
(free form allomorphs)		101 + N1	102 + N1
		(2nd. pers. poss. + base)	(3rd. pers. poss. + base)
<i>aj</i>	Hsis, Bw	<i>na-j</i>	<i>no-j</i>
<i>amkan</i>	sisd, d of female cousin	<i>na-mkan</i>	<i>nw-mkan</i>
<i>angoy</i>	mBw	<i>na-mgoy</i>	<i>nw-mgoy</i>
<i>amy</i>	m, msis, Fw, FBw, etc.	<i>na-rm</i>	<i>no-rm</i>
<i>aps</i>	Fm, mm, etc.	<i>na-ps</i>	<i>nw-ps</i>
<i>awal</i>	Fsis	<i>na-wal</i>	<i>nw-al</i>
<i>awy</i>	wsis	<i>na-wy</i>	<i>no-wy</i>
<i>ay</i>	sis , female cousin	<i>na-nay</i>	<i>nw-nay</i>

<i>banok</i>	wF, dH	<i>na-mok</i>	<i>nw-mok</i>
<i>bany</i>	wB, sisH	<i>na-ny</i>	<i>no-ny</i>
<i>basd</i>	FF, mF, male of grandparental generation	<i>na-sd</i>	<i>nw-sd</i>
<i>bapy</i>	F, fsisH, F's male cousins	<i>na-p</i>	<i>no-p</i>
<i>bpap</i>	mB, m, male parallel cousins	<i>na-bap</i>	<i>nw-bap</i>
<i>bwow</i>	FB, F's male cousins	<i>na-wow</i>	<i>nw-ow</i>
<i>man</i>	B, male parallel cousin	<i>na-man</i>	<i>nw-man</i>
<i>nbem</i>	male cross-cousin, son of all men who are <i>man</i> to F or women who are <i>ay</i> to F.	<i>na-mwd</i>	<i>nw-mwd</i>

B= brother, F= father, H = husband, d = daughter,
sis = sister, m = mother, w = wife.

E.g. *amy!* *amy!* 'Mother! Mother!'; *na-nm* or *narm-nǎđ*
'your (sg.) mother'; *nan-nm n̄t* 'your (d.) brother'; *amy yǎđ* 'my
mother', *amy čt* 'our (d.) mother'.

Before a following base of class N5 (person-marker)
the free form alternants are in free stylistic variation with ex-
panded bases consisting of 101-102 + N1. E.g. *na-p nǎđ* ~ *bapy-nǎđ*
'your father'; *na-nay-nǎđ* ~ *ay-nǎđ* 'your sister', *nw-mwd n̄k* ~
nbem n̄k 'his cross-cousin'.

Those personal names (N4), place names (N8), and names of flora and fauna (N2, N3) which appear to consist of several morphemes are treated here as expanded bases of the same class as the base morphemes for which they will substitute, irrespective of the class of the morphemes of which they are composed. E.g. *tob yōb* 'Big Feet' (a personal name) (N3+N16)^{N4}, *mēg-sek* 'Toothy' (personal name) (N3+114)^{N4}, *twbum kab ket* 'Flower pecker' (*Oreocharis arfaki*) (a bird name which means literally 'belonging to the fruit-spray tree stone') (N3+N3+131)^{N2}; *yng twd* 'Cuscus var.' (*Phalanger gymotis*), literally 'white tail' (N3+N15)^{N2}.

N5 expanded bases consist of a non-singular N5 base morpheme followed by 121 *-*may* 'dual' or 122 -*ykam* 'plural'. *-*may* has three alternants, -*may* ~ -*mnał* ~ -*mṇay*, in stylistic variation, -*may* is the most frequently occurring alternant. E.g.

<i>ct-may</i> ~ <i>ctk-may</i>	'1st person dual'
<i>nt-may</i> ~ <i>ntk-may</i>	'2nd person dual'
<i>ky-may</i> ~ <i>kyk-may</i>	'3rd person dual'
<i>cn-ykam</i> ~ <i>cnk-ykam</i>	'1st person plural'
<i>nb-ykam</i> ~ <i>nbk-ykam</i>	'2nd person plural'
<i>ky-ykam</i> ~ <i>kyk-ykam</i>	'3rd person plural'

N9 expanded bases consist of a nuclear minor morpheme of class 105-8 plus an N9 base morpheme. E.g. *b-yon* 'up, upwards',

b-nen 'up-valley', *b-ym* 'down-valley', *b-don* 'across-valley', *b-yan* 'down, downwards', *b-y* 'here, towards this place' (all (104+N9)); *ka-yan* 'down there in your direction', *ka-don* 'across-valley in your direction' (105+N9); *bk-nen* 'up-valley a short distance, just there up-valley' (106+N9); *ak-ym* 'down-valley there' (108+N9).

N11 expanded bases consist of N5 base morphemes followed by *-p* 'object', or by *-pey* 'object, emphatic relation' or, in the case of non-singular bases, ^{by}~~y~~*-may* 'dual' or *-ykam* 'plural'.

N11 bases are as follows:

<i>y-p</i>	'1st person singular, object'
<i>n-p</i>	'2nd person singular, object'
<i>nw-p</i>	'3rd person singular, object'
<i>ct-p</i> ~ <i>ct-p-may</i>	'1st person dual, object'
<i>nt-p</i> ~ <i>nt-p-may</i>	'2nd person dual, object'
<i>kwy-p</i>	'3rd person non-singular, object'
<i>kwy-p-may</i>	'3rd person dual, object'
<i>cn-p</i> ~ <i>cn-p-ykam</i>	'1st person plural, object'
<i>nb-p</i> ~ <i>nb-p-ykam</i>	'2nd person plural, object'
<i>kwy-p-ykam</i>	'3rd person plural, object'
<i>y-pey</i>	'1st person singular object, emphatic'
<i>n-pey</i>	'2nd person singular object, emphatic'
<i>nw-pey</i>	'3rd person singular object, emphatic'

<i>ct-pey</i> ~ <i>ct-pey-may</i>	'1st person dual object, emphatic'
<i>nt-pey</i> ~ <i>nt-pey-may</i>	'2nd person dual object, emphatic'
<i>kwy-pey</i>	'3rd person non-singular object, emphatic'
<i>kwy-pey-may</i>	'3rd person dual object, emphatic'
<i>cn-pey</i> ~ <i>cn-pey-ykam</i>	'1st person plural object, emphatic'
<i>nb-pey</i> ~ <i>nb-pey-ykam</i>	'2nd person plural object, emphatic'
<i>kwy-pey-ykam</i>	'3rd person plural object, emphatic'

Any sequence consisting of a \check{V} class stem (base) plus 116 *-ep 'function or characteristic marker', is an expanded base of class N16. E.g. *nŋ-ep* 'associated with perceiving, that which perceives, he who perceives, etc.', *agy-ep* 'associated with heating, that which heats, he who heats, etc.', *tk-ep* 'associated with cutting across, that which cuts across, etc.', *ñŋ-eb* 'associated with eating, what which eats, etc.'.

Any sequence consisting of an N class base plus 114 -sek 'possessing, etc.' is an N16 class expanded base. E.g. *kab* 'stone', *ñg* 'liquid, water', *kotp* 'house, abode', *gop* 'hook, handle, catch, key', *lum* 'soil, ground' (all of class N3), *byn* 'woman, wife', *kaj* 'pig' (both of class N2) *lkañ* 'red', *twd* 'white' (both N15), all occur preceding 114 as follows: *kab^v-sek* 'stony, full of stones', *ñg^v-sek* 'watery, soaked', *kotp^v-sek* 'house-possessing, abode-possessing, container-possessing', *gop^v-sek* 'having a hook, handle, catch, key', *lum^v-sek* 'dirty, covered with dirt', *byn^v-sek* 'having a wife, married (of a man)', *kaj^v-*

sek 'pig-possessing', *lkañ-^vsek* 'very red, covered with red, blood-shot', *twá-^vsek* 'covered with white'.

Any sequence consisting of an N class base plus 119 *-*nen* 'purposive' is an expanded base of class N21. E.g. *tap-nen* 'after food' (N3+119)^{NG21}, *b-nen* 'after a man, husband' (N2+119)^{N21}, *etp-nen* 'for what reason?, why?' (N3+119)^{N21}.

Any sequence consisting of a V class stem (base) is plus 117 -*yjsek* 'stability' is an expanded base of class N22. E.g. *tgaw-yjsek* 'fixed in the act of drawing a bow', *nn-yjsek* 'fixed in the act of perceiving, staring, etc.', *d-yjsek* 'fixed in the act of obtaining, holding' (all (V+117)^{N22}).

Any sequence consisting of an N class base base reduplicated or partially reduplicated is classified as an expanded base of the same class as that of the constituent base morphemes. E.g. *s-sayn* 'very weak, loose, lax, soft, abated' (N16+N16)^{N16}, *s-skoy* 'very small' (N16+N16)^{N16}, *konay konay* 'very numerous' (N17+N17)^{N17}, *key key* 'each, separately, individually' (N22+N22)^{N22}, *pen pen* 'reciprocally (iterative) (N22+N22)^{N22}.

5. Phrases.

Chapters 6-10 are concerned with the combinatorial possibilities of bases (expanded bases or base morphemes) and peripheral minor morphemes within longer stretches.

It is convenient to first distinguish a unit, called the *phrase*, within which certain fixed distributional relations hold between bases and peripheral minor morphemes which permit their classification into position (order) and substitution classes.

Phrases are characterized by a number of features which together support their isolation as a significant unit in the grammar, including the following.

(a) They occur alone as semantically and grammatically acceptable utterances.

(b) They are transposable within longer stretches. A number of permutations are possible of any combination of phrases in a clause.

(c) Within phrase boundaries morphemes and morpheme classes exhibit many fixed distributional ^{inter-}relations which do not hold across phrase boundaries, including those of fixed relative order, non-recurrence, mutual exclusiveness, dependent occurrence, and obligatory co-occurrence. ~~and~~

(d) In slow speech non-final juncture /,/ occurs at

the boundary of most phrases within sentences, but does not normally occur within phrases.

(e) Normally, when a speaker pauses or hesitates before completing a phrase, he begins the phrase again. This behaviour is also usual when the unit interrupted is minimal utterance, but is less characteristic of units consisting of more than one phrase.

Phrases consist of a nucleus position filled by a base or by a sequence of bases which will substitute for a single base of given class, and a postposed peripheral position filled by peripheral minor morphemes. In contrast to nuclear minor morphemes (which distribute around individual bases within the nucleus, and are thus capable of recurring in multi-base nuclei), peripheral minor morphemes distribute around (follow) the nucleus as a whole. Phrase structure is described by first stating the combinatorial possibilities of bases within the nucleus and those of peripheral minor morphemes within the periphery, and then stating the combinatorial possibilities of nucleus ^{and} periphery classes.

Phrases fall into two major classes, verb and nominal phrases. Verb phrases contain only verb bases in the nucleus and only verbal minor morphemes in the periphery. Nominal phrases contain only nominal bases in the nucleus and only nominal morphemes

minor morphemes in the periphery. Both the nucleus and the periphery are obligatory filled.

Verb phrases are divided into three major classes and some 18 subclasses according to the class of their peripheral constituent. (The periphery of a verb phrase consists of one or more morphemes marking categories such as tense, aspect, mood, sequential relation, and subject identity or non-identity relation between verb phrases). Nominal phrases fall into eight classes, according to the class of their nuclear constituent.

Phrase boundary occurs: (1) at terminal juncture (2) between any two adjacent morphemes of classes which, according to the combinatorial formulae in 4.3 and 6-7, cannot occur consecutively within a phrase. E.g., phrase boundary occurs whenever a postposed peripheral minor morpheme precedes a morpheme which is not a postposed peripheral minor morpheme, whenever a V-class base follows an N-class base, whenever an N⁹ class base follows a base of any class other than N⁸ or N¹⁰, and so on.

These rules determine the boundaries of most but not all phrases. In certain utterances the phrase boundaries cannot be unambiguously determined by any rule known at present, i.e. these utterances are ambiguous - can be assigned more than one structural description. E.g. the utterance

b . *sak^y* *ay-p*.

man stupid he/it has set

(N2 + N16 + V + 25.1 + 33.1)

can be analyzed as consisting of two phrases (*b sak^y*) (*ay-p*) meaning 'the stupid man has put it', or three phrases (*b*) (*sak^y*) (*ay-p*) meaning 'the man has become stupid/deaf/uncomprehending'.

The internal structure of phrases is stated in chapters 6-7. Except for a few cases of selectional restrictions operating between particular base and minor morpheme classes across phrase boundary, the remaining chapters (8-10) are not concerned with combinations of bases and minor morphemes as such, but with the combinatorial possibilities of phrases within phrase groups, of phrase groups within clauses, and of clauses within sentences.

6. Verb phrases.

6.1 Constituents of the verb phrase.

Verb phrases consist of a nucleus of one or more verb stems (with or without the negative prefix **ma-*) and an obligatory postposed inflectional constituent consisting of verbal minor morphemes.

It may be noted, in anticipation of the classification of verb phrases made in 6.3, that the class of a verb phrase is determined by its inflectional constituent. Verb phrase nuclear constituents (nuclei) fall into a single class; inflectional constituents, on the other hand, are divided into three major subclasses differing from each other in both internal structure and distribution.

6.2 The verb phrase nucleus.

The nucleus position in the verb phrase can be filled by (a) a single verb stem (b) a sequence of verb stems (c) any verb stem or sequence of verb stems plus *d-* 'to complete' or *md-* 'to continue' or (d) any of the preceding constructions, i.e. (a), (b) or (c), in sequence with **ma-* 'negative'.

For examples of verb phrases containing a single verb base appear in Paradigms 1 - 8, 12 - 25 in Appendix B.

No structurally definable limit can be placed on the number of verb stems which can occur in the nucleus of the verb

phrase, but the number is usually one, two or three, and rarely exceeds four or five. The restrictions on stem combinations appear to be semantic not structural. Several hundred sequences of two verb stems (other than those in which the second stem is *d-* or *md-*) have been recorded to date. The following, for example, are some of the two stem sequences in which *tb-* 'to cut' is the first member:

- tb ask-* 'to cut free, release by cutting' (*ask-* 'to free from restriction').
- tb klwk-* 'to cut out or hollow out the centre of something (as in carving a wooden bowl)' (*klwk-* 'to grate, scrape')
- tb lak-* 'to split' (*lak-* 'to open up lengthways')
- tb sak-* 'to cut off' (*sak-* 'to remove a part from a whole, take something off a parent body')
- tb tk-* 'to cut in half, sever, cut apart' (*tk-* 'to create a hiatus, make a parting')
- tb yk-* 'to cut open' (*yk-* 'to open in the middle, make an opening')
- tb yok-* 'to cut away, cut clear' (*yok-* 'to get rid off, remove from a set position')

The following are examples of verb phrases with nuclei consisting of three or more verb stems:

I have finished splitting the wood.

mon tb lak d-p-yn.

wood cut split I have finished

(N3)^{NP} (V + V + V + V + 25.1 + 31.1)^{VP}

I have got and brought some wood.

mon pk d ap ay-p-yn.

wood strike get come I have put

(N3)^{NP} (V + V + V + V + 25.1 + 31.1)^{VP}

I have gathered and brought some food.

tap g d ap ay-p-yn.

stuff get come I have put

(N3)^{NP} (V + V + V + V + 25.1 + 31.1)^{VP}

Go and get it and hit (him)!

am d pk-an!

go get you strike

(V + V + V + 26 + 32.2)^{VP}

He kept eating and eating until he finished it.

nb nb nb nb nb d-p

eat eat eat eat eat he finished

(V + V + V + V + V + V + 25.1 + 33.1)^{VP}

The verb stems *d-* 'to hold, constrict, etc.' and *md-* 'to be, exist, persist, etc.' can follow any verb base or sequence of verb bases. In this position *d-* and *md-* carry aspect-like meanings which can be translated 'to finish, complete' and 'to continue', respectively. For example:

<i>mnm ag d-p-yn</i>	'I have finished speaking' (N V) ^{NP} (V+V+25.1+31.1) ^{VP}
<i>mnm ag mdpyn</i>	'I am still talking' (N V) ^{NP} (V+V+25.1+31.1) ^{VP}
<i>mnm ag d-sp-yn</i>	'I am just on the point of finished/ have just finished talking' (N V) ^{NP} (V+V+24.1+31.1) ^{VP}
<i>d d-p-yn</i>	'I have finished obtaining, holding' (V+V+25.1+31.1) ^{VP}
<i>d md-p-yn</i>	'I am still obtaining, holding' (V+V+25.1+31.1) ^{VP}
<i>ñag d-p-yn</i>	'I have finished shooting' (V+V+25.1+31.1) ^{VP}

The negative prefix **ma-* is represented in formulae by 01. **ma-* has two alternants: 01.1 *ma-* and 01.2 *m-*. *m-* occurs before vowels *ma-* occurs elsewhere. E.g.

<i>m-ow-p</i>	'he has not come' (01.2+V+25.1+33.1) ^{VP}
<i>m-am-n-mn</i>	'you should not go' (01.2+V+23.1+32.5) ^{VP}
<i>ma-g-n-mn</i>	'you should not do (it)' (01.1+V+23.1+32.5) ^{VP}
<i>ma-nñ-b-yn</i>	'I do not know, I have not perceived' (01.1+V+25.2+31.1) ^{VP}

6.3 The inflectional constituent.

6.3.1 Classification of inflectional suffixes.

The inflectional suffixes (verbal minor morphemes) are listed in decades 10-50 below. The indexing method follows that detailed in 4.1. It will be noted that in one case more than 9 morphemes (belonging to two substitution classes) are assigned to the same decade; in this case one substitution class is numbered 20 and the other 20a.

Illustrative examples of all inflectional suffixes appear in Paradigms 1 - 25 in Appendix B.

Decade 10

11 *e- 'prior action by different subject' 11.1 -e- 11.2 -o-
11.2 occurs before 20+34 or 20+36, 11.1 occurs elsewhere.

Decade 20

Members of this decade belong to two substitution classes. 21 - 26 mark tense, aspect or mood. 21a - 24a mark identity of subject relation, and sequential relation, between verb phrases.

21 - 26 are as follows:

21 *-ab- 'recent past, immediately preceding' 21.1 -ab-
21.2 -ay- 21.3 -a-. 21.2 and 21.1, and 21.3 and 21.1

are in free or stylistic variation when they follow 24a + *g-* 'to do'. In the environment 24a + *g-* 'to do' -- + 31 or 35, either 21.1 or 21.3 can occur. In the environment 24a + *g-* 'to do' -- + 32-34 or 36-38, either 21.1 or 21.2 can occur. 21.1 occurs in all other positions.

22 *-ygp-* 'past iterative, past habitual'

23 **-n-* 'future subjunctive, future prescriptive' 23.1 *-n-*
23.2 *-j-*. 23.2 occurs before 34 or 36, 23.1 occurs elsewhere.

24 **-sp-* 'present transient, present progressive' 24.1 *-sp-*
24.2 *-jp-* 24.3 *-sw-* 24.4 *-s..p* 24.5 *j..p*
24.6 *s..w*. 24.4-24.6 occur in sequence with 33 **-a*
'3rd person singular', 24.1-24.3 occur before all other members of decade 30. 24.3 and 24.6 occur following stems of class IV, 24.2 and 24.5 occur following stems of class I, 24.1 and 24.4 occur following stems of other classes.

25 *-p-* 'present perfect, present iterative'. Allomorphs 25.1 *-p-* 25.2 *-b-*. 25.2 occurs following stems of class I and II and *nŋ-* 'to perceive'. 25.1 occurs elsewhere.

26 **-∅-* 'hortative, imperative'. 26 is realized as zero in all positions. (Its presence is marked in verb phrases of

type 1 or 2 by the absence of any other member of decade 20, and in certain positions by the occurrence of certain allomorphs of decade 30 members) (see below).

20a members are as follows:

- 21b *-y* 'prior action by same subject'
 22b *-tag* 'prior action by same subject'
 23b *-yg* 'simultaneous action by same subject'
 24b *-ng* 'prospective action by same subject'

22b appears to occur only in *sosm* (folktales).

Decade 30

Decade 30 members belong to a paradigmatic set of subject markers, each of which has several alternants. To facilitate the statement of their distribution these alternants are classified into ^{substitution} 7 sets distinguished by decimal point numbers. In some cases the same alternant is assigned more than one such member, i.e. is a member of more than one substitution set.

Alternants numbered .3 occur before 41 *-k* 'past', those numbered .4 occur before 42 **pp* 'past subjunctive', and those numbered .5 occur following 23 **n* 'present subjunctive'. 32.7 occurs following the verb bases **am-* 'to go' and *n-* 'to go with, join'. .2 alternants occur after a verb stem plus 26 *-ϕ-* 'hortative', and .6 alternants occur after 11 **-e-* 'different subject' plus 26 *-ϕ-*

'hortative'. 33.7 occurs in sequence with 24 χ *-sp- 'present progressive', as noted above. .1 alternants occur in all other environments.

- 31 **-yn* '1st person singular' 31.1, 31.2 *-yn* 31.3, 31.4
-n, 31.5 *-m* 31.6 *-n*
- 32 **-an* '2nd person singular' 32.1, 32.2 *-an* 32.3, 32.4 *-na-*
 32.5 *-mn* 32.6 *-y/* 32.7 *-on*
- 33 **-a* '3rd person singular' 33.1 ϕ -, 33.2 *-an* 33.3 *-a-*
 33.4 *-k-*, 33.5 *-mun* 33.6 *-yan* 33.7 *-a-*
- 34 **-wt* '1st person dual' 34.1, 34.2 *-wt*, 34.4 *-tw-*
 34.5, 34.6 *-t*
- 35 **-yt* '2nd person dual' 35.1, 35.2 *-yn*, 35.3, 35.4 *-t-*
 35.5 *-myt*, 35.6 *-t*
- 36 **-wn* '1st person plural' 36.1, 36.2 *-wn* 36.3 *-nw-*
 36.4 *-nw-* 36.5, 36.6 *-n*
- 37 **-m* '2nd person plural' 37.1, 37.2 *-m*, 37.3 *-p-*,
 37.4 *-k-*, 37.5 *-mb*, 37.6 *-m*
- 38 **-ay* '3rd person plural' 38.1 *-ay*, 38.2 *-yan*, 38.3, 38.4
-ya-, 38.5 *-gy*, 38.6 *-y*

Decade 40

The two members of decade 40 belong to a paradigmatic set of tense-aspect markers which are mutually exclusive with

and which substitute (except in position of occurrence) for members of decade 20a.

41 $-k$ 'past'

42 $*-p...p$ 'past subjunctive'. Allomorphs 42.1 $-p...p$,
42.2 $b \dots p$

42 is realized as a discontinuous morph. 42.2 occurs following verb bases of classes I and II and $n\eta$ - 'to perceive'; 42.1 occurs following other verb bases.

Decade 50

51 $-n\eta$ 'simultaneous action by different subject'

6.3.2 Classification of inflectional constituents and verb phrases.

Inflectional constituents fall into three classes, called here types 1, 2 and 3. Any verb phrase which contains an inflectional constituent of type 1 is classified as a type 1 verb phrase, any verb phrase which contains an inflectional constituent of type 2 is classified as a type 2 verb phrase. Verb phrases are classified as type 1, 2 or 3 according to the class of their inflectional constituent. The distribution of verb phrases within longer stretches is stated in 8-10.

6.3.3 Type 1 inflectional constituents.

Type 1 inflectional constituents consist of either a decade 20 member plus a decade 30 member or of decade 30 member

plus a decade 40 member. E.g. *sand-sp-yn* 'I am departing' (V+24.1+31.1)^{VP1} ; *am-n-mn* 'you should go' (V+23.1+32.5)^{VP1} ; *a-b-n-p* 'I might have gone' (V+31.4+42.2)^{VP1} ; *amn-ya-k* 'they (pl.) went' (V+38.3+41)^{VP1} ; *md-ygp-yn* 'I used to be' (V+22+31.1)^{VP1}. Full illustrative examples appear in Appendix B (paradigms 1-8).

6.3.4 Type 2 inflectional constituents.

Type 2 inflectional constituents consist of 2¹4a - 2¹1a alone or of 11 + 2¹4a.

As noted in 6.3.1, morphemes 2¹1a-2¹4a indicate identity of subject relationship and sequential relationship between the verb phrase they are a constituent, and subsequent verb phrases. A verb phrase containing a type 2 inflectional constituent always occurs in sequence in the clause with a verb phrase containing a type 1 inflectional constituent (see 10. for detailed discussion of this point).

E.g. fetch it here!

d-y aw-ān!

having got you come
(V+2¹1a)^{VP2} (V+26+32.1)^{VP1}

they have come to get it.

d-ng o-p-ay.

to get they have come
(V+2¹4a)^{VP2} (V+25.1+38.1)^{VP1}

I am sitting watching/listening.

ba^cg md-yg nn-b-yn.

sit do I remain I perceive

(V+V+23a)^{VP2} (V+25.2+31.1)^{VP1}

I will come when I have finished work.

wog g d-y, ow-^yng g-p-yn.

work do having finished prospective coming I do

(N17)^{NP} (V+V+21a)^{VP2} (V+24a)^{VP2} (V+25.1+31.1)^{VP1}

Further examples appear in 10. and in Paradigms 12-

17 in Appendix B.

6.3.5 Type 3 inflectional constituents.

Inflectional constituents of type 3 have a more complex internal structure than either type 1 or type 2 constituents. Type 3 constituents consist of any of the following sequences:

(a) 11 + 30 + 40

(c) 11 + 26 + 30

(b) 11 + 23 + 30

(d) 25 + 30 + 51

(e) 11 + 30 + 41 + 51

Verb phrases containing an inflectional constituent of type 3 always occur in sequence in the clause with a verb phrase containing a type 1 inflectional constituent (see 10. for fuller

treatment of this point).

E.g. If you grab it it will come out!

d-e-y *aw-an!*
 you hold it comes
 (V+11+26+32.6)^{VP3} (V+26+33.2)^{VP1}

If you had said so I would have come.

ag-e-b-na-p *o-p-n-p.*
 had you uttered I would have come
 (V+11+32.4+42.2)^{VP3} (V+31.4+42.1)^{VP1}

You stay, I must be off.

nad md-e-y *yad am-jp-yn.*
 you stay I am going
 (N5)^{NP} (V+11+26+32.6)^{VP3} (N5)^{NP} (V+24.2+31.1)^{VP1}

Further examples appear in 10.2 -10.3 and in Paradigms 18-25 in Appendix B.

6.3.6 Subclassification of VP1, VP2 and VP3 phrases.

VP1-3 class phrases are further subclassified according to the individual aspect marking suffixes or combinations of aspect marking suffixes which occur in their inflectional constituents.

By 'aspect marking suffixes' are meant here the members of decades 10, 20, 40, and 50, which variously indicate tense, tense-aspect, mood, sequence, subject identity or non-identity, etc.

There are eight subclasses of VP1 phrases as follows.

Subclass label	Internal structure
VP1 recent past	V + 21 + 30
VP1 past iterative	V + 22 + 30
VP1 prescriptive	V + 23 + 30
VP1 present progressive	V + 24 + 30
VP1 present perfect	V + 25 + 30
VP1 hortative	V + 26 + 30
VP1 past	V + 30 + 41
VP1 past contrary to fact	V + 30 + 42

These are illustrated by paradigms 1-11 in Appendix B.

There are four subclasses of VP2 phrases as follows.

VP2 prior	V + 21a-22a
VP2 progressive	V + 23a
VP2 prospective	V + 24a
VP2 prospective, change of subject anticipated	V + 11 + 24a

These are illustrated by paradigms 12-17 in Appendix B.

There are **six** subclasses of VP3 phrases as follows.

VP3	prior	$V + 11 + 30 + 41 \pm 51$
VP3	hortative	$V + 11 + 26 + 30$
VP3	future subjunctive	$V + 11 + 23 + 30$
VP3	progressive	$V + 30 + 41 + 51$
VP3	contrary to fact	$V + 11 + 30 + 42$
VP3	present perfect	$V + 25 + 30 + 51$

These are illustrated by paradigms 18-25 in Appendix B.

The distribution of these subclasses is discussed in 10.1-10-2, where it will be seen that the combinatorial possibilities of verbal clauses are determined by the subclass of the verb phrase they contain.

7. Nominal phrases.

7.1 Constituents of the nominal phrase.

Nominal phrases consist of a nucleus position plus a postposed peripheral position. The nucleus position can be filled by a single N- class base or by a sequence of N- class bases which will substitute for a single base of a given class; the morphemic material filling the nucleus position is called the (nominal phrase) nucleus. The peripheral position can be filled by one or more nominal peripheral minor morphemes, or by zero (i.e. it can be empty); the morphemic material filling the postposed position is called the (nominal phrase) periphery.

7.2 The internal structure and classification of nominal phrase nuclei.

Nominal phrase nuclei fall into eight classes, labelled n1 to n8. Their internal structure is as follows:

n1: (a) N4

or (b) $\pm N4$ or N8 + N1-3 \pm N1-3 \pm N15 \pm N16 \pm N16 \pm (N17 or (N18)^R)

n2: (a) N5 or (N4 + N5)

or (b) $\pm N4$ + N1-3 \pm N1-3 \pm N15 \pm N16 \pm N16 \pm N5 \pm (N17 or (N18)^R) \longleftrightarrow

n3: $\pm N8$ \pm N10 \pm N9 (where at least one occurs)

n4: (a) N11 or N21

or (b) $\pm N4$ + N-3 \pm N1-3 \pm N15 \pm N16 \pm N16 + N11 \pm (N17 or (N18)^R) \pm N11

n5: N7 or N14 ± N16

n6: (a) N12 ± N13 ± N16 ± (N17 or (N18)^R)

or (b) N13 or any of the following N13 + N13 sequences:

mnek mnek 'everyday', *toy mdak* 'later tomorrow', *ksen mdak*

'later today', *menk atk* 'the day before yesterday'

n7: N6 or N14 ± N16

n8: N15-17 or (N18)^R or N22

Certain restrictions not stated in these formulae apply to base combinations in nominal phrase nuclei. The number of bases in a single nucleus does not normally exceed five or six; in the case of nuclei of classes n1, n2 and n4, longer sequences are structurally acceptable, but these are regarded by native speakers as too awkward or too complicated for normal use. The formulae also do not specify selectional restrictions based on the semantic incompatibility of individual bases.

Examples appear in 7.4.

7.3 The internal structure and classification of nominal phrase peripheries.

Nominal phrase peripheries fall into two classes, labelled p1 and p2. Their internal structure is as follows:

p1: (a) ± 140 ± 150 ± 160 ± 170 ± 180 ± (190 ± 200) or (200 ± 190)

or (b) $\pm 170 \pm 140 \pm 160 \pm 180 \pm (190 \pm 200)$ or (200 ± 190)

p2: 130

While a sequence of up to seven morphemes is structurally possible in the case of p1 class peripheries, the number of morphemes in the periphery does not normally exceed four or five; in the case of a periphery following a nucleus containing three or more bases, it does not normally exceed two or three.

Examples appear in 7.4.

7.4 Classification of nominal phrases.

Nominal phrases fall into eight classes, labelled NP1-NP8, according to the class of their nucleus. Any phrase with an n1 class nucleus is an NP1 class phrase, any phrase with an n2 class nucleus is an NP2 class phrase, and so on, as specified in the formulae below.

The internal structure of each of the nominal phrase classes, stated in terms of the possible combinations of nucleus and periphery classes, is as follows:

NP1: $n1 \pm (p1 \text{ or } p2)$

NP2: $n2 \pm (p1 \text{ or } p2)$

NP3: $n3 \pm p1$

NP4: $n4 \pm (p1 \text{ or } p2)$

NP5: n5

NP6: n6 ± p1

NP7: n7

NP8: n8 ± p1

Nominal phrases consisting of a single base are exemplified in the discussion and lists of nominal base morphemes and expended bases given in 4.2 and 4.3. The examples cited here illustrate nominal phrases consisting of two or more bases, or of a nucleus plus a periphery.

The following are examples of nominal phrases of ^{class}NP1:

N1 + N1: *nō-p no-p* 'his father's father'; *no-nm no-p* 'his parents, his father and mother'. (both 102.2 + N1 + N102.2 + N1).

N1 + N2: *nw-mām kaj* 'his brother's pig' (102.1+N1+N2); *bapŷ kaj* '(my) father's pig'.

N1 + N3: *na-mām kotp* 'your mother's house', *nā-p wog* 'your father's garden'; *na-mwā em* 'your cross-cousin's bow' (all (101+N1+N3)).

N2 + N2: *bŷn ykam* 'a group of women'; *byn b* 'people, men and women', *ñapan nan* 'child'.

N2 + N1: *kaj no-nm* 'the female owner or parent of the pig' (both (N2 + 102.2 + N1)).

- N3 + N1: *smý no-p* 'the sing-sing host'; *mass no-řm* 'the head of a match',
tw no-řm 'axe-head' (all (N3 + 102.2 + N1)).
- N2 + N3: *bijn kotp* 'women's house', *yakt kotp* 'bird's nest', *yakt kas*
 'feathers', *křm kas* 'fur of *křm* (game mammal)'.
- N3 + N3: *smý kotp* or *kotp smý* 'singsing house', *mass kotp* 'matchbox',
káb kotp 'stone house', *gudý kotp* 'pandanus house', *kwnáy kotp*
 'thatched house', *mon wagn* 'base of tree', *món kás* 'tree leaves',
kařm kas 'banana leaves'.
- N4 + N1: *kyás bapy* 'Kiyas' father', *sawán no-řm* 'Sawan's mother'
 (N4 + 102.2 + N1).
- N4 + N2: *wpc kaj* 'Wpc's pig', *gy klokl* 'Gi's fowls', *mosák byn*
 'Mosak's wife'.
- N2 + N15: *b p̣k* 'light skinned man'; *b twđ* 'white man, albino man'
- N2 + N16: *b yōb* 'big man'; *cp tmey* 'evil one'; *kaj ayđk* 'wild pig',
b saky 'stupid man'.
- N2 + N17: *b konáy* 'many men'; *b bap* 'a certain man'; *b gumáp* 'some
 men'; *b magysěk* 'all the men'.
- N2 + N18: *b omnāl* 'two men'; *pañ nokom* 'one daughter'.
- N2 + N15 + N16: *byn twđ yōb* 'big white woman'; *kaj mosb tēp* 'fine
 brown pig'.

- N2 + N16 + N16: *b ptaĵ kls* 'strong unmarried man'; *ñ skoy tep* 'good little boy'.
- N2 + N15 + N17: *ñ skoy konay* 'many little boys'; *kaj mošb gumap* 'some brown pigs'.
- N3 + N15 + N16 + N17: *kotp twd yob konay* 'many big white buildings'.
- N3 + N16 + N18 + N18: *kařm ĵk omnal omnal* 'four ripe bananas'; *mon yob omnal nokom* 'three big logs'.
- N3 + N15 + N16 + N17: *b twd yob bap* 'a certain big white man'.
- N1 + 131: *no-p ket* 'belonging to his father' (102.2 + N1 + 131).
- N4 + 131: *an ket* 'whose?'; *sawan ket* 'belonging to Sawan'.
- N2 + 161: *b-nep* 'men only, just a man'.
- N2 + 181: *ny abey* 'the boys also'; *byn abey* 'the woman also'.
- N1 + 191: *no-p tek?* '(is it) his father?' (102.2 + N1 + 191).
- N2 + 191: *kayn tek* 'like a dog'; *syn tek* 'snake-like'.
- N2 + 142: *b ak* 'this man, that man'.
- N3 + 142 + 151: *mon a-nb* 'a tree like this'; *tap a-nb* 'a thing similar to this'.
- N2 + N16 + 141 + 161: *b mlp o-nep* 'only old man'.
- N2 + N17 + 171: *byn ksen yp* 'with his junior wife'.

N3 + 141 + 151 + 191: *tap ā-nb tek* 'a thing like this'.

N3 + N3 + N18 + 141 + 191: *smŷ kotp omnal ō-tek?* 'those two singsing houses?'

N2 + N16 + 161 + 171: *n skōy nep yp* 'with the small boys only'

N3 + N3 + 191 + 201: *myšn bālwš tek akan?* 'or is it the mission plane?'

Phrases of class NP2 differ from those of class NP1 and NP4 in containing an N5-class base, marking *subject*/^{or subject possessor}person and number. NP2-class phrases are exemplified by the following:

N1 + N5: *bany yād* 'my brother-in-law'; *no-wy nŷk* 'his sister-in-law'
(102.2 + N1 + N5)

N2 + N5: *ny yād* 'my son', *klok1 yād* 'my fowls'

N3 + N5: *kotp yād* 'my house', *tap cñk* 'our property'.

N4 + N5: *wŷc et-may* 'Wpc and L' (N4 + N5 + 121), *wŷc nt-may* 'Wpc and you' (N4 + N5 + 121).

N4 + N1 + N5: *sawān nw-nay nŷk* 'Sawan's sister' (N4 + 102.1 + N1 + N5),
kabāy nw-mwd nŷk 'Kabay's cross-cousin' (N4 + 102.1 + N1 + N5).

N4 + N3 + N5: *mowñ kotp nŷk* 'Mowñ's house', *mosāk wog nŷk* 'Mosak's affair'

N4 + N3 + N3 + N5: *mosāk m-wog nŷk* 'Mosak's taro garden', *yałk egoy mj nŷk*

'Yalk's cigarette paper'.

N1 + N1 + N5: *am̃y no-nm ñwk* '(my) mother's mother' (N1+102.2+N1+N5).

N2 + N3 + N5: *yakt magy ñwk* 'his bird's eggs'

N3 + N3 + N5 + N18: *kmm kas yād nokōm* 'my one game-mammal fur'

N2 + N5 + N17: *byn ñwk ñd* 'his senior wife'; *bwm ñwk b̃ap* 'his other wife, another of his wives'.

N4 + N1 + N5 + N18: *golōw nw-nay ñwk omnāl* 'Golow's two sisters' (N4 + 102.1 + N1 + N8 + N18).

N4 + N1 + N5 + N17: *yałk nw-mam ñwk ñd* 'Yalks' oldest borther' (N4 + 102.1 + N5 + N17).

N2 + N16 + N5: *klokł tep ñwk* 'his fine fowl', *wtay ñ-ep ñwk* 'his tame cockatoo' (N2 + (V + 116)^{N16} + N5).

N2 + N15 + N16 + N5 + N17: *kaj mosb tep ñwk gwnāp* 'some others of his fine black pigs'.

N5 + 161: *ōt-may nep* 'just we two' (N5 + 121 + 161).

N5 + 191: *yād tek* 'I?'; *k̃yk-may tek* 'they?' (N5 + 121 + 191)

N3 + N5 + 131: *tw yād ket* 'my own axe'.

N3 + N5 + 191: *tap nād-tek* '(is it) your property?'

N1 + N5 + 171 + 181: *nw-mam ñwk yp abey* 'with his brothers also'

(102.1 + N1 + N5 + 171 + 181).

N2 + N5 + N17 + 171 + 141 + 161: *byn mwk ksěŋ yp ō-nep* 'just together with his junior wife'.

Phrases of class NP3 are exemplified by the following:

N8 + N9: *sbay b-nen* 'Simbai up-valley, up-valley at Simbai', *kaytog b-y* 'here at Kaironk' (N8+104+N9), *kopon ak-ym* 'down-valley in Kobon' (N8+108+N9).

N10 + N9: *kd ak-nen* 'on the far side up-valley'; *pat ak-ym* 'a long way down-valley' (both N10+108+N9); *sn b-y* 'just over here'; *sn b-nen* 'just there in the up-valley direction' (both N10+104+N9), *got ok-don* 'alongside there in the across-valley direction' (N10+107+N9), *ms b-don* 'outside in the across-valley direction', *taw b-ym* 'opposite in the down-valley direction', *taw b-yon* 'straight upwards' (both N10+104+N9), *at yon* 'above, over', *at nen* 'above, on top in the up-valley direction'.

N8 + N10: *kaytog ōt* 'Upper Kaironk', *kaironk aŷn* 'Lower Kaironk', *kotp ōt* 'top of house, roof', *kotp ms* 'area outside a house', *p1n kđ* 'on the other side of Pln', *sbay mǎn* 'near Simbai'.

N8 + N10 + N9: *blm kd ak-yan* 'down on the far side of Blm', *kopon ŷy ak-ym* 'way down-valley in Kobon territory' (both N8+N10+108+

+ N9), *m̄mon pat ak-nen* 'a place a long way in the up-valley direction' (N8+N10+108+N9).

N8 + 42: *sb̄y ak, p̄d̄m ak, alp̄an ak, pḡoy ak* 'there's Simbai, there's P̄d̄m, there's Alpan, there's Pgoy' (N8+142)^{NP3}(N8+142)^{NP3}
(N8+142)^{NP3}(N8+142)^{NP3}

N8 + 151: *sb̄y nb* 'from Simbai', *gobn̄m nb* 'from Gobnem'.

N9 + N10 + 181: *at ȳon abey* 'above also, top also'

N8 + 151 + 191: *sb̄y nb tek?* 'from Simbai?'

N8 + 151 + 201: *p̄d̄m nb akan?* 'or from P̄d̄m?'

N10 + N9 + 141 + 161: *at yon ō-nep* 'just over the top, exactly on top'.

N8 + 151 + 191 + 201: *pḡoy nb tek akan?* 'or from Pgoy up-valley?'

Phrases of class NP⁴ differ from those of class NP¹ and NP² in containing an N¹¹-class base, marking *object* ^{or object possessor} /person and number.

NP⁴-class phrases are exemplified by the following.

N¹ + N¹¹: *na-nay ŋ̄-p* 'your sister', *na-p ŋ̄-p* 'your father' (both (101 + N¹ + (N⁵ + 111)^{N¹¹}).

N² + N¹¹: *kaj ȳ-p* 'my pig', *pañ ȳ-p* 'my daughter' (both (N²+(N⁵+111)^{N¹¹})

N³ + N³ + N¹¹: *egoy mj ȳ-p* 'my tobacco paper', *gudy kotp n̄w̄-p* 'his pandanus house' (both N³ + N³ + (N⁵ + 111)^{N¹¹}).

N⁴ + N² + N¹¹: *ydm̄d byn n̄w̄-p* 'Ydm̄d's wife', *saw̄n kaj n̄w̄-p* 'Sawan's

pigs' (both (N4+N2+102+N5)^{N11})

N2 + N11 + N17: *kmm y-p končy* 'my many mammal furs/skins', *kaj en-p kagŕl* 'our six pigs' (both N2+(N5+N11)^{N11} +N17).

N1 + N2 + N11 + N18: *nw-mŕd pař omŕl* 'his cross-cousin's two daughters' (102+N1+N2+N17).

N3 + N11 + 181: *tap ŷ-p abey* 'my property also' (N3+(N5+111)^{N11}+181).

N2 + N11 + 131: *ř nw-p ket* 'belonging to his son' (N2+(N5+111)^{N11}+131).

NP5 class phrases are exemplified by the following:

N7 + N16: *gos tĕp* 'approve. think well of', 'admire'; *sy tmĕy* 'weep strongly, wail'; *gos tmĕy* 'worry, hate, be concerned, think badly of'; *mmm skĕtk* 'incorrect speech'.

N14 + N16: *swk tĕp* 'smile, chickle'; *sĕ tmĕy* 'extremely upset'; *wsn tĕp* 'sound sleep', *kwy tĕp* 'nice-smelling'.

NP6 class phrases are exemplified by the following:

N12 + N13: *řn akčy* 'which day?', *řn ksĕn* 'next day, new era', *takn akčy* 'which month?', *takn ksĕn* 'next month, new moon'.

N12 + N17: *pwb nčb* 'mid-day, highest point of sun's path', *takn řy* 'eighth month, August', *lotw řd* 'last Sunday'.

N12 + N13 + N17: *klsmas nd omŕl* 'two years ago'.

N12 + N16: *onřap skŏy* 'a short time', *kysm yŏb* 'mid-night, in the middle of the night'.

N13 + 161: *pět nep* 'constantly, regularly, very often'; *ps nep* 'permanently', *mřy nep* 'just now, immediately' *ksěn nep* 'straight afterwards'.

N13 + 142 + 161: *tŏy a-nep* 'just tomorrow'.

N12 + N17 + 141 + 161: *řn wajtem ŏ-nep* 'ten days precisely, just ten days'.

N13 + 201: *mřy akan?* 'or now?'

N13 + 142 + 191: *tŏy a-tek* 'tomorrow?'

NP7 class phrases are exemplified by the following:

N6 + N16: *ytwk tměy* 'extremely lethargic', *ywt tměy* 'extremely painful, 'bad pain', *ygen křs* 'strong wind, intense cold', *mřmon yŏb* 'heavy rain'.

N14 + N16: *ywan tměy* 'extremely hungry', *swk tměy* 'mirth, gust of laughter'.

NP8 class phrases are exemplified by the following:

N18 + 141: *omňal ok* 'those two'.

N18 + N18 + 161: *omňal nokŏm nep* 'only three'.

N16 + 161: *sŷ-sek nep* 'just weeping, tearfully' ((N6+114)^{N16} +161).

N17 + 171: *konāy nep* 'very many'.

N22 + 161: *key kēy nep* 'separately, individually, just by themselves'
(N22 + N22 + 161).

N22 + 201: *čawsek akan?* 'or alone'

N15 + 181: *tŷd abey* 'white also'.

N22 + 181: *pēn abey* 'reciprocally also'.

N17 + 141 + 161: *kagoł ŷ-nep* 'just six, exactly six', *agp o-nep*
'just eleven, exactly eleven'.

N15 + 181 + 191: *tŷd abey tek?* 'white also?'

N22 + 141 + 161: *kwn ŷ-nep* 'just like that, exactly thus', *kapkap ŷ-nep*
'just slowly, quite carefully',

N22 + 161 + 191: *key kēy nep tek?* 'just by themselves?, separately?'

8. Phrase groups.

8.1 Phrase group classification.

In the statement of simple verb clause structure given in 10. is noted that simple verb clauses consist of 8 positions (called phrase group positions) each of which can be filled by a single phrase or by a sequence of phrases which will substitute for a single phrase of given class. Such a sequence of phrases is called a phrase group.

The number of phrase groups which can occur in a simple verb clause is limited to eight. On the other hand, it will be seen below that the number of phrases which can occur in a phrase group (or at least in certain phrase groups) is potentially unlimited.

Phrase groups are classified according to their internal structure and combinatorial privileges into classes, symbolized in formulae as NG1, NG2, NG3, NG4, NG5, NG6, NG7, NG8 and VP. Their internal structure is stated below in 8.2.

In examples cited below, each phrase is separated by four or more spaces. In formulae, the material belonging to each phrase is enclosed in brackets with class label appended. A free translation is given above the cited text; where necessary, each minimal free form is glossed below the text.

e.g. The big man's house.

b yδb kotp nδk.

man big house his

$(N2+A5)^{NP1}$ $(N3+N5)^{NP1}$

The class of each phrase group is indicated by the section heading. The symbol R following brackets in formulae indicates one or more occurrences of the preceding bracketed material.

8.2.1 NG1 phrase groups.

The internal structure of NG1 class phrases is as follows: $(NP1)^R$

e.g. Sweet potatoes, taro, yams, sugar, cucumbers, bananas.

maj, m, pd, gam, sag, kaŋm.

$(N3)^{NP1}$ $(N3)^{NP1}$ $(N3)^{NP1}$ $(N3)^{NP1}$ $(N3)^{NP1}$ $(N3)^{NP1}$

Salp, Nnday, Alyag, Kan, and Smy's father.

salp, nnday, alyag, kan, smy^v no-p abey.

salp, nnday alyag kan smy his father also

$(N4)^{NP1}$ $(N4)^{NP1}$ $(N4)^{NP1}$ $(N4)^{NP1}$ $(N4 + 102.2 + N1 + 181)^{NP1}$

8.2.2 NG2 phrase groups.

The internal structure of phrase groups of class

NG2 is specified in the following formula: $(\pm(NP1)^R + (NP2)^R)^R$

i.e. any arrangement of NP1 and NP2 phrases where at least one NP2 phrase occurs *finally*.

e.g. (a). Gi's sister's son.

$\check{G}y$	<i>mw- nay</i>	$\check{m}wk$,	\check{n}	$\check{m}wk$.
Gi	his sister his		son	hers
	$(N4+102.1+N1+N5)^{NP2}$		$(N2+N5)^{NP2}$	

(b). Golow and I.

<i>et - may</i>	<i>Golow</i> ,
we two	Golow
$(N5+121)^{NP2}$	$(N4)^{NP1}$

(c). I, you, Salp, Kabay, Kabays' younger brother, all of us.

<i>yad</i> ,	<i>nad</i> ,	<i>Salp</i> ,	<i>Kabay</i> ,	<i>Kabáy mw- mam ksén</i> ,
I	you	salp	kabay	kabay his brother younger
$(N5)^{NP2}$	$(N5)^{NP2}$	$(N4)^{NP1}$	$(N4)^{NP1}$	$(N4+102.1+N1+N17)^{NP1}$
<i>enk magysék</i> .				
we all				
$(N5+N17)^{NP2}$				

- (d). They, together with their brothers, parallel cousins
and fathers' brothers.

kyk, nw -mān yp, nw -ōw yp,
they their brothers with their parallel cousins with
(N5)^{NP2} (102.1+N1+171)^{NP1} (102.1+N1+171)^{NP1}
nw - bap yp.
their fathers' brothers with
(102.1+171)^{NP1}

- (e). The big man of Gobnem's pigs.

Gobnem b yob kaj nōk.
gobnem man big pig his
(N8+N2+N16)^{NP1} (N2+N5)^{NP2}

8.2.3. NG3 phrase groups.

Phrase groups of class NG3 have the following
internal structure: (\pm NP1 or NP4 + NP3)^R

- e.g. (a). Up at Gobnem, down at Kaironk.

gobnem b-yōn, kaytog b-yān.
Gobnem up Kaytog down
(N8+104+N9)^{NP3} (N8+104+N9)^{NP3}

(b). My house up valley.

kotp yǎd b-nen.
 house my up-valley
 (N3+N5)^{NP2} (104+N9)^{NP3}

(c). On the other side of Plŋ mountain.

pŋ dum, kd ak-yǎn.
 Plŋ mountain other side down there
 (N8+N3)^{NP1} (N10+108+N9)^{NP3}

(d). Way down there at Wlm, up on the far side.

Wlym ak-ym, kd ak-yǎn.
 Wlym down-valley other side up there
 (N8+108+N9)^{NP3} (N10+108+N9)^{NP3}

(e). Down below you in the across-valley direction.

ka-dǎn, ka-yǎn.
 your direction across valley your direction down
 (105+N9)^{NP3} (105+N9)^{NP3}

8.2.4 NG4 phrase groups.

Phrase group of class NG4 have the following
 internal structure: (NP3)^R

e.g. (a). My brothers, my sisters and my cousins.

mam y̆p, *ay y̆-p,* *ñbem y̆-p.*
 brother my (obj.) sister my (obj.) cross-cousins^{my} (obj.)
 $(N2+(N5+111))^{N11} NP^4$ $(N1+(N5+111))^{N11} NP^4$ $(N1+(N5+111))^{N11} NP^4$

(b). Ball belonging to the Kaironk boys.

kaytög ñ sköy, *bal kw̆y-p.*
 Kaironk boy small ball their (obj.)
 $(N8+N2+N16)^{NP1}$ $(N3+(N5+111))^{N11} NP^4$

(c). ~~Theirs~~ the Alpan and Pgoi people.

alpan, *pgöy* *byn b* *kw̆y-p.*
 Alpan Pgoi men women them
 $(N4)^{NP1}$ $(N4)^{NP1}$ $(N2+N2)^{NP1}$ $(N5+111)^{N11} NP^4$

8.2.5. NG5 phrase groups.

Phrase groups of class NG5 consist of a single NP5 class phrase. Examples appear in 7.2.

8.2.6 NG6 phrase groups.

Phrase groups of class NG6 have the following internal structure: $(NP6)^R$

e.g. (a). Tomorrow, the next day, the next day, Saturday.

<i>tōy ak,</i>	<i>meñk ak,</i>	<i>asōn ak,</i>
tomorrow	two days from now	three days from now
$(N13+142.1)^{NP6}$	$(N13+142.1)^{NP6}$	$(N13+142.1)^{NP6}$
 <i>ñn kagōl.</i>		
the sixth day		
$(N12+N17)^{NP6}$		

8.2.7 NG7 phrase groups.

Phrase groups of class NG7 consist of a single phrase of class NP7. Examples appear in 7.2.

8.2.8 NG8 phrase groups.

Phrase groups of class NG8 consist of a single phrase of class NP8. Examples appear in 7.2.

8.2.9 VP phrase groups.

Phrase groups of class VP consist of a single phrase of class VP. Examples appear in 6.3 and Appendix B.

8.2.10 Unclassified phrase groups.

Phrase groups consisting of the phrases *tap etp-nen* $(N3+N3+119.1)$ and *etp-nen* $(N3+119.1)$ 'why, for what reason?' are unclassified.

9. Clauses.

Phrase groups exhibit certain fixed distributional relations within longer stretches called clauses. Within the clause the combinatorial possibilities of phrase groups are restricted by rules of non-recurrence, dependent occurrence, incompatibility, and (to a limited extent) fixed order of occurrence, applying to all or certain phrase group classes.

9.1 The classification of clauses: nominal and verbal clauses.

Clauses fall into two classes: nominal and verbal.

Nominal clauses in all cases consist of a single nominal phrase group, bounded by silence or terminal juncture / . ? !/ and terminal juncture / . ? !/. Nominal clauses have no combinatorial possibilities in sentences (see 10.1), and are not treated further here.

Verbal clauses, consist of at least a verb phrase group, and are expandable by the addition of nominal phrase groups. They are further subclassified as simple or complex.

Simple verbal clauses can consist of (a) a verb phrase group, (b) a verb phrase group + (190 ± 200) or (200 ± 190), or (c) a verb phrase group flanked by up to seven nominal phrase groups.

Complex verbal clauses, which are not treated here, consist of a discontinuous simple verbal clause in sequence with one

or more included verbal clauses.

9.2 The internal structure of simple verbal clauses.

As noted in 9.1, simple verbal clauses consist of a verbal phrase group optionally expanded by the addition of up to seven nominal phrase groups.

Eight positions are distinguished within the simple verbal clause. Position 7 is always filled by the verb phrase group. Positions 1-6 precede the verb phrase group slot, position 8 follows it; i.e. up to six phrase groups may precede the verb phrase group but only one may follow it.

Phrase groups of classes NG2, NG5, NG7, NG8 and (*tap*) *etp-nen* always precede the verb phrase group (i.e. can occur in positions 1-6 but not in position 8). Phrase groups of classes VP, NG2-3, NG5-8, and (*tap*) *etp-nen* cannot recur within the simple verbal clause; those of classes NG1 and NG4 cannot occur more than twice.

No other restrictions of the order or arrangement of phrase groups within simple verbal clauses can be defined using a descriptive model which distinguishes only grammatical and ungrammatical utterances. All other theoretically possible arrangements have some degree of grammaticality, and many of them occur in normal speech.

While the order of phrase groups within the verbal clause is relatively free, there do exist certain stylistically favoured arrangements. The following is one of several preferred arrangement.

(It may be noted that here and in later examples phrase groups are separated in text by four or more spaces, and in formulae by enclosing each phrase group in brackets with class label appended).

\pm NG1 or NG2 \pm (*tap*) *etp nen* \pm NG6 \pm NG4 or NG1 \pm NG8 \pm NG5 + VP \pm ~~NG3~~
 e.g. Why did Jmm sneak off to Pgoy earlier today with those vegetables?

jmm *etp nen* *mdatk* *tap maŋy* *kapkap* *dad*
 Jmm what for earlier vegetables stealthily carrying

((N4)^{NG1} (N3+119.1) (N13)^{NG6} (N3+N3)^{NG1} (N2~~2~~)^{NG8} (N7)^{NG5}

am-b *pgoy* *b-nen?*

he has gone Pgoy up-valley

(V+25.2+33.1)^{VP1} (N8+104+N9)^{NG3}

Further study is needed to establish degrees of grammaticality of a scale of stylistic ranking on which the very large number of acceptable arrangements can be placed. It may be noted, however, that the number of preferred arrangements is limited as much by restrictions on the *number* as by restrictions on the *order* of phrase groups occurring in verbal clauses. Verbal clauses containing more than three or four phrase groups in sequence with a verb phrase group are unusual.

To allow statement of rules of agreement^{and of semantic relations}/holding between constituents of the verb phrase and constituents of certain other phrase groups in the clause, such grammatical relations as subject-predicate, subject-object, time-predicate, etc., must be posited. Full statement of these rules awaits further research, and no attempt will be made here to define them in detail. The following points, however, may be noted.

In verbal clauses, the subject-predicate relation can be assumed in at least some cases to underly *agreement* in person and/or number between an NG1, NG2 or NG7 class phrase group and the subject marking suffix of the verb phrase. The object-predicate relation can be assumed to underly *disagreement* in person and/or number between NG1, NG3-5, NG7-8 phrase group and the subject marking suffix of the verb phrase. For example compare the two clauses

(1). The pig has gone.
 kaj *am-b*.
 pig it has gone
 ((N2)^{NG1} (V+25.2+33.1)^{VP1})

and (2). I have eaten (the) pig.
 kaj *ñ-b-yn*.
 pig I have eaten
 ((N2)^{NG1} (V+25.2+31.1)^{VP1})

In (1) the N1 constituent agrees with the verb phrase subject marker in person and number, and can be regarded as subject of the verb phrase; in (2) the same N1 constituent disagrees in person and number with the verb phrase subject marker, and can be regarded as object of the verb phrase.

The time-predicate relation can be assumed to underly selection^{al} restrictions holding between NG6 class phrase groups, and tense-aspect marking suffixes in verb phrases. For example

(1) I am doing it now.

mñy *g-sp-yn.*

now I am going

((N13)^{NG6}(V+24.1+31.1)^{VP1}) is possible, but not

(2) *I did it now.

**mñy* *g-n-k.*

now I did

((N13)^{NG6}(V+33.3+41)^{VP1})

i.e., NG6 phrase groups consisting of the N13 base *mñy* 'now, today' are compatible with verb phrases containing suffix 24 *-sp- 'present progressive' but not suffix 41 -k 'past'. On the other hand, NG6 phrase groups consisting of the base *toytk* 'yesterday' can occur in sequence with 41 -k 'past' but not with 24 *-sp- 'present progressive', while those consisting of the base *mdatk* 'earlier today, already' can occur

in sequence with *-p- 'present perfect' but are compatible with neither *-sp- nor -k, and so on.

Certain further semantic relations are distinguished in the examples in 9.2-9.5, including the relations direct object-, location-, and manner-predicate. It seems probable that more detailed subclassification of bases, phrases and phrase groups will reveal further patterns of selectional restrictions operating across phrase-group boundary which can be associated with these semantic relations.

In particular, more detailed subclassification of verb stems will probably reveal patterns of selection in which particular nominal bases will be found to be compatible in the clause with, or to occur in a particular semantic relation with some verb stems but not with others. It has already been noted (4.2.3) that there are nominal base classes which occur in sequence in the clause with verb stems as subject only (N6 bases), as direct object only (N7 bases), or which as subject select one small subclass of verb stems and as object select another small subclass of verb stems (N14 bases).

As already noted, no attempt will be made here to define in detail formal features characterizing such semantic relations as subject-predicate, object-predicate, etc. Treatment of clause structure is confined to statement of grammatically acceptable arrangements and to brief discussion of the syntactic relations usually associated

with particular sequences of phrase groups (see 9.3-9.5 for examples). NG2 and NG7 phrase groups preceding a verb phrase refer to subject, NG1 phrase groups in sequence with a verb phrase may refer either to subject of the verb phrase, NG3 phrase groups to locational object of the verb phrase, NG4 to object (direct, indirect, instrumental or beneficiary object), NG5 to indirect object, NG6 phrase groups to time, and NG8 phrase groups to manner.

Sections 9.3-9.5 contain examples of verbal clauses consisting of a verbal phrase in sequence with one or more phrase groups of other classes, and to brief statement of the grammatical relations associated with each structure.

In the absence of features of ordering as markers of syntactic relations between constituents of the verbal clause, many Karam utterances are grammatically ambiguous (i.e. must be assigned more than one structural description) and semantically ambiguous (i.e. have more than one meaning). In particular, the subject-predicate and object-predicate relations are distinguishable only in some utterances. E.g. the utterance

kaj *ñb-s-a-p.*
 pig he/she/it is eating
 (N2)^{NG1} (V+24.4+33,7)^{VP1}

can mean either 'he is eating pork' or 'the pig is eating'. *kaj* 'pig'

as either subject or object can occur preceding a verb phrase containing a third person singular subject marking suffix. On the other hand

<i>nwk</i>	<i>kaj</i>	<i>ñb-s-a-p.</i>
he	pig	he is eating
(N5) ^{NG2}	(N2) ^{NG1}	(V+24.4+33.1) ^{VP1}

'he is eating pork', is made unambiguous by the presence of the N5 base *nwk* '3rd person singular non-object' preceding *kaj* 'pig'.

In anticipation of the classification of verbal clauses made in 10.1 it may be noted that any verb clause containing a verb phrase of class VP1 (see 6.3.2) is capable of standing alone as an independent sentence. All clauses cited in 9.2-9.5 are of this type. Verbal clauses containing verb phrases of VP2 and VP3 are exemplified in 10.

9.3 Verbal clauses consisting of a verb phrase plus one other phrase group.

(1). NG1 + VP. This sequence is associated with either the relation subject-predicate, or the relation object-predicate.

e.g. (a). The bird has gone.

<i>yakt</i>	<i>am-b.</i>
bird	it has gone
((N2) ^{NG1}	(V+25.2+33.1) ^{VP1})

(b). He shot the bird.

yakt *ñag-p.*

bird he shot

$((N2)^{NG1} (V+25.1+33.1)^{VP1})$

(2) NG2 + VP. This sequence is associated with the relation subject-predicate.

e.g. (a). He has climbed the tree. *or* The tree has grown.

mon *tan-b.*

tree he/it has ascended

$((N3)^{NG1} (V+25.2+33.1)^{VP1})$

(b). The wood is burning.

mon *y-j-a-p.*

wood it is burning

$\uparrow (N3)^{NG1} (V. \text{ imp. } +24.4+33.8)^{VP1}$

(3). NG3 + VP. This structure is associated with the relation locative object-predicate.

e.g. (a). Where are they shooting?

akáy *ñá-sp-ay?*

where they are shooting?

$((N10)^{NG3} (V+24.1+38.1)^{VP1})$

(b). He is coming down the mountain up yonder.

dum b-yōn a-s-a-w.
 mountain above he is coming
 ((N3+104+N9)^{NG3} (V+24.6+33.8)^{VP1})

(4). NG6 + VP. This structure is associated with the relation time-predicate.

e.g. (a). He is coming now!

māy a-s-a-w!
 now he is coming
 ((N13)^{NG6} (V+24.6+33.8)^{VP1})

(b). Which day did he arrive?

ñn akāy ow-a-k?
 ((N12+N13)^{NG6} (V+33.3+41)^{VP1})

(5). NG4 + VP. This structure is associated with both the relation object-predicate.

e.g. (a) He gave it to me.

y-p ñ-a-k.
 me he gave
 ((N5+111)^{N11})^{NG4} (V+33.3+41)^{VP1})

(b). They shot his pig.

kaj nū-p ñag-ya-k.
 pig his (obj.) they shot
 ((N2+(N5+111)^{N11})^{NG4} (V+38.3+41)^{VP1})

(6). NG5 + VP. This structure is associated with the relation direct-object-predicate.

e.g. (a). He sang (a song).

knáp^v *ag-a-k.*
 song he sounded
 ((N7)^{NG5}) ((V+33.3+41)^{VP1})

(b). He carried it away / he took it away.

dad *am-a-k.*
 carrying he went
 ((N7)^{NG5}) ((V+33.3+41)^{VP1})

(c). He lied.

esék^v *ag-a-k.*
 deceiving he uttered
 ((N7)^{NG5}) ((V+33.3+41)^{VP1})

(d). I am thinking.

gös^v *nn-sp-yn.*
 mind I am perceiving
 ((N7)^{NG5}) ((V+24.1+31.1)^{VP1})

(7).NG8 + VP. This structure is associated with the relation manner-predicate.

e.g. (a). They are fighting, quarreling.

pen pen pk-sp-ay.

reciprocally they are striking

$((N22+N22)^{NG8} (V+24.1+38.1)^{VP1})$

(b). I am admiring.

tēp nn-sp-yn.

good I am perceiving

$((N16)^{NG8} (V+24.1+31.1)^{VP1})$

(8). (*tap*) *etp-nen* + VP. This structure is associated with the relation cause-predicate.

e.g. (a). Why did he go?

e^Ytp-nen am-b?

what for he has gone?

$((N3+119.1) (V+25.2+33.1)^{VP1})$

(9). VP + NG3. This structure is associated with the relation predicate-locational object (cf. (3) above).

e.g. (a). Where are they shooting?

ñā-sp-^Vay akay?

they are fighting where?

$((V+24.1+38.1)^{VP1} (N10)^{NG3})$

(b). He is coming from down-valley.

a-s-a-w *b-ym.*
 he is coming down-valley
 ((V+24.6+33.7)^{VP1} (104+N9)^{NG3})

(10). VP + NG6. This is associated with the relation predicate-time (cf. (4) above).

e.g. ~~He~~ He died yesterday.

kum-a-k *toytk.*
 he died yesterday
 ((V+33.3+41)^{VP1} (N13)^{NG6})

(11). VP + NG4. This is associated with the relation predicate-object.

e.g. ~~You~~ You should give it to the boy.

n-n-mn *n skoy nw-p.*
 you should give boy him
 ((V+23.1+32.5)^{VP1} (N2+N16+(N5+111)^{N11})^{NG4})

9.4 Verbal clauses containing two nominal (NG) class phrase groups.

(12). NG1 + NG4 + VP. This structure is associated with the relation subject-object-predicate or object-object-predicate.

e.g. (a). Gony is talking to you.

gony *n-p* *a-s-a-p.*
 Gony you (obj.) he is sounding
 (((N4)^{NG1} (N5+111)^{N11})^{NG4} (V+24.4+33.1)^{VP1})

(13). NGL + NGL + VP. This structure is associated with the relation subject-object-predicate or object-subject-predicate.

e.g. (a). Wpc has shot the pig.

kaj *wpe* *ñag-p.*
 pig Wpc he has shot
 $((N2)^{NG1} (N4)^{NG1} (V+25+33.1)^{VP1})$

(b). Wpc has shot the pig.

wpe *kaj* *ñag-p.*
 Wpc pig he has shot
 $((N4)^{NG1} (N2)^{NG1} (V+25+33.1)^{VP1})$

(14). NG4 + NG4 + VP. This structure is associated with the relation direct object-indirect object-predicate or indirect object-direct object-predicate.

e.g. (a). You are giving him my property!

tap *y-p* *nw-p* *ñ-sp-an!*
 thing mine him you are giving
 $((N3+(N5+111)^{N11})^{NG4} ((N5+111)^{N11})^{NG4} (V+24.1+32.1)^{VP1})$

(b). You are giving him my property!

nw-p *tap* *y-p* *ñ-sp-an!*
 him thing my you are giving
 $((N5+111)^{N11})^{NG4} (N3+(N5+111)^{N11})^{NG4} (V+24.1+32.1)^{VP1})$

(15). NG1 + NG3 + VP. This structure is associated with the relation subject-location-predicate.

e.g. (a). The woman stays at Gobnem.

byn *Gobnem*^V *md-p.*
 woman Gobnem she stays
 ((N2)^{NG1} (N8)^{NG3} (V+25.1+33.1)^{VP1})

(16). NG1 + NG6 + VP. This structure is associated with the relation subject-time-predicate.

e.g. (a). He has just arrived.

nwk *mny*^V *nep* *ow-p.*
 he just now he has come
 ((N5)^{NG1} (N13+161)^{NG6} (V+25.1+31.1)^{VP1})

(17). NG1 + NG5 + VP. This structure is associated with the relation subject-direct object-predicate.

e.g. (a). The child wept.

napan-nay *sy*^V *ag-a-k.*
 child weeping he sounded
 ((N2+N2)^{NG1} (N7)^{NG5} (V+33.3+41)^{VP1})

(b). I had a dream, I dreamt.

yad *wšn*^V *nη-n-k.*
 I sleep I perceived
 ((N5)^{NG2} (Nη)^{NG5} (V+31.3+41)^{VP1})

(18). NG1 + NG8 + VP. This structure is associated with the relation subject-manner-predicate.

e.g. (a). The cat crept up / approached silently.

ksy kapkap^v ow-a-k.
 cat stealthily he came
 ((N2)^{NG1}(N2₂)^{NG8}(V+33.3+41)^{VP1})

(19). NG4 + NG5 + VP. This structure is associated with the relation indirect object-direct object-predicate.

e.g. (a). I sang to (for, about) the woman.

byn nwp^v kmap^v ag-n-k.
 woman her song I sang
 ((N2+(N5+111))^{N11})^{NG4}(N7)^{NG5}(V+31.3+41)^{VP1})

(b). She is bringing the string-bag.

wad^v dad a-s-a-w.
 string-bag carry she is coming
 ((N3)^{NG1}(N7)^{NG5}(V+24.6+33.8)^{VP1})

(20). NG4 + NG6 + VP. This structure is associated with the relation object-time-predicate.

e.g. (a). **T** have already paid them.

kwy-p mdatk^v taw-p-yn.
 them earlier today I have given
 (((N5+111))^{N11})^{NG4}(N13)^{NG6}(V+25.1+31.1)^{VP1})

(21). NG4 + NG8 + VP. This structure is associated with the relation object-manner-predicate.

e.g. (a). He is pleased with you / he thanks you.

<i>n-p</i>	<i>tēp</i> ^v	<i>ag-p.</i>
you	good	he sounds
((N5+111) ^{NG11}) ^{NG4} (N16) ^{NG8} (V+25.1+33.1) ^{VP1})		

(22). NG5 + NG8 + VP. This structure is associated with the relation direct object-manner-predicate.

e.g. (a). Sing quietly!

<i>kmap</i>	<i>kapkap</i> ^v	<i>ag-m!</i>
song	quietly	you (pl.) sing
((N7) ^{NG5} (N22) ^{NG8} (V+26+37.1) ^{VP1})		

(b). I am worried.

<i>gos</i>	<i>konay</i> ^v	<i>nn-b-yn.</i>
mind	many	I perceive
((N7) ^{NG5} (N17) ^{NG8} (V+25.2+31.1) ^{VP1})		

(23). NG5 + NG3 + VP. This structure is associated with the relation direct object-location-predicate.

e.g. (a). Take it just up there!

<i>dad</i>	<i>sn b-nen</i>	<i>amn-ōn!</i> ^v
carrying	just up-valley	you go
((N7) ^{NG5} (N10+104+N9) ^{NG3} (V+26+32.7) ^{VP1})		

(24). NG6 + NG3 + VP. This structure is associated with the relation time-location-predicate.

e.g. (a). I am going now to Simbai.

mñy sbáy am-jp-yn.
 now Simbai I am going
 ((N13)^{NG6}(N8)^{NG3}(V+24.2+31.1)^{VP1})

(25). NG4 + VP + NG3. This structure is associated with the relation object-predicate-location.

e.g. (a). He saw a witch up-valley there.

koyb nw-p nn-b b-nen.
 witch him he has seen up-valley
 ((N2+(N5+111)^{N11})^{NG4}(V+25.2+31.1)^{VP1}(104+N9)^{NG3})

9.5 Verbal clauses containing three or more non-verbal phrase groups.

(26). NG1 + NG6 + NG3 + VP. This structure is associated with the relation subject-time-location-predicate.

e.g. (a). That man came from Simbai yesterday.

b-ak toytk Sbáy nb ow-a-k.
 that man yesterday from Simbai he came
 ((N2+142.1)^{NG1}(N13)^{NG6}(N8+151)^{NG3}(V+33.3+41)^{VP1})

(27). NG2 + NG4 + NG6 + VP. This structure is associated with the relation subject-object-time-predicate.

e.g. (a). I have already spoken to Sawan.

yad *Sawan nw-p* *mdatk* *a-p-yn.*
 I Sawan him earlier I have sounded
 ((N5)^{NG1}(N4+(N5+111)^{N11})^{NG4} (N13)^{NG6} (V+25.1+31.1)^{VP1})

(28). NG1 + NG4 + NG1 + VP. This structure is associated with the relation subject-object-direct object-predicate.

e.g. (a). Yalk should give some food to the man.

yalk *b nw-p* *tap* *n-n-mwn.*
 Yalk man him food he should give
 ((N4)^{NG1}(N1+(N5+111)^{N11})^{NG4} (N3)^{NG1} + (V+23.1+33.5)^{VP1})

(29). NG1 + NG4 + NG5 + VP. This structure is associated with the relation subject-direct object-indirect object-predicate.

e.g. (a). Gi is thinking about his wife.

gy *byn nw-p* *gos* *nn-s-a-p.*
 Gi woman his mind / thought he is perceiving
 ((N4)^{NG1}(N2+(N5+111)^{N11})^{NG4} (N7)^{NG5} (V+24.4+33.7)^{VP1})

(30). NG1 + NG4 + NG5 + NG8 + VP. This structure is associated with the relation subject-indirect object-direct object-manner-predicate.

e.g. (a). The mother is worried about her daughter.

no-nm *pañ nw-p* *gos* *konay* *nn-b.*
 her mother daughter her mind many she perceives
 ((1o2.2+N1)^{NG1}(N2+(N5+111)^{N11})^{NG4} (N7)^{NG5} (N17)^{NG8} (V+25.2+33.1)^{VP1})

(31). NG2 + NG4 + NG1 + NG5 + VP. This structure is associated with the relation subject-indirect object-indirect object-direct object-predicate.

e.g. (a). They have brought some vegetables for the big man.

kyk *b yōb n-wp* *tap magy*
 they big man him vegetables

$((N5)^{NG2} (N2+N16+(N5+111)^{N11})^{NG4} (N3+N3)^{NG1})$

dad *o-p-ay.*

carrying they have come.

$(N7)^{NG5} (V+25.1+38.1)^{VP1}$

(32). NG2 + *etp-nen* + NG1 + VP. This structure is associated with the relation subject-cause-object-predicate or object-cause-subject.

e.g. Why don't you (pl.) eat toads?

nbk *etp-nen* *as gwim* *mā-ñ-b-m?*

you (pl.) what for toads you do not eat

$((N5)^{NG2} (N3+119.1) (N1+N3)^{NG1} (01.1+V+25.2+37.1)^{VP1})$

(33). NG4 + NG6 + NG7 + VP. This is associated with the relation object-location-subject-predicate.

e.g. (a). Now he has grown a beard.

nw-p *mñy* *dsn* *tan-b.*
 him now beard it has grown

$((N5+111)^{N11})^{NG4} (N13)^{NG6} (N6)^{NG7} (V+25.2+33.1)^{VP1}$

(b). Now I feel like laughing.

y-p *mñy* *swk* *ow-p.*
 me now laugh it has come
 (((N5+111)^{N11})^{NG4}(N13)^{NG6}(N14)^{NG7} (V+25.1+33.1)^{VP1})

(34). (*tap*) *etp-nen* + NG1 + NG3 + NG5 + VP. This structure is associated with the relation purpose-subject-location-direct object-predicate.

e.g. Why are all those men gathered at the house up there?

etp-nen *b konay nep* *kotp b-yon*
 what reason very many men house up yonder
 ((N4+119.1) (N2+N17+161)^{NG1} (N8+104+N9)^{NG3}
nan *g-p-ay?*
 assembling they have acted
 (N7)^{NG5} (V+25.1+38.1)^{VP1})

10. Arrangements of verbal clauses in sentences.

10.1 Classification of verbal clauses.

Verbal clauses fall into three major classes, distinguished by the class of their verb phrase constituent, and labelled C1, C2 and C3.

Any clause containing a verb phrase of class VP1 is a C1 class clause. Any clause containing a verb phrase of class VP2 is a C2 class clause. Any clause containing a verb phrase of class VP3 is a C3 class clause. (See 6.3.3-6.3.5 and Appendix B for discussion and examples of verb phrases of classes VP1-3).

It was noted in 6.3.2 that verb phrases of classes VP1, VP2 and VP3 differ only in the internal structure of their inflectional constituents. The inflectional constituent of VP1 phrases consists of an aspect marking suffix (where 'aspect' covers tense, aspect, mood and tense-aspect) i.e. 21-26 or 41-42 and a suffix indicating person and number, i.e. 30 members. The inflectional constituent of VP2 phrases, on the other hand, consists (with one exception) of a single aspect marking suffix (21a-24a) indicating (a) identity of subject relation, and (b) sequential relation, to certain subsequent verb phrases. The inflectional constituent of VP3 phrases consists of a suffix marking aspect, (23, 25, 26, 41-42), a suffix marking person and number, (decade 30), and one or two suf-

fixes (11, (15)) marking (a) non-identity of subject relation, and (b) sequential relation, to certain subsequent verb phrases.

C1-C3 clauses are further subclassified according to the subclass of the VP1, VP2 and VP3 phrases which they contain. As noted in 6.3.6, VP1-VP3 phrases are divided into subclasses according to the individual aspect marking suffixes or combinations of aspect marking suffixes which occur in their inflectional constituents. There are eight subclasses of VP1 phrases, four of VP2 phrases, and six of VP3 phrases, detailed in 6.3.6.

C1-C3 subclasses correspond to the subclass of the VP1-VP3 phrases they contain, i.e. any C1 clause which contains a VP1 phrase of the subclass *VP1 present progressive* is subclassified as a *C1 present progressive* clause, any C2 clause which contains a VP2 phrase of the subclass *VP2 prior* is subclassified as a *C2 prior* clause, any C2 clause which contains a VP2 phrase of the subclass *VP2 progressive* is subclassified as a *C2 progressive* clause, and so on.

10.2 Sentences consisting of one or more verbal clauses.

10.2.1 Sentences.

The morphemic material between silence or / . ? ! / and / . ? ! / is called a sentence. Any sentence containing one or more verbal classes is a verbal sentence.

It is not possible at this point to state exhaustively the possible arrangements of C1, C2 and C3 clauses within sentences, but research to date permits the following assertions to be made.

C1 clauses can occur alone as one-clause sentences. C2 and C3 clauses, on the other hand, do not occur alone in well-formed sentences, but always occur in sequence with a C1 clause. A verbal sentence can consist of (a) single C1 clause (b) certain combinations of C1 clause subclasses (c) a C2 or C3 clause plus a C1 clause (d) certain combinations of C2 subclasses and/or C3 subclasses plus a C1 clause. Those combinations which have been recorded to date are stated and exemplified in 10.2.2 - 10.2.3 below.

Examples in 10.2.2 and 10.2.3 are set out as follows. A free translation occupies the top line above the cited utterance, below which are placed respectively, a phrase by phrase translation, and the formulaic representation. Phrase group boundary is shown by four or more spaces between morphemes, and clause boundary by a slanting line /. In the formulaic representation, the material belonging to each phrase group and each clause is enclosed in labelled brackets.

E.g. I have come in order to see it.

$nn-\overset{v}{ng}$ / $o-p-yn.$

in order to perceive I have come

$((V+24)^{VP2})^{C2}$ $((V+25.1+31.1)^{VP1})^{C1}$

For reasons of simplicity most examples of clause sequences cited here consist of sequences of verb phrases alone. It should be understood, however, that in such sequences each clause can contain one or more nominal phrase groups^{as} specified in 9.

10.2.2 Two-clause sequences.

10.2.2.1 C2 + C1 sequences.

Any C2 class clause can precede any C1 class clause. There are 8 subclasses of C1 clauses, and 4 subclasses of C2 clauses, making a total of 32 theoretically possible sequences, all of which are grammatical.

E.g. *C2 prior + C1 past.*

I came after I saw it.

$nn-\overset{v}{y}$ / $ow-n-k.$

having seen I came

$((V+21a)^{VP2})^{C2}$ $((V+33.3+41)^{VP1})^{C1}$

C2 prior + C1 present perfect.

I have come from seeing it.

$nn-\check{y}$ / $o-p-yn$.

having seen I have come

$((V+21a)^{VP2})^{C2} ((V+25.1+31.1)^{VP1})^{C1}$

C2 prior + present progressive.

You are coming with it.

$d-\check{y}$ / $a-sw-m$.

having obtained I have come

$((V+21a)^{VP2})^{C2} (V+24.3+37.1)^{C1}$

C2 progressive + present progressive.

They are laughing as they go.

$swk ag-\check{y}g$ / $am-jp-ay$.

laugh uttering they are going

$(N7)^{NG5} (V+23a)^{C2} ((V+25.2+38.1)^{VP1})^{C1}$

C2 prospective + C1 present progressive.

You are coming to get it.

$d-\check{ng}$ / $a-sw-m$.

to obtain you are coming

$((V+24a)^{VP2})^{C2} (V+24.3+37.1)^{C1}$

C2 prospective + C1 prescriptive.

You ought to go and hit it.

pk-ŋg / *am-n-mn*.

in order to strike you should go

$((V+24a)^{VP2})^{C2}$ $((V+23.1+32.5)^{VP1})^{C1}$

10.2.2.2 The following sequences of C3 + C1 clauses are possible.

C3 non-future contrary to fact + C1 non-future contrary to fact.

If you had given it to me, I would have eaten it.

y-p ŋ-e-b-nā-p, / *ŋ-b-ŋ-p.*

me had you given

I would have eaten

$((N5+111)^{N11})^{NG4}(V+11.1+42.2+32.4)^{VP3})^{C3}$ $((V+42.2+31.4)^{VP1})^{C1}$

C3 prior + C1 hortative.

(a) When you cut wood, chips fly.

mōn / *tb-e-y,* / *bops* *ow-an.*

wood when you cut chips it comes

$((N3)^{NG4}(V+21.1+26+32.6)^{VP3})^{C3}$ $((N4)^{NG4}(V+26+33.2)^{VP1})^{C1}$

(b) After we dig he gathers the clods.

ct-may *pwŋy-ō-t,* / *nwd* *līm* *d-an.*

we two when we pierce he ground he takes

$((N5+121.1)^{NG1}(V+11.2+26+34.6)^{VP3})^{C3}$ $((N5)^{NG1}(N3)^{NG1}(+26+33.6)^{VP1})^{C1}$

C3 prior + C1 present progressive.

- (a). He is weeping because of what you did.

kŭn *g-e-y*, / *sŷ* *a-s-a-p*.
 thus you do weeping he is uttering
 ((N23)^{NG8}(V+11.1+26+32.6)^{VP})^{C3} ((N7)^{NG5}(V+24.4+33.3)^{VP1})^{C1}

- (b). It has rained heavily, so we are not playing football.

mnmn *yŏb* *pk-e-k*, /
 rain big it strikes
 ((N6+N16)^{NG7}(V+11.1+26+33.7)^{VP3})^{C3}
en *bal* *mă-pk-sp-wn*.
 we ball we are not striking
 ((N5)^{NG2}(N3)^{NG1}(01.1+V+24.1+36.1)^{VP1})^{C1}

C3 prior + C1 present perfect.

- (a). He wept because of what you have done.

kwn *g-ě-y*, / *sŷ* *ag-p*.
 thus you do weeping he utters.
 ((N22)^{NG8}(V+11.1+26+33.6)^{VP3})^{C3} ((N7)^{NG5}(V+25.1+33.1)^{VP1})^{C1}

- (b). I have got a blister from cutting wood.

mon *tb-ě-n*, / *bŏk* *ay-p*.
 wood I cut blister it has become
 ((N3)^{NG1}(V+11.1+26+31.6)^{VP3})^{C3} ((N6)^{NG7}(V+25.1+33.1)^{VP1})^{C1}

C3 progressive + C1 present perfect.

I remain because my head is aching.

jwn *ẏ-p* *ywt* *g-a-k-nn*, /

head me pain it makes

((N3)^{NG1}(N5+111)^{N11}(N6)^{NG7}(N4)^{NG4}(N4+V+33.3+41+51)^{VP3})^{C3}

md-p-yn.

I remain

((V+25.1+31.1)^{VP1})^{C1}

C3 progressive + C1 recent past.

He has been working while I was asleep.

yad *kn-n-k-n̄n*, / *nwk* *wōg* *g-ab*.

I while I sleep , he work he has just worked

((N5)^{NG1}(V+31.3+41+51)^{VP3})^{C3}(N5)^{NG1}+(N7)^{NG5}(V+21.1+33.1)^{VP1})^{C1}

C3 progressive + C1 non-future contrary to fact.

Who told you you could do it that way?

ān *n-p* *ag-a-k-nn*,

who you he tells

((N4)^{NG1}(N5+111)^{N11})^{NG4}(V+33.3+41+51)^{VP3})^{C3}

/nad k^vm g-p-na-p?
 you thus you could do
 ((N5)^{NG2}(N2²)^{NG8}(V+33.4+42.1)^{VP1})^{C1}

C3 progressive + C1 present progressive.

(a). While you are eating they are stealing food.

nad n^vn-na-k-n^vn, / kyk tap s^vy d-sp-ay.
 ((N5)^{NG2}(V+32.3+41+51)^{VP3})^{C3}((N5)^{NG2}(N3)^{NG1}(N7)^{NG5}(V+25.1+38.1)^{VP1})^{C1}

(b). Kiyas is pleased because his girl friend is coming.

Kiyas t^vep g-a-k-nn, /
 Kiyas good he does
 ((N⁴)^{NG1}(N16)^{NG8}(V+33.3+41+51)^{VP3})^{C3}
 pa-skoy n^vwk a-s-a-w.
 little girl she is coming
 ((N2+N16+N5)^{NG2}(V+24.6+33.3)^{VP1})^{C1}

10.2.2.3 The following C1 + C1 sequences have been recorded.

C1 recent past + C1 present perfect.

Where have you been?
 ak^vay md-ab-an / o-p-an?
 where you were just now you have come
 ((N10)^{NG3}(V+21.1+32.1)^{VP1})^{C1} ((V+25.1+32.1)^{VP1})^{C1}

C1 recent past + C1 present progressive.

e.g. I have just come after being away cutting pandanus leaves.

yad gwdy^v tk tag-ab-yn, /mny^v nep o-sw-yn.
 I pandanus cut I have just been away/ just now I am coming
 ((N5)^{NG2}(N3)^{NG1}(V+V+21.1+31.1)^{VP1})^{C1}((N13+161)^{NG6}(V+24.3+31.1)^{VP1})^{C1}

C1 present perfect + C1 present perfect.

e.g. I don't understand what you said.

a-p-an / ma^v-nq-b-yn.
 you have uttered I have not perceived
 ((V+25.1+32.1)^{VP1})^{C1} ((01.1+V+25.2+31.1)^{VP1})^{C1}

C1 present progressive + C1 present progressive.

e.g. I am listening to what you are saying.

a-sp-an / nq-sp-yn^v.
 you are uttering I am listening
 ((V+24.1+32.1)^{VP1})^{C1} ((V+24.1+31.1)^{VP1})^{C1}

10.2.3 Sequences of three or more clauses.

10.2.3.1 Sequences of two or more C2 class clauses preceding a C1 class clause.

Any final clause of class C1 can occur preceded by one or more clauses of class C2, provided that the C2 clauses are all of the same subclass. E.g. the following:

C2 prior + C2 prior + C2 prior + C2 prior + C1.

I got up, then I ate, then I went away, came back again, and
after finishing work I slept.

jak-ŷ, / *tap n̄b-ŷ,* / *am-ŷ,* / *ap-ŷ,*

having risen having eaten having gone having come

$((V+21a)^{VP2})^{C2}((N3)^{NG1}(V+21a)^{VP2})^{C2}((V+21a)^{VP2})^{C2}((V+21a)^{VP2})^{C2}$

wog g-d-ŷ, / *kn-n̄-k.*

work having finished I slept

$((N7)^{NG5}(V+V+21a)^{VP2})^{C2}((V+31.3+41)^{VP1})^{C1}$

At least the following arrangement of C2 clauses of
different subclasses can precede a final C1 class clause:

(a). $(C2\ prior)^R + C2\ prospective + C1.$

I will do the work when I get there.

am-ŷ, / *ap-ŷ,* / *wog gŋg,* / *g-p-yn.*

having gone having come work prospective doing I do

$((V+21a)^{VP2})^{C2}((V+21a)^{VP2})^{C2}((N7)^{NG5}(V+24a)^{VP2})^{C2}((V+25.1+31.1)^{VP1})^{C1}$

(b). $(C2\ progressive)^R + C2\ prospective + C1.$

I am planting sweet potato, yam, and taro to provide food for
later.

maj *ym-ŷg*, / *pd* *ym-ŷg*, / *m* *ym-ŷg*,
 sweet potato planting yam planting taro planting
 $((N3)^{NG1}(V+23a)^{VP2})^{C2}((N3)^{NG1}(V+23a)^{VP2})^{C2}((N3)^{NG1}(V+23a)^{VP2})^{C2}$

tap *ñn-ñg*, / *g-sp-yn*.
 food in order to eat I am doing
 $((N3)^{NG1}(V+24a)^{VP2})^{C2}((V+24.1+31.1)^{VP1})^{C1}$

(c). $(C2 \text{ prior})^R + C2 \text{ prospective} + C1$.

Eg. We got a ball and we are going to play football.

bal *d-ŷ*, / *pk-ñg* / *am-jp-wn*.
 ball having got in order to kick we are going
 $((N3)^{NG1}(V+21a)^{VP2})^{C3}((V+24a)^{VP2})^{C2}((V+24.2+31.1)^{VP1})^{C1}$

(d). $C2 \text{ prior} + C2 \text{ progressive} + C1$.

Eg. He has got a drum and is beating it as he goes.

daen *d-ŷ*, / *pk-ŷg* / *dad* *am-j-a-p*.
 drum having got striking carry he is going
 $((N3)^{NG1}(V+21a)^{VP2})^{C2}((V+23a)^{VP2})^{C2}((N4)^{NG5}(V+24.5+33.3)^{VP2})^{C1}$

(e). $C2 \text{ prospective} + C2 \text{ prior} + C1$.

Eg. You should call out to me when you are about to go.

nad *amñg*, / *y-p* *sŷk* *ag-y*
 you prospective going me shout having uttered
 $((N5)^{NG1}(V+24a)^{VP2})^{C2}((N5+111)^{N11})^{NG4}(N7)^{NG5}(V+21a)^{VP2})^{C2}$

/ am-n-mn.

you should go

((V+23.1+32.5)^{VP1})^{C1}

10.2.3.2 Sequences of two or more C3 class clauses preceding a C1 class clause.

Any C1 clause which is compatible with a preceding C3 clause (see 10.2) can be preceded by two or more such C3 clauses, provided that the C3 clauses are all of the same subclass.

E.g. *C3 progressive + C3 progressive + C1 present perfect.*

While one man beat the drum, and another man sang, a third man sat and watched.

b-băp dăcŋ pk-a-kŋ, / b-băp kmăp

a certain man drum he strikes a certain man song

((N2+N17)^{NG1}(N3)^{NG1}(V+33.3+41+51)^{VP3})^{C3} ((N2+N17)^{NG1}(N7)^{NG5}

ag-a-k-nn, b-băp bsg mđ-p.

he utters a certain man sit he remained

(V+33.3+41+51)^{VP2})^{C3} ((N2+N17)^{NG1}(V+V+25.1+33.1)^{VP1})^{C1}

The following sequences of C3 clauses of different subclasses have been recorded preceding a final C1 clause.

C3 prior + C3 progressive + C1.

He knocked and when someone opened the door, he went inside.

nwk gyg^v g-e-k, / ktā^vm

he knock he did door

$((N5)^{NG2}(N7)^{NG5}(V+11.1+33.6+41)^{VP3})^{C3} ((N3)NG1$

yk-a-k-nn, kotp mgā^vn amn-a-k.

while he opens house inside he went

$(V+33.3+41+51)^{VP3})^{C3} ((N8+N10)^{NG3}(V+33.3+41)^{VP1})^{C1}$

C3 progressive + C3 prior + C1.

After he finishes collecting, you two dig again, while I watch.

yad nn md-n^v-k-nn, / d d-ē^v-k, /

I perceive I remain take when he finishes

$((N5)^{NG1}(V+V+31.3+41+51)^{VP3})^{C3} (V+V+11.1+33.6+41)^{VP3})^{C3}$

nt- may pken ksē^vn pwn-yt.

you two stick after you force in

$((N5+121)^{NG2}(N3)^{NG1}(N13)^{NG6}(V+26+35.1)^{VP1})^{C1}$

10.2.3.3 Sequences of C2 and C3 clauses preceding C1.

One or more C2 clauses can precede or follow one or more C3 clauses in sequence with a final C1 clause.

e.g. One man threw the ball, and a second man caught it and shot a goal.

<i>b-băp</i>	<i>bal</i>	<i>d</i>	<i>yok-a-k-n̄n,</i>	/	<i>b-băp</i>
a certain man	ball	he	throws		a certain man
$((N2+N17)^{NG1}(N3)^{NG1}(V+V+33.3+41+51)^{VP3})^{C3}$					$((N2+N17)^{NG1}$
<i>ks̄en</i>	<i>d-y,</i>	/	<i>gōt</i>	<i>ay-p.</i>	
next	having got	goal	he has	put	
$(N13)^{NG6}(V+21a)^{VP2})^{C3}$			$((N3)^{NG1}(V+25.1+33.1)^{VP1})^{C1}$		

Appendix A. On the typological comparison of Karam and East New Highland Stock languages.

As noted in fn. 2, Wurm in his pioneering classification of East New Guinea Highland languages set up a Stock whose members comprise of some 50 of the 60-odd languages spoken in the Australian Highlands Districts. Within this Stock he distinguished 5 families and notes that "languages belonging to different families of the Stock largely show an agreement in basic vocabulary of between 15% and 25%" (1964:78). Karam falls narrowly outside the lower range of agreement between members of the Stock, sharing an average of 12% with members of the Stock (with a highest figure of 19% with a neighbouring language, Maring of the Central Family) (Wurm 1964:80, 1965:384).

Wurm's original classification (1961, 1962) was based mainly on lexico-statistical evidence, but took into account typological resemblances. He says (1965:384) "these comparisons of features of the structure of the languages showed results which were mostly in keeping with those arrived at by lexico-statistical methods, though in a few instances the findings were contradictory". It is only recently, however, that he has published the details of his typological comparison (Wurm 1964, 1965). Here he specifies certain features which are almost universally present in members of

the Stock, and finds that Karam and other languages such as Kutubu and Mikaru which he claims to be related to the Stock at the micro-phylum level, exhibit a number of important typological deviations from the Stock. This of course is in accordance with the very distant relationship posited between them and the Stock.

However, Wurm's typological characterization of Karam, based on data obtained by him during a necessarily brief period of fieldwork, contains certain inaccuracies. Comparison with more adequate data indicates that Karam possesses almost all the features cited as diagnostic of membership in the Stock. These features will now be outlined.

Wurm divided the typological features considered into 3 groups, A, B and C-type features. A-type and B-type features are shared by all or almost all members of the Stock, C-type features are found only in certain regions of the Stock territory or in certain subgroups of the Stock. A-type features occur not only in the Stock but in some other New Guinea languages including certain languages not believed to be related to the Stock. B-type features are present in only a few languages outside of the Stock, all of which are related or are possibly related to the Stock. C-type features, which have a restricted distribution within the Stock, occur only in rarely non-Stock languages. Wurm states that the pos-

session of A-type features in a non-Stock language "links it typologically to the Stock" only if it also possesses type-B features (1964:88).

He finds that Karam shares only 3 of the 4 type-A features, and only one (and this one partially present) of the 4 most important type-B features. With the exception of Siane and Duna, all members of the Stock possess all 8 of these features.

The Karam figures compare with Kubutu (also placed outside the Stock but within the East New Guinea Highlands Micro-phylum) which possesses ~~two~~ A-type features fully and two partially, and three of the four most important type-B features partially (see Wurm 1964:88), and with the two aberrant members of the Stock, Siane (two type-A features fully and two partially, two type-B features fully and one partially) and Duna (two type-A features and one type-B); in association with the lexico-statistical figures this would appear to justify the exclusion of Karam from the Stock, and its inclusion in the Micro-phylum as noted above.

With the fuller data now to hand it would appear, however, that Karam's typological resemblance to the Stock is considerably stronger than Wurm supposed. For example, if I have noted Wurm's typological features correctly, Karam in fact possesses all four A-type features and three of the four main B-type features.

The type-A, -B and -C features cited by Wurm, together with some other material are listed below, and their presence or absence in Karam, and in the 5 Stock families (called by Wurm Eastern, East Central, Central, West Central and Western) **are** also noted.

Type A.

A1. Predominance of suffixes over prefixes. Present in all members of the Stock and in Karam.

A2. Person and number of the verb is usually indicated by suffixes. Present in all families of the Stock and in Karam.

A3. Dual number is present (Wurm does not specify whether in suffixed person-markers, in free form person-markers, or both). Present in all families of the Stock, and in Karam (both in suffixed and free form person-markers).

A4. Lack of special possessive pronouns. (From his remarks in the 1964 paper (^{P.}83), I take it that ^{Wurm finds} all members of the Stock lack a special set of possessive pronouns distinct in form from personal pronouns carrying other meaning such as subject or object relation. In Karam possessive relation is shown by suffixing what are elsewhere free-form subject- or object-marking person - markers to the noun possessed. A possessive suffix *-ket* is optionally added. Present in all families of the Stock and Karam.

Type B.

B1. Complicated supra-segmental phonemics, with closely interrelated tone and stress patterns. In most of the Stock languages "tone can be interpreted as phonemic, with the stress patterns predictably conditioned by it. In some languages the reverse interpretation is possible" (1964:81). In Karam neither tone nor stress appears to be lexically contrastive (though stress and tone are utterance-contrastive and are probably closely inter-related at the utterance level), hence this feature, present in Stock languages, can be considered absent from Karam.

B2. Some medial verbs carry forms denoting (a) identity and (b) identity and non-identity, or only non-identity of the subjects of the medial and final verbs. Present in all families of the Stock, and in Karam (though Wurm regarded this as absent from Karam). Karam medial verbs carry a suffix to indicate identity or non-identity of the subject with that of the final verb.

B3. Sentence-medial "verbal forms which appear in cases of non-identity of the subject change for person + number" (1964:88). It would appear that Wurm is here referring to the presence of a suffix to the medial verb marking the person + the number of the subject of that verb. This feature is present in all families of the Stock, and in Karam. In Karam medial verbs carrying a subject-identity marker are not inflected for person

or number (this being specified in the final verb), but medial verbs carrying a subject-non-identity marker are inflected for person and number.

B4. There is no distinction between second and third person dual, and between second and third person plural. This feature is present in all families of the Stock, and partially present in Karam. Karam has a single person-marker suffix which marks second and third person dual subject, but separate suffixes for second person plural and third person plural subject.

B5 - B6 are somewhat less important than B1 - B4 as a measure of structural resemblance.

B5a. An interrogative suffix is present in verbs. Present in (all families of) the Stock, and in Karam. Karam has two such suffixes: *-tek* 'yes-or-no interrogation' and *-akan* 'whether-or interrogation'.

B5b. Its form is either a labial consonant plus vowel or zero, or by *-o*. Absent in Karam. Members of the Stock show some diversity in this feature, but almost all apparently have the suffix in one or other of these shapes.

B6a. Negation with verbs is indicated by a prefix, rarely by suffix. Present in all families of the Stock and in Karam.

B6b. The form of the negative affix is *na*, *mV*, *o*, *i*,

a, *ka* or *kia*. Present in all families of the Stock and in Karam (where the negative marker is a prefix *ma-* ~ *m-*).

Type C.

These are features characteristic of certain regions of the Stock territory or of certain subgroups of the Stock.

C1. Some verbs occur with obligatory object prefixes. Present in the Eastern and East-Central families. Karam has a class of verbs which, when they occur in sequence with N7 class bases, are normally preceded by an object-marking phrase (which includes an object person-marker); the action of the verb in such cases is always depicted as happening to a sufferer (the object) (see structure (33) in 9.4 for examples). The object-marker in Karam is normally preposed to the verb, but is isolable (i.e. is not strictly a prefix). It is possible that these constructions parallel the verbal constructions containing obligatory object prefixes noted above.

C2. The negative affix is *mV* (in particular *mu*, *amu*, *am*, *me*). Present in the Western half of East-Central. Cf. B6b above.

C3a. An agent suffix is present in all Stock families except Central, but not in Karam.

C3b. Its form is *-mo*, *-me*, *-mi* or *-ga*. *-ga* is the form in Western, *-mo*, *-me* or *-mi* in East Central and West Central.

C4. Most "sentence-medial verbal forms change for person ± number in cases of identity and of non-identity of the

subjects" (1964:83). Present in Eastern and East-Central. As noted in B3 above, person and number is indicated in Karam medial verbs only in cases of subject non-identity.

C5a. Medial verbs "appearing in cases of non-identity of subjects consist largely of sentence-final verbs + special suffixes" (suffixes indicating the non-identity of subjects of the medial and final verbs) (1964:83). Found in Central, West Central, and in the western third of the East Central territory. Present in Karam, where such medial verbs carry a suffix indicating simply that the final verb has a different subject from the medial verb.

C5b. Such medial verbs "are predominantly special forms which cannot be derived directly from sentence-final forms" (1964:83). This feature, the opposite of C5a, is present in the Eastern family, and in the eastern two-thirds of the East Central region. Absent in Karam, where such special forms are very few.

C6. Medial verb person-marker suffixes "refer in an anticipatory manner to the subject of the subsequent verb in a majority of cases" (1964:83). I take this to mean that the medial verb contains a suffix indicating the person \neq number of the subsequent verb. Such anticipatory subject markers occur in the Eastern family and in the eastern half of the East Central family. Absent from Karam, where there is simply a marker in medial verbs indi-

cating whether or not the subject of the medial verb is the same as or different from that of the final verb.

C7a. Possession with at least some nouns is indicated by affixes. Present in Eastern, East Central and in the eastern three-quarters of the Central family. The exact nature of this feature is not clear to me, but it is probably absent in Karam.

C7b. Possession is indicated "by person pronouns \pm a suffix attached to them" (1964:83). Present in West Central, Western and Karam. In Karam there is a set of person-markers which (according to position) indicate subject or possessive relation, and a set which similarly indicate object or possessive relation; these are optionally followed by *-ket* 'possession marker' (Cf. A4).

C8. There is a glottal stop phoneme. Present in Eastern and East Central, absent in Karam.

From the number of type-A and type-B features present in Karam it would seem that Karam's typological resemblance to Stock languages is in fact very close. Indeed on these grounds Karam has stronger claims for inclusion in the Stock than either Siane (included in the East Central family) and Duna (included in the Western family), whose inclusion in the Stock rests mainly on lexico-statistical evidence.

In terms of type-C features Karam shows no strong similarities to any particular subgroup of the Stock, though rather

more features are shared with Eastern and East-Central languages than with any other of the Stock families. This tendency to share more type-C features with Eastern and East-Central languages than with other Stock languages has been noted by Wurm (1965:394-5) as characteristic of most genetically related or typologically similar non-Stock languages. It may reflect the conservatism of Eastern and East-Central languages in retaining certain type-C features which were present in the language ancestral to all members of the Stock and related languages. In the absence of comparative reconstruction for this group it is not possible at this point to know whether a shared typological feature represents a shared innovation or a shared retention.

Wurm concludes from his preliminary comparative work that it should be possible to reconstruct in detail the languages ancestral to each of the four main Stock families (the exception being the Western family with only a single member language). As evidence of the retention of some of the morphological features of the pre-Stock language in the daughter languages, he cites the forms and meanings of the suffixed subject-markers in several Eastern and East-Central languages. These are very similar in almost all cases, and the proto-Eastern-East-Central equivalents can be reconstructed in detail. (See Table I below).

What is of particular interest here is that the proto-Eastern-East Central suffixes exhibit detailed similarity to the major allomorphs of the subject-marking suffixes in Karam and Kobon. These also are cited in the table below. (The data is taken from Wurm 1965:399, except that the reconstructions, and the Karam and Kobon data, are mine).

Table I.

Subject-marker suffixes with the sentence-final verbs in certain Eastern, East-Central languages, proto-Eastern-East-Central, Karam and Kobon.

Gadsup, Auyana, Usarufa, and Awa are Eastern languages; Gende, Benabena, Fore, Gimi, Kamano, Kanite, Keingana, Yali and Yaguru are East-Central languages. Kobon data has not been phonemicized. Karam /y/ is phonetic [i], /w/ is phonetic [u] and /t/ is phonetic alveolar flapped [r], in these positions. It will be noted that 2nd and 3rd person plural are distinguished in Karam and Kobon but not in Eastern and East-Central languages.

	Gende	Benabena	Fore	Gimi	Kamano Kanite Keingana Yali	
sg. 1	u	u	uw	u	u	
2	an	an	a:n	an	an	
3	(a)i	i	iy	i	i	
dl. 1	ur	u?i	us	ur	u?	
2-3	ar	a?i	a:s	ar	a?	
pl. 1	un	un	un	un	un	
2-3	a	a	a:w	a	a	
	Gadsup	Auyana Usarufa	Awa	P-E-EC	Karam	Kobon
sg. 1	u	un	u?	*u	yn	[in]
2	on	an	ona?	*an	an	[an]
3	i	ay	i?	*i	a	[a]
dl. 1	u	uy	uya?	*uR	wt	[ul]
2-3	o	ay	oya?	*aR	yt	[əl]
pl. 1	u	un	una?	*un	wn	[un]
2	o	a	o?	*a	m	[im]
3					ay	[al]

Appendix B. Verb phrase paradigms.

Paradigms 1-8 illustrate verb phrases of class VP1 consisting of a single verb stem plus suffixes marking aspect and subject person-and-number.

Paradigms 9-11 illustrate ~~type~~ VP1-class verb phrases consisting of two verb stems, the second of which is either *d̄*- 'to complete, to hold' or *md̄*- 'to continue, to exist, to remain', plus aspect and subject marking suffixes.

Paradigms 12-17 illustrate VP2- and VP1-class verb phrases in sequence. In each case the VP2 phrase consists of a single verb stem plus ~~a suffix~~ a suffix marking both identity of subject relation and sequential relation to the following verb phrase.

Paradigms 18-23 illustrate verb phrases of class VP3 consisting of a single verb stem plus aspect and subject marking suffixes plus a suffix marking non-identity of subject relation and sequential relation to a following verb phrase.

Paradigms 24-25 illustrate VP3 and VP1 class verb phrases in sequence.

Where an inflectional suffix has alternant shapes these are shown in paradigm subsets a, b, c, etc., each of which contains a different alternant. Inflectional suffix alternants are listed in 6.2. Verb stem alternants are listed in 4.2.2.

Each paradigm is given a gloss which corresponds to

verb phrase subclasses referred to in 6.3.6.

Paradigm 1a: 'present progressive' (V + 24.1 or 24.4 + 30)^{VP1}

<i>pkspyn</i>	'I am striking'
<i>pkspan</i>	'you are striking'
<i>pksap</i>	'he is striking'
<i>pkspwt</i>	'we (d.) are striking'
<i>pkspyt</i>	'you/they (d.) are striking'
<i>pkspwn</i>	'we (pl.) are striking'
<i>pkspm</i>	'you (pl.) are striking'
<i>pkspay</i>	'they (pl.) are striking'

Paradigm 1b: (V + 24.2 or 24.5 + 30)^{VP1}

<i>kjpyyn</i>	'I am sleeping'
<i>kjpan</i>	'you are sleeping'
<i>kjap</i>	he/she/it is sleeping'
<i>kjpwat</i>	'we (d.) are sleeping'
<i>kjpyt</i>	you/they (d.) are sleeping'
<i>kjpwon</i>	we (pl.) are sleeping'
<i>kjpm</i>	'you (pl.) are sleeping'
<i>kjpay</i>	'they (pl.) are sleeping'

Paradigm 1c: (V + 24.3 or 24.6 + 30)^{VP1}

<i>aswyn</i>	'I am coming'
<i>aswan</i>	'you are coming'
<i>asaw</i>	'he/she/it is coming'
<i>aswt</i>	'we (d.) are coming'
<i>aswyt</i>	'you/they (d.) are coming'
<i>aswn</i>	'we (pl.) are coming'
<i>aswm</i>	'you (pl.) are coming'
<i>asway</i>	'they (pl.) are coming'

Paradigm 2a: 'hortative' (V + 26 + 30)^{VP1}

<i>pkyn</i>	'let me strike!'
<i>pkan</i>	'you strike!'
<i>pkan</i>	'let him/her/it strike!'
<i>pkwt</i>	'let us (d.) strike!'
<i>pkyt</i>	'you/ they (d.) strike! / let us/them (d.) strike!'
<i>pkwn</i>	'let us (pl.) strike!'
<i>pkm</i>	'you (pl.) strike!'
<i>pkyan</i>	'let them (pl.) strike!'

Paradigm 2b: (V + 26 + 30)^{VP1}

<i>amnyñ</i>	'let me go! / I'll go!'
<i>amnoñ</i>	'go! (s.)'
<i>amnan</i>	'let him/her/it go!'
<i>amñwt</i>	'let us (d.) go!'
<i>amnyñt</i>	'go! (d.) / let them (d.) go!'
<i>amñwn</i>	'let us (pl.) go!'
<i>amñm</i>	'go! (pl.)'
<i>amnyañ</i>	'let them (pl.) go!'

Paradigm 3a: 'present perfect, present iterative' (V+25.1+30)^{VP1}

<i>pkpyn</i>	'I have hit, I hit'
<i>pkpan</i>	'you have hit, you hit'
<i>pkp</i>	'he/she/it has hit, he/she/it hits'
<i>pkpwt</i>	'we (d.) have hit, we hit'
<i>pkpyt</i>	'you/they (d.) have hit, you/they (d.) hit'
<i>pkpwn</i>	'we (pl.) have hit, we (pl.) hit'
<i>pkpñm</i>	'you (pl.) have hit, you (pl.) hit'
<i>pkpñy</i>	'they (pl.) have hit, they (pl.) hit'

Paradigm 3b: (V + 25.2 + 30)^{VP1}

<i>abyn</i>	'I have gone, go (iterative)'
<i>aban</i>	'you have gone (iterative)'
<i>amb</i>	'he/she/it has gone, goes (iterative)'
<i>abwt</i>	'we (d.) have gone, go " '
<i>abyt</i>	'you/they (d.) have gone, go " '
<i>abwn</i>	'we (pl.) have gone, go " '
<i>abm</i>	'you (pl.) have gone, go " '
<i>abay</i>	'they (pl.) have gone, go " '

Paradigm 4: 'recent past' (V + 21 + 30)^{VP1}

<i>pkabyn</i>	'I just struck'
<i>pkaban</i>	'you just struck'
<i>pkab</i>	'he/she/it just struck'
<i>pkabwt</i>	'we (d.) just struck'
<i>pkabyt</i>	'you/they (d.) just struck'
<i>pkabwn</i>	'we (pl.) just struck'
<i>pkabm</i>	'you (pl.) just struck'
<i>pkabay</i>	'they (pl.) just struck'

Paradigm 5: 'past iterative' (V + 22 + 30)^{VP1}

<i>pkygpyn</i>	'I used to strike'
<i>pkygpan</i>	'you used to strike'
<i>pkygpp</i>	'he/she/it used to strike'
<i>pkygpwt</i>	'we (d.) used to strike'
<i>pkygpyt</i>	'you/they (d.) used to strike'
<i>pkygpwn</i>	'we (pl.) used to strike'
<i>pkygpm</i>	'you (pl.) used to strike'
<i>pkygpay</i>	'they (pl.) used to strike'

Paradigm 6: 'past' (V + 30 + 41)^{VP1}

<i>pknk</i>	'I struck'
<i>pknak</i>	'you (s.) struck'
<i>pkak</i>	'he/she/it struck'
<i>pktwk</i>	'we (d.) struck'
<i>pktk</i>	'you/they (d.) struck'
<i>pknwk</i>	'we (pl.) struck'
<i>pkbk</i>	'you (pl.) struck'
<i>pkyak</i>	'they (pl.) struck'

Paradigm 7: 'future prescriptive' (V + 23 + 30)^{VP1}

<i>pkrm</i>	'I should/must strike'
<i>pkrmn</i>	'you (s.) should/must strike'
<i>pkrmwn</i>	'he/she/it should/must strike'
<i>pkjt</i>	'we (d.) should/ must strike'
<i>pkrmyt</i>	'you/they (d.) should/must strike'
<i>pkjn</i>	'we (pl.) should/must strike'
<i>pkrmb</i>	'you (pl.) should/must strike'
<i>pkngy</i>	'they (pl.) should/must strike'

Paradigm 8a: 'past contrary to fact' (V+30+42.1)^{VP1} (where 42.1 *p...p*
P is discontinuous).

<i>pkpnp</i>	'I could have/would/should have struck'
<i>pkpnap</i>	'you (s.) could/would/should have struck'
<i>pkpkop</i>	'he/she/it could/would/should have struck'
<i>pkptwp</i>	'we (d.) could/would/should have struck'
<i>pkptp</i>	'you/they could/would/should have struck'
<i>pkpnwp</i>	'we (pl.) could/would/should have struck'
<i>pkpkp</i>	'you (pl.) could/would/should have struck'
<i>pkpyap</i>	'they (pl.) could/would/should have struck'

Paradigm 8b: (V+42.2+30)^{VP1} (where 42.2 *b..p* is discontinuous).

<i>abnp</i>	'I could/would/should have gone'
<i>abnap</i>	'you could/would/should have gone'
<i>abkop</i>	'he/she/it could/would/should have gone'
<i>abtwp</i>	'we (d.) could/would/should have gone'
<i>abtp</i>	'you/they (d.) could/would/should have gone'
<i>abnwp</i>	'we (pl.) could/would/should have gone'
<i>abkp</i>	'you (pl.) could/would/should have gone'
<i>abyap</i>	'they (pl.) could/would/should have gone'

Paradigm 9: 'present perfect completive' (V+d- 'to complete'+30)^{VP1}

<i>pk dpyn</i>	'I have finished striking'
<i>pk dpan</i>	'you have finished striking'
<i>pk dp</i>	'he/she/it has finished striking'
<i>pk dpwt</i>	'we (d.) have finished striking'
<i>pk dpyt</i>	'you/they (d.) have finished striking'
<i>pk dpwn</i>	'we (pl.) have finished striking'
<i>pk dpm</i>	'you (pl.) have finished striking'
<i>pk dpay</i>	'they (pl.) have finished striking'

Paradigm 10: 'immediate present completive'

(V+d- 'to complete' +24+30)^{VP1}

<i>pkʃaspyn</i>	'I am just finishing striking'
<i>pkʃaspan</i>	'you are just finishing striking'
<i>pkʃasap</i>	'he/she/it is just finishing striking'
<i>pkʃaspwt</i>	'we (d.) are just finishing striking'
<i>pkʃaspyt</i>	'you/they (d) are just finishing striking'
<i>pkʃaspan</i>	'we (pl.) are just finishing striking'
<i>pkʃaspm</i>	'you (pl.) are just finishing striking'
<i>pkʃaspay</i>	'they (pl.) are just finishing striking'

'present incomplete'

Paradigm 11: $\sqrt{(V + md- 'to continue' + 25.1 + 30)}^{VP1}$

<i>pk mǎpyn</i>	'I am still striking, continue to strike'
<i>pk mǎpan</i>	'you are still striking, continue to strike'
<i>pk mǎp</i>	'he/she/it is still striking, continue to strike'
<i>pk mǎpwt</i>	'we (d.) are still striking, continue to strike'
<i>pk mǎpyt</i>	'you/they (d.) are still striking, continue to strike'
<i>pk mǎpan</i>	'we (pl.) are still striking, continue to strike'
<i>pk mǎpm</i>	'you (pl.) are still striking, continue to strike'
<i>pk mǎpay</i>	'they (pl.) are still striking, continue to strike'

Paradigm 12: 'action prior to action by same subject'

(V+21a)^{VP2} (V+25.1+30)^{VP1}

<i>dy opyn</i>	'having obtained (it) I have come'
<i>dy opan</i>	' " " " you have come'
<i>dy owp</i>	' " " " he/she/it has come'
<i>dy opwt</i>	' " " " we (d.) have come'
<i>dy opyt</i>	' " " " you/they (d.) have come'
<i>dy opwn</i>	' " " " we (pl.) have come'
<i>dy opm</i>	' " " " you (pl.) have come'
<i>dy opay</i>	' " " " they (pl.) have come'

Paradigm 13: 'action simultaneous with action by same subject'

(V+23a)^{VP2} (V+25.1+30)^{VP1}

<i>nnyg mdpyn</i>	'I am sitting looking'
<i>nnyg mdpan</i>	'you are sitting looking'
<i>nnyg mdp</i>	'he/she/it is sitting looking'
<i>nnyg mdpwt</i>	'we (d.) are sitting looking'
<i>nnyg mdpyt</i>	'you/they (d.) are sitting looking'
<i>nnyg mdpwn</i>	'we (pl.) are sitting looking'
<i>nnyg mdpm</i>	'you (pl.) are sitting looking'
<i>nnyg mdpay</i>	'they (pl.) are sitting looking'

Paradigm 14: 'prospective action, following progressive action
by same subject' (V+24a)^{VP2} (V+24+30)^{VP1}

<i>nɲŋg amjɲyn</i>	'I am going in order to see'
<i>nɲŋg amjɲan</i>	'you are going in order to see'
<i>nɲŋg amjɲap</i>	'he/she/it is going in order to see'
<i>nɲŋg amjɲwt</i>	'we (d.) are going in order to see'
<i>nɲŋg amjɲyt</i>	'you/they (d.) are going in order to see'
<i>nɲŋg amjɲwn</i>	'we (pl.) are going in order to see'
<i>nɲŋg amjɲm</i>	'you (pl.) are going in order to see'
<i>nɲŋg amjɲay</i>	'they (pl.) are going in order to see'

Paradigm 15: 'future' (V+24a)^{VP2} (g-'to do' + 21+30)^{VP1}

<i>nɲŋg gabyn</i> ~ <i>nɲŋg gayn</i>	'I will/intend to see'
<i>nɲŋg gaban</i>	'you will/intend to see'
<i>nɲŋg gab</i>	'he/she/it will/intend to see'
<i>nɲŋg gabwt</i>	'we (d.) will/intend to see'
<i>nɲŋg gabyt</i> ~ <i>nɲŋg gayt</i>	'you/they (d.) will/intend to see'
<i>nɲŋg gabwn</i>	'we (pl.) will/intend to see'
<i>nɲŋg gabm</i>	'you (pl.) will/intend to see'
<i>nɲŋg gabay</i>	'they (pl.) will/intend to see'

Paradigm 16: 'immediate future' (V+24a)^{VP2} (g-'to do' +25+30)^{VP1}

<i>pkng gspyn</i>	'I am just about to strike'
<i>pkng gspan</i>	'you are just about to strike'
<i>pkng gsap</i>	'he/she/it is just about to strike'
<i>pkng gspwt</i>	'we (d.) are just about to strike'
<i>pkng gspyt</i>	'you/they (d.) are just about to strike'
<i>pkng gspwn</i>	'we (pl.) are just about to strike'
<i>pkng gspm</i>	'you (pl.) are just about to strike'
<i>pkng gspay</i>	'they (pl.) are just about to strike'

Paradigm 17: 'immediate future perfect' (V+ ~~d-'to complete'~~+24a)^{VP2}
(V+25+30)^{VP1}

<i>pkdng gspyn</i>	'I am almost finished/about to finish striking'
<i>pkdng gspan</i>	'you are " " "
<i>pkdng gsap</i>	'he/she/it is " " "
<i>pkdng gspwt</i>	'we (d.) are " " "
<i>pkdng gspyt</i>	'you/they (d.) " " "
<i>pkdng gspwn</i>	'we (pl.) " " "
<i>pkdng gspm</i>	'you (pl.) " " "
<i>pkdng gspay</i>	'they (pl.) " " "

Paradigm 18: 'hortative, prior to action by different subject'

(V+11+26+30)^{VP3}

<i>pken</i>	'let me strike, and ... (someone does something)'	
<i>pkey</i>	'you (s.) strike	"
<i>pkeyan</i>	'let him/her/it strike	"
<i>pkot</i>	'let us (d.) strike	"
<i>pket</i>	'you/they (d.) strike	"
<i>pkon</i>	'let us (pl.) strike	"
<i>pkem</i>	'you (pl.) strike	"
<i>pkey</i>	'let them (pl.) strike	"

E.g. *pken, nad ksen pknmn*. 'I'll strike (it), you can strike it afterwards!'

Paradigm 19: 'future subjunctive, relating to action by different subject' (V+11+23+30)^{VP3}

<i>pkenm</i>	'should/in the event that/when I strike'	
<i>pkenmn</i>	'you (s.) strike'	"
<i>pkenmun</i>	'he/she/it strikes'	"
<i>pkajt</i>	'we (d.) strike'	"
<i>pkenmyt</i>	'you/they (d.) strike'	"
<i>pkajn</i>	'we (pl.) strike'	"
<i>pkenmb</i>	'you (pl.) strike'	"
<i>pkengy</i>	'they (pl.) strike'	"

E.g. *pkenm, nad drmn*. 'when I strike it, you should catch it.'

Paradigm 20: 'past contrary to fact' (V+11+30+42)^{VP3} (where 42 is discontinuous')

<i>pkebnp</i>	'if I could have/ if I had struck'
<i>pkebnap</i>	'if you (s.) could have/ if you (s.) had struck'
<i>pkebkop</i>	'if he/she/it could have/ if he/she/it had struck'
<i>pkob⁷twp</i>	'if we (d.) could have/ if we (d.) had struck'
<i>pkebtp</i>	'if you/they (d.) could have/ if you/they had struck'
<i>pkobnwp</i>	'if we (pl.) could have/ if we (pl.) had struck'
<i>pkebkp</i>	'if you (pl.) could have/ if you (pl.) had struck'
<i>pkebyap</i>	'if they (pl.) could have/ if they (pl.) had struck'

E.g. *pkebnp, kwbkop*. 'if I had struck, he would have died'

Paradigm 21: 'past action, prior to action by different subject'

(V+11+30+41)^{VP3}

<i>pkenk</i>	'when I struck/strike ... (someone else is doing something else'
<i>pkenak</i>	'when you struck/strike " "
<i>pkek</i>	'when he/she/it struck/strike " "
<i>pkotwk</i>	'when we (d.) struck/strike " "
<i>pketk</i>	'when you/they (d.) struck/strike " "
<i>pkomwk</i>	'when we (pl.) struck/strike " "
<i>pkebk</i>	'when you (pl.) struck/strike " "
<i>pkeyak</i>	'when they (pl.) struck/strike " "

E.g. *pkenk, ptk amnak*. 'when I struck, he fled'

Paradigm 22: 'action simultaneous with action by different subject'

(V+30+41+51)^{VP3}

<i>pknkn_n</i>	'while I was/am striking ... (someone did/will do something else'	
<i>pkakn_n</i>	'while you were/are striking...	"
<i>pknakn_n</i>	'while he/she/it was/is striking...	"
<i>pktwkn_n</i>	'while we two were/are striking ...	"
<i>pktkn_n</i>	'while you/they two were/are striking ...	"
<i>pknwkn_n</i>	'while we (pl.) were/are striking ...	"
<i>pkbkkn_n</i>	'while you (pl.) were/are striking ...	"
<i>pyakn_n</i>	'while they (pl.) were/are striking ...	"

E.g. *en bal pknwkn_n, dys ap bsg mdab haws kwk.* 'while we were playing football, the teacher came and sat down in the cook-house.'

Paradigm 23: 'present perfect iterative action, simultaneous with

action by different subject' (V+25.1+30+51)^{VP3}

<i>opyn_n</i>	'while I was coming ... (someone else did something else)'	
<i>opan_n</i>	'while you were coming ...	"
<i>owpn_n</i>	'while he/she/it was coming ...	"
<i>opwt_n</i> ⁿ	'while we (d.) were coming ...	"
<i>opyt_n</i> ⁿ	'while you/they (d.) were coming ...	"
<i>opwn_n</i>	'while we (pl.) were coming ...	"
<i>opmn_n</i>	'while you (pl.) were coming ...	"
<i>opayn_n</i>	'while they (pl.) were coming ...	"

E.g. *b owpn_n, yk ksen opyn.* 'while the man was coming, I followed'

Paradigm 24: 'hortative sequence, different subjects'

(V+11+26+32.6)^{VP3} (V+26+30)^{VP1}

<i>dey pkyn</i>	'you hold (it) and I will strike (it)!'
* <i>dey pkan</i>	(This is ungrammatical - see note below)
<i>dey pkan</i>	'you hold (it) and he/she/it will strike (it)!'
<i>dey pkwt</i>	'you hold (it) and we (d.) will strike (it)!'
<i>dey pkyt</i>	'you hold (it) and you/they (d.) will strike (it)!'
<i>dey pkwn</i>	'you hold (it) and we (pl.) will strike (it)!'
<i>dey plm</i>	'you hold (it) and you (pl.) will strike (it)!'
<i>dey pkyan</i>	'you hold (it) and they (pl.) will strike (it)!'

*Where the subjects are identical the correct translation of 'you hold it and strike it!' is either *dy pkan!* (lit. 'having taken hold (of it), strike (it)!' (V+21a)^{VP2} (V+26+32.1)^{VP1} or *dyg pkan!* 'while holding (it) strike (it)!' (V+23a)^{VP2}(V+26+32.1)^{VP1}, where the first verb phrase is of class VP2 (i.e. contains a suffix marking identity of subject relation to the following verb phrase).

Paradigm 25: 'contrary to fact sequence, different subjects'

(V+11+32.4+42.2)^{VP3} (V+30+42)^{VP1}

<i>pkebnap dpnp</i>	'if you had struck (it) I would have caught (it)'
* <i>pkebnap dpnap</i>	(This is ungrammatical - see note below)

- pkebnap dpkop* 'if you had struck (it) he/she/it would have caught (it)'
- pkebnap dptwp* 'if you had struck (it) we (d.) would have caught (it)'
- pkebnap dptp* 'if you had struck (it) you/they (d.) would have caught (it)'
- pkebnap dpnwp* 'if you had struck (it) we (pl.) would have caught (it)'
- pkebnap dpkp* 'if you had struck (it) you (pl.) would have caught (it)'
- pkebnap dpyap* 'if you had struck (it) they (pl.) would have caught (it)'

**pkebnap dpnap* 'if you had struck (it) you would have caught (it)' is ungrammatical, since the subjects are identical. The correct Karam translation is *pky dpnap* 'having struck it, you would have caught it' (V+21a)^{VP2} (V+32.4+42.1+V)^{VP1} where the first verb phrase is of class VP2 (i.e. contains a suffix marking subject identity relation to the following verb phrase).

Appendix C. N6, N7 and N14 bases in sequence with verb stems.

As noted in 4.2.3, N6 bases occur only in *subject* relation and N7 bases occur only in *direct object* relation to the verb phrase of a clause, while N14 bases are compatible with one small subclass of verb stems as *subject* only, and with another small subclass of verb stems as *direct object* only.

The following is a partial list of N6, N7 and N14 bases cited in sequence with those verb stems with which they are compatible. All sequences listed (other than N7 + V, which comprise the large majority) are given symbolic representations.

It will be noted that, in each construction, the N6, N7 or N14 base carries specific meaning, while the verb stem carries very broad meaning.

*ag-	'to make a sound, to sound, to utter'	
asb ag-	'to cadge, ask for gifts'.	asb 'cadging'
bw ag-	'to explode'	bw 'explosion'
esek ag-	'to lie, be untruthful'	esek 'deceiving'

- gygw ag-* 'to knock, beat, drum, rattle, jingle'.
gygw 'sharp sound'
- gwɔwɔm ag-* 'to snore, rumble'. *gwɔwɔm* 'rumbling'
- gw ag-* 'to resound, as bell ringing, plane roaring'
gw 'resounding'
- jwɔ ag-* 'to squeak, as a rat or a bird'. *jwɔ* 'squeak'
- jlken ag-* 'to cough'. *jlken* 'cough' (N14 + V)
- kl ag-* 'to mimic'. *kl* 'mimicking'
- kwk ag-* 'to cry out, esp. of women calling warning
or alarm'. *kwk* 'call'
- kwb ag-* 'to shout or yodel oo-oo-oo! to someone at
a distance'. *kwb* 'big'
- kmɔp ag-* or *kmɛp ag-* 'to sing'. *kmɔp* ~ *kmɛp* 'song, singing'
- mɔ ag-* 'to make a noise which breaks silence'.
mɔ 'sudden noise'
- mnm ag-* 'to speak, to talk, to make the characteris-
of animal or thing'. *mnm* 'speech, utterance'
- mnm kɔnɔy ag-* 'to talk a lot'. *mnm* 'speech' *kɔnɔy* 'many'
(N7 + N17 + V)
- mnm pwg ag-* 'to be longwinded, talk a lot'. *mnm* 'speech'
pwg- 'to blow' (N7 + V + V)
- monmon ag-* 'to talk nonsense, talk freely' *monmon* 'free
of restriction'

<i>mukbel ag-</i>	'to belch'. <i>mukbel</i> 'belch'
<i>nnd ag-</i>	'to tell the truth' <i>nnd</i> 'truth'
<i>nñakol ag-</i>	'to glitter, dazzle, as light reflected by glass or shiny surface'. <i>nñakol</i> 'glittering'
<i>nwgl ñagl ag-</i>	'to chorus, of evening chorus of insects, frogs and birds in the bush'. <i>nwgl ñagl</i> 'evening bush chorus' (N7 + N7 + V)
<i>san ag-</i>	'to sing and dance (of the women's festival associated with initiation ceremonies)'. <i>san</i> 'women's festival'
<i>sy ag-</i>	'to weep'. <i>sy</i> 'weeping'
<i>swk ag-</i>	'to laugh, shout'. <i>swk</i> 'laugh, shout' (N14 + V)
<i>swk swk ag-</i>	'to shout or laugh in derision' (N14 + N14 + V)
<i>swk tep ag-</i>	'to smile, chuckle'. <i>swk</i> 'laugh, shout' <i>tep</i> 'good' (N14 + N16 + V)
<i>swl ag-</i>	= <i>sy ag-</i>
<i>tmwk ag-</i>	'to thunder'. <i>tmwk</i> 'thunder' (N6 + V)
<i>wal ag-</i>	'to cry out in amazement, pain, fear, to squeal, of pigs'. <i>wal</i> 'call of amazement, etc.'
<i>wol ag-</i>	'to chant, esp. of chants at <i>smv</i> festival'. <i>wol</i> 'chant'
<i>*adk-</i>	'to turn'

<i>twg adk-</i>	'to turn around by hand'. <i>twg</i> 'handling'
<i>*am-</i>	'to go, move away'
<i>dad am-</i>	'to take, carry and go'. <i>dad</i> 'carrying'
<i>kat am-</i>	'to go with evil intent'. <i>kat</i> 'malice'
<i>klend am-</i>	'to crawl'. <i>klend</i> 'crawling'
<i>kod am-</i>	'to accompany, go with'. <i>kod</i> 'in the company of'
<i>monmon am-</i>	'to go freely, go without ritual restriction, e.g. of a woman going to live with a man or with the family of her fiance before <i>smen</i> (bridewealth) is paid'. <i>monmon</i> 'free, unrestricted'
<i>pond am-</i>	'to lead, guide, bring someone or some animal which does not know the way'. <i>pond</i> 'guiding'
<i>sy dad am-</i>	'to steal and take away, to take away illegally'. <i>sy</i> 'illegal' <i>dad</i> 'carrying' (N7+N7+V)
<i>wand am-</i>	'to drown, be carried away by water' <i>wand</i> 'carried by water'
<i>wond am-</i>	= <i>wand am-</i>
<i>wnd am-</i>	'to fly, become dizzy, lose control of one's movements'. <i>wnd</i> 'flying'
<i>ywkd dad am-</i>	'to pursue, chase' <i>ywkd</i> 'pursuing' <i>dad</i> 'carrying' (N7 + N7 + V)

- *ap- 'to come, move hither'
- dad* ap- 'to bring, carry and come'. *dad* 'carrying'
- kat* ap- 'to come with malice aforethought, as when intending to take revenge on someone'. *kat* 'malice'
- kw̃k* ap- ~~kw̃k~~. 'to salivate, water at the mouth'. *kw̃k* 'saliva, spit' (N6 + V).
- sy* ñg ap- 'to feel tears coming'. *sy* 'weeping' ñg 'liquid' (N7 + N3 + V)
- swk* ap- 'to feel like laughing' *swk* 'laugh, shout' (N4 + V)
- sy* ap- 'to come illegally, without right or permission'. *sy* 'illegal'
- twg* ap- 'to hold in the fingers and draw towards one' *twg* 'handling'
- wsn* ap- 'to feel sleepy' *wsn* 'sleep' (N4 + V).
- ygen* ap- 'to be windy' *ygen* 'cold, wind' (N6 + V)
- *ask- 'to free from physical restriction, avoid something ritually dangerous'.
- sy* ag ask- 'to stop weeping' *sy* 'weeping' *ag*- 'to sound' (N7 + V + V)
- twg* ask- 'to unfasten, release with fingers' *twg* 'handling'

- **ay-* 'to come into being, to set, establish, become, put, place, turn into'
- añ ay-* 'to draw breath, to recover the wind' *añ* 'breath'
- bok ay-* 'to have an infected sore or pimple' *bok* 'pus'
(N6 + V)
- kał ay-* 'to swallow' *kał* 'swallowing'
- kan ay-* 'to avoid by dodging or ducking' *kan* 'avoiding'
- kñown ay-* 'to have a birth-mark' *kñown* 'birthmark' (N6 + V)
- jwn bobom ay-* 'to have dandruff' *jwn* 'head' *bobom* 'dandruff'
(N3 + N6 + V)
- lkañ ay-* 'to have a blood blister, or a scratch' *lkañ* 'blood'
(N6 + V)
- mablep ay-* 'to have warts' *mablep* 'wart' (N6 + V)
- magy wt ay-* 'to have a scar' *magy* 'round thing' *wt* 'cluster'
(N6 + N3 + V)
- ptend ay-* 'to jump onto' *ptend* 'jump'
- saky ay-* 'to be/become deaf, crazy, out-of-mind'. *saky* 'uncom-
prehending'
- sbek ay-* 'to have pimples' *sbek* 'pimple' (N6 + V)
- slañ ay-* 'to have a scab, healing sore' *slañ* 'scab' (N6 + V)
- slk ay-* 'to have tinea' *slk* 'itching, skin irritation'
(N6 + V).

- snl ay-* 'to have boils' *snl* 'boil' (N6 + V).
soy ay- 'to have sores' *soy* 'sore' (N6 + V).
swη ay- 'to regain good health, to become free of ritual restriction'. *swη* 'in good or uncontaminated condition' (N6 + V).
toptop ay- 'to be mute, stupid' *toptop* 'unspeaking, mute' (N6+V)
tmwd sb ay- 'to have wax in the ears' *tmwd* 'ear' *sb* 'waste material secreted by body' (N3 + N6 + V).
**eg-* 'to adhere'
twg eg- 'to stick onto by hand, seal up by hand'.
twg 'handling'
**d-* 'to hold, constrict, obtain, etc.'
gom d- 'to jump from one tree to another (without returning to the ground'. *gom* 'jumping from tree to tree'
jep d- 'to shiver, tremble, quake'. *jep* 'trembling'
jkw d- 'to mark the face for the *smv* festival'. *jkw* 'face marking'
jη d- 'to put a point on something, sharpen to a point'
jη 'point'
konam d- 'to have a hoarse or blocked throat' *konam* 'throat' (N6+V)
kwd d- 'to make a back-cut (in felling a tree)' *kwd* 'back'
nawl d- 'to overcome with astonishment' *nawl* 'astonishing'

- ptend d-* 'to jump onto'. *ptend* 'jump'
- sb d-* 'to make the scarf cut (in felling a tree)'. *sb* 'scarf'
- sy d-* 'to steal, obtain illegally' *sy* 'illegal'
- wan sy d-* 'to fornicate or commit adultery (with a man)'.
wan 'penis' *sy* 'illegal' (N3+N7+V)
- *g-* 'to do, make, act, function, work'
- amñeb g-* 'to faint, make a sham attacking movement'.
amñeb 'faint'
- bl g-* 'to abstain (e.g. from smoking, eating, sexual intercourse)'. *bl* 'abstention'
- dlam g-* 'to be horizontal'. *dlam* 'horizontal' (N6+V)
- esek g-* 'to joke, tease, pretend, deceive (by action)'.
esek 'deceiving'
- jonb tmey g-* 'to whine, pull a sad face (esp. of children)'.
jonb 'mouth' *tmey* 'bad' (N6+N16+V)
- jl g-* 'to pump, push in and out of an opening' *jl* 'pumping'
- jlken g-* 'to have a head-cold' *jlken* 'cough' (N6 + V)
- kaj krm g-* 'to wince, shudder on hearing a harsh grating or piercing noise'. *kaj krm* 'grating' (N6 + N6 + V)
- kls g-* 'to be strong, tight, firm, flexed, tense'
kls 'strong' (N6 + V)

- km g-* 'to be bitter, sour-tasting'. *km* 'bitter' (N6+V)
- koty g-* 'to be diseased, malformed, esp. of plants'.
koty 'malformation' (N6 + V)
- kwñk g-* 'to spit' *kwñk* 'saliva, spit'
- kwy g-* 'to be rotten, to stink'. *kwy* 'odour, rot'
- leb g-* 'to recline, sleep, rest'. (ritual language only)
leb 'reclining'
- lk g-* 'to smack the lips, make a noise when eating'
lk 'lip-smacking'
- lm g-* 'to shoot, of plants appearing above the ground'.
lm 'shooting up' (N6 + V)
- mkał g-* 'to open up something hinged, as a book'. *mkał*
 'opening from a hinge'
- młwk beŋbeŋ g-* 'to show off, boast, behave in a conceited way'
młwk 'face' *beŋbeŋ* 'boastful' (N6+N16+V)
- młwk sayn g-* 'to stop sulking, to abate (of anger) *sayn* 'soft, lax,
 loose, weak, easy' (N14 + N16 + V)
- monmon g-* 'to be free from ritual restriction, to be uncon-
 taminated' *monmon* 'free, unrestricted'
- mmwg g-* 'to whisper, to bribe'. *mmwg* 'whisper'
- nabŋ g-* 'to feel ashamed, shy' *nabŋ* 'shame' (N6 + V)
- ñekñek g-* 'to hiccup' *ñekñek* 'hiccup' (N6 + V)

- ñk g-* 'to crouch, duck down'. *ñk* 'ducking'
- ññbon ay g-* 'to tease, pretend'. *ññbon* 'teasing' *ay* 'to place'
- ñwtam g-* 'to comb, to make a comb' *ñwtam* 'comb'
- pasb g-* 'to distribute food or valuables' (ritual language only) *pasb* 'distribution of food or valuables'
- pbon g-* ~~imp.~~ 'to feel warm' (N6 + V)
- plam g-* 'to die' (ritual language) *plam* 'die'
- saj g-* 'to pay compensation' *saj* 'compensation'
- sayn g-* 'to ease, abate (e.g. of sickness, pain or anger)'
sayn 'soft, lax, loose, weak, easy'
- sb g-* 'to feel upset, sorry, jealous, excited, affection'
sb 'intestines' (N6 + V)
- slk g-* 'to feel itchy, bitter, hot to the taste, as beer or pepper' *slk* 'itching, skin irritation' (N6 + V)
- slk slk g-* 'to scratch' *slk slk* 'keep irritating' (N6 + V)
- sm g-* 'to weep' (ritual language) *sm* 'weeping'
- smen g-* 'to give bridewealth' *smen* 'bridewealth'
- takl g-* 'to get cold' *takl* 'cold' (N6 + V)
- tap g-* ~~imp.~~ 'to get sick' *tap* 'sickness' (N6 + V)
- tob g-* 'to leave footprints, spoor; to make footwear'
top 'foot' (N14 + V)
- tob mogm g-* 'to cross the legs' *mogm* 'cross'

- tol g-* 'to screw on, put on'. *tol* 'fitting'
- tom g-*, *mnm tom g-* 'to lie, to deceive by telling falsehood'
tom 'lie' *mnm* 'speech' (N7+N7+V)
- twg cekoy g-* 'to turn around and around by hand' *twg* 'handling'
cekoy 'screwing' (N7+N7+V)
- twg mkal g-* 'to open by hand something which is hinged, as a
book' *mkal* 'opening from hinge'
- wog g-* 'to work, to garden' *wog* 'garden, work'
- wsb g-* 'to be sweating, perspire' *wsb* 'sweat' (N6 + V)
- ydk g-* 'to be sweet, pleasant-tasting' *ydk* 'sweet' (N6+V)
- yem g-* 'to free from restriction' (ask mosk speech)
- ygen g-* 'to feel cold' *ygen* 'cold, wind' (N6 + V)
- ypd g-* 'to be straight' *ypd* 'straight, true' (N6 + V)
- ytwk g-* 'to feel lethargic, lazy, weary of' *ytwk* 'lethargy'
(N6 + V)
- ywan g-* 'to be hungry, thirsty' *ywan* 'hunger' (N6 + V)
- ywt g-* 'to feel pain' *ywt* 'pain' (N6 + V)
- *jak-* 'to rise up, reach an elevated position'
- dad at jak-* 'to carry onto the top' *dad* 'carrying' *at* 'top'
(N7 + N10 + V)
- *jw-* 'to withdraw suddenly from firm position'
- twg jw-* 'to pull off or out, extract with the hands or fingers'
twg 'handling'

- *kby- 'to leave, leave off (doing something)'.
 asb kby- 'to stop cadging, asking for things' asb 'cadging'
 esek kby- 'to stop bluffing, lying, joking' esek 'deceiving'
 mmm kby- 'to stop talking' mmm 'speech'
 sy kby- 'to stop weeping' sy 'weeping'
 swk kby- 'to stop laughing, shouting' swk 'laugh, shout' (N14+V)
- *kn- 'to rest prone, recline'
 wsn kn- 'to sleep' wsn 'sleep' (N14+V)
- *ky- 'to excrete'
 sb ky- 'to defecate' sb 'waste secreted by body, faeces' (N14+V)
 sb kogl ky- 'to have diarrhea' kogl 'stomach' (N7 + N3 + V)
 ss ky- 'to urinate' ss 'urine' (N14+V)
- *nn- 'to perceive'
 bwk nn- 'to study, read' bwk 'book'
 gos nn- 'to think, consider, be tame or civilized, clever'
 gos 'mind'
- gos konay nn- 'to worry, be concerned about' konay 'many' (N7+N17+V)
 gos tep nn- 'to dislike, hate, to worry' tep 'good'
 kwj nn- 'to know magic' kwj 'mind'
 kwy nn- 'to be aware of an odour' kwy 'odour'

- mapn* nη- 'to feel sympathy, affection for' *mapn* 'liver'
- młwk* nη- 'to glare at, feel angry or worked up about'
młwk 'nose, face' (N14 + V)
- mrum* nη- 'to know a language, to understand an utterance'
mrum 'speech'
- mmwg* nη- 'to listen to a whisper, to think over a bribe
offer' *mmwg* 'whisper, bribe'
- peg* nη- 'to spy on, watch from hiding' *peg* 'hiding'
- skwl* nη- 'to be learned, educated, have acquired knowledge
at school' *skwl* 'lesson, school'
- sb* nη- 'to feel sorry, affection for' *sb* 'intestines' (N14+V)
- **ñ-* 'to bring an object into legitimate contact with
another object or surface, fit, give, transfer, etc.'
- mnan* pwny ñ- 'to bribe, press a bribe on someone' *mnan* 'bribe',
'payment' *pwny-* 'to force into position' (N7+V+V)
- mnm* ag ñ- 'to confide in someone, to tell a secret' *mnm*
'speech' *ag-* 'to utter' (N7 + V + V)
- wsym* ñ- 'to smooth by grinding, filing, planing, troweling,
etc' *wsym* 'smoothing instrument, plane, file, etc.'
- ywg* ñ- 'to put a lid or cover on' *ywg* 'lid, cover'

- *pk- 'to come into sudden and transient contact with, touch, strike'
- mīmon* pk- 'to rain' *mīmon* 'rain, sky' (N6 + V)
- mωη* pk- 'to rain' *mωη* 'rain' (N6+V)
- īn* ppal pk- 'to shake the wrists, an expression of amazement or admiration' *īn* 'hand' *ppal* 'shaking' (N6 + N7 + V).
- *sak- 'to remove a part from a whole'
- twg* sak- 'to remove by a hand a part from a whole'
twg 'handling'
- *sand- 'to go beyond, to depart'
- dad* sand- 'depart carrying' *dad* 'carrying'
- pond* sand- 'go off guiding, lead away' *pond* 'guiding'
- *tan- 'to rise above surface level'
- dsn* tan- 'to have a beard or stubble grow' *dsn* 'beard'
(N6 + V)
- kas* tan-, *kaskas* tan- 'to have hair or feathers grow' *kas* 'hair, feathers, fur, foliage' (N6 + V)
- mwm* kogy tan- 'to become blistered' *mwm* 'blister'
kogy 'swelling' (N6 + N6 + V)
- *yap- 'to fall'

- lakñ yap-* 'to bleed' *lkañ* 'blood' (N6 + V).
- sb yap-* 'to feel the need to defecate' *sb* 'waste material secreted by body, faeces, earwax, etc.' (N14 + V)
- slom yap-* 'to have a running nose' *slom* 'nasal mucus' (N6 + V)
- ss yap-* 'to feel the need to urinate' *ss* 'urine' (N14 + V)
- *yok-* 'to remove from a constricted position, get rid of, dispose of, dislocate, etc.'
- jonb mlwk yok-* 'to pout, point lips in certain direction as a signal'. *jonb* 'mouth' *mlwk* 'nose, face' (N6 + N14 + V)
- twg jw yok-* 'to remove by hand by drawing away from a tight-fitting position, as in taking off clothes or a wristwatch'. *twg* 'handling' *jw-* 'to withdraw' (N7 + V + V)
- twg mlok yok-* 'to roll along by hand' *mlok* 'roll' (N7 + N7 + V)
- twg sog yok-* 'to empty out by hand' *twg* 'handling' *sog-* 'to pour out' (N7 + V + V)
- wdn nñ yok-* 'to signal by moving the eyes'. *wdn* 'eye' *nñ-* 'to perceive' (N6 + V + V)

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