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PREFACE

The aim of this work is to provide a comprehensive and rigorous *synchronic* description of grammatical structures and their meanings in Mangap-Mbula, an Austronesian language spoken in the Morobe Province of Papua New Guinea. Occasional reference is also made to diachronic matters when these touch upon or help to explain synchronic patterns.

In the introductory chapter the linguistic, geographic, and cultural setting of Mangap-Mbula is described, significant dialect variations are outlined, previously published material on the language is noted, the nature and sources of the data upon which the present analysis is based are described, and a brief overview of Mangap-Mbula grammar is given.

The second chapter presents a description of the sound system of the language. The description includes: 1) units distinguished, 2) allophonic and morphophonemic alternations, and 3) segmental composition of morphemes.

The third chapter is a description of the morphology of the language. It characterises both the structure of words and the various word classes which are distinguished in the language. Because of their complexity, adverbs receive especially detailed treatment.

The fourth chapter is a presentation of phrase structure up to the level of simple sentences and complement clauses. The theoretical model used is a modified version of the X-bar theory of phrase structure as outlined in Gazdar, Klein, Pullum, and Sag (1985) and Pollard and Sag (1987), in which formal statements are supplemented by prose descriptions. The major modification is the replacement of the verb-phrase constituent by a predicate phrase in order to account more naturally for non-verbal predicates.

The fifth chapter describes mechanisms for combining simpler sentences into more complex ones. It therefore treats relative clauses, complement clauses, and various types of sentential connectives. The connectives system of Mangap-Mbula is relatively intricate, but attempts have been made to delineate precisely the meaning differences between various forms.

The sixth and final chapter is a study of various means of referring. In it are treatments of thematic devices, a statistical study of the frequencies and continuity characteristics of various encodings of clausal arguments, and a description of the principal devices for encoding emphasis.

There are four appendices. The first one presents evidence for surface phonemic contrasts, while the second one consists of a reconstruction of the historical developments of consonant and vowel phonemes from Proto Oceanic. The third appendix is entitled 'On how to say things' and consists of a semantically organised set of examples. The fourth appendix consists of three glossed texts.

Throughout the grammar, strong emphasis is placed upon precisely characterising the meanings of various forms and structures.

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It is only 'right, meet, and salutary' that this grammar be predicated with expressions of gratitude to those who have helped in many ways to make its production possible. I would first like to express my appreciation to all of those who have sought to widen my horizons in linguistics over the years. These include: Kenneth Pike, Robert Longacre, Stephen Wallace, Anna Wierzbicka, and colleagues of the Papua New Guinea branch of the Summer Institute of Linguistics – Ger Reesink, Les Bruce, Bob Litteral, Karl Franklin, Ray Johnston, and Ken McElhanon.

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The government of Papua New Guinea deserves recognition for permitting and encouraging language work in the many vernaculars of the country, including the Mangap-Mbula language. They have had the clear vision to see the importance of language and culture to the soul of a nation.

Moving a bit closer to Umboi Island, I would like to thank the Evangelical Lutheran Church of Papua New Guinea for inviting my wife and me to work in the Mangap-Mbula language in the first place. During much of our research, the local District missionary Cecil Logan and his wife were frequent sources of practical help as well as good friends.

The greatest recognition is due to my long-suffering village friends, who have patiently put up with my attempts to learn their language, and with the unending series of questions I asked them over the years. Of these, Pastor Silas Ariko, his wife Keke, Misek Mark, Moses Gial, Giemsa Apei and Gilende Goya have given the most time. The members of the local organisation overseeing work in the language – the *Kalqanda Komiti* – deserve special recognition for faithfully giving of their time over the years to the recording of their language and culture. We have shared many enjoyable times together.

Over the years, Christian friends in the United States, Finland, and Australia have supported and encouraged my wife and me in countless ways. Their interest in a small language group on a small island in a remote part of the world is testimony to the power of the ideal of a universal family of God, made up of people from 'every tribe and language and people and nation', in which cultural diversity is affirmed and appreciated as a sign of the Creator's love of variety.

Lastly, I would like to express my appreciation to my wife, Salme, for her friendship and patience during the production of this work.

ABBREVIATIONS AND SYMBOLS

ACC	accusative
ADV	adverb
ADVS	adverbialiser (creates adverbs)
BIR	Birik Village
CAUS	causative / transitivity increasing prefix <i>pa ~ p-</i>
CERT.FUT	certain future
CESS	cessative
COMP	a sentential complement whose Subject is not required to be coreferential with some argument of the matrix sentence
CON.RECX	recipient-experiencer-possessor of an entity intended for immediate consumption
DU	dual
DEM	demonstrative (Since there are many Mangap-Mbula demonstratives, there is no concise way to distinguish between them in glosses. DEM is used as a cover gloss. For the exact meaning of a form thus glossed, see §3.2.7.)
DET	determiner
DETR	detransitivising prefix (a form <i>ma-</i> ~ <i>m-</i> which converts transitive action-process verbs into intransitive ones encoding processes)
EXC	exclusive (a subcategorising feature of first person non-singular pronouns and affixes. Exclusive pronouns and affixes indicate that the hearer is not considered to be included in their reference.)
GAU	Gauru Village
g.	grand (as in grandrelative)
GEN	genitive (glosses the suffixes of inalienably 'possessed' forms)
GIV	given or thematised entity (glosses a deictic formative <i>na ~ n-</i> which is used extensively in the language to indicate entities or propositions which the speaker assumes to be known to the hearer or which are taken as a kind of foundation upon which the remainder of the sentence utterance is built)
H(EAD)	head constituent of a phrase
IMP	imperative
INC	inclusive (This is a counterpart to EXC(lusive).) It is used in glossing first person non-singular pronouns and affixes which include the hearer in their reference.)
KAB	Kabi Village
KAM	Kampalap Village

LOC	locative (a preposition <i>ki</i> or formative <i>k-</i> used to indicate animate or potent locations and goals. Within noun phrases, it encodes entities which bear an alienable, enduring and typically controlled relationship to the HEAD noun.)
μ	morpheme (used in some phonological rules)
MAR	Marile Village
N	noun
n.a.	not applicable
n.e.	no examples
NEG	negative
NEG.PERF	negative perfect (glosses a form <i>zen</i> , which means something has yet to happen)
NF	non-factual (glosses a modal auxiliary <i>be</i> which is used to encode propositions which the Speaker is not asserting to have actually happened)
NMS	nominaliser
NOM	nominative
NON.REF	non-referential (glosses a form <i>sa</i> , which encodes indefinite quantities when modifying mass nouns and non-specific referents when modifying count nouns)
NON.VIS.PROX	non-visible but proximate (glosses a form <i>(g)a</i> which means 'I don't see this happening now with my own eyes, but I know this has happened or is happening'.)
NP	noun phrase
OBJ	object syntactic function / grammatical relation
OBL	obligation
o.	older (as in older sibling)
PASS.GEN	passive / subordinate genitive
PL	plural
PCOMP	a sentential complement whose Subject is required to be coreferential with an argument in the main clause and is encoded by a pronoun in the complement clause
PER	persistence (= the number of consecutive following clauses in which mention is made of a particular referent)
PERF	perfect (glosses a form <i>kek</i> which encodes perfect aspect)
PFORM	form of preposition (a syntactic feature used to specify which preposition a particular construction requires)
PERM	permission
POc	Proto Oceanic
POSD	possessed item
POSSR	possessor
PRED	predicate
PREDP	predicate phrase
PREP	preposition
PRO	pronoun
PROH	prohibitive (glosses a form <i>pepe</i> , which means the speaker wants someone to not do something)

PRON.GEN	pronominal genitive syntactic feature. (The presence of this feature licenses the occurrence of NP Themes in noun phrases and sentences.)
PROX	proximate (glosses a form <i>(g)i</i> which means 'I know this is true here and now'.)
QUANT	quantifier
RC	relative clause
RD	referential distance (=the number of clauses back in a text one must look in order to find the last previous mention of a referent)
REC	reciprocal transitivity-deriving prefix <i>par-</i>
RECX	recipient-experiencer-possessor
RED	reduplication
REF	referent (glosses the preposition <i>pa</i> or the formative <i>p-</i> , which are used to encode more oblique arguments in a predication)
REFL	reflexive-emphatic inalienably possessed noun
REM	glosses a form <i>(g)o</i> which means 'I know this is true, because I was there when it happened. It happened some time before now.'
σ	syllable (used in some phonological rules)
S	sentence; subject
SAK	Sakar Village
SG	singular (used in expressions of person-number for pronouns and affixes; e.g. 1SG = first person singular)
SPEC	specific (glosses the form <i>ta</i> 'a/the specific one that'. This form functions as the numeral 'one', the indefinite article, and as a relative clause complementiser. It also is a component of several demonstratives and causal conjunctions.)
SUBJ	subject syntactic function / grammatical relation
UC	uncertain (glosses a modal auxiliary <i>ko</i> , which indicates that the speaker is uncertain about whether or not something has happened or will happen.)
V	verb; vowel
VP	verb phrase
w.	with
w.o.	without
X^0	a constituent of class X and structural level 0
X^1	a constituent of class X and structural level 1
X^2	a constituent of class X and structural level 2
X^3	a constituent of class X and structural level 3
X_α	a constituent of sub-class α of class X
XCOMP	a sentential complement whose Subject is required to be coreferential with an argument of the matrix sentence and is obligatorily absent in the complement clause.
YAN	Yangla Village
y.	younger (as in younger sibling)
Y < X	Y is linearly ordered before X.
Y \rightarrow H _b ^a , XP	Y consists of a HEAD constituent of bar level a and category b plus a phrasal constituent of category X.

1DU.EXC	first person dual (Hearer excluded)
1DU.INC	first person dual (Hearer included)
1PL.EXC	first person plural (Hearer excluded)
1PL.INC	first person plural (Hearer included)
1SG	first person singular
2DU	second person dual
2PL	second person plural
2SG	second person singular
3DU	third person dual
3PL	third person plural
3SG	third person singular
+	1) an obligatory element of structure / characteristic, 2) a morpheme but not an internal or external word boundary, 3) used when glossing a multimorphemic form that is not easily segmentable
±	an optional element of structure / characteristic
-	1) a prohibited element of structure / characteristic, 2) a generic morpheme boundary which is unspecified as to whether it is <i>solely</i> a morpheme boundary or also an internal or external word boundary
[...]	phonetic transcription
/.../	phonemic transcription
#	internal word boundary
##	external word boundary
A / B	either A or B is permitted.
A / **B	grammatical if A is present; ungrammatical if B is present
**	ungrammatical utterance
*	a proto-form derived via historical reconstruction
XP*	one or more instances of the constituent XP is permitted
??	questionable grammaticality or meaning unknown
∅	used to indicate null or missing elements
(A)	A is optional.
[]	designated constituent
/	slight pause
//	longer pause
=	(between constituents) indicates following element cliticised to preceding one

CHAPTER 1

INTRODUCTION

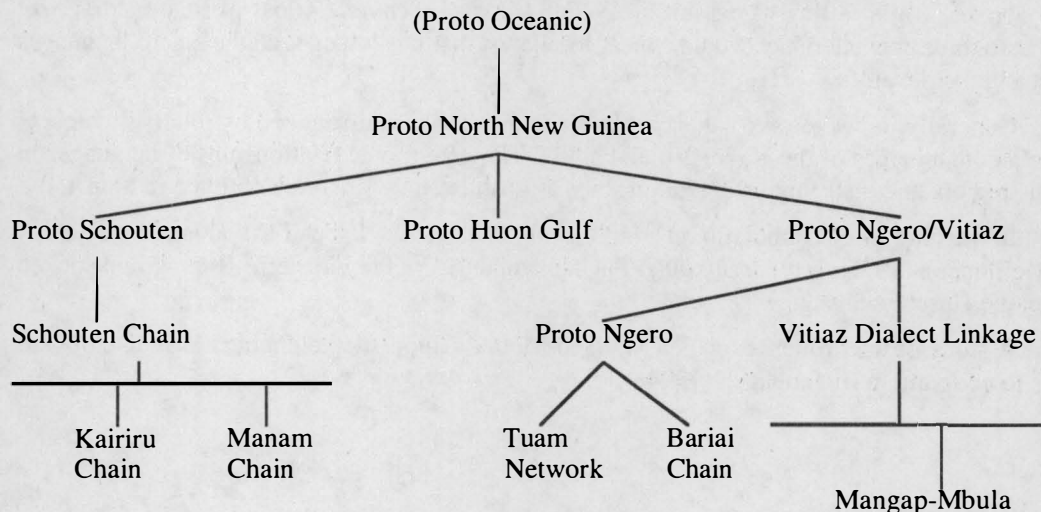
1.1 THE SETTING OF MANGAP-MBULA

This grammar presents a description of Mangap-Mbula, an Austronesian language of Papua New Guinea spoken by some 2,500 people. Since language is not just an abstract formal system but a device used by human beings to communicate in a concrete situation, it is appropriate that the grammar be prefaced by placing the speakers of the language in their linguistic, environmental, and cultural setting.

1.1.1 LINGUISTIC CLASSIFICATION AND SETTING

Mangap-Mbula is a member of the Oceanic group of Austronesian languages. Hooley (1971) and McElhanon (1984:13) classify it as a member of the Sias(s)i Family, a large set of languages extending from Karkar Island in the Madang Province of Papua New Guinea, along the coast of the mainland to Finschafen, and then across to New Britain.

Ross (1988:122,161) considerably revises this classification, proposing the following new classification:



Within this classification, Mangap-Mbula is said to be one of many descendants of the ancestral Vitiaz Dialect Linkage. The immediate ancestor of this linkage was not a single well-defined proto-language but rather a *chain of related dialects*. These are hypothesised to have subsequently gradually diverged from each other, yielding the present situation.

Ross's evidence for the North New Guinea cluster includes (pp.183-188): 1) the loss of the distinction between incorporated and unincorporated objects, 2) loss of the POC transitive marker **-i* as a productive morpheme, 3) loss of the numerals from six to nine, 4) an innovative use of the Proto Oceanic nominalising suffix *-ŋa* to derive attributive adjectives from stative verbs, 5) the innovative possessive classifiers **ne* and **le*, 6) an innovative second person singular pronominal form **komu* (instead of **ko[e]*), and 7) three lexical innovations: **lipu-* 'cross-sibling' (for POC **lopu*), **paqu* 'new' (for POC **paqoru*), and **loŋon-i* 'hear' (for POC **loŋoR-i*).

No phonological innovations support the Ngero-Vitiaz family, but there are two morphological developments which do. These are (p.172): 1) POC **-dria* '3PL' is reflected as Proto Ngero-Vitiaz **ji*, and 2) an innovative first singular subject proclitic **ŋa-*.

The Vitiaz linkage is supported by three¹ pieces of phonological evidence (p.177): 1) loss of POC medial **p*, 2) loss of POC medial **k*, and 3) the merger of POC **r* and **R*.

The Ngero Family is said to be distinguished by six innovations: 1) POC **j* merged with the lenis-grade reflex of POC **s* as **z*, 2) POC initial **k-* was lenited, 3) a fossilised morphophonemic alternation between fortis and lenis grade reflexes of POC initial **p-* and **s-*, 4) object pronominal enclitics for first and second persons acquired an initial **g-*, 5) an innovative possessive preposition **to-*, and 6) the innovative negator **mayo*. In addition to these, the Ngero languages are distinguished by *failing to undergo* the two Vitiaz innovations of: 1) the loss of medial POC **p* and **k*, and 2) the merger of POC **r* and **R*.²

Mangap-Mbula poses a problem for the Ngero-Vitiaz division on the basis of the above criteria, since it exhibits two of the putative Ngero phonological innovations (numbers 1 and 3 above), while failing to exhibit the Vitiaz Linkage's *complete* loss of POC medial **p*.³ These three characteristics would appear to suggest that it is linked with the Ngero languages at a higher level.

Generally, however, we can say that Mangap-Mbula is surrounded by relatively closely related languages of the Ngero/Vitiaz Family. The geographic relationships of languages in the region, and their linguistic relationships as postulated by Ross, are outlined in Map 1.1.

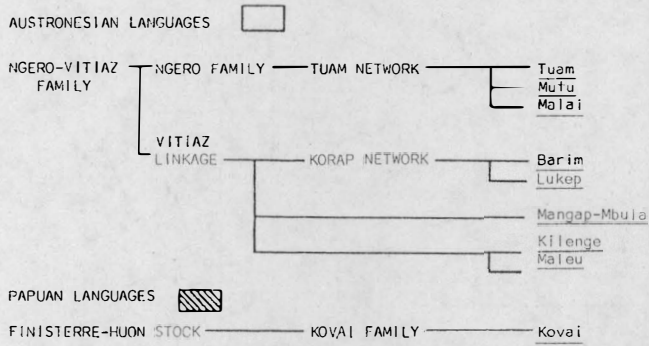
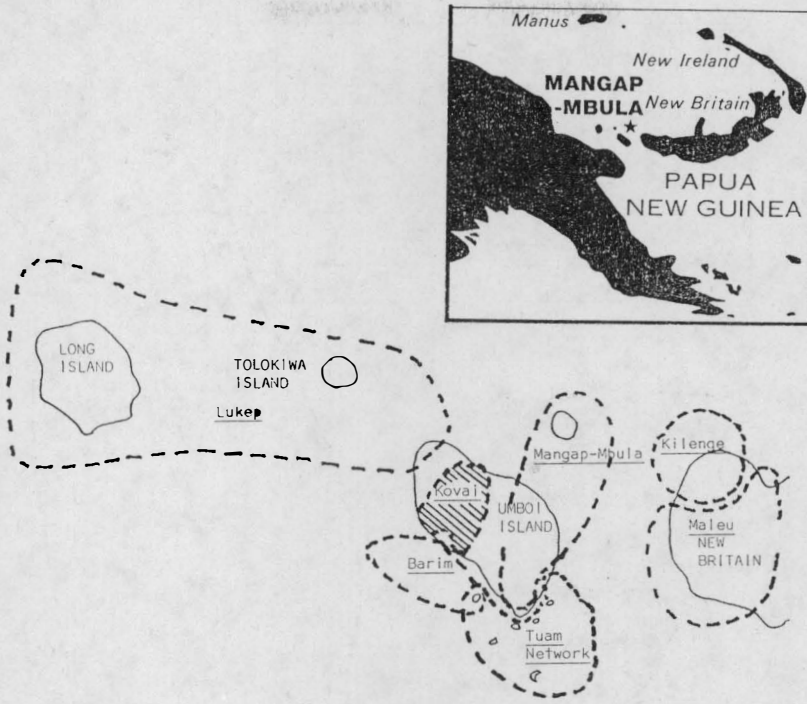
In the interior of Umboi, up on a high level plateau is the Papuan Kovai language, which McElhanon (1973:vi) relates to other Papuan languages of the Finisterre-Huon group spoken on the Huon Peninsula.

A study of the influences which Mangap-Mbula's linguistic neighbours have had upon it is to be found in Bugenhagen (1994a).

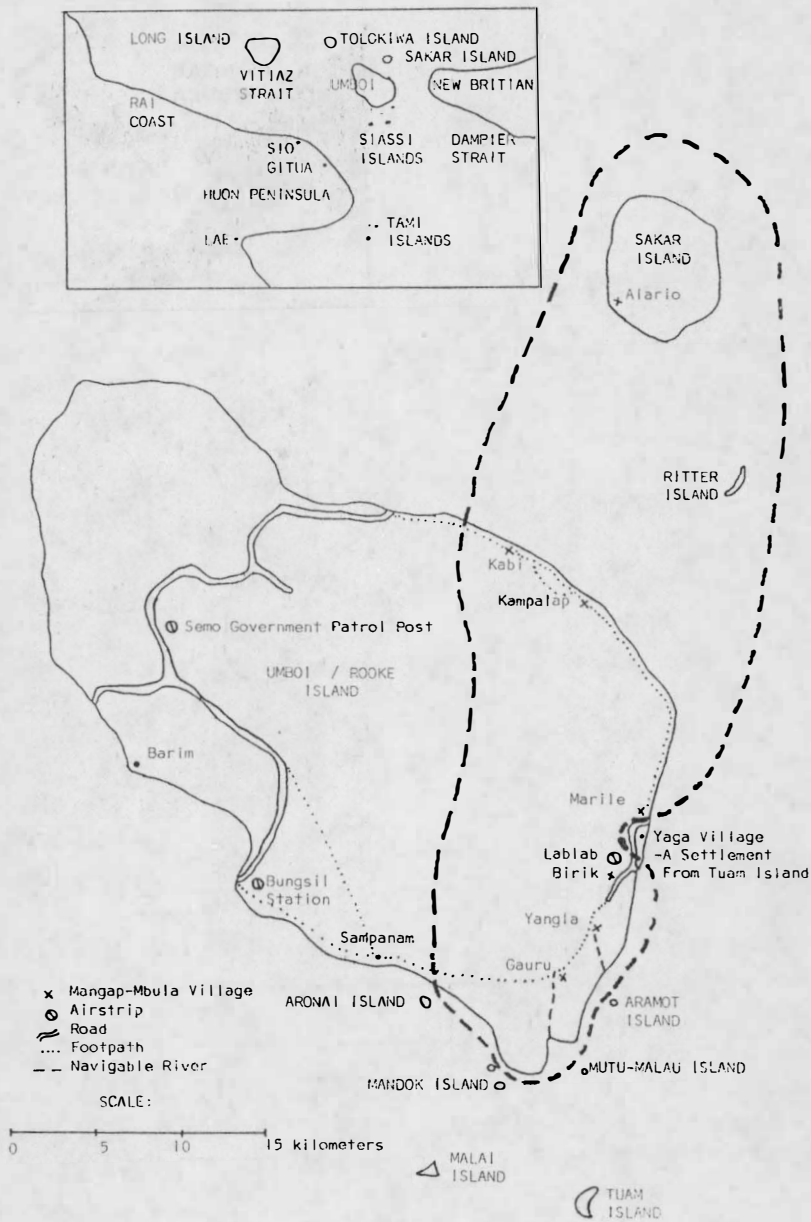
¹ Actually there is a fourth piece of evidence. POC medial **s* and **c* are lost or become /y/. In two languages, however, they are retained. One of these languages is Mangap-Mbula.

² The **r* / **R* distinction was retained in the Bariai Chain of the Ngero Family but lost in the Tuam network.

³ For details regarding the historical developments of Mangap-Mbula consonants, see Appendix 2. The morphophonemic alternation between fortis and lenis grade /p/ and /s/ is described in § 2.4.1.1.3 of the phonology.



MAP 1.1: GEOGRAPHIC AND LINGUISTIC RELATIONSHIPS OF MANGAP-MBULA AND ITS SURROUNDING LANGUAGES



MAP 1.2: THE MANGAP-MBULA LANGUAGE AREA

1.1.2 ENVIRONMENTAL SETTING

The speakers of Mangap-Mbula live in seven villages: Gauru (locally termed Nguuru), Yanjla (hereafter written as Yangla), Birik, Marile, Kampalap, Kabi, and Sakar (also termed Alario). These are located on the eastern half of Umboi (also termed Rooke) Island and on Sakar Island (locally termed Tabalou). Both of these islands are to be found in the Morobe Province of Papua New Guinea at 148° East longitude and between 5° and 6° South latitude (See Map 1.2).

Umboi Island is approximately 50 kilometres by 30 kilometres, with the long axis of the island being orientated north-west–south-east. Sakar Island is more symmetrical, being about seven kilometres in diameter, and outlies Umboi Island by about fifteen kilometres. The maximum elevation of Umboi is 1,658 metres, while that of Sakar is 992 metres. Both islands are volcanic in origin, but are not currently volcanically active. Active volcanoes are to be found, however, on Ritter Island (locally termed Kurkur) – a stony outcrop about two kilometres long and less than 200 metres high located ten kilometres northeast of Umboi – and on the facing shore of New Britain. To the south-east of Umboi are the many small Siassi Islands. These are inhabited by the speakers of the Ngero languages, who have been and still are intimate trading partners with the Mangap-Mbula (Harding 1967).

The Mangap-Mbula language area is approximately 550 square kilometres with a low theoretical population density of 4.5 persons per square kilometre. In fact, the speakers are not evenly distributed, but are concentrated on or near the coast.

The language area may be divided into four geomorphic provinces: 1) sago swamp (the south-eastern portion of the area), 2) coast, 3) very dense mountainous tropical forest (the interior), and 4) elephant grass-covered recent lava flows (found only in the northern portion of the language area, alternating with mountainous forests). Only the villages of Yangla and Gauru are located in the sago swamp province. Birik is located in the forest province. All other villages are located along the coast within 100 to 300 metres of the sea.

Locally, three seasons are distinguished: a very windy, rainy one from May to August (the time for collecting and eating galip nuts and sago); a dry season from September to December (the time for clearing and planting new gardens); and a more moderate, alternately wet and dry season from January to April (the time for gardens to grow).

The Mangap-Mbula people live in a bountiful area. There is an abundance of wild game; high quality timber is accessible to all; fish are plentiful. The sago swamps in the south-east portion of the area constitute an ample reserve supply of food. The many rivers of the area provide easily accessible fresh water.

One of the curses of this lowland and somewhat swampy area is a teeming mosquito population. Malaria is a major health problem and a frequent cause of infant mortality.

The influence of the island environment upon the language is most clearly seen in the realm of vocabulary. There are many specific vocabulary items for different species of fish and sea shells, canoes and their components, nets, different types of fishing spears, and so on.

One pair of motion verbs, ‘-pet to go out, appear, happen’ and -le ‘to enter’, specifically encodes paths of motion radially outward to the sea or radially inward.

The language area is administered by a government station at Semo on the other side of Umboi Island. The only large centre of extracultural influence within the language area itself is the Lutheran mission station at Lablab, where there is a Lutheran high school, an airstrip, a wharf, a bulk store, several small stores, a post office and a community government clerk.

1.1.3 CULTURAL SETTING: THE SPEAKERS OF THE LANGUAGE

As a brief characterisation of some of the more important customs of the Mangap-Mbula, the following comments are provided.

Although they live on an island, the Mangap-Mbula people are not really seafarers. They are far more at home on solid ground in the forests and swamps of their homeland, for all that a few now own speedboats.

In his study of the local trading network, Harding (1967:185) states:

The cultures of the Vitiaz Strait region of northeastern New Guinea are highly acculturated. In the coastal and island areas, European influence was felt soon after the German annexation of New Guinea in 1884. Missionization began at the same time, although there had been an abortive attempt to establish a mission on Umboi Island in the middle of the nineteenth century... As part of the far-reaching changes in native life instigated by colonial rule and the Christian missions, indigenous warfare, initiation ceremonies, much of magical knowledge and practice, and major features of social organization such as clans and men's ceremonial houses, now exist largely as 'memory culture'.

Despite this rather bleak assessment of the current vitality of traditional cultures in the area, in many respects the way of life of Mangap-Mbula villagers is not very different from that of their great-grandfathers. Men often while away time in the *urum* or men's house. Subsistence agriculture using the slash-and-burn method is still practised, with the *aro* (digging stick) being a favoured implement. The diet is based on traditional staples like cassava, sweet potato, bananas and sago, albeit rice now constitutes an important supplement. Traditional delicacies like *narabu* – a 'bread' made by mixing cassava or sago with coconut or galip nut oil, wrapping it in banana leaves and cooking it for many hours on heated stones – or *wak* – a starchy pudding made by pounding some root crop and mixing the result with coconut or galip oil, cooking it, and then serving it on leaves – are relished. Young men hunt for wild pigs at night with handmade nets. Fish are speared or shot with special multi-pronged spears and arrows.

Houses are built on posts, being fashioned from hand-hewn planks (for walls), hand-hewn posts and studs, black-palm bark (for flooring), and sago palm leaves (for roof thatching).

As for all human beings, the occasions of birth, marriage and death are significant ones for the Mangap-Mbula. In addition, there is a type of coming of age ceremony (termed *reetegana* 'cutting') in which young boys aged four to seven years are circumcised. (Formerly, there was also the practice of cutting holes in the earlobes, but this has now been discontinued.) Marriage is a time of celebration, with much feasting. It is preceded by a ceremony of brideprice payment in which the brideprice is assembled out in the open for all to see and then transported to the bride's father and mother for them to divide among their relatives. A major portion of the price consists of traditional wealth objects like *mbio* 'carved

wooden bowl', *kuuru* 'clay pot', and pigs, with these currently being supplemented by cash payments of several hundred kina.

Responses to birth and death are now somewhat dictated by the Christian faith which the villagers adopted at the beginning of this century. Babies are baptised, and the dead are buried, by local pastors. The experience of death is, however, also frequently accompanied by all-night meetings to inquire about the cause of death, whether it was natural or due to someone having *pasaana*-ed 'damaged' the victim with *pu* 'sorcery'. Associated with death are changes of name for the close relatives, and taboos whereby foods particularly relished by the deceased are foregone by his/her relatives for periods of up to two years. There is a series of lexical death names like *nora* 'widow', *kisa* 'widower', *imzal* 'woman whose child has died', *maanda* 'man whose child has died' which become new terms of address for the relatives of the deceased. More-distant relatives adopt new names which somehow reflect the circumstances of death. For example, someone might call him/herself 'ice' (for the morgue), or *motmooto* 'worm' (for worms which were found in the wounds of a dead person). Another custom sometimes associated with death is the destruction of the deceased person's property. Their possessions are taken (by non-relatives), gardens they have planted are hacked up, and trees they have planted are cut down. The reasoning behind this is that the deceased cannot use his/her possessions now and others should not be able to freely benefit from the deceased person's labour. Those who have recently died can be a potent source of help, if called upon in an appropriate manner, and frequently appear to people in dreams or as apparitions.

Prestige, having a *zaana biibi* 'big name', is a very important value within the society, and is reflected by a number of different lexical items. For example, the expressions *-kam seu pa* and *-kam azaaga pa* refer to activities in which one person does something extraordinary in order to show how capable, powerful, or wealthy he/she is and thereby receive a 'big name'. People who: 1) have the ability to get wealth, 2) have been on long journeys, 3) have special skills and knowledge which are not shared by other members of the community, 4) only have to 'speak and things happen', and 5) have possessions from faraway places, are identified as having 'big names'. An especially potent means of 'getting a name' is the *mailaŋ*, an elaborate and expensive feast which is usually put on 'for' someone else. This other person is then obligated to reciprocate. If he is not able to do so, then he loses prestige.

Two things which Mangap-Mbula speakers want very much to avoid are *miaŋ* 'shame, embarrassment, the experience of being isolated from one's fellows as being deficient or different' and being a *sorokŋana*, a person who does not have a big name (a nominalisation of *sorok* 'useless, in vain, without basis').

The culture is basically patrilineal, with property being handed down from father to son and the oldest sons getting larger shares.

Firstborn children are extremely important in society. Feasts are held in their honour when they are born, when they are circumcised, and even when they visit a place for the first time. A special 'display' ceremony (termed *beedeŋana* 'writing'), in which children are painted and decorated and then led around the village to be praised by people, further elevates their prestige.

Mythologically, extensive stories are told about a folk hero named Raupati or Mala, who came from Long Island; performed various deeds on the Kovai side of the island; came to the Mangap-Mbula area and created various natural features; taught people about betelnut, sex,

and canoes; distributed different dialects; and then walked across to New Britain on top of a fallen tree and eventually went on to the lands of the Europeans, where he gave them their technology.

When all things began, people emerged from under the ground near the centre of Umboi Island at Lake Mbuan, were washed down to the coast by a flooding Urgan River, passed by the present site of the village of Sampanam, and continued on to their ultimate homes. The residents of Sampanam were the first to be washed down. Later, when the others came, they too passed by Sampanam, and so the people of Sampanam learned their languages. That is why, even today, the people of Sampanam speak all the different languages spoken on Umboi and its environs. Beliefs in *undu* 'different types of spirit beings which are typically associated with particular places' and *yagoyago* 'water spirits' are widespread, with snakes being an especially common form of incarnation of such spirits. Events are often interpreted symbolically. If, in the digging of a grave, the side collapses, this indicates that another death is soon to occur. The cries of certain birds herald ill-fortune. Explanations are sought for unusual dreams.

Various forms of sorcery, white magic,⁴ and divination are practiced, although the introduction of Christianity has apparently lessened their importance. Young men commonly perform *naborou* upon girls in order to make girls like them. *Naborou* is also done in order to make one's gardens grow well. *Yaamba* is slightly destructive magic. An example of it would be the following. One year, a neighbouring village performed *yaamba* upon the Tahitian Chestnut trees of Yangla village with the result that huge flocks of birds came and ate up all the highly treasured nuts from the trees. The mildly destructive *yaamba* is to be distinguished from the much more dangerous *pu* which is only used to kill or disable people. Residents of Aramot Island, Mandok Island, and New Britain are especially expert in all types of magic and are frequently hired for such purposes.

No man is an island. Neither are language groups. The Mangap-Mbula are part of what was once a very extensive and intricate trading network with surrounding language groups. The neighbouring Ngero language groups on the Siassi Islands formed the hub of this network. They were fishermen and manufacturers, making canoes, paddles, trochus shell armlets, carved wooden dishes and pandanus mats, which they then traded for different products as they voyaged around Umboi Island, New Britain, and the mainland.⁵ Although the geographic extent of this network is currently much reduced from what it once was, it is still quite viable on Umboi Island and its environs, extending to north-west New Britain.

In the current network, the Mangap-Mbula people constitute a market for pigs, dogs, wooden dishes, pots, lime, pandanus mats and trochus shell armlets, and serve as sources of garden foods, betelnut, betel pepper, tobacco, wood, sago starch, sago thatch, pigs and dogs.

1.1.4 KNOWLEDGE OF OTHER LANGUAGES

Approximately 65 per cent of Mangap-Mbula speakers are at least somewhat bilingual in Tok Pisin, being able to use it for purposes of trading and the communication of most

⁴ 'White magic' here refers to various forms of useful, non-destructive magic like garden magic and love magic.

⁵ For further details, see Harding (1967).

concrete concepts. Some 35 per cent of the population are somewhat bilingual and literate in English, being able to comprehend simple, concrete texts, but not being able to produce connected discourse. Thirty per cent of the population understands and speaks the neighbouring Ngero languages spoken on the small Siassi Islands, reflecting the high amount of contact between the groups.

Literacy ability varies according to language, with 36 per cent being literate to some extent in English and 45 per cent being literate to some extent in Tok Pisin (Salme Bugenhagen 1984).

1.2 DIALECTAL VARIATION

Since this grammar describes the language as it is spoken in Yangla Village, it behooves us to list some of the principal differences observed between that dialect and those of the other villages.

1.2.1 REGULAR PHONOLOGICAL DIFFERENCES BETWEEN MANGAP-MBULA DIALECTS

There are four regular phonological differences between dialects which affect large numbers of lexical items. These are listed in Table 1.1.

TABLE 1.1: REGULAR PHONOLOGICAL DIFFERENCES BETWEEN MANGAP-MBULA DIALECTS

	Gauru	Yangla	Birik	Marile	Kampalap	Kabi	Sakar
1. $V\alpha:C\alpha V\alpha\# \Rightarrow V\alpha:C$ if C is not a prenasalised consonant	+	-	-	-	-	-	-
2. $k \Rightarrow \emptyset / V\alpha_V\alpha$	+	-	-	-	-	+	+
3. $n[z,j] \Rightarrow z$	-	+	+	+	-	-	-
4. $V\alpha \Rightarrow [+long]$ / $_CV\alpha\#$	+	+	+	+	+	+	-

A few illustrations of these are given below:

- GAU [-ru:t] 'plant' versus YAN, BIR, MAR, KAM, KAB [-ru:tu], SAK [-rutu],
GAU [-ta:r] 'cut' versus YAN, BIR, MAR, KAM, KAB [-ta:ra], SAK [-tara],
GAU [bi:p] 'big' versus YAN, BIR, MAR, KAB [bi:βi], KAM [beβe], SAK [biβi]
- GAU, KAB, SAK [pe:] 'betel pepper' versus YAN, BIR, MAR, KAM [pe:ge],
GAU, KAB, SAK [-re:] 'tear down' versus YAN, BIR, MAR, KAM [-re:ge]
- YAN, BIR, MAR [ŋuzu-] 'nape' versus KAM, KAB [ŋunzu-], GAU [ŋunju-],
YAN, BIR, MAR [maza-] 'flesh' versus GAU [manja-], KAM, KAB, SAK
[manza-]

4. YAN, BIR, MAR, KAM, KAB [-yo:zo] ‘smell’, GAU [-yo:s] versus SAK [-yozo], YAN, BIR, MAR, KAM, KAB [-zo:ro], GAU [-zo:r] versus SAK [-zoro]

1.2.2 SHARED LEXICAL INNOVATIONS

The following quantities of unique lexical items were observed in elicited lists of 478 lexical items.

1. The Gauru dialect had 22 lexical items unique to itself;
2. Kabi and Sakar shared 35 unique lexical items;
3. Kampalap, Kabi, and Sakar shared eleven unique lexical items;⁶
4. The Kabi dialect had 32 lexical items unique to itself.

1.2.3 COGNATE PERCENTAGES

As a measure of the degree of lexical divergence of the different villages from the Central Dialect⁷ (to which Yangla belongs), consider the following table, which summarises: 1) the percentage of forms in each dialect which are phonetically identical to Central Dialect forms; 2) the percentage of forms definitely cognate with Central Dialect forms, – that is identical or exhibiting regular phonological correspondences; 3) the percentage of possibly cognate forms, – that is those of group 2 plus others which are phonetically highly similar but exhibit slightly irregular⁸ sound correspondences. The percentages are based upon lists of 478 lexical items.

TABLE 1.2: LEXICAL DIVERGENCE OF MANGAP-MBULA DIALECTS FROM THE CENTRAL DIALECT
(Based on a 478-item list)

	Gauru	Yangla	Birik	Marile	Kampalap	Kabi	Sakar
Percentage of items phonetically identical with Central Dialect forms	65.9%	99.6%	97.7%	94.4%	90.0%	68.2%	59.2%
Percentage of items definitely cognate with Central Dialect forms	93.1%	99.6%	98.1%	94.6%	93.5%	78.9%	87.0%
Percentage of forms possibly cognate with Central Dialect forms	98.5%	100%	100%	99.4%	99.6%	95.0%	96.7%

⁶ Note that Kampalap, Kabi, and Gauru share a common first person plural inclusive pronominal formative: *indi*.

⁷ The Central Dialect encompasses Yangla, Birik, and Marile. Note here that the Central Dialect is a theoretical construct. It is not completely identical to the speech variety of Yangla, Birik, or Marile. If any two of these three villages shared a form, which was not exhibited by the third village, then that form was considered to be the Central Dialect form.

⁸ Typically, these irregular correspondences involve the sporadic lengthening or loss of vowels.

From Table 1.2, it can be seen that most of the lexical items which are not phonetically identical across all dialects are still formally very similar.

1.2.4 VARIANTS OF THE INALIENABLE GENITIVE SUFFIXES

The dialectal variants of the inalienable genitive suffixes are given in Table 1.3.

TABLE 1.3: DIALECTAL VARIANTS OF THE INALIENABLE GENITIVE SUFFIXES

	Gauru	Yangla	Birik	Marile	Kampalap	Kabi	Sakar
1SG	-ŋ	-ŋ	-ŋ	-ŋ	-ŋ	-ŋ	-ŋ
2SG	-m	-m	-m	-m	-m	-m	-m
3SG	-Vn	-VnV	-nV	-nV	VnV	-VnV	-nV
1PL.INC	-ndV	-ndV	-ndV	-ndV	-ndV	-ndV	-ndV
1PL.EXC	-yam	-yam	-yam	-yim	-yam	-am	-am
2PL	-yom	-yom	-yom	-yom	-yem	-yem	-yem
3PL	-n	-n	-n	-n	-n	-n	-n

Note that the other dialects differ from that of Yangla in the ways set out below.

1. Gauru has the third singular ending *-Vn*, rather than *-VnV*. Thus, one finds forms like [kwo:n] ‘his mouth’, [kumbu:n] ‘his leg’, instead of [kwo:no] and [kumbu:nu].
2. Birik has the third singular ending *-nV* rather than *-VnV*. Thus, one finds forms like [kwono] and [kumbunu].
3. Marile also has the third singular ending *-nV*. In addition, the first plural exclusive ending is unique, being *-yim*, rather than *-yam*. Examples of this are [kwoyɪm]⁹ ‘our (EXC) mouth’ and [kumbuyɪm] ‘our (EXC) leg’.
4. Kampalap, Kabi, and Sakar exhibit a second person plural ending of *-yem* rather than *-yom*.
5. Kabi and Sakar exhibit a first person exclusive ending of *-am* rather than *-yam*. In addition, Sakar has the third singular ending *-nV*.

1.2.5 VARIANTS OF FREE PRONOMINAL FORMS

The free pronominal forms of each dialect are listed in Table 1.4.

⁹ [t] here represents a high front unrounded lax vocoid.

TABLE 1.4: DIALECTAL VARIANTS OF FREE PRONOMINAL FORMS

	Gauru	Yangla & Birik	Marile	Kampalap	Kabi	Sakar
NOMINATIVE						
1 SG	<i>nio</i>	<i>nio</i>	<i>nio</i>	<i>nio</i>	<i>nio</i>	<i>nio</i>
2 SG	<i>nu ~ niu</i>	<i>nu ~ niwi</i>	<i>nu ~ niwi</i>	<i>ɲu</i>	<i>ɲue</i>	<i>ɲue</i>
3 SG	<i>ni</i>	<i>ni¹⁰</i>	<i>ini</i>	<i>ini</i>	<i>ini</i>	<i>ini</i>
1 PL.INC	<i>indi</i>	<i>iti</i>	<i>iti</i>	<i>indi</i>	<i>indi</i>	<i>iti</i>
1 PL.EXC	<i>niam</i>	<i>niam</i>	<i>niam</i>	<i>niam</i>	<i>niam</i>	<i>niam</i>
2 PL	<i>niom</i>	<i>niom</i>	<i>niom</i>	<i>niom</i>	<i>niom</i>	<i>niom</i>
3 PL	<i>zin</i>	<i>zin</i>	<i>izin</i>	<i>izin</i>	<i>izin</i>	<i>zin</i>
ACCUSATIVE						
1 SG	<i>yo</i>	<i>yo</i>	<i>yo</i>	<i>yo</i>	<i>yo</i>	<i>yo</i>
2 SG	<i>=u¹¹</i>	<i>=u</i>	<i>=u</i>	<i>=u</i>	<i>=u</i>	<i>=u</i>
3 SG	<i>=i</i>	<i>=i</i>	<i>=i</i>	<i>=i</i>	<i>=i</i>	<i>=i</i>
1 PL.INC	<i>indi ~ =ti</i>	<i>iti ~ =ti</i>	<i>iti ~ =ti</i>	<i>indi ~ =ti</i>	<i>indi ~ =ti</i>	<i>iti ~ =ti</i>
1 PL.EXC	<i>yam</i>	<i>yam</i>	<i>yam</i>	<i>yam</i>	<i>yam</i>	<i>yam</i>
2 PL	<i>yom</i>	<i>yom</i>	<i>yom</i>	<i>yom</i>	<i>yom</i>	<i>yom</i>
3 PL	<i>zin</i>	<i>zin</i>	<i>zin</i>	<i>zin</i>	<i>zin</i>	<i>zin</i>
LOCATIVE						
1 SG	<i>tio</i>	<i>tio</i>	<i>tio</i>	<i>tio</i>	<i>tio</i>	<i>tio</i>
2 SG	<i>ku ~ kiu</i>	<i>ku ~ kiwi</i>	<i>ku ~ kiwi</i>	<i>ku ~ kiwi</i>	<i>kue</i>	<i>kue</i>
3 SG	<i>kiin</i>	<i>kini</i>	<i>kini</i>	<i>kini</i>	<i>kini</i>	<i>kini</i>
1 PL.INC	<i>kindi</i>	<i>kiti</i>	<i>kiti</i>	<i>kindi</i>	<i>kindi</i>	<i>kiti</i>
1 PL.EXC	<i>tiam</i>	<i>tiam</i>	<i>tiam</i>	<i>tiam</i>	<i>tiam</i>	<i>tiam</i>
2 PL	<i>tiom</i>	<i>tiom</i>	<i>tiom</i>	<i>tiom</i>	<i>tiom</i>	<i>tiom</i>
3 PL	<i>kizin</i>	<i>kizin</i>	<i>kizin</i>	<i>kizin</i>	<i>kizin</i>	<i>kizin</i>
REFERENT						
1 SG	<i>pio</i>	<i>pio</i>	<i>pio</i>	<i>pio</i>	<i>pio</i>	<i>pio</i>
2 SG	<i>pu ~ piu</i>	<i>pu ~ piwi</i>	<i>pu ~ piwi</i>	<i>pu ~ piwi</i>	<i>pue</i>	<i>pue</i>
3 SG	<i>piin</i>	<i>pini</i>	<i>pini</i>	<i>pini</i>	<i>pini</i>	<i>pini</i>
1 PL.INC	<i>pindi</i>	<i>piti</i>	<i>piti</i>	<i>pindi</i>	<i>pindi</i>	<i>piti</i>
1 PL.EXC	<i>piam</i>	<i>piam</i>	<i>piam</i>	<i>piam</i>	<i>piam</i>	<i>piam</i>
2 PL	<i>piom</i>	<i>piom</i>	<i>piom</i>	<i>piom</i>	<i>piom</i>	<i>piom</i>
3 PL	<i>pizin</i>	<i>pizin</i>	<i>pizin</i>	<i>pizin</i>	<i>pizin</i>	<i>pizin</i>

Differences between forms appear often to be due to a process of convergence with the inalienable genitive suffixes. For example, the first person plural inclusive forms ending in *-ndi* reflect the genitive ending *-ndV*. Similarly, the Nominative third singular forms of *ini* reflect the genitive ending *-VnV*. Finally, the Gauru third singular forms ending in *-iin* would appear to reflect the Gauru third singular genitive suffix *-Vn*.

¹⁰ In the Birik dialect, the third singular form *ni* alternates with *ini*, but *ni* is more common.

¹¹ The = sign here indicates that the form is a phonologically adjoined clitic.

1.3 PREVIOUSLY PUBLISHED WORK ON THE LANGUAGE

Mangap-Mbula is one of the more poorly documented languages of the world. Apart from brief vocabularies contained in Chinnery (1926), and Hooley (1971), scattered examples in Ross (1988), and the previously published work of the present author (Bugenhagen 1986, 1989a, 1989b, 1991, 1994a, 1994b) there is no published material on the language. The present description fills, therefore, an important gap in the linguistic knowledge of a region about which Ross (1988:160) comments: “the languages of the Ngero/Vitiaz Strait family remain very poorly described”.

1.3.1 THE NAME OF THE LANGUAGE

The Mangap-Mbula language is often referred to in the literature as Mangap or Kaimanga. In the author’s experience, the first name is non-occurring and the second one offensive, having implications like ‘unsophisticated bush person’. When asked what the name of their language is, native speakers typically have trouble responding. It is far easier for them to provide names for other language groups! When pressed, however, they will respond with either: 1) Maṅaaba, the name the Siassi Islanders¹² use for them, or 2) Mbula. The latter name has support from traditional origin stories, but many people are unfamiliar with these. In this grammar the hyphenated name Maṅap-Mbula is used in order to maintain continuity with the work of past researchers. Current vernacular publications, however, indicate the language’s name to be Maṅaaba-Mbula.

1.4 PURPOSE OF THE PRESENT STUDY

Given the lack of published material upon the language, the primary objective of this study has been to produce a comprehensive and rigorously formulated synchronic grammar of the Mangap-Mbula language. As a comprehensive grammar, it treats phonology, morphology and the structure of phrases and sentences as well as some aspects of the construction of connected discourse. As a rigorously formulated description, it seeks to precisely characterise: 1) morphophonemic alternations, 2) the phonemic composition of morphemes, 3) the structure of words, 4) the word classes distinguished in the language, and 5) constituency within various phrase types.

Since, however, the author believes along with Wierzbicka (1988:1) that “language is an integrated system, where everything ‘conspires’ to convey meaning—words, grammatical constructions, and illocutionary devices (including intonation)”, a third emphasis of the present study is upon meaning. In particular, I have sought to carefully define and delineate the meanings of a number of important forms and constructions. In this task, frequent use has been made of a controlled semantic metalanguage consisting of simpler terms like I, you, this, someone, something, time, place, want, say, think, know, imagine and part, which tend to be more easily and consistently translatable cross-linguistically than so-called ‘technical vocabulary’. The need for such a metalanguage in definitions is argued for at length in Wierzbicka (1972), (1980) and (1985).

¹² The Siassi Islanders actually say Maṅa:β.

Although occasional reference is made to historical sources of Mangap-Mbula phonology and morphology, this grammar does not focus upon the historical development of the language. Such material is typically adduced only when it helps explain synchronic patterns or is relevant for distinguishing Mangap-Mbula from its linguistic neighbours.

1.5 METHODOLOGY

The analysis is based upon research conducted over seven years, with a little less than half of that time actually being spent in residence in the village of Yangla.

Over this period, a reasonable speaking competence of the language was obtained, and texts were taped, transcribed, and converted to a form which could be manipulated by computer as an aid to analysis. Hypotheses about grammatical structures were formulated and then checked against text material. Rarer structures and maximal expansions were occasionally sought by elicitation. When this was done, elicited examples were always checked for acceptability with a number of different speakers. Throughout the research the author's wife has been in the process of compiling a dictionary on computer. This will ultimately complement the extended word list of Bugenhagen and Bugenhagen (1994).

Since a large portion of the work has been conducted under the auspices of the Summer Institute of Linguistics, significant amounts of the author's (and his wife's!) time have been devoted to: working with native speakers in the collection of stories; locally publishing reading materials based upon traditional narratives; developing and promoting pedagogical materials for vernacular literacy; and advising Mangap-Mbula co-workers as they have translated portions of the New Testament. This work has provided the author with some advantages often lacked by other field linguists. Texts produced by participants in literacy classes have provided additional examples and vocabulary. The experience of being an onlooker to the creativity of the Mangap-Mbula translators as they have struggled to convey some of the culturally foreign concepts of the New and Old Testaments has provided extra insights into the structural possibilities and lexicon of the language.

1.6 ORGANISATION OF THE GRAMMAR

There is a basic tension in the writing of grammars between the strict linear sequencing imposed upon material by having to fill successive sheets of paper, and the fact that languages are better characterised as networks, in which individual items and structures can have many different types of functions and relations. At present, there seems to be no way out of this bind of multiple relationships versus linear sequencing except by having abundant cross-referencing and indexing in a grammar. In the future, computer-based hypertext grammars may provide better solutions to this difficulty.

The overall organisation of the present grammar is hierarchical, proceeding from simpler units and structures to more complex ones. Thus phonology is treated first, then morphology, then the structure of simple sentences, and then mechanisms for constructing complex sentences. A chapter on discourse cohesion, which seeks to characterise some of the conditions for referring to discourse participants via ellipsis, pronouns, noun phrases, thematised noun phrases, noun phrase plus demonstratives and other devices, concludes the grammar proper.

There are four appendices. The first provides evidence for the phonemic contrasts in the language. The second is a reconstruction of the historical phonological developments from Proto Oceanic to the current language. The third is a semantically organised set of examples entitled ‘How to say things’ and is intended as insurance against the (hopefully remote!) possibility of someone reading this grammar and still not knowing how to express the basic notions which constitute a major component of everyday speech. The final appendix contains some texts, to which the reader can turn when he/she wants to see the linguistic resources of Mangap-Mbula put to work in live discourse.

It has become somewhat trendy¹³ to treat Tense-Aspect-Modality together as if they always constituted some sort of coherent group of notions. To borrow an introductory phrase from Søren Kierkegaard’s *Attack Upon Christendom*, “This has to be said; so be it now said”: there is no formal evidence for such a grouping in Mangap-Mbula. Modal notions are encoded by a variety of formal devices, including: 1) verbs, 2) pre-verbal modal adverbs, 3) sentence-final modal adverbs, 4) complementisers, 5) and intonation, while aspect is encoded by: 1) reduplication, 2) various predicate phrase-internal adverbs, and 3) a number of adverbial cosubordinate constructions. Temporal notions, on the other hand, are encoded by temporal adverbs and adverbial constructions. To conflate such a menagerie of formal encodings under a single heading, however hyphenated, would be deceptive. This is why there is no Tense-Aspect-Modality chapter in this grammar.

It will also be noted that there is no purely ‘theoretical’ chapter. To draw a metaphor from computerese, I believe in ‘context-sensitive’ presentations of theory. Theoretical matters bearing on the analyses presented in each chapter are treated, therefore, in the introductions to each chapter.

1.7 A BRIEF OVERVIEW OF MANGAP-MBULA GRAMMAR

The basic word order of the language is SVOX.

Subject Verb Direct Object Oblique Arguments

- (1) *Akum i-kam kini pa kar.*
 Akum ISG-do food REF village
 Akum put on a feast for the village.

Modifiers typically follow the HEAD constituent. Thus the language is prepositional, adverbs follow the constituents they modify and, within the noun phrase, genitive modifiers, adjectives, relative clauses and demonstratives are post-nominal. Inalienable genitives constitute a possible exception to this generalisation, since they apparently precede the HEAD noun. An alternative analysis is argued for in Chapter 4, however, in which overt inalienable genitives are analysed as pragmatic Themes of noun phrases, with the post-nominal genitive suffixes constituting the syntactic encoding.

- | | N | Genitive | Quantifier | Relative Clause |
|-----|----------------------------|------------|------------|--------------------------|
| (2) | <i>me</i> | <i>tio</i> | <i>ru</i> | [<i>ta ti-kam ŋge</i>] |
| | dog | LOC.ISG | two | SPEC 3PL-get pig |
| | my two dogs that got a pig | | | |

¹³ Givón (1984: Chapter 8) Chung and Timberlake (1985), and Hopper (1982) are examples of this.

	Theme	N	Genitive
(3)	<i>Silas</i>	<i>tama</i>	<i>-ana</i>
	Silas	father	-GEN.3SG
	Silas' father		

The following sorts of morphological processes yield multi-morphemic words:

1. indexing on verbs for the person and number of the Subject
2. inflection of inalienable nouns for the person and number of their genitives
3. reduplication
4. derivation of predicates to increase or decrease their transitivity
5. compounding
6. nominalisation

In the Nominative series of pronouns, the following person-number distinctions are made:

- 1 singular
- 1 dual exclusive
- 1 dual inclusive
- 1 plural exclusive
- 1 plural inclusive

- 2 singular
- 2 dual
- 2 plural

- 3 singular
- 3 dual
- 3 plural

All other pronoun series conflate the distinction between the dual and plural members.

Interrogation is indicated via sentence-final rising intonation or the replacement of a questioned constituent by an interrogative form.

Positive commands are morphosyntactically identical to statements. Suprasegmentally, however, they tend to be louder and more staccato. Negative commands/prohibitions contain formal syntactic marking which differentiates them from statements: the sentence-final adverbs *pepe* 'don't do it' and *rimos* 'quit doing it'.

Temporal specification is indicated by a number of different temporal adverbs and adverbials. Where no such elements are present, the time reference is understood to be the same as that of the immediately preceding discourse context. Thus, only temporal discontinuity is overtly marked.

CHAPTER 2

PHONOLOGY

2.1 INTRODUCTION

This chapter presents an analysis of the structure of the Mangap-Mbula sound system as represented by the dialect spoken in Yangla Village.¹ The analysis is based on a corpus of roughly 2,400 unique morphemes. With their associated reduplications and conjugations, these represent well over 15,000 distinct words. The phonological model used in the description is basically that of 'classical' generative phonology as expounded in Chomsky and Halle (1968) and Hyman (1975), but supplemented with some devices of autosegmental phonology as outlined in Clements and Keyser (1983). For example, analysis of the regularities in the data seems to require reference to extrinsic rule ordering and the following types of phonological boundaries and units: ## (external word boundary), # (internal word boundary), + (morpheme boundary), - (non-specific grammatical boundary), = (phonologically adjoined clitic), μ (morpheme), and σ (syllable). The treatment of higher level phenomena like intonation and phrasal stress is confined to a few brief remarks.

2.2 PHONOLOGICAL UNITS

2.2.1 CHARTS OF MAXIMAL PHONETIC AND PHONEMIC CONTRASTS

The phones observed to occur in the Yangla dialect of Mangap-Mbula are given in Table 2.1.

¹ Occasional reference will, however, be made to other dialects of the language.

TABLE 2.1: PHONES OCCURRING IN THE CENTRAL DIALECT OF MANGAP-MBULA

Manner	Place of Articulation			
	Bilabial	Dental or Alveolar	Laminal Post-Alveolar	Velar
Voiceless Oral Stop	p p^M	t t^N t^J		k k^N k k^N
Voiced Oral Stops	b	d		g g
Voiced Pre-Nasalised Stops	mb	$^n d$		$^ŋ g$ $^ŋ g$
Voiceless Fricatives		s		
Voiced Fricatives	β	z^2		
Voiced Pre-Nasalised Affricates				
Nasals	m	n n^J		$ŋ$ $ŋ$
Lateral		l		
Trill		r		
Glides	w	j		
	Front Unrounded		Back Unrounded	Back Rounded
Close, Tense	i $i:$			u $u:$
Close, Lax	ɪ			ʊ
Half-close, Tense	e $e:$			o $o:$
Half-open, Lax	ɛ $\text{ɛ}:$			
Open, Tense			a $a:$	

² Recall that in Gauru village, a further contrast is maintained intervocally between [z] and [nz]~[ndz], while in the Kampalap, Kabi, and Sakar dialects, a contrast is maintained intervocally between [z] and [nz]. In the Central Dialect of the language (=Yangla, Birik, and Marile Villages) the contrast between [z] and [nz]~[ndz] is neutralised. Thus while all dialects agree in having [tizi-] for 'younger sibling', there are differences in the form for 'flesh' between Central Dialect [maza-], Gauru [manza-] ~ [mandza-] and Kampalap, Kabi, Sakar [manza-].

The phonetic values of the symbols in Table 2.1 are more precisely characterised as follows:

[p]	voiceless bilabial stop with slight aspiration
[pM]	voiceless bilabial stop with voiceless bilabial nasal release
[t]	voiceless dental stop with slight aspiration
[tN]	voiceless dental stop with voiceless dental nasal release
[tʃ]	voiceless, laminal post-alveolar stop with slight aspiration and a high off-glide
[k]	voiceless front velar stop with slight aspiration
[kN]	voiceless front velar stop with voiceless front velar nasal release
[k]	voiceless velar stop with slight aspiration
[kN]	voiceless velar stop with voiceless velar nasal release
[b]	voiced bilabial stop
[d]	voiced dental stop
[g]	voiced front velar stop
[g]	voiced velar stop
[^m b]	voiced prenasalised bilabial stop
[ⁿ d]	voiced prenasalised dental stop
[^ŋ g]	voiced prenasalised front velar stop
[^ŋ g]	voiced prenasalised velar stop
[s]	voiceless alveolar fricative
[z]	voiced alveolar fricative
[ⁿ z]	voiced prenasalised alveolar fricative
[ⁿ dʒ]	voiced prenasalised palatal-alveolar affricate
[β]	voiced bilabial fricative
[m]	voiced bilabial nasal
[n]	voiced dental nasal
[n]	voiced, laminal post-alveolar nasal with high off-glide
[ŋ]	voiced front velar nasal
[ŋ]	voiced velar nasal
[l]	voiced alveolar lateral
[r]	voiced alveolar trill
[w]	voiced labio-velar glide
[j]	voiced palatal glide
[i]	front unrounded, close tense voiced vocoid
[i:]	lengthened, front unrounded, close tense voiced vocoid
[ɪ]	front unrounded, close lax voiced vocoid
[e]	front unrounded, half-close, tense voiced vocoid
[e:]	lengthened, front unrounded, half-close, tense voiced vocoid
[ɛ]	front unrounded, half-open, lax voiced vocoid
[ɛ:]	lengthened, front unrounded, half-open, lax voiced vocoid
[ɑ]	back unrounded, open tense voiced vocoid
[ɑ:]	lengthened, back unrounded, open tense voiced vocoid
[u]	back rounded, close tense voiced vocoid
[u:]	lengthened, back rounded, close tense voiced vocoid

[ʊ]	back rounded, close lax voiced vocoid
[ɔ]	back rounded, half-close tense voiced vocoid
[ɔ:]	lengthened, back rounded, half-close tense vocoid

A classical phonemic analysis³ yields the surface phonemic system given in Table 2.2.

TABLE 2.2: MANGAP-MBULA CENTRAL DIALECT PHONEMES⁴

	Place of Articulation		
	Bilabial	Dental/ Alveolar	Velar
Manner			
Voiceless Oral Stops	<i>p</i>	<i>t</i>	<i>k</i>
Voiced Oral Stops	<i>b</i>	<i>d</i>	<i>g</i>
Voiced Pre-Nasalised Stops	<i>^mb</i>	<i>ⁿd</i>	<i>^ŋg</i>
Voiceless Fricatives		<i>s</i>	
Voiced Fricatives		<i>z</i>	
Nasals	<i>m</i>	<i>n</i>	<i>ŋ</i>
Lateral		<i>l</i>	
Trill		<i>r</i>	
Glides	<i>w</i>	<i>j</i>	
	Front	Back Unrounded	Back Rounded
High	<i>i</i>		<i>u</i>
-High	<i>e</i>	<i>a</i>	<i>o</i>

Regarding the system of contrasts depicted in this table, it should be noted that the prenasalised stops are analysed as unit phonemes, and the phonetic contrast between short and lengthened vocoids is analysed as being due mainly to a difference between epenthetically inserted vocoids (which are not underlyingly present) and those which are underlyingly present. On the basis of morphophonemic evidence, the glide /y/ appears to be better treated as being underlyingly vocalic, while the glide /w/ is consonantal. Arguments for these decisions are given in §2.2.2.1ff.

It should be noted that the phonemes in Table 2.2 depict the *maximal* set of contrasting segments. This maximal set is found, however, only in morpheme-initial position. In other positions, a considerable amount of neutralisation takes place, especially among the

³ For examples of contrasts, see Appendix 1.

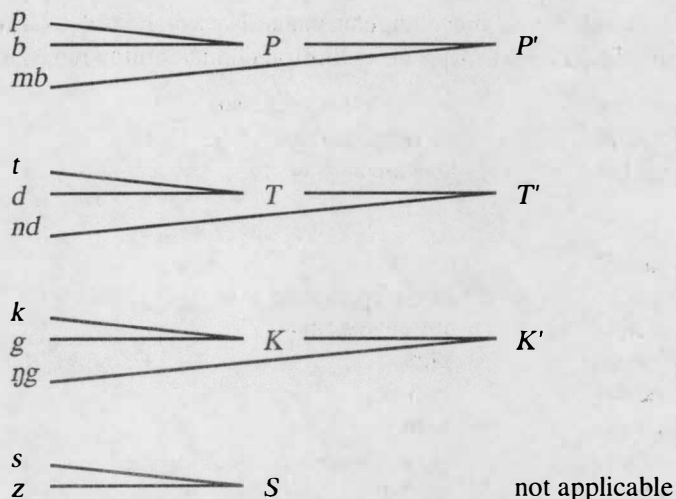
⁴ From this point onwards, [j] will be orthographically represented as /y/ and the nasalisation of prenasalised stops will no longer be written as a superscript. Similarly, the non-contrastive positional variations between 1) dental and alveolar consonants, 2) front and back velars, and 3) tense and lax vocoids will not be orthographically represented unless they are relevant for the particular rule or phenomenon being discussed. Finally [a] will be represented as a.

obstruents. As these neutralisations are important for later analytical decisions, several of the more general ones will now be discussed. Following this, there is a section describing a strong distributional *tendency* of initial voiced stops.

2.2.1.1 WORD-FINAL NEUTRALISATIONS

Word finally, only [p, t, k, s, m, n, ŋ, l, r] occur. Thus, no glides occur, and all manner contrasts among the obstruents are neutralised. In discussing the phenomenon of neutralisation, it is convenient to adopt Trubetzkoy's (1969:79) concept of the archiphoneme, which is defined in the following manner: "By the term "archiphoneme" we understand the sum of distinctive properties that two⁵ phonemes have in common".

We can represent the set of distinctive consonant contrasts permitted word finally as /P', T', K', S, m, n, ŋ, l, r/, where capital letters are used to indicate archiphonemes. The segment /P'/ here is simply a bilabial stop with no specification for voicing or nasality. It is what /p/, /b/, and /mb/ have in common. The prime notation (P') is used here because later we shall make reference to another set of archiphonemes /P, T, K/, which are the neutralisations of just the voiced and voiceless oral stops but not the prenasalised ones. The distinction between the prime and non-prime archiphonemes is graphically represented below:



The unmarked value of voicing is dependent upon sonorance; that is [α sonorant, \emptyset voice] \Rightarrow [α voice]. For the obstruent archiphonemes, then, we expect them to surface as phonetically voiceless segments, unless some other rule acts to voice them.

⁵ In Trubetzkoy's work, archiphonemes are restricted to neutralisations of contrast between only *two* phonemes. Lass (1984:46-49) argues for the possibility of neutralisations involving more than two phonemes.

2.2.1.2 NEUTRALISATIONS FOLLOWING LENGTHENED VOCOIDS

A second type of neutralisation is observed when a consonant occurs following a lengthened vocoid and before another vocoid of the same quality – that is [...V α :__V α]. In this environment only the following contoids occur: [β, mb, t, d, nd, g, ŋg, z, m, n, ŋ, l, r]. Thus again the glides /y/ and /w/ are absent, and again there is a neutralisation of obstruent manners. This time, however, it is just the voicing contrast between oral obstruents which is neutralised. The prenasalised stops /mb, nd, ŋg/ occur in this environment as distinct phones. Witness forms like [ya:mba] ‘witchcraft’, [-lo:ndo] ‘to run’, and [ti:ŋgi] ‘swamp, muddy place’.

In the case of the fricatives and the oral bilabial and velar stops the neutralisation of voicing is particularly clear. The opposition between /s/ and /z/ is neutralised to an archiphoneme /S/, which has a constant phonetic realisation of [z] in this environment. Thus, we find forms like [pe:ze] ‘paddle’ and [le:ze] ‘nit’ but no **[pe:se] or **[le:se]. Similarly, the opposition between /p,b/ is reduced to /P/ (= [β]),⁶ while the opposition between /k, g/ is reduced to /K/ (= [g]). Thus, we find [ya:βa] ‘type of banana’ and [ti:gi] ‘type of basket’ but no forms like **[ya:pa] or **[ti:ki].

In the case of the dental stops /t,d/ the situation is slightly more complicated. In the given environment, the contrast between /t/ and /d/ is still neutralised, but the archiphoneme /T/ has varying realisations. These are phonologically conditioned at a distance by the consonant *preceding* the lengthened vocoid. If this preceding consonant is a voiced oral obstruent, /T/ is realised as [d], otherwise it is realised as [t]. This is illustrated in the following examples:

<i>ba:Ta</i>	[-ba:da]	to carry on one’s back
<i>da:Ta</i>	[-da:da]	to tighten a rope
<i>ge:Te</i>	[-ge:de]	to stare at

versus

<i>pa:Ta</i>	[-pa:ta]	to call
<i>te:Te</i>	[-te:te]	to cut by sawing
<i>si:Ti</i>	[-si:ti]	to sew together
<i>mbe:Te</i>	[mbe:te]	sore
<i>me:Te</i>	[-me:te]	to die
<i>lo:To</i>	[lo:to]	nettles
<i>re:Te</i>	[-re:te]	to circumcise
<i>yo:To</i>	[-yo:to]	to shout

Summarising thus far: for oral obstruents occurring between a lengthened vocoid and a following vocoid of the same quality, voicing is non-contrastive.

⁶ Note here that [β] is the result of an allophonic rule leniting /b/ intervocalically. Thus, we have an archiphoneme /P/, which becomes morphophonemically lenited to /b/, and then is allophonically lenited to [β].

Still a further neutralisation is observed in a subset of this particular environment. If we represent the shape of such morphemes as [+...C₁Vα:C₂Vα+], we find that if a voiced oral or voiced prenasalised obstruent occurs in the first consonant position (=C₁), then a voiced prenasalised stop is precluded from occurring in the second (=C₂) position. Prenasalised stops in the C₂ position are found only therefore after: 1) voiceless obstruents, 2) /z/, 3) nasals, and 4) /l, r, w, y/. This is diagrammed below:

In morphemes having the form /+...C₁Vα:C₂Vα+/

then C₂ can be filled by:

/P, T, K/ /mb, nd, ŋg/

If C₁ is filled by:

/p, t, k, s, z/	+	+
/b, d, g/	+	-
/mb, nd, ŋg/	+	-
/m, n, ŋ/	+	+
/l, r, w, y/	+	+

From this chart, it can be seen that although there is contrast between the oral archiphonemes /P, T, K/ and the prenasalised stops following most consonants, they do not contrast following the voiced stops. Here, all obstruent manners of articulation are neutralised, with only [β, t ~ d, g, z]⁷ (= /P', T', K', S/) occurring. Thus, while there are morphemes like [-pe:βe] 'to give birth', [-bo:βo] 'to call', and [pa:nda] 'pandanus', there are no morphemes like *[do:mbo] or *[ndo:mbo]. Another way of viewing this restriction is that only one stop with *contrastive* voicing is permitted per morpheme. (Recall that [β] is the intervocalic realisation of the archiphoneme /P/ via the phoneme /b/.)

The following diagram summarises all the neutralisations observed in morphemes of this type:

/p, t, k, s, z, m, n, ŋ, l, r, y, w/	Vα: __ Vα	$\begin{array}{c} p \quad b \\ \vee \\ P \quad mb \\ \vee \\ P' \end{array}$	$\begin{array}{c} t \quad d \\ \vee \\ T \quad nd \\ \vee \\ T' \end{array}$	$\begin{array}{c} k \quad g \\ \vee \\ K \quad ŋg \\ \vee \\ K' \end{array}$	$\begin{array}{c} s \quad z \\ \vee \\ S \\ \vee \\ S \end{array}$
/b, d, g, mb, nd, ŋg/	Vα: __ Vα				

2.2.1.3 NEUTRALISATIONS OF CONSONANTS BETWEEN TWO IDENTICAL SHORT VOCIDS

Another phonetic environment in which obstruent voicing is neutralised is between two identical short vocoids, that is [+CVα __ Vα+], where both vocoids and the intervening consonant are all *constituents of the same morpheme*.

⁷ Recall that [d] occurs following /b,d,g,z/ in the C₁ position, while [t] occurs following all other consonants.

This time, however, the neutralisation is exhibited only by the oral *stops*. The oral fricatives /s/ and /z/ contrast in this environment. This can be seen from pairs like [kese-] ‘flame’ and [keze-] ‘chin, jaw’, and [pese-] ‘navel’ and [tizi-] ‘younger sibling of same sex’.

The realisations of the oral archiphonemes /P, T, K/ in this environment vary in a way reminiscent of the archiphoneme /T/ in the previous section. If these morphemes are represented as having the shape [+C₁VαC₂Vα+], we observe that the archiphonemes are realised as [β, d, g] following voiced oral obstruents in the C₁ position and as [p, t, k] elsewhere. Thus we find forms like the following:

<i>beKe-</i>	[bege-]	armpit, wing
<i>doKo</i>	[dogo]	hill
<i>goPo-</i>	[goβo-]	ancestor

versus

<i>-paTa</i>	[-pata]	to be heavy
<i>koPo-</i>	[kopo-]	stomach
<i>paKa-</i>	[paka-]	half
<i>meTe</i>	[mete]	disease
<i>luTu-</i>	[lutu-]	child
<i>baTabaTa</i>	[badabada]	pig which can be carried by one person (an obligatory full reduplication)

Again, as was the case in the preceding section, whereas the stops /P, T, K/ and /mb, nd, ŋg/ contrast following most consonants in morphemes having this canonical form, we find that the distinction between the oral and prenasalised obstruents is neutralised following voiced oral and voiced prenasalised stops.

The following diagram summarises the obstruent neutralisations in morphemes of this type:

		<i>p b</i>	<i>t d</i>	<i>k g</i>	<i>s z</i>
/p, t, k, s, z, m, n, x, l, r, y, w/	Vα__Vα	$\begin{array}{c} \vee \\ P \end{array}$ <i>mb</i>	$\begin{array}{c} \vee \\ T \end{array}$ <i>nd</i>	$\begin{array}{c} \vee \\ K \end{array}$ <i>ŋg</i>	$\begin{array}{c} \\ s \\ \\ z \end{array}$
/b, d, g, mb, nd, ŋg/	Vα__Vα	$\begin{array}{c} \vee \\ P' \end{array}$	$\begin{array}{c} \vee \\ T' \end{array}$	$\begin{array}{c} \vee \\ K' \end{array}$	$\begin{array}{c} \\ s \\ \\ z \end{array}$

If one compares this diagram with the similar diagram found at the end of the previous section, it is striking how similar they are. The only difference between them is in the maintenance of the /s/ ~ /z/ contrast. A defect of these diagrams, however, is that they gloss over one very important difference: how the various archiphonemes are phonetically realised. Recall that /P/, /P'/, /K/, /K'/ and /S/, in morphemes of the form /...C₁Vα:C₂Vα/, are invariably realised as [β], [g] and [z]. In the morphemes of this section, however, the realisations of /P'/ and /K'/ alternate between [p] and [β] and [k] and [g]. These voiceless realisations of /P'/ and /K'/ will prove to be important when we consider the status of lengthened vocoids in §2.2.2.2.

2.2.1.4 MORPHEME-INITIAL DISTRIBUTION RESTRICTIONS OF VOICED ORAL AND VOICED PRENASALISED STOPS

It has been shown in the previous sections that morpheme medially and morpheme finally the contrast between voiced and voiceless oral stops (and in some cases the prenasalised stops as well) is neutralised. This leaves only the morpheme-initial position as a site where the three series of stops can contrast. In this position contrasts are observed. One representative set of examples is given below.

[pok]	branch of a pandanus tree
[buk]	bubble up
[mbuk]	you (SG) tie a knot
[muk]	dirt
[pe:ze]	a paddle
[be:ze]	garden house
[mbe:ze]	you (SG) serve
[me:ze]	a type of tree
[tete]	walking stick
[didi]	wall
[ndundu]	you (SG) be crossing a river
[nene]	you (SG) rock (a child)
[ko]	modal auxiliary encoding uncertainty
[go]	adverb encoding remoteness
[ŋgo]	you (SG) send someone
[ŋo]	you (SG) gnaw

Although all three series of stops do contrast morpheme initially, there is a strong distributional tendency for initial voiced stops to be oral when followed by non-sonorant consonants and pre-nasalised when followed by sonorant segments. Because of this, initial voiced oral stops are in a kind of *semi*-complementary distribution with the initial voiced prenasalised stops. This is demonstrated by Table 2.3, which lists frequencies of consonant occurrence for several common canonical morpheme types.

TABLE 2.3: FREQUENCIES OF CONSONANT OCCURRENCE

	C ₂ =P ⁸	B	MB	S	M	R
Canonical Form of Morpheme						
C ₁ V						
C ₁ = voiced oral stops	5					
C ₁ = prenasalised stops	12					
C ₁ = voiceless stops	15					
C ₁ VC ₂						
C ₁ = voiced oral stops	12	-	-	0	1	4
C ₁ = prenasalised stops	5	-	-	4	24	18
C ₁ = voiceless stops	43	-	-	15	36	30
C ₁ Vα:C ₂ Vα						
C ₁ = voiced oral stops	0	31	0	4	1	1
C ₁ = prenasalised stops	2	1	0	6	4	22
C ₁ = voiceless stops	10	17	21	15	9	26
C ₁ VαC ₂ Vα						
C ₁ = voiced oral stops	0	13	0	2	3	3
C ₁ = prenasalised stops	1	0	0	1	7	12
C ₁ = voiceless stops	35	0	9	10	7	18
meanings of C ₂ mnemonics:						
P = voiceless oral stops	[p, t, k]					
B = voiced oral stops	[b, d, g]					
MB = voiced prenasalised stops	[mb, nd, ŋg]					
M = nasals	[m, n, ŋ]					
R = liquids	[l, r]					
S = fricatives	[s, z]					

⁸ Note here that capital letters are *not* being used to indicate archiphonemes, but as abbreviations for classes of manners of articulation.

As one specific example, consider the figures for morphemes having the canonical form CVC. Of the initial prenasalised stops occurring in such morphemes, 42/51 or 81 per cent were followed by a [m, n, ŋ, l, r]. Of the initial voiced oral stops, only 5/17 or 29 per cent were followed by such sonorant consonants. Other canonical morpheme types exhibit similar voiced stop distribution tendencies. Because the frequencies are not 100 per cent, one cannot analyse the initial voiced oral and voiced prenasalised stops as being allophones of single phonemes. But because of this strong distributional tendency for morpheme-initial voiced stops to 'harmonise' in sonorance with following stops, contrasts between the two series are relatively infrequent.

2.2.2 CONTROVERSIAL SEGMENTS

Before presenting a fully specified feature matrix for the Yangla dialect of Mangap-Mbula, a digression is in order regarding the feature specifications of three ambiguous classes of segments: 1) (phonemic) voiced prenasalised stops and (allophonic) voiceless stops with voiceless nasal release, 2) lengthened vocoids, and 3) non-syllabic high vocoids.

2.2.2.1 PRENASALISED STOPS

Prenasalised stops are interpreted here as complex *unit* phonemes. This analytical decision is based upon the following considerations.

First, since there are clear contrasts morpheme initially between voiceless stops, voiced oral stops, and voiced prenasalised stops, it is not possible to dispose of the prenasalised stops as merely being allophones of the voiced oral stops.

If it were not for the morpheme initial contrasts, it would be tempting to analyse the intervocalic occurrences of prenasalised stops as allophones of /b, d, g/. Such an analysis would, however, be suspect, given the following sorts of partial reduplications:

[-pa:ta]	to read	[wat-wa:ta]
[-ba:da]	to carry	[bad-ba:da]
[-lo:ndo]	to run	[loŋ-lo:ndo]
[-gi:βi]	to toss	[gib-gi:βi]
[-ya:mba]	to scold	[yam-ya:mba]
[-te:ge]	to hold	[tek-te:ge]
[-to:mbo]	to try	[tom-to:mbo]

Compare also:

[-na:ma]	to wait for	[nam-na:ma]
[-pe:ne]	to shoot	[wen-we:ne]

Note that the reduplications of morphemes containing prenasalised stops are identical to those of morphemes containing ordinary nasals. Thus [-lo:ndo] 'to run' becomes [-lon-lo:ndo] and not **[lod-lo:ndo] or **[lot-lo:to]. If the medial prenasalised stops were allophones of the voiced stops, with (non-contrastive) prenasalisation later being added by some sort of late phonetic spell-out rule, then there would be no logical reason for such nasals to appear. Such reduplications argue, then, for some sort of nasal component in the representation of the prenasalised stops at an underlying level. This contravenes the following statement by Ross (1988:46):

It is also clear that by the break-up of POC, voicing had replaced prenasalisation as the distinctive feature of the 'nasal-grade' stops conventionally written as **ɲp*, **mp*, **nt*, and **ŋk*, as I have found no daughter-language which provides counter evidence.

Another matter which must be accounted for in the representation of the prenasalised stops is the fact that the morpheme-initial voiced oral and prenasalised stops are not followed by prenasalised stops in the same morpheme. This distribution restriction, which is noted in §2.2.1.2-3 above, suggests that the representations of voiced oral stops and voiced prenasalised stops share something in common.

The facts thus far are summarised below.

1. The prenasalised stops cannot be treated as allophones of the voiced stops because they are contrastive (albeit only morpheme initially).
2. The prenasalised stops must have some sort of nasal element in their underlying representation in order to account for partial reduplication patterns.
3. The representations of voiced oral and voiced prenasalised stops should have something in common in order to account for the distribution restriction that neither of them may be followed by another prenasalised stop in the same morpheme.

If the prenasalised stops cannot be treated as allophones of the voiced stops (or vice versa), the next possibility is that they might underlyingly be consonant clusters rather than unit phonemes; for example /mb, nd, ŋg/. Since such clusters would contain both a nasal and a voiced stop, they would account for the links between prenasalised stops and both the voiced oral stops and the nasals. Here, we must consider the canonical patterns of morphemes.

If we ignore the prenasalised stops and examine the consonants occurring *morpheme internally* (i.e. not in morpheme-initial position and not in morpheme-final position), we find that no consonant clusters ever occur in this environment. Prenasalised stops, however, do occur here. If we were to analyse them as sequences of a nasal plus a stop, they would be the only consonant clusters occurring in this environment.

It is argued in §2.2.2.2 that *underlyingly* a variety of consonant clusters occur morpheme-initially, which are then broken up by an epenthetic vowel. Thus, forms like [molo] ‘short’ and [-lomo] ‘to be cold’ are considered to be underlyingly /mlo/ and /lmo/. The maximal number of unambiguous consonants in such morpheme-initial clusters is two. If prenasalised stops were to be treated as clusters, then forms like [ndomo-] ‘forehead’ would contain an initial consonant cluster consisting of *three* consonants: /ndmo-/. Moreover, the formulation of the rule epenthesising vowels between adjacent consonants would be significantly complicated, because it would have to fail to apply to sequences of a nasal plus a homorganic stop.

On the basis of attested syllable structures, then, we find it preferable to treat prenasalised stops as unit phonemes, contrasting with the voiced and voiceless oral stops, even though this complicates the consonant inventory.

Such a decision is supported by phonetic evidence. When measurements were made of voiced oral and voiced prenasalised stops occurring in a group of items using the Cecil⁹ instrumentation and software, the following results obtained:

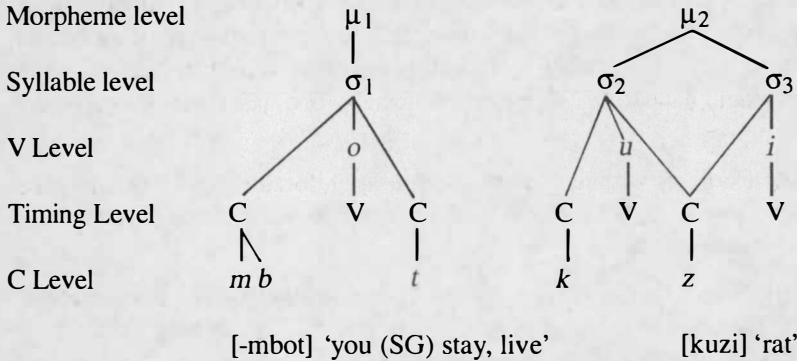
Type of Segment	Average Duration of Segments (in seconds)	
	Occurring In Morpheme Initial Position	Occurring Morpheme Internally
voiced oral stops	.156	.066
nasals	.117	.084
nasal portion of pre-nasal stop	.084	.075
oral portion of pre-nasal stop	.043	.030

From these figures, it can be seen that both the oral and the nasal portions of prenasalised stops are shorter in duration than ordinary nasals and voiced oral stops. In the case of the stop portion, the difference is particularly dramatic. Thus the length of the prenasalised stops in no way approaches what one would expect if they were really a cluster of a nasal plus stop.

Because of their paradoxical two-but-one nature, it seems advantageous to analyse complex segments containing nasality in the autosegmental framework of phonology, such as is outlined in Clements and Keyser (1983) and Goldsmith (1990). There, phonological representations are permitted to have a richer structure than simply a linear sequence of segments occurring one after another. Instead, phonological representations are construed as consisting of a number of independent levels or tiers. Examples of such levels include: 1) a timing or skeletal level, on which C and V units are delineated, 2) a C level, on which

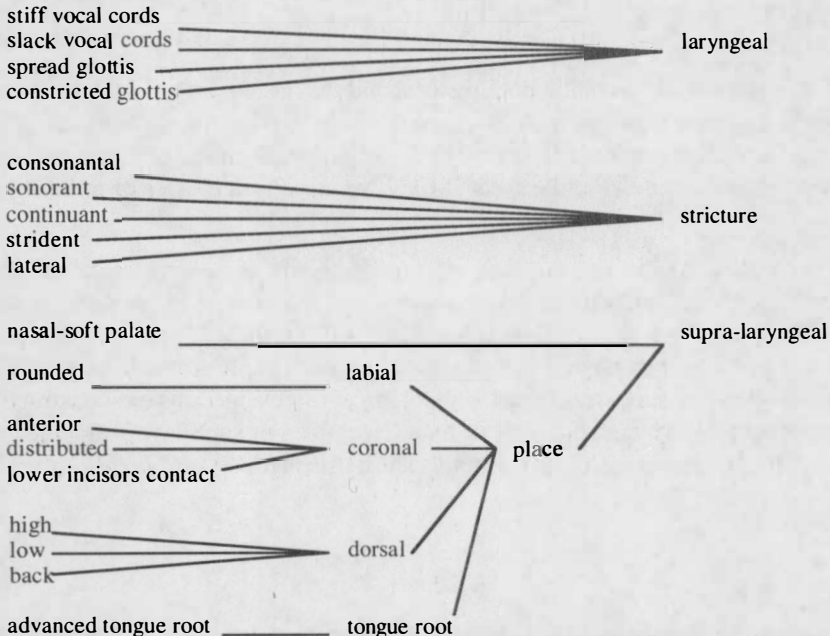
⁹ The acronym stands for Computerised Extraction of Components of Intonation in Language. The equipment and software are distributed by the Summer Institute of Linguistics.

manners and places of articulation for consonants are specified,¹⁰ 3) a V level, on which vowel qualities are specified,¹¹ 4) a syllabic level (indicated with the symbol σ), and 5) a morphemic level (indicated with the symbol μ). Under this model, representations for Mangap-Mbula lexical items like *-mbot* 'stay' and *kuzi* 'rat' would be:



By way of terminology, the first C in the representation for *-mbot* would be *associated* with the segments /m/ and /b/, while the V would be associated with /o/ and the last C would be associated with /t/. Similarly, σ_1 would be associated with C V and C and μ_1 would be associated with σ_1 . The association lines connecting the different tiers are not permanently

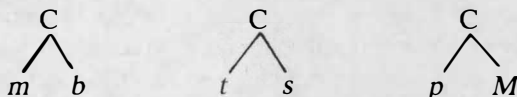
¹⁰ There are arguments for further factoring the C and V tiers into a number of sub-levels or tiers. For example, the common phonological process of assimilation to an adjacent segment's point of articulation suggests that the set of place-of-articulation features constitutes some sort of unified entity or 'gesture' (Lass 1984:113-118). Nasality and voicing assimilations argue that these constitute independent tiers, and so on. Halle (1988), in a recent proposal, suggests an organisation of features along the following lines:



¹¹ It is also possible to conflate the C and the V levels to a single articulatory level.

fixed. If segments are deleted, inserted or rearranged by various segmental morphophonemic processes, lines can reassociate. Association lines between any two tiers do not cross.

In this framework, complex segments like nasalised consonants and affricates are underlyingly specified as entities with two articulations but one unit of timing:



Such representations seem to more adequately depict the two-but-one nature of phonetically complex segments which pattern in the same way as single consonants.

2.2.2.2 LENGTHENED VOCOIDS

In this grammar, the contrast between lengthened and non-lengthened vocoids is analysed as being the result of the following two rules:

1. $V\alpha \Rightarrow [+long] / _ C V\alpha +$ (Penultimate Lengthening)
2. $\emptyset \Rightarrow V\alpha / + C _ C V\alpha$ (Epenthesis)
[+cons]

Thus, two phonetically contrasting forms like [moto] '2SG fear' and [mo:to] 'snake' are considered to have the underlying representations /mto/ and /moto/. Given this analysis, there is no need to distinguish short and long vowels underlyingly. Reasons for this analysis will now be given.

The first fact to be noted is that length is contrastive. Therefore, the underlying representations of short and long vocoids must be differentiated in some way. Some examples of minimal length contrasts are given below:

[ipata]	3SG be heavy
[ipa:ta]	3SG reads
[mete]	disease, too much
[me:te]	you (SG) die
[mbili]	domestic animal
[mbi:li]	new shoot of a plant
[molo]	long
[mo:lo]	a type of ant
[muŋgu]	before
[mu:ŋgu]	mark of mourning, you (SG) precede

Since unambiguous vocoid clusters occur in the language, one analytical possibility would be to treat the lengthened vocoids as sequences of two identical underlying vowels, that is $V\alpha V\alpha$. Examples of a few of the vocoid clusters occurring in the language are given below:

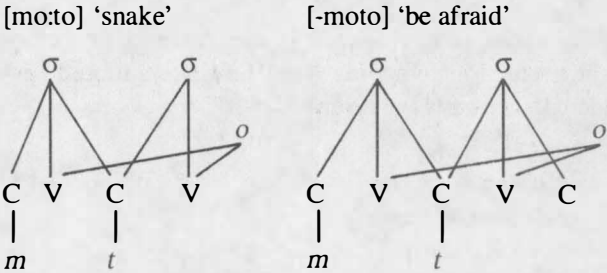
/mboe/	song
/irao/	3SG be able, sufficient
/teu/	sugar cane
/mbia/	bat
/rie/	kunai grass
/kiu/	yam

/tui/	milk
/reo/	armspan
/aigule/	day(time)

There are distributional differences, however, between these heterorganic vowel clusters and the lengthened vocoids which suggest that they are different in origin. Whereas heterorganic vocoid clusters may occur in any syllable, intramorphemic lengthened vocoids never occur morpheme finally. In fact, there is only one environment in which they occur: penultimately in the morpheme,¹² in open syllables, followed by a CV syllable containing a vowel having the same quality as the lengthened vocoid. Schematically, this environment can be represented as:

...V α :C V α +

There are several possibilities for synchronically analysing vowel length in Mangap-Mbula. One solution is to interpret lengthened vocoids as sequences of two underlying vowels, with these sequences exhibiting a restricted distribution. Another possibility is to postulate a rule of penultimate vowel lengthening which lengthens vowels in the above environment, with lexical marking of the exceptional forms which fail to undergo the rule. A third possibility is to postulate some sort of abstract final consonant which never surfaces for those forms which unaccountably fail to exhibit the lengthening. In autosegmental theory, there is the analytical possibility of postulating a free C-element which does not dominate a phonetic feature matrix on the segmental layer (Clements and Keyser 1983:69). Using this device, forms differing only in vowel length could be differentiated in the following manner:



The unrealised final consonant in [-moto] would then prevent the rule of penultimate lengthening from applying. This seems, however, a *prima facie* instance of the diacritic use of phonological features, which Kiparsky (1968) condemns.

A fourth possibility, the analysis adopted here, is to treat the unaccountably short vocoids as being epenthetically inserted, while lengthened vocoids are underlyingly present. In such an analysis, the underlying form for [-moto] 'be afraid' is /mto/, while that of [mo:to] 'snake' is /moto/. The above-mentioned rule of penultimate vowel lengthening would apply to *underlying* sequences of identical vowels within the same morpheme but fail to apply to sequences of vowels which have arisen via epenthesis. While such an analysis might initially

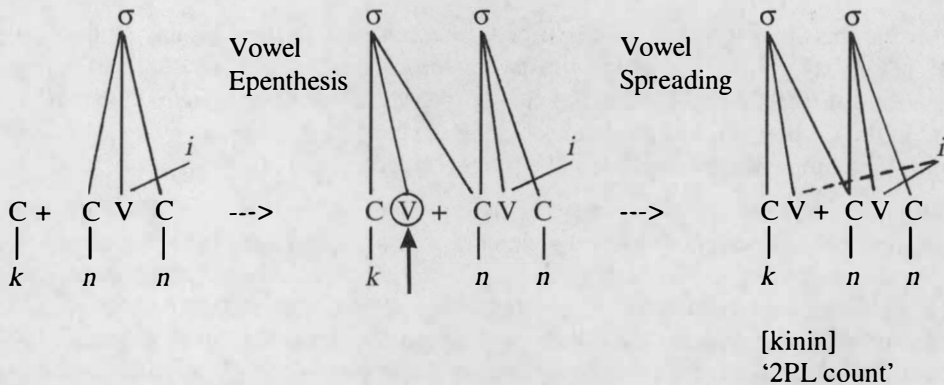
¹² That the environment of occurrence for lengthened vocoids must be formulated as 'penultimately in the morpheme' can be seen from a nominalised form like [zɔ:ro+ɲana] 'rebellion' (from [-zo:ro] 'to rebel' + [-ɲa] 'nominalisation' + [-VnV] 'GEN.3SG').

seem a bit artificial, given the Oceanic tendency towards CVCV syllable structure,¹³ it at least accounts for the highly restricted environment of occurrence of lengthened vocoids.

Postulating such an epenthesis rule would not be completely ad hoc. In verbal paradigms, the first person inclusive plural Subject prefix, second person plural Subject prefix, causative prefix, and detransitivising prefix always contain vowels identical to the first vowel in the following verb stem. Consider the following forms:

[ta-ba:da]	we (INC) carry
[to-molo]	we (INC) jump across
[ta-pai]	we (INC) wake up or take out
[to-noi]	we (INC) boil something
[ku-u:lu]	you (PL) help
[ki-nin]	you (PL) count
[-po-mbol]	CAUS-be strong
[-pa-bayov]	CAUS-be hot
[-pe-met]	CAUS-end
[-mi-liŋ]	DETR-spill
[-ma-ra:za]	DETR-tear

In these prefixes, the quality of the vocoid is completely predictable, and therefore it is not necessary to postulate its presence underlyingly. Instead, the underlying forms of these prefixes are simply: *t-*, *k-*, *p-*, and *m-*, and when they are adjoined to a verb stem, a vocalic element is inserted after the consonant of the prefix.



The quality of the first following vowel then spreads onto the epenthesised vowel.

Given the existence of one process of epenthesis, it does not seem unreasonable to postulate another one to account for the exceptional forms containing two identical vocoids but failing to exhibit vowel lengthening. Sample derivations of contrasting forms would be as follows:

Underlying form	/mlo/	/t-mlo/	/t-paTa/
Vowel Lengthening	-	-	t-paVTa

¹³ For an example of a New Guinea Oceanic language in which many words *do not* have a CVCV structure underlyingly, see Hooley (1970:107,108,110).

Vowel Epenthesis	<i>mVlo</i> -	<i>tmVlo</i> <i>tVmVlo</i>	<i>tVpaVTa</i> -
Vowel Spreading	<i>molo</i> -	<i>tVmolo</i> <i>tomolo</i>	<i>tVpa:Ta</i> <i>tapa:Ta</i>
Surface Forms	<i>molo</i> 'long'	<i>tomolo</i> 'we (INC) jump across'	<i>tapa:ta</i> 'we (INC) read'

Another important piece of evidence in favour of this epenthesis analysis has to do with the consonant neutralisations described in §2.2.1.2-3. Recall that in the case of morphemes containing phonetically lengthened vocoids, the contrast between the voiced and voiceless oral stops is neutralised, with only /P/ (= [β]), /K/ (= [g]), and /T/ (= [t] ~ [d]) occurring. Under the epenthesis analysis, /P/, /T/, and /K/ in this position would be in an *underlyingly* intervocalic environment. This would provide a ready explanation for their lenited phonetic realisations.

In the case of the morphemes having the canonical form [+C₁VαC₂Vα+], recall that the realisations of the archiphonemes /P/, /T/, and /K/ occurring in the C₂ position are variable: [p] ~ [β], [t] ~ [d], and [k] ~ [g]. The voiced realisations occur following voiced stops in C₁ position, and the voiceless realisations occur elsewhere. Under the epenthesis analysis, these realisations are easily explained. A form like [kopo-] 'stomach' would underlyingly be /kPo-/. Since /P/ is not underlyingly intervocalic, it does not lenite to [β]. In the case of a form like [bege-] 'wing, armpit', the underlying form is /bKe-/. Here, /K/ becomes [g] by a rule of Obstruent Voicing Assimilation¹⁴ rather than intervocalic lenition.

We find this analysis is further confirmed if we consider morphemes having the canonical form [+C₁VαC₂Vβ+], in which the two vocoids have different qualities. Here, the realisations of /P,T,K/ occurring in the clearly intervocalic C₂ position are identical to those found in the C₂ position of morphemes having the canonical form [+C₁Vα:C₂Vα+]. Thus, we only find monomorphemic forms like [puge] 'crocodile' and [kaβoŋ] 'adze'.

Summarising now the arguments for the epenthesis analysis: 1) it avoids the ad hoc postulation of abstract phonological segments which never surface, 2) it accounts for the restricted distribution of lengthened vocoids, 3) the existence of epenthesis processes in the language is attested by those verbal prefixes which always agree with the first vowel in verb stems, and 4) it accounts for the failure of the voiceless obstruent archiphonemes to voice when surrounded by identical short vocoids. On the minus side, the analysis complicates the underlying morpheme structures, since we will have to postulate CC clusters in the beginning of morphemes.

Under the proposed analysis, intervocalic [k] and [p] would have only three possible sources as set out below.

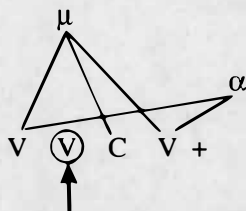
1. They occur at a morpheme boundary. Thus, when the third plural subject prefix [ti-] is added to verb stems beginning with voiceless stops like [-ko] 'to flee' and [-pa:ta] 'to count, read', the result is [tiko] and [tipa:ta], not *[tigo] and [tiβa:ta].
2. If the vowels preceding and following the stop are identical, the preceding vowel is not underlyingly present but is the result of epenthesis.

¹⁴ This rule of Obstruent Voicing Assimilation is further illustrated and formulated in §2.4.1.2.6.

3. The word in which they occur is an unassimilated borrowing.¹⁵

The rules which have been proposed thus far can be formulated as below (recall that the symbol μ indicates a morpheme).

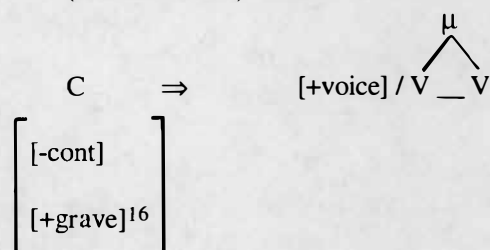
Rule 1: Penultimate Lengthening



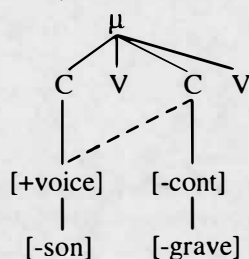
A penultimate vowel is lengthened when it is followed by a single consonant and an identical vowel, all of which are in the same morpheme. Note that lengthening here is being formulated as a kind of epenthesis. The inserted underspecified vowel subsequently receives its quality from the following vowel.

Rule 2: Morpheme-Internal Intervocalic Lenitions

(for /P/ and /K/)



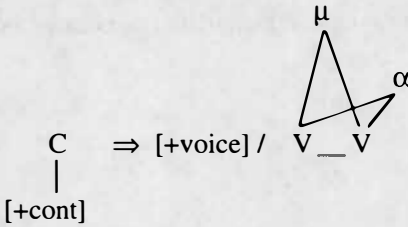
(for /T/)



¹⁵ For a discussion of borrowings in Mangap-Mbula, see Bugenhagen (1994a).

¹⁶ Note that use is being made here of the Jakobson, Fant, and Halle (1952); acoustic distinctive feature [grave]. This allows a more compact statement of the rule than would be possible using articulatory features.

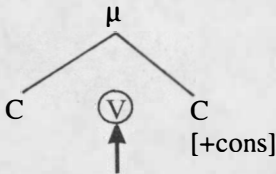
(for /S/)



Oral obstruents which are underlyingly intervocalic become voiced. This is always the case for the archiphonemes /P/ and /K/. /T/ voices intervocalically only when it is also preceded by a voiced *oral* obstruent. /S/ voices only when it occurs between two identical underlying vowels.

The process of intervocalic lenition fails to apply in some items which appear to be relatively recent borrowings (Bugenhagen 1994a). This failure of lenition is particularly striking in a number of personal names like [Aikeŋ] and [Aikilo], many of which are shared with the neighbouring Papuan Kovai language.

Rule 3: Morpheme-Internal Epenthesis



Sequences of two consonants at the beginning of a morpheme, in which the second consonant is not a glide, are broken up by an epenthetic vowel. The epenthetic vowel receives its quality from the first following vowel by Rule 5: Regressive Spreading.

Rule 4: Prefix Epenthesis



Morphemes consisting of a single consonant and which are adjoined to a following morpheme always have an epenthetic vowel inserted following the consonant. This rule applies cyclically, as often as its structural description is met.

Rule 5: Regressive Spreading



The structural descriptions in Rules 3 and 4 are designed to block the rules from applying to: 1) consonant clusters produced by reduplicative processes, 2) consonant clusters produced by the addition of Subject prefixes ending in consonants to verbs, 3) consonant

clusters produced by the addition of the nominalising suffix *-ŋa* to consonant final forms, and 4) morpheme-internal consonant-glide clusters. Examples follow.

The form [-ba:da] ‘to carry’ reduplicates to [bad-ba:da], not **[bada-ba:da].

The first person plural exclusive form of [-gi:Bi] ‘to toss’ is [am-gi:Bi], not **[ami-gi:Bi].

The nominalisation of [-kam] ‘to do’ is [kamŋana] and not **[kamaŋana].

The form *twi* ‘you (SG) bury’ is pronounced as [twi] and not as **[twi].

The rules postulated above must apply in the given order. Sample derivations are given below:

Underlying Form	<i>kPo-m</i>	<i>kaPoŋ</i>	<i>pePe</i>	<i>t-p-toP'</i>
Penultimate Lengthening	-	-	<i>peVPe</i>	-
Regressive Spreading	-	-	<i>peePe</i>	-
Lenition	-	<i>kaboŋ</i>	<i>peebe</i>	-
Morpheme-Internal Epenthesis	<i>kVpo-m</i>	-	-	-
Prefix Epenthesis	-	-	-	<i>tV-pV-toP'</i>
Vowel Spreading	<i>kopom</i>	-	<i>peebe</i>	<i>topotoP'</i>
Surface Form	[kopom]	[kaβoŋ]	[pe:βe]	[topotop]
	‘your (SG) stomach’	‘adze’	‘you (SG) give birth to’	‘we (INC) drop carefully’

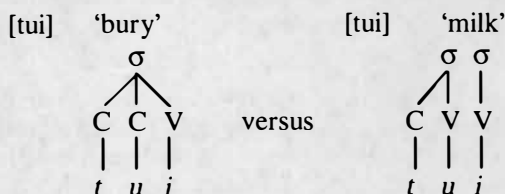
2.2.2.3 NON-SYLLABIC HIGH VOCOIDS

The last class of controversial segments requiring some discussion are the non-syllabic high vocoids (here represented as superscripts [ʰ], [ʰ]). Such segments are ambiguous because they have the potential to pattern as either vowels or consonants.

We shall argue that the non-syllabic high vocoid [ʰ] is underlyingly consonantal, while [ʰ] is underlyingly vocalic.

There are a few minimal pairs between vocoid clusters which are based upon syllabification differences. These are restricted, however, to clusters in which the first vocoid is [u]. One such example would be [tʰi] ‘you (SG) bury’ versus [tui] ‘milk’.

In the autosegmental framework it is easy to formally differentiate such pairs:



Note here that both /u/ and /w/ have the same *articulatory* specification (here symbolised by *u*). They differ solely in whether they function as a consonant or as a vowel.

The non-syllabic vocoid [ʰ] always patterns as a consonant. When the first inclusive and second plural Subject prefixes *t-* and *k-* or the transitivity prefixes *p-* and *m-* are added to

verb stems beginning with [ʷ], it is ignored by the regressive vowel-spreading rule. Thus, it acts like other, unambiguous consonants. This can be seen from the examples below.

		1PL.INC	2PL
[-mbol]	be strong	[to-mbol]	[ko-mbol]
[-ke]	to hide	[te-ke]	[ke-ke]
[-tʷi]	to bury	[ti-tʷi]	[ki-tʷi]
[-sʷe]	to reveal	[te-sʷe]	[ke-sʷe]
[-ʷo:lo]	to marry	[to-ʷo:lo]	[koʷo:lo]
[-ʷin]	to drink	[ti-ʷin]	[ki-ʷin]
[-pi-ʷin]	to nurse	[ti-pi-ʷin]	[ki-pi-ʷin]

Given the two facts that: 1) there are instances of contrastive syllabification involving the non-syllabic versus syllabic versions of the high, back, round vocoid, and 2) the non-syllabic version is ignored by the regressive vowel spreading rule, we distinguish /u/ from /w/.

In the case of the non-syllabic vocoid [i], the issue is not so clear-cut. Unlike [ʷ] and [u], there are no minimal pairs based on syllabification differences of [i]. When the Subject prefixes *t-* and *k-* are added to verb stems beginning with [i], the [i] is ignored by regressive vowel spreading:

		1PL.INC	2PL
[-iʷo:to]	to go forth	[to-iʷo:to]	[ko-iʷo:to]
[-iʷa:ra]	to shine	[ta-iʷa:ra]	[ka-iʷa:ra]

Here, [i] seems to be behaving similarly to other, clearly consonantal segments.

When, however, the transitivity-derivational prefixes *p-* and *m-* are added to verb stems beginning with [i], the [i] behaves like a vowel. Consider the following examples:

Causative			
[-iʷo:to]	to go forth	[pi-iʷo:to]	
[-iʷa:ra]	to shine	[pi-iʷa:ra]	

Note here that the non-syllabic vocoid [i] is conditioning the quality of the epenthesised vowel. If [i] were purely consonantal, we would expect forms like ***paya:ra* and ***poyo:to*.

The model of lexical phonology suggests one possible solution to the differential behavior of [i] in the contexts of transitivity derivation and inflection with the Subject prefixes. This model is succinctly characterised by Goldsmith (1990:237-238) as follows:

...lexical phonology allows for the lexicon to be divided into what are called strata (or, interchangeably, levels or layers)... Strata are small components in which affixation processes and phonological processes are packaged together. They are linearly arranged, so that the first stratum has as its potential input (or domain on which to operate) the monomorphemic roots of the language. Each such root may undergo affixation of one of the stratum 1 affixes, at which point it will have the opportunity to pass through all the stratum 1 phonological rules, some of which it may chance to trigger... At the end of each stratum, all the internal bracketings are dropped, so that rules of a given layer can never make reference to any internal structure that was created on an earlier stratum.

Let us assume such a model and postulate [i] to be underlyingly vocalic; that is [-iɑ:ra] = /-iara/. We shall further assume that the transitivity prefixes and Subject prefixes belong to different strata, and that Prefix Epenthesis and Regressive Spreading apply cyclically. The following derivation could then obtain.

- (a) Transitivity affixation is added.
- (b) Prefix Epenthesis applies.
- (c) There is regressive spreading of vowel quality from the verb stem initial /i/ onto the underspecified V.
- (d) The vowel /i/ is then desyllabified to /y/.
- (e) The Subject prefixes are added.
- (f) There is another application of Prefix epenthesis and another application of regressive spreading.

The phoneme /w/, being underlyingly consonantal, would never condition the quality of underspecified vowels. The following derivations would then obtain:

Underlying Form	<i>ioTo</i>	<i>ioTo</i>	<i>win</i>
Transitivity Affixation	<i>p-ioTo</i>		<i>p-win</i>
Prefix Epenthesis	<i>pV-ioTo</i>		<i>pV-win</i>
Regressive Spreading	<i>pi-ioTo</i>	<i>ioTo</i>	<i>pi-win</i>
Desyllabification of /i/	<i>pi-yoTo</i> ¹⁷	<i>yoTo</i>	
Addition of Subject Prefixes	<i>t-piyoTo</i>	<i>t-yoTo</i>	<i>t-piwin</i>
Prefix Epenthesis	<i>tV-piyoTo</i>	<i>tV-yoTo</i>	<i>tV-piwin</i>
Regressive Spreading	<i>ti-piyoTo</i>	<i>to-yoTo</i>	<i>ti-piwin</i>
Other rules	[tipiyo:to]	[toyo:to]	[tipiwin]
	'we (INC) bring out'	'we (INC) go out'	'we (INC) nurse'

While such an approach accounts for the differential behavior of [i] with respect to transitivity derivation and the Subject prefixes, this comes at a cost. We are forced to postulate an asymmetrical system in which one non-syllabic high vocoid is underlyingly consonantal while the other is vocalic. On the other hand, we do eliminate one phoneme: /y/.

The desyllabification rule for /i/ is straightforward:

Rule 6: Desyllabification of /i/

$$V \Rightarrow C / + _ V$$

$$\left[\begin{array}{l} +\text{high} \\ -\text{back} \end{array} \right]$$

2.2.3 DISTINCTIVE FEATURE MATRICES

This completes the digression regarding controversial feature specifications. Given below in Table 2.4 is a fully specified feature matrix for the postulated systematic phonemes.

¹⁷ Compare, however, the related form [-pa-¹a:ra] 'to give life to', in which [i] does not seem to condition the quality of the epenthised vowel. Or, more probably, this is an instance of the /pa-/ allomorph of the causative morpheme.

TABLE 2.4: SYSTEMATIC PHONEMES AND THEIR FEATURE SPECIFICATIONS

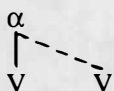
	p	t	k	b	d	g	mb	nd	ŋg	m	n	ŋ	s	z	l	r	w	i	e	a	o	u	V		
	C	C	C	C	C	C	^	^	^	C	C	C	C	C	C	C	C	V	V	V	V	V	V	V	
							^	^	^																
consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	
sonorant	-	-	-	-	-	-	+	-	+	-	+	-	+	-	+	+	+	+	+	+	+	+	+	+	
nasal	-	-	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	
voiced	-	-	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	-	-	-	-	-	-	
continuant	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-	-	-	
lateral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
bilabial	+	-	-	+	-	-	+	+	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	
velar	-	-	+	-	-	+	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	
high	-	-	+	-	-	+	-	-	-	+	+	-	-	+	-	-	-	-	+	+	-	-	-	+	∅
back	-	-	+	-	-	+	-	-	-	+	+	-	-	+	-	-	-	-	+	-	-	+	+	+	∅
round	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	+	∅	

Note in Table 2.4 that the point-of-articulation features [bilabial] and [velar] have been substituted for [anterior] and [coronal] as having more phonetic and phonological plausibility. Also, if only the plus values of non-redundant place and manner features count towards the complexity of a segment (i.e. the features are analysed as being privative, as per the treatment in Goldsmith (1990:245-246)), such treatment will have the beneficial effect of making the most common point of articulation (alveolar) the least marked formally. Also note that an underspecified vowel archiphoneme (V) is postulated. This is to account for the third person singular and first person plural inclusive inalienable genitive suffixes, which always agree with the final vowel in the noun stem. This is illustrated in the following examples.

[lutu:nu]	child-GEN.3SG
[lutundu]	child-GEN.1PL.INC
[kuzi:ni]	smell-GEN.3SG
[kuzindi]	smell-GEN.1PL.INC
[kopo:no]	stomach-GEN.3SG
[tama:na]	father-GEN.3SG

It does not seem possible to derive these suffixes by any sort of vowel epenthesis rule, and therefore the third singular and first person plural inclusive suffixes are postulated to have the following underlying forms: /-VnV/ and /-ndV/, with spreading of the immediately preceding vowel quality onto the V. Note, however, that in contrast to the *regressive* spreading of vowel quality which affects the epenthesis vowels, spreading onto the genitive suffixes is *progressive*. This progressive spreading rule is formulated in Rule 7:

Rule 7: Progressive Spreading



The matrix in Table 2.4 has a number of redundancies in it. These include the following:

1. [-cons] \Rightarrow [+son]
2. [+nas] \Rightarrow $\begin{bmatrix} +cons \\ +son \\ +voice \\ -cont \\ -lat \end{bmatrix}$
3. [+lat] \Rightarrow $\begin{bmatrix} +cons \\ +son \\ -nas \\ +voice \\ +cont \\ -bilabial \\ -velar \end{bmatrix}$
4. $\begin{matrix} C \\ | \\ [-cont] \end{matrix}$ \Rightarrow $\begin{bmatrix} -lat \\ +cons \\ -son \end{bmatrix}$
5. [-son] \Rightarrow $\begin{bmatrix} -nas \\ +cons \\ -lat \end{bmatrix}$
6. $\begin{bmatrix} +cons \\ \alpha velar \end{bmatrix}$ \Rightarrow $\begin{bmatrix} -round \\ \alpha high \\ \alpha back \end{bmatrix}$
7. $\begin{bmatrix} -cons \\ +high \\ \alpha back \end{bmatrix}$ \Rightarrow [-round]
8. [+son] \Rightarrow [+voice]
9. V \Rightarrow [-consonantal]

With these redundancies removed, we obtain the matrix shown in Table 2.5.

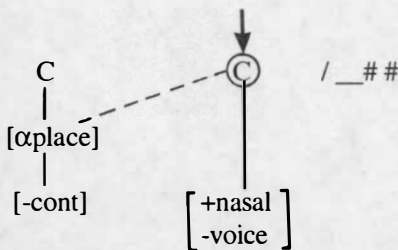
TABLE 2.5: SYSTEMATIC PHONEMES AND THEIR FEATURE SPECIFICATIONS WITH REDUNDANCIES REMOVED

	<i>p</i>	<i>t</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>g</i>	<i>mb</i>	<i>nd</i>	<i>ŋg</i>	<i>m</i>	<i>n</i>	<i>ŋ</i>	<i>s</i>	<i>z</i>	<i>l</i>	<i>r</i>	<i>w</i>	<i>i</i>	<i>e</i>	<i>a</i>	<i>o</i>	<i>u</i>	<i>V</i>	
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	V	V	V	V	V	V	V
							∧	∧	∧															
consonantal																								
sonorant																								
nasal							+	+	+	+	+	+												
voiced	-	-	-	+	+	+	+	+	+					-	+									
continuant	-	-	-	-	-	-	-	-	-	-	-	-		+	+									
lateral																								
bilabial	+	-	-	+	-	-	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
velar	-	-	+	-	-	+	-	-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-	-
high																								
back																								
round																								

2.3 PHONETIC (ALLOPHONIC) RULES

The low-level / allophonic rules operant in the language are now given below.

Rule 8: Nasal Release (optional)



Word final stops (which are always voiceless) are optionally released with a homorganic voiceless nasal, yielding forms like [posopM] and [katN] from /pSoP/ ‘you (SG) finish’ and /kaT/ ‘very’.¹⁸

¹⁸ From this point onwards, morpheme final /P',T',K',S/ and morpheme internal /P,T,K,S/ will normally just be written as /p,t,k,s/ unless the fact of their being archiphonemes is especially relevant to the discussion at hand. The fact that they are archiphonemes has been made clear by now, and it seems pedantic to belabour the point notationally with capital letters.

Rule 9: B-lenition

C

$$\left[\begin{array}{l} -\text{cont} \\ -\text{nas} \\ +\text{bilabial} \end{array} \right] \Rightarrow [+cont] / \text{V_V}$$

The phoneme /b/ is lenited to [β] when it occurs intervocalically. This rule applies obligatorily morpheme-internally and optionally at morpheme boundaries, deriving forms like [aβal] from /aPal/ ‘mountain’ and [ti-bo:βo] ~ [ti-βo:βo] from /ti-boPo/ ‘they call’. Note that the archiphoneme /P/ first becomes the phoneme /b/ by Rule 2 (Morpheme-Internal Intervocalic Lenitions). It is these /b/s which are then lenited to [β].

Rule 10: Velar Assimilation

$$\begin{array}{c} \text{C} \\ | \\ [+velar] \end{array} \Rightarrow \begin{array}{c} \sigma \\ | \\ \%V \\ [-back] \end{array}$$

All velars which are contiguous to front vowels in the same syllable are fronted, yielding forms like [pitik̚] and [riḡa] ‘slowly, carefully’, from /ptik/ ‘star’ and /riḡa/ ‘slowly’.

Rule 11: Alveolar Palatalisation

$$\begin{array}{c} \text{C} \\ | \\ \left[\begin{array}{l} -\text{cont} \\ -\text{bilabial} \\ -\text{velar} \\ \alpha\text{nas} \\ \alpha\text{voice} \end{array} \right] \end{array} \quad \begin{array}{c} \text{V} \\ \text{---} \\ | \\ [+high] \\ [-back] \end{array} \quad \begin{array}{c} \text{V} \\ | \\ [-high] \end{array}$$

Alveolar nasals or voiceless dental stops¹⁹ are combined with /i/ before a mid or low vowel to form a portmanteau of a laminal post-alveolar segment with a high off-glide. Thus /tiama/ ‘cooking stones’, /tie-m/ ‘your(SG) faeces’, /t-io/ ‘1SG Locative pronoun’, and /n-iam/ ‘1PL.EXC Nominative pronoun’ become [t̪ama], [t̪em], [t̪io] and [n̪iam]. The V element left over after the reassociation takes place is lost by what Goldsmith (1990:53) terms “the Linkage Condition”, which he defines in the following terms:

A segment will not be phonetically realised if it is not linked to a position in the skeletal tier.

Rule 12: High Vowel Laxing

V

V

¹⁹ There are no examples of /d/ or /nd/ occurring in this environment.

$$\begin{array}{ccc} | & & | \\ [+high] & \Rightarrow & [-tense] / \quad [-high] _ \end{array}$$

The phonemes /i/ and /u/ are laxted to [ɪ] and [ʊ] when they immediately follow a non-high vowel, yielding forms like [teʊ] and [noi] from /teu/ 'sugar cane' and /noi/ 'you (SG) boil s.th.'.

Rule 13: E-Laxing

$$\begin{array}{ccc} V & & \sigma \\ & & / \quad \backslash \\ [-high] & \Rightarrow & [-tense] / _ \quad C \\ [-back] & & \end{array}$$

The vowel /e/ is laxted to [ɛ] when it occurs in a closed syllable. This yields forms like [kɛk], [kɛmbei] from /kek/ 'perfective' and /kmbei/ 'like, as'.

The remaining rules are phonetic spell-out rules:

Rule 14: $\left[\begin{array}{l} -son \\ -cont \\ -voice \end{array} \right] \Rightarrow$ mildly aspirated / $_ _ V$

All prevocalic voiceless stops are mildly aspirated.

Rule 15: $\left[\begin{array}{l} -cont \\ -bilabial \\ -velar \end{array} \right] \Rightarrow$ dental point of articulation

[-bilabial, -velar] stops and nasals are pronounced at the dental point of articulation.

Rule 16: $\left[\begin{array}{l} +cont \\ -bilabial \\ -alveolar \end{array} \right] \Rightarrow$ alveolar point of articulation

[-bilabial, -velar] fricatives, trills and laterals are pronounced at the alveolar point of articulation.

Rule 17: [+lat] is a clear, voiced alveolar [l] with no friction.

Rule 18: $\left[\begin{array}{l} +cons \\ +son \\ -nas \\ -lat \end{array} \right]$ is [r], a voiced alveolar trill.

Rule 19: $\left[\begin{array}{l} +velar \\ +back \end{array} \right]$ is pronounced at the velar point of articulation.

Rule 20: $\left[\begin{array}{l} +velar \\ -back \end{array} \right]$ is pronounced at a slightly fronted velar point of articulation.

Rule 21:²⁰ When vowels are unmodified by the laxing rules (#12, 13), their normal phonetic values are:

/i/	[i]	front unrounded, close tense voiced vocoid
/e/	[e]	front unrounded, slightly lowered, half-close, tense voiced vocoid
/a/	[a]	back unrounded, open tense voiced vocoid
/o/	[o]	back rounded, slightly lowered, half-close, tense voiced vocoid
/u/	[u]	back rounded, close tense voiced vocoid

2.4 HIGH-LEVEL (MORPHOPHONEMIC) RULES

Morphophonemic alternations are exhibited in four morphological contexts: 1) reduplication, 2) verbal affixation for person and number, 3) conjugation of pronoun systems, and 4) conjugation of nouns having inalienable genitives. Each of these contexts will now be examined with respect to the types of phonological rules they evidence.

2.4.1 MORPHOPHONEMIC ALTERNATIONS EXHIBITED BY REDUPLICATIONS

Reduplication is used in Mangap-Mbula to encode notions such as: PLURALITY, DISTRIBUTION, DIMINUTION, INTENSIFICATION, and IMPERFECTIVITY. There are also some alterations in the meaning of reduplicated forms which appear to be idiosyncratic.

There are two basic patterns of reduplication: complete and partial. Whether an item is reduplicated partially or completely appears to be lexically determined. The surface form of partial reduplication varies according to the canonical form of the morpheme being reduplicated, with the following forms being distinguished:

1. partial reduplications of the vowel plus final consonant of morphemes consisting of a single closed syllable;
2. partial reduplications of just the final vowel of morphemes ending in a final open syllable;
3. partial reduplications of ultimate syllables of polysyllabic morphemes;
4. partial reduplications of surface penultimate syllables of polysyllabic morphemes.

Of these four partial reduplication types, the first three involve the addition of the reduplication *following* the stem, whereas in the last type the reduplication is added *before* the stem. The surface forms of the different types of reduplication are exemplified below.

Complete	<i>pátpàt</i>	gravel
	<i>mútumùtu</i>	many islands
	<i>tótomentòtomen</i>	forever
	<i>zúzù</i>	you (SG) be going down
	<i>kískis</i>	you (SG) be holding

²⁰ From this point on in this chapter, the minor phonetic detail provided by Rules 8-21 will no longer be represented. Instead, a broader phonetic transcription will be used.

Partial Type 1 ²¹	<u>kámam</u> <u>kélel</u> <u>kánan</u> <u>kúdut</u>	you (SG) be doing you (SG) be digging you (SG) be eating many lice (The surface form of the unreduplicated morpheme is /kut/.)
Partial Type 2	<u>kówo</u> <u>kéwe</u>	you (SG) be fleeing you (SG) be hiding
Partial Type 3	<u>pósopsop</u> <u>mólolo</u> <u>garáurau</u>	you (SG) be finishing very long you (SG) be approaching
Partial Type 4	<u>bozbó:zo</u> <u>pamatmá:ta</u> <u>lonló:ndo</u> <u>mbarará:ra</u>	very many you (SG) be keeping watch you (SG) be running you (SG) be carrying

2.4.1.1 COMPLETE REDUPLICATIONS

2.4.1.1.1 COMPLETE REDUPLICATION FORMATION RULE

Complete reduplications of morphemes containing from one to three syllables have been observed. The first element in such reduplications always receives primary stress, with the second element receiving secondary stress. The placement of both the primary and the secondary stresses²² is upon the same syllable as the primary stress of the unreduplicated form.

Because of the presence of secondary stresses on complete reduplications they are postulated to contain an *internal* word boundary (here represented as #). Internal word boundaries are characterised as: 1) triggering secondary stress, and 2) not being ordinarily interruptible by pauses. They are distinguished from: 1) external word boundaries (here represented as ##), which trigger primary stress and are interruptible by pauses, and 2) simple morpheme boundaries (here represented as +), which do not trigger stress placement and are not ordinarily interruptible by pauses. Since partial reduplications lack additional, secondary stresses, they are analysed as containing only an ordinary morpheme boundary.

The rule for complete reduplication is formulated in:

Rule 22: Complete Reduplication

(#) # X # (#) ⇒ (#) # X # X # (#)
[+Redup]

Condition: X is a morpheme that is lexically marked as taking complete reduplications.

²¹ The form of the unreduplicated root morpheme is underlined.

²² Stress, both primary and secondary, is manifested by increased amplitude. For further discussion of stress placement, see §2.6 of this chapter.

Examples of the operation of Rule 22 are now given.

##mutu## [+Redup]	⇒	##mutu#mutu##	⇒	<i>mútumùtu</i> ‘many islands’
##ikis## [+Redup]	⇒	##i-kis#kis##	⇒	<i>ikískìs</i> ‘3SG be holding’
##totomen## [+Redup]	⇒	##totomen#totomen##	⇒	<i>tótomentòtomen</i> ‘forever’

2.4.1.1.2 NASAL ARTICULATION DISSOCIATION AND SQUEEZED NASAL DELETION

There are only two regular segmental morphophonemic processes exhibited by complete reduplications. The first of these is a loss of the nasal component of prenasalised stops which obligatorily occurs at both morpheme and internal word boundaries and optionally applies across external word boundaries in fast speech. The following reduplications illustrate this:

<i>ngun</i> + Reduplication	⇒	<i>ngun#ngun</i>	⇒	<i>ngunngun</i> ‘you (SG) be coughing’
<i>ngun</i> + Reduplication	⇒	<i>ngun#ngun</i>	⇒	<i>ngungun</i> ‘you (SG) be sticking something into the ground.’
<i>am-ndeeŋe</i>	⇒	<i>amdeeŋe</i>	⇒	‘we (EXC) find’

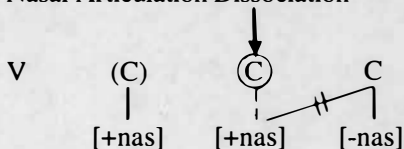
A related process is observed in partial reduplications. Consider the following examples:

[lo:ndo]	⇒	[lon-lo:ndo]	you (SG) be running
[ya:mba]	⇒	[yam-ya:mba]	you (SG) be scolding
[se:ŋge]	⇒	[zeŋ-ze:ŋge]	you (SG) be laughing

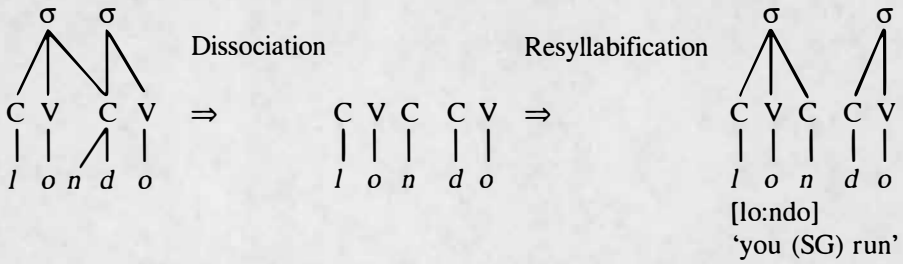
Note here that just the nasal components of intervocalic prenasalised stops are used to construct the reduplication.

To account for the above two processes, we postulate a rule of nasal articulation dissociation, in which the nasal articulation of a prenasalised stop is dissociated from its stop when it is preceded by an immediately adjacent vowel or another nasal consonant. The output of this rule is a consonant cluster consisting of a nasal plus a stop.

Rule 23: Nasal Articulation Dissociation



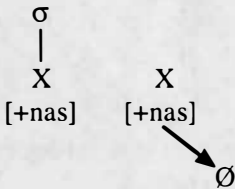
Once the nasal component is dissociated, general processes of resyllabification will reassociate it with an immediately preceding open syllable if one is available.



Assuming such a resyllabification takes place, a reduplication like [lon-lo:ndo] is perfectly regular if the partial reduplication rule is formulated in such a way as to copy penultimate syllables.

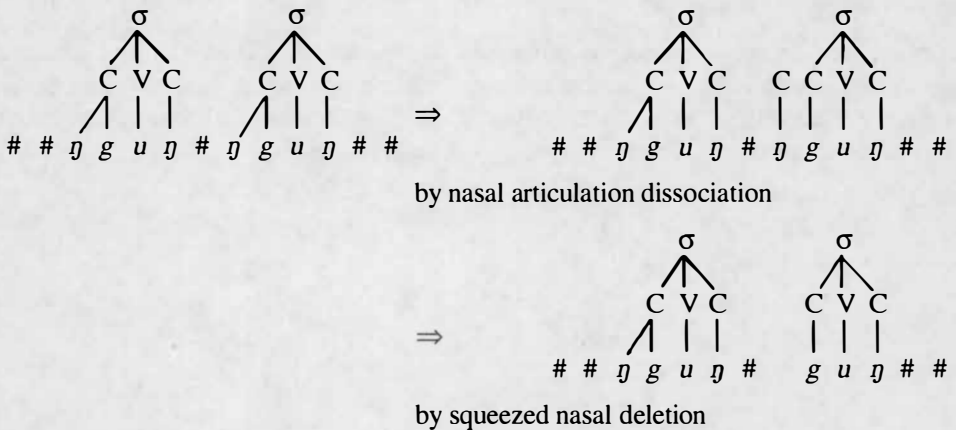
Since Mangap-Mbula has no syllable-internal consonant clusters other than syllable initial consonant–glide sequences, the resyllabification rules attach at most one consonant and one glide to the onset of a syllable, and at most one consonant to its coda. Accordingly, if the nasal component of a prenasalised stop is dissociated before another *closed* syllable, it is ‘squeezed’ between two syllables, with no syllable to which it can be associated. It is then deleted by a further rule of Squeezed Nasal Deletion.

Rule 24: Squeezed Nasal Deletion



Nasals which are preceded by another nasal segment and are not associated with a syllable are deleted.

A sample derivation for the form [ŋgunguŋ] ‘you (SG) be coughing’ is given below:



2.4.1.1.3 LENITION OF VERB STEM-INITIAL /p/ AND /s/ TO /w/ AND /z/ IN REDUPLICATIONS

A second process which is observed in both complete and partial reduplications of *verbal* roots but never in reduplications of non-verbal roots is a lenition whereby all instances of verb stem-initial /s/ and most instances of verb-stem initial /p/ become /z/ and /w/ respectively.²³ The reduplications of some verb stems beginning with /p/ exhibit either /w/ or /p/.

[so]	+ Reduplication ⇒	[zozo]	you (SG) be saying
[suŋ]		[zuŋzuŋ]	you (SG) be asking, praying
[pa]		[wawa]	you (SG) be walking
[po]		[wowo]	you (SG) be tying
[pe:ne]		[wenwe:ne]	you (SG) be shooting
[pi:zi]		[wiswi:zi]	you (SG) be squeezing
[pe:ze]		[weswe:ze]	you (SG) be paddling

but

[pat]		[patpat]	gravel
[pe:ne]		[penpe:ne]	small bow and arrow
[pi:zi]		[pispiz:zi]	how much is each one?
[pe:te]		[petpe:te]	you (SG) be dividing
[pe:ze]		[pespe:ze]	you (SG) be paddling
[-pet]		[-wedet] ~ [-pedet]	you (SG) be appearing

Stem initial /z/ and /w/ remain /z/ and /w/ when reduplicated.

[we]		[wewe]	you (SG) be bathing
[zun]		[zunzun]	you (SG) be removing

Thus, there is a neutralisation of contrast between /s/ and /z/ and between *lenitable* /p/ and /w/ in such reduplications.

Given the restriction of these alternations to verbal forms, the historical source for the [s] ~ [z] and [p] ~ [w] alternations appears to have been a process by which voiceless obstruents were lenited intervocalically after the historically vowel-final Subject prefixes. Ross (1988:48ff) describes such a process for the geographically proximate Ngero languages. One possible explanation for the failure of some cases of verb-initial /p/ to undergo lenition to [w] might be that they are really morphologically frozen instances of the causative morpheme p-. In the synchronic grammar, no verb forms transparently beginning with the causative morpheme /p-/ ~ /pa-/ exhibit this lenition of /p/ to [w]. Because all verb roots in Mangap-Mbula underlyingly begin with a consonant, adjunction of the causative morpheme /p-/ to a verb root yields an underlying stem beginning with the sequence /p-CV.../. It is understandable that /p/, being followed by a consonant, should have failed in such instances to have undergone lenition historically.

A further question, however, remains: why did the unreduplicated verb forms *fail to lenite* after the Subject prefixes, all of which were historically vowel-final? Such, evidently,

²³ This process is not uniformly evidenced by all dialects. The northern dialects of Kampalap, Kabi, and Sakar exhibit it only for some verb roots having the form /-CV/. In the Birik dialect, it applies for all verbs except for those having the canonical form /-pVC/.

was the case in the neighbouring Ngero languages (Ross 1988:173). One possible explanation is that lenition happened *after* the prefixes obtained their current Mangap-Mbula forms. These forms are reproduced below.

1 SG	<i>aŋ-</i>
2 SG	\emptyset -
3 SG	<i>i-</i>
1 PL.INC	<i>t-</i>
1 PL.EXC	<i>am-</i>
2 PL	<i>k-</i>
3 PL	<i>ti-</i>

Note that only two of the seven prefixes would condition lenition of a following consonant: the third person singular and third person plural forms. It may well have been the case that at some point in time the third person verb forms exhibited lenition while the other forms did not, and that analogical levelling applied to regularise the verb paradigms. For non-reduplicated forms, this levelling altered the third person forms to agree with the other, non-lenited forms, while for reduplicated forms the non-lenited members were altered to agree with the lenited third person forms. Thus, for the verb *-so* 'to say':

I.		II.	
<i>*aŋ-so</i>	⇒ <i>aŋso</i>	<i>*aŋ-so-zo</i>	⇒ <i>aŋzozo</i>
<i>*\emptyset-so</i>	<i>so</i>	<i>*\emptyset-so-zo</i>	<i>zozo</i>
<i>*i-zo</i>	<i>iso</i>	<i>*i-zo-zo</i>	<i>izozo</i>
<i>*t-so</i>	<i>tso</i>	<i>*t-so-zo</i>	<i>tzozo</i>
<i>*am-so</i>	<i>amso</i>	<i>*am-so-zo</i>	<i>amzozo</i>
<i>*k-so</i>	<i>kso</i>	<i>*k-so-zo</i>	<i>kzozo</i>
<i>*ti-zo</i>	<i>tiso</i>	<i>*ti-zo-zo</i>	<i>tizozo</i>

Given such paradigms, it is not surprising that analogical levelling did not operate uniformly. The numerical predominance of /so/ forms in the first paradigm compared with /zo/ would favour the levelling of /zo/ to /so/, while the numerical predominance of /zo/ forms in the second paradigm would favour the levelling of /so/ to /zo/.

The historical discussion of Appendix 2 is anticipated here to some extent, because of the apparent oddness of a rule of 'Lenition of verb-root initial /p/ and /s/ in the context of reduplication'. In the synchronic grammar, it seems best to treat this process as morphologically conditioned allomorphy. Thus, a form like /-pene/ 'to shoot', which undergoes this alternation, must be listed in the lexicon as having two allomorphs:

<i>-peene</i>	/-wene/	when reduplicated
	/-pene/	elsewhere

The form /-peTe/ 'break in two', on the other hand, is listed as having only one allomorph:

<i>-peete</i>	/-peTe/
---------------	---------

2.4.1.1.4 W-SWALLOWING BEFORE U

There are three *phonetic* distribution restrictions in the Central Dialect of Mangap-Mbula upon which the morphological alternation of [p] and [w] sheds some light: 1) there are no

[wu] phonetic sequences, 2) the *only* vowel with which surface forms of verb roots begin is [u], and 3) verb roots overwhelmingly begin with consonants. Now consider the following reduplications: [-pas] 'to remove' becomes [-waz-as], [-pet] 'to appear' becomes [-wed-et], but [-pun] 'to hit' becomes [-un-un]. If the underlying form of [-un-un] is /wun-un/, then it harmonises with the reduplications of the first two forms. This suggests a further rule of W-Swallowing which deletes a /w/ before /u/. This, in turn, suggests that verb stems *phonetically* beginning with [u] could be analysed as underlyingly beginning with /wu.../, enabling the generalisation that all verb stems underlyingly begin with consonants. Such a rule would be supported by a dialect variation found in the village of Kampalap, in which a Central Dialect form like [ute-] 'head' is pronounced as [wʊte].

There is also some phonetic evidence which bears on the matter. When the verbal Subject prefixes /t-/ '1PL.INC' and /k-/ '2PL' are added to verb stems which phonetically begin with a [u], what one hears is [tu\$u...] and [ku\$u...], with a very clear syllable boundary being heard. If such forms were to underlyingly begin with /u/, this phonetic fact would be unexplainable. One would rather expect the prefixes to simply be adjoined, with no application of Epenthesis, producing initial sequences like [t-u...] and [k-u...]. Thus forms like [tu\$u:lu] '1PL.INC help' (= /tu-wulu/) and [ku\$ut] '2PL adopt' (= /ku-wut/) provide further evidence for the presence of an initial /w/ in verb forms which phonetically begin with [u]. The rule of W-Swallowing Before U is formulated in:

Rule 25: W-Swallowing Before U

$$\begin{array}{ccc}
 \text{C} & \Rightarrow & \emptyset / _ \text{V} \\
 | & & | \\
 \left[\begin{array}{c} \text{-cons} \\ \text{+back} \end{array} \right] & & \left[\begin{array}{c} \text{-cons} \\ \text{+back} \\ \text{+high} \end{array} \right]
 \end{array}$$

2.4.1.2 PARTIAL REDUPLICATIONS

Proceeding to the partial reduplications in more depth, recall that there are four surface forms of partial reduplication as listed below.

1. Partial reduplications of the rhymes of morphemes consisting of a single closed syllable:

[kam]	⇒	[kam-am]	you (SG) be doing, getting
[kel]		[kel-el]	you (SG) be digging
[pet]		[wed-et]	you (SG) be appearing

2. Partial reduplications of just the final vowel in morphemes ending in a final open syllable:

[ke]	⇒	[ke-we]	you (SG) be hiding
[ko]		[ko-wo]	you (SG) be fleeing
[karakiti]		[karakiti-wi]	you (SG) be repairing
[urpe]		[urpe-we]	you (SG) be putting right

3. Partial reduplications of ultimate syllables of polysyllabic morphemes:

[posop]	⇒	[posop-sop]	you (SG) be finishing
[ambai]		[ambai-mbai]	you (SG) be very good
[molo]		[molo-lo]	very long

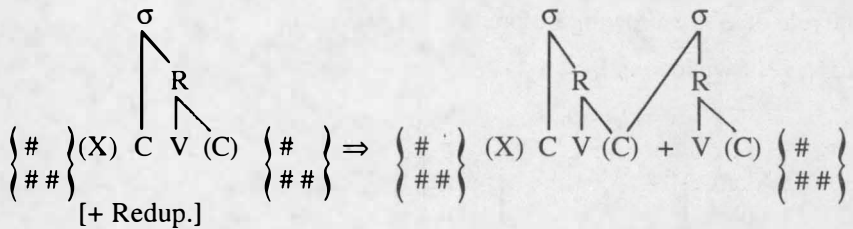
4. Partial reduplications of surface penultimate syllables of polysyllabic morphemes:

[ba:da]	⇒	[bad-ba:da]	you (SG) be carrying
[mo:to]		[mot-mo:to]	worms
[mbarara]		[mba-ra-rara]	you (SG) be holding

2.4.1.2.1 PARTIAL REDUPLICATION FORMATION RULES

The first two of these four reduplication types can be unified under a single rule of *Rhyme*²⁴ *Reduplication*, in which the final vowel (and consonant if present) of morphemes (here symbolised as a R(hyme) syllabic sub-constituent) is added following the morpheme. This is formulated below:

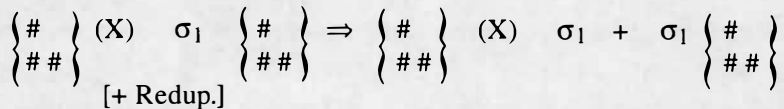
Rule 26: Rhyme Reduplication



Condition: applies only to morphemes which are lexically marked as taking partial Rhyme Reduplication.

The third type of partial reduplication can be generated by a rule of final *syllable* reduplication, which operates on the syllable autosegmental tier:

Rule 27: Final Syllable Reduplication



Condition: applies only to morphemes which are lexically marked as taking partial syllable reduplication and which fail to meet the environmental specifications for Penultimate Syllable Reduplication.

The fourth type of reduplication is generated by a rule of Penultimate Syllable Reduplication which, unlike the rule of Final Syllable Reduplication, makes reference to both the syllable and CV tiers:

²⁴ The term rhyme comes from Goldsmith (1990:108).

Rule 28: Penultimate Syllable Reduplication

$$\left\{ \begin{array}{l} \# \\ \# \# \end{array} \right\} (X) \begin{array}{l} \sigma_1 \\ \sigma_2 \end{array} \Rightarrow \left\{ \begin{array}{l} \# \\ \# \# \end{array} \right\} (X) + \sigma_1 + \sigma_1 + \sigma_2 \left\{ \begin{array}{l} \# \\ \# \# \end{array} \right\}$$

Vα

Condition: applies only to morphemes which are lexically marked as taking partial reduplication.

Rule 28 must be ordered before Rule 1 (Penultimate Lengthening), otherwise forms like **[ba:dba:da] would result and it would be necessary to have a clean-up rule to shorten the extra lengthened vowel in the reduplication.

2.4.1.2.2 W-INSERTION BETWEEN HOMORGANIC VOWELS

A number of other phonological rules are evidenced by partially reduplicated forms. Consider again the partial reduplications from group 2 above:

[ke]	⇒	[ke-we]	you (SG) be hiding
[ko]		[ko-wo]	you (SG) be fleeing
[karakiti]		[karakiti-wi]	you (SG) be repairing
[urpe]		[urpe-we]	you (SG) be putting right

From these, it will be noted that for morphemes ending in a final open syllable, simple adjunction of a single homorganic vowel across a morpheme boundary is not permitted. Instead, a [w] occurs between the two vowels to break up the homorganic vowel cluster. Thus a rule of W-Insertion is evidenced.

Rule 29: W-Insertion Between Homorganic Vowels

$$\emptyset \Rightarrow C / V\alpha + _ V\alpha +$$

$$\left[\begin{array}{l} -\text{cons} \\ +\text{back} \end{array} \right]$$

2.4.1.2.3 MORPHEME-FINAL INTERVOCALIC LENITION

Now consider the following two sets of examples:

I.	[kuk]	⇒	[kuk-uk]	you (SG) be barking
	[kel]		[kel-el]	you (SG) be digging
	[kan]		[kan-an]	you (SG) be eating
II.	[pas]		[waz-as]	you (SG) be taking out
	[kut]		[kud-ut]	you (SG) be filling up
	[up]		[ub-up]	you (SG) be digging up

The forms in I. illustrate the application of Rhyme Reduplication with no other changes, while those in II. illustrate a lenition process whereby the [-velar, -sonorant] morpheme-final archiphonemes /P/, /S/, and /T/ respectively become [b], [z], and [d] intervocally preceding a morpheme boundary. This rule is formulated below.

Rule 30: Morpheme-Final Intervocalic Lenition

$$C \Rightarrow [+voice] / V _ + V$$

$$\left[\begin{array}{l} \text{-velar} \\ \text{-sonorant} \end{array} \right]$$

Since the lenition rule in Rule 30 somewhat resembles the Morpheme-Internal Intervocalic Lenitions Rule 2 that was postulated earlier, it might seem more elegant to attempt to combine them. However, because of the differences in environments and affected segments, it seems wiser to keep the two rules separate. Recall that the Morpheme-Internal Intervocalic Lenitions rule always voices the archiphonemes /P/, /K/, and /S/ intervocalically and sometimes voices /T/ and sometimes not. Morpheme-Final Intervocalic Lenition, however, always voices /P/, /T/, and /S/ and never voices /K/. Rule 2 is also restricted to morpheme-internal environments, whereas Rule 30 operates only before a morpheme boundary.

2.4.1.2.4 ORAL OBSTRUENTS IN PENULTIMATE SYLLABLE REDUPLICATION

The forms below in I. illustrate the already-discussed *morphologically conditioned* lenition of morpheme initial /p/ and /s/ to /w/ and /z/ in reduplications:

I.	[pe:ne]	⇒	[wen-we:ne]	you (SG) be shooting
	[pa:ta]		[wat-wa:ta]	you (SG) be calling, reading
	[pe:ze]		[wes-we:ze]	you (SG) be paddling
	[se:ŋge]		[zeŋ-ze:ŋge]	you (SG) be laughing
	[si:ri]		[zir-zi:ri]	you (SG) be sweeping

Now consider the following set of forms:

II.	[ra:ba]	(=/raPa/)	⇒	[rap-ra:ba]	you (SG) be bowed down
	[ma:ga]	(=/maKa/)		[mak-ma:ga]	you (SG) be drying up
	[ŋge:ze]	(=/ŋgeSe/)		[-ŋges-ŋge:ze]	be fluent, smooth, or clean
	[pi:zi]	(=/piSi/)		[pis-pi:zi]	how much is each one?

Recall from §2.2.1.2 that [b], [d] ~ [t], [g], and [z] following lengthened vocoids are the lenited realisations of the oral obstruent archiphonemes /P, T, K, S/, occurring in the underlying environment /...C₁ V __ V/.²⁵ In the above partial reduplications, these oral archiphonemes are occurring syllable finally before a voiceless consonant, and therefore Rule 30 (Morpheme-Final Intervocalic Lenition) does not apply. For obstruents the unmarked value for voicing is [-voice], whereas for sonorant segments the unmarked value for voicing is [+voice]; that is:

$$[\alpha\text{sonorant}, \emptyset \text{ voice}] \Rightarrow [\alpha\text{voice}].$$

Therefore if some rule does not fill in a plus value for voicing, then obstruent archiphonemes with no voicing specification will emerge as phonetically voiceless segments. This is what is observed in the above reduplications.

²⁵ As one specific example of what is meant by this environmental specification, in a form like [-ge:de] 'to stare' (= /-geTe/), [g] is occurring in the C₁ position before the phonetically lengthened vocoid [e:], and [d] is occurring in the intervocalic position.

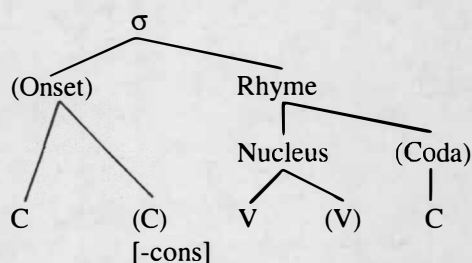
2.4.1.2.5 SYLLABLE STRUCTURE AND AUTOSEGMENTAL SYLLABIFICATION PROCESSES

Now consider the following set of forms:

[lo:ndo]	⇒	[lon-lo:ndo]	you (SG) be running
[ya:mba]		[yam-ya:mba]	you (SG) be scolding
[mbo:no]		[mbon-bo:no]	ironwood seedlings

These all contain prenasalised stops, either in the C₁ or C₂ position and are accounted for by Rule 23 (Nasal Articulation Dissociation), Rule 24 (Squeezed Nasal Deletion), and language-specific and universal constraints for associating the units on the various phonological tiers.

These language-specific constraints for Mangap-Mbula are: 1) at most one consonant plus a glide can be associated with a syllable as its onset, 2) at most a single consonant can be associated with a syllable as its coda, 3) at most two vowels can be associated with a syllable nucleus, and 4) a consonant is permitted to associate with two syllables (i.e. ambisyllabicity is permitted). Schematically, then, the structural possibilities of the Mangap-Mbula syllable can be represented as follows:



In addition to this language-specific syllable structure, more universal constraints, which are listed below, govern the association of elements on different tiers.

- Non-consonants are anchored to V-elements of the CV tier.
- Consonants are anchored to C-elements of the CV tier.
- Free (unassociated) segments are linked with free anchors pairwise from left to right until either no further segments or no further anchors remain.
- Given a string of free anchors remaining after the operation of (c), each anchor is associated with the nearest available segment, giving precedence to the segment on the left.

(Clements and Keyser 1983:63-64)

For consonants, an Onset-first principle constrains syllabification as set out below.

- Syllable initial consonants are maximised to the extent consistent with the syllable structure conditions of the language in question.
- Subsequently, syllable final consonants are maximised to the extent consistent with the syllable structure conditions of the language in question.

(Clements and Keyser 1983:37)

As illustrations of the application of these conventions and principles, consider the following sample derivations for the forms [lonlo:ndo] 'you (SG) be running' and [mbonbo:no] 'ironwood seedlings':

Underlying Form	<p>## l n d o ## [+Redup.]</p>	<p>## mb n o ## [+Redup.]</p>
Nasal Articulation Dissociation	<p>## l n d o ##</p>	-
Resyllabification	<p>## l n d o ##</p>	<p>## mb n o ##</p>
Penultimate Syllable Reduplication	<p>## l n - l n d o ##</p>	<p>## mb n - mb n o ##</p>
Nasal Articulation Dissociation (Second Application)	-	<p>## mb n - m b n o ##</p>
Resyllabification (Second Application)	-	<p>## mb n - m b n o ##</p>
Unsyllabified Segment Deletion	-	<p>## mb n b n o ##</p>
Penultimate Lengthening and Vowel Spreading	<p>## l n - l n d o ##</p>	<p>## mb n - b n o ##</p>

2.4.1.2.6 GEMINATE CONSONANT CLUSTER REDUCTION AND OBSTRUENT VOICING ASSIMILATION

There are two other rules which are evidenced by partial reduplications. The first of these is observed in the following two reduplications:

[-pe:be]	to give birth	⇒	[-pepe:be]
[-ka:ga]	to open	⇒	[-kaka:ga]

According to the analysis proposed thus far, the underlying forms of these items are /-pePe/ and /-kaKa/, and their reduplications should be /-peP-pePe/ and /-kaK-kaKa/. Since the archiphonemes /P/ and /K/ at the end of the reduplication are not intervocalic, they are not voiced by Rule 30 (Morpheme-Final Intervocalic Lenition). Accordingly they emerge as the voiceless phonemes /p/ and /k/. However, since only one of the geminate consonants emerges in the surface forms, there appears to be a further rule of geminate consonant cluster reduction.

Rule 31: Geminate Consonant Cluster Reduction

$$C\alpha C\alpha \Rightarrow C\alpha$$

A second rule is needed to account for reduplications like the following:

[-ba:da]	carry	⇒	[-bad-ba:da]
[-bo:zo]	many	⇒	[-boz-bo:zo]

The underlying forms here are postulated to be /-baTa/ and /-boSo/. By Penultimate Syllable Reduplication, these become /-baT-baTa/ and /-boS-boSo/. In order to produce the surface forms, there must be a further rule of obstruent voicing assimilation, which voices an obstruent contiguous to another voiced obstruent²⁶ in order to yield the surface [db] and [zb] sequences.

Rule 32: Obstruent Voicing Assimilation

$$\begin{array}{c} C \\ | \\ [-son] \end{array} \Rightarrow [+voice] / \%C \quad \left[\begin{array}{c} -son \\ +voice \end{array} \right]$$

Voiceless obstruents adjacent to another voiced obstruent become voiced. The rule applies both morpheme internally and across ordinary morpheme boundaries.

²⁶ The environmental restriction to contiguous voiced *obstruents* is necessary, given reduplications like [me:te] → [met-me:te], [lo:to] → [lot-lo:to], and [pe:ze] → [wes-we:ze], in which voiceless obstruents do not become voiced before voiced *non-obstruents*.

2.4.1.3 SUMMARY LISTING OF MORPHOPHONEMIC ALTERNATIONS EXHIBITED BY REDUPLICATIONS AND SAMPLE DERIVATIONS

At this point, a large number of morphophonemic rules which are evidenced in reduplications have been postulated. With regard to the interactions between rules, see the following summary, in which various rule types are distinguished and ordering restrictions are indicated (note: the minor allophonic spell-out rules of §2.3 are omitted from the listing):

(22) Complete Reduplication

Freely Applying Cyclic Morphophonemic Rules²⁷

- (4) Prefix Epenthesis
- (5) Regressive Vowel Spreading
- (7) Progressive Vowel Spreading
- (24) Nasal Articulation Dissociation (must precede Rule 24: Squeezed Nasal Deletion)
- Autosegmental Reassociation Processes

Partial Reduplication Formation Rules

- (24) Rhyme Reduplication
- (25) Final Syllable Reduplication
- (26) Penultimate Syllable Reduplication

Non-Cyclic Rules

- (1) Penultimate lengthening (must precede Rule 3: Morpheme-Internal Epenthesis)
- (2) Morpheme-Internal Intervocalic Lenitions (must precede Rule 3: Morpheme-Internal Epenthesis)
- (24) Squeezed Nasal Deletion (must apply before Rule 3: Morpheme-Internal Epenthesis)
- (32) Obstruent Voicing Assimilation (must precede Rule 3: Morpheme-Internal Epenthesis, Rule 31: Geminate Cluster Reduction, and Rule 9: B-Lenition)
- (3) Morpheme-Internal Epenthesis (applies iteratively from right to left and must be ordered before Rule 25: W-Swallowing Before U)
- (6) Desyllabification of /i/
- (29) W-Insertion Between Homorganic Vowels
- (30) Morpheme-Final Intervocalic Lenition
- (31) Geminate Consonant Cluster Reduction

Allophonic Rules

- (9) B-Lenition (must follow Rule 3: Morpheme-Internal Intervocalic Lenitions, and Rule 30: Morpheme-Final Intervocalic Lenition)
- (25) W-Swallowing Before U (must follow Rule 29: W-Insertion)
- (10) Velar Assimilation
- (11) Alveolar Palatalisation
- (12) High Vowel Laxing

²⁷ These rules constantly monitor the output of the other phonological rules, and reapply whenever their structural conditions are met. They are assumed to apply once before the reduplications are formed.

- (13) E-Laxing
 (8) Nasal Release (optional)

As examples of the application of these rules, sample derivations are given in Tables 2.6 and 2.7 below.

TABLE 2.6: SAMPLE DERIVATIONS OF MANGAP-MBULA FORMS

Underlying Form ²⁸	-swVro+Red.	-bVPo+Red.	-keS+Red.	-IVndo+Red.	gPo-n
Morphological Spirantisation	-zwVro+Red.				
Complete Reduplication					
Nasal Articulation Dissociation				IV n do	
Autosegmental Reassociation				IV n do	
Partial Reduplication	zwVr-zwVro	bVP-bVPo	keS-eS	IVn-IVn do	
Penultimate Lengthening	zwVr-zwVVro	bVP-bVVPo		IVn-IVVndo	
Morpheme-Internal Lenition		bVP-bVVbo			
Squeezed Nasal Deletion					
Obstruent Voicing Assimilation		bVb-bVVbo			gbo-n
Morpheme-Internal Epenthesis					gVbo-n
Autosegmental Reassociation	zwor-zwooro	bob-boobo		lon-loondo	gobo-n
Desyllabification of /i/					
W-Insertion					
Morpheme-Final Lenition			kez-eS		
Geminate Cluster Reduction		boboobo			
B-Lenition		boboobo			goBo-n
W-Swallowing					
Later rules	[-zworzwo:ro]	[-bo:Bo:Bo]	[-kezεS]	[-lonlo:ndo]	[goBo-n]
	'be stretching'	'be calling'	'be filling'	'be running'	'their ancestor'

²⁸ Note that here archiphonemes are again being notationally distinguished via the device of capital letters.

TABLE 2.7: FURTHER SAMPLE DERIVATIONS

Underlying Form	-ndom+Red.	-bVTa+Red.	-ko+Red.	t-pun+Red.	-pTa
Morphological Spirantisation				t-wun-Red.	
Complete Reduplication	ndom#ndom				
Nasal Articulation Dissociation	ndom#n dom				
Autosegmental Reassociation	ndom n dom				
Partial Reduplication		bVT-bVTa	ko-o	t-wun-un	
Penultimate Lengthening		bVT-bVVTa			
Morpheme-Internal Lenition		bVT-bVVda			
Squeezed Nasal Deletion	ndom# dom				
Obstruent Voicing Assimilation		bVd-bVVda			
Morpheme-Internal Epenthesis				tV-wun-un	pVTa
Autosegmental Reassociation		bad-baada		tu-wun-un	paTa
Desyllabification of /i/					
W-Insertion			ko-wo		
Morpheme-Final Lenition					
Geminate Cluster Reduction					
B-Lenition					
W-Swallowing				tu-un-un	
Later rules	[-ndomdom]	[-badbada]	[-kowo]	[tu\$unun]	[-pata]
	'be growing'	'be carrying'	'be fleeing'	'we (INC) be hitting'	'be heavy'

2.4.2 OTHER MORPHOPHONEMIC ALTERNATIONS EXHIBITED BY VERBS

The second major context in which morphophonemic alternations are observed is the verb. The following Subject agreement and transitivity prefixation occurs on the verb:

<i>aŋ-</i>	1SG Subject
<i>∅-~ ku</i> ²⁹	2SG Subject
<i>i-</i>	3SG Subject
<i>t-</i>	1PL.INC Subject
<i>am-</i>	1PL.EXC Subject
<i>k-</i>	2PL Subject
<i>ti-</i>	3PL Subject
<i>p- ~ pa</i> ³⁰	Causative
<i>m- ~ ma-</i>	Detransitive
<i>par-</i>	Reciprocal

Paradigmatic examples of the Subject prefixes are given below:

<i>/-peT'/</i> 'appear'	<i>/-kaKa/</i> 'open'	<i>/-wulu/</i> 'help'	<i>/-boPo/</i> 'call'	
[aŋ-pet]	[aŋ-ka:ga]	[aŋ-u:lu]	[aŋ-bo:bo]	1SG
[pet]	[-ka:ga]	[-u:lu]	[-bo:bo]	2SG
[i-pet]	[i-ka:ga]	[i-u:lu]	[i-bo:bo]	3SG
[te-pet]	[ta-ka:ga]	[tu-u:lu]	[to-bo:bo]	1PL.INC
[am-pet]	[am-ka:ga]	[am-u:lu]	[am-bo:bo]	1PL.EXC
[ke-pet]	[ka-ka:ga]	[ku-u:lu]	[ko-bo:bo]	2PL
[ti-pet]	[ti-ka:ga]	[ti-u:lu]	[ti-bo:bo]	3PL

As examples of the transitivity deriving prefixes, see the following:

- (1) [-po-mbol]
CAUS-be.strong
encourage, strengthen
- (2) [-pi-tiri]
CAUS-examine
examine carefully
- (3) [-pe-te:ge]
CAUS-hold
hand over to someone for them to hold
- (4) [-pa-ute]
CAUS-know
teach, show, inform about
(Lexically marked as taking *pa-* rather than *p-*)

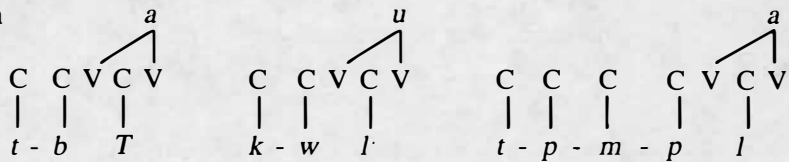
²⁹ The *ku-* second singular Subject prefix is found only in the Gauru dialect. It alternates with *∅*, occurring before all verb stems except for those beginning with /k/ (which take the *∅* variant). The other dialects of the language exhibit only the null second singular prefix.

³⁰ Whether the causative and detransitivising morphemes consist of just a bare consonant or the consonant plus the vowel /a/ is lexically determined by the verb roots with which they co-occur. However, verb roots taking the bare consonant forms are far more frequent.

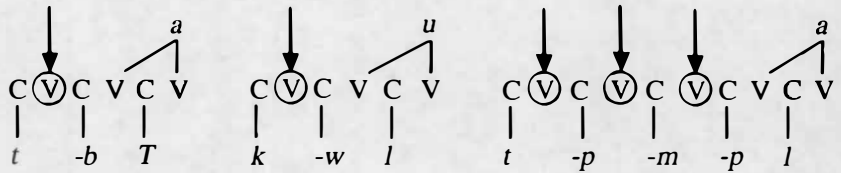
- (5) [-ma-ra:za]
 DETR-tear_{trans}
 tear_{intrans}
- (6) [-mi-liŋ]
 DETR-pour_{trans}
 spill intrans
- (7) [-pa-mi-liŋ]
 CAUS-DETR-pour_{trans}
 accidentally spill something
- (8) [-par-u:lu]
 REC-help
 help each other

The behaviour of verbs containing the single consonant prefixes *t-*, *k-*, *p-*, and *m-* is accounted for by the already motivated rules of: 1) Prefix Epenthesis, and 2) Regressive Spreading of the vowel quality of the first vowel in a verb stem onto the epenthised V elements. Thus, derivations like the following obtain:

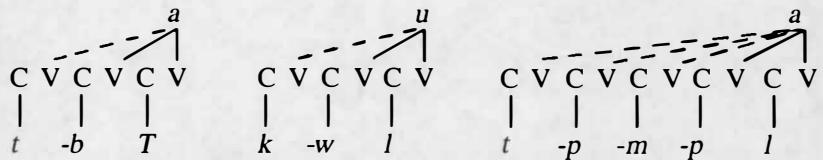
Underlying Form



Epenthesis



Spreading



Other Rules

[taba:da]
 'we (INC) carry'

[ku\$u:lu]
 'you (PL) help'

[tapamapa:la]
 'we (INC) accidentally break'

The above derivations actually conflate two steps. Recall from §2.2.2.3 that, for verb stems beginning with /i/, vowels epenthised following the transitivity prefixes echo the underlying /i/, whereas those epenthised following the Subject prefixes echo the vowel following the /i/. For example:

- [-ya:ra] to shine
 [-yo:to] to go forth

[-pi-ya:ra]	to make shine
[-mi-ya:ra]	to overflow
[-pi-yo:to]	to cause to go forth
[ta-ya:ra]	we (INC) shine
[to-yo:to]	we (INC) come forth
[ti-pi-ya:ra]	we (INC) make shine ³¹
[ti-pi-yo:to]	we INC cause to go forth

No such ambivalence has been observed in verb stems beginning with /w/, which never conditions the quality of epenthised vowels. Compare the above forms with the following set of forms for the verb stem *-win*.

[-win]	to drink
[-pi-win]	to nurse
[ti-win]	we (INC) drink
[ti-pi-win]	we (INC) nurse

To account for the /i/ initial verb stems, we postulate that the transitivity prefixes are added first and the cyclic rules of Prefix Epenthesis and Regressive Vowel Spreading are allowed to apply. Following this, /i/ is desyllabified to /y/. Then the Subject Prefixes are added, and epenthesis and vowel spreading apply again. Sample derivations can be found in §2.2.2.3.

In addition to Prefix Epenthesis and Regressive Spreading, the cyclic rules of Nasal Articulation Dissociation, Squeezed Nasal Deletion, and the non-cyclic rule of Geminate Consonant Cluster Reduction are observed to apply when the Subject prefixes are added to verb stems. Recall that Nasal Articulation Dissociation separates the nasal component of a prenasalised stop off, making it an independent C element which can be reassociated with the syllable tier, while Squeezed Nasal Deletion deletes such separated elements if they occur after a nasal consonant. The following paradigms illustrate the application of these rules to Subject agreement morphology.

/-mbo/	/-mar/	/-ndu/	/-ŋgal/	/-ŋoŋo/	
'stay'	'come'	'cross'	'pierce'	'quarrel'	
[aŋ-bot]	[aŋ-mar]	[aŋ-du]	[aŋ-gal]	[aŋo:ŋo]	1 SG
[mbo]	[-mar]	[ndu]	[ŋgal]	[ŋo:ŋo]	2 SG
[i-mbo]	[i-mar]	[i-ndu]	[i-ŋgal]	[i-ŋo:ŋo]	3 SG
[to-mbo]	[ta-mar]	[tu-ndu]	[ta-ŋgal]	[to-ŋo:ŋo]	1 PL.INC
[am- bot]	[amar]	[am- du]	[am- gal]	[am-ŋo:ŋo]	1 PL.EXC
[ko-mbo]	[ka-mar]	[ku-ndu]	[ka-ŋgal]	[ko-ŋo:ŋo]	2 PL
[ti-mbo]	[ti-mar]	[ti-ndu]	[ti-ŋgal]	[ti-ŋo:ŋo]	3 PL

³¹ Compare, however, the related form [-pa-ya:ra] 'give life to', in which /y/ does not seem to condition the quality of the epenthised vowel. However, this is more probably just an instance of the /pa-/ allomorph of the causative morpheme.

Sample derivations would be:

Underlying Form	<i>aŋ-mbot</i>	<i>am-mar</i>	<i>ti-ŋgal</i>	<i>am-ŋgal</i>
Nasal Articulation Dissociation	<i>aŋ-m bot</i>		<i>ti-ŋgal</i>	<i>am-ŋgal</i>
Squeezed Nasal Deletion	<i>aŋ-bot</i>			<i>am-gal</i>
Geminate Reduction		<i>amar</i>		
Surface Forms	[aŋbot] 'I stay'	[amar] 'we (EXC) come'	[tiŋgal] 'they pierce'	[amgal] 'we (EXC) pierce'

2.4.2.1 APOCOPE

A process of apocope is observed in verbs having the underlying form ... C V α C V α . When the Accusative post-clitics =*i* '3SG' and =*u* '2SG' are added to these verbs, the final vowel of the verb stem is lost, yielding surface forms like [i+wo:]=*i* '3SG+marry=3SG' and [ti+pa+sa:n=u] 'they harm you (SG)'. Contrast these forms with [ti+par+wo:lo zin] 'they intermarry' and [ti+pa+sa:na yam] 'they harm us (EXC)'. The rule of apocope is formulated in:

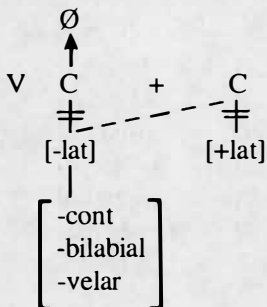
Rule 33: Apocope

$$V\alpha \Rightarrow \emptyset / V\alpha V\alpha C _ = V \#\#$$

2.4.2.2 /t/ AND /l/ CONFLATION

Another process conflates the sequence /t+l/ to [r], deriving forms like [-pera] 'go towards the coast' (from /-pet/ 'appear' + /-la/ 'go') and [-mbore-] 'hang around' (from /-mbot/ 'stay' + /le-/ 'recipient-experiencer').

Rule 34: /T/ and /l/ conflation



2.4.2.3 SYLLABLE REDUCTION IN REDUPLICATIONS AND SYNCOPE

In fast speech, two further processes are observed to apply to verbs: 1) syncope in reduplications of morphemes ending in a final syllable consisting of C (glide) V, and 2) reduction of reduplications of morphemes ending with the sequence prenasalised stop-vowel-stop to a syllabic /n/. The first process yields forms like *z-zu* (< *zu-zu* 'be descending'), *mol-lo* (< *molo-lo* 'long' (of plural entities)), *z-zo* (< *zo-zo* 'be saying'), and

z-zwe (< *zwe-zwe* ‘be revealing’). The second process yields forms like *ŋ-mbot* (< *mbot-mbot* ‘be staying’), *ŋ-ŋgal* (< *ŋgal-ŋgal* ‘be piercing’), and *-mɛŋnder* (< *mender-nder* ‘be standing’). These two rules are late in application, since the complex consonantal clusters produced by them are not simplified by the rules of Prefix Epenthesis, Squeezed Nasal Deletion, or Geminate Cluster Reduction. There is an interesting conflict between Prefix Epenthesis, Squeezed Nasal Deletion, Geminate Cluster Reduction and these two rules. The former act to *simplify* surface syllable structures while these significantly *complicate* them, producing forms like [aŋ-ŋ-bot], ‘I be staying’ and [am-ŋ-gal] ‘we (EXC) be piercing’. These two rules are formulated in the two following rules:

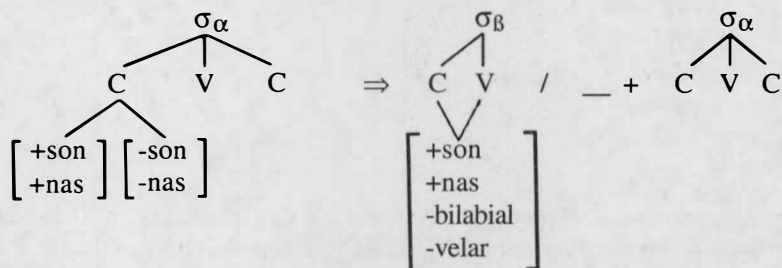
Rule 35: Syncope

$$C\alpha \quad (C) \quad V \Rightarrow C\alpha \quad / _ + \quad C\alpha \quad (C) \quad V \left\{ \begin{array}{l} \# \\ \#\# \end{array} \right\}$$

[-cons] [-cons]

Condition: occurs in fast speech.

Rule 36: Syllable Reduction In Reduplications



Condition: occurs in fast speech.

2.4.3 ALTERNATIONS EXHIBITED BY PRONOUNS (VELAR ASSIMILATION TO /i/)

The next morphological context exhibiting morphophonemic alternations is that of the pronouns.

Tabulated in Table 2.8 are all the pronominal forms occurring in the Yangla Dialect³² of the language. (Recall that = indicates a phonologically adjoined clitic.):

TABLE 2.8: PRONOMINAL FORMS OF THE YANGLA DIALECT

	Nominative	Accusative	Referent ³³	Locative
1SG	<i>nio</i>	<i>yo</i>	<i>pio</i>	<i>tio</i>
2SG	<i>nu~niwi</i> ³⁴	= <i>u</i>	<i>pu~piwi</i>	<i>ku~kiwi</i>
3SG	<i>ni</i>	= <i>i</i>	<i>pini</i>	<i>kini</i>

³² For dialectal variations in the pronouns, see §1.2.5 of the introductory chapter.

³³ The Referent series of pronouns encodes arguments of predications bearing a wide variety of semantic roles. The series is discussed in more depth in §3.2.2.3 of the morphology chapter.

³⁴ The *-iwi* variant appears to be used in more formal contexts by some speakers, while other speakers use the two forms interchangeably.

1DU.INC	<i>ituru</i>	<i>iti ~ =ti</i> ³⁵	<i>piti</i>	<i>kiti</i>
1DU.EXC	<i>niamru</i>	<i>yam</i>	<i>piam</i>	<i>tiam</i>
2DU	<i>niomru</i>	<i>yom</i>	<i>piom</i>	<i>tiom</i>
3DU	<i>ziru</i>	<i>zin</i>	<i>pizin</i>	<i>kizin</i>
1PL.INC	<i>iti</i>	<i>iti ~ =ti</i>	<i>piti</i>	<i>kiti</i>
1PL.EXC	<i>niam</i>	<i>yam</i>	<i>piam</i>	<i>tiam</i>
2PL	<i>niom</i>	<i>yom</i>	<i>piom</i>	<i>tiom</i>
3PL	<i>zin</i>	<i>zin</i>	<i>pizin</i>	<i>kizin</i>

The Yangla Dialect forms are constructed from the following formatives:

Nominative	/n-/
Accusative	/Ø/
Referent	/p-/
Locative	/k-/
1SG	/io/
2SG	/u/ ~ /wi/
3SG	/i/ ~ /ni/
1PL.INC	/ti/
1PL.EXC	/iam/
2PL	/iom/
3PL	/zin/ ~ /zi/
'two'	/ru/

The productive morphological processes evidenced in the pronouns are: 1) Rule 4 (Prefix Epenthesis), 2) Rule 6 (Desyllabification of /i/), and 3) a rule converting /k/ to /t/³⁶ before /i/ at a morpheme boundary. This last rule is formulated below:

Rule 37: Velar Assimilation to /i/

$$\begin{array}{c} \text{C} \\ \left[\begin{array}{l} +\text{back} \\ +\text{velar} \\ -\text{voice} \end{array} \right] \end{array} \Rightarrow \begin{array}{c} / \quad _ \quad + \\ \left[\begin{array}{l} -\text{back} \\ -\text{velar} \end{array} \right] \end{array} + \begin{array}{c} \text{V} \\ \left[\begin{array}{l} -\text{back} \\ +\text{high} \end{array} \right] \end{array}$$

The phoneme /k/ becomes /t/ when it is followed by /i/ at a morpheme boundary. Note that this rule must apply before the allophonic rule which palatalises /t/ to [tʃ] before [i] in order to derive surface forms like [tʃo] '1SG.LOC' (< /kio/) and [tʃam] '1PL.EXC.LOC' (< /kiam/).

2.4.4 ALTERNATIONS EXHIBITED BY FORMS HAVING INALIENABLE GENITIVES (VOWEL ALTERNATION)

Forms with inalienable genitives are the last arena of morphophonemic activity in Mangap-Mbula. Two full paradigms for the Yangla dialect³⁷ are given here:

³⁵ The cliticised *ti* variant is optionally used following verbs that end in a consonant.

³⁶ The /t/ here is phonetically palatalised.

³⁷ For the genitive endings in other dialects, see §1.2.4 of the introductory chapter.

<i>kumbu-ŋ</i>	1SG leg	<i>kuli-ŋ</i>	1SG skin
<i>kumbu-m</i>	2SG leg	<i>kuli-m</i>	2SG skin
<i>kumbu-unu</i>	3SG leg	<i>kuli-ini</i>	3SG skin
<i>kumbu-ndu</i>	1PL.INC leg	<i>kuli-ndi</i>	1PL.INC skin
<i>kumbu-yam</i>	1PL.EXC leg	<i>kuli-yam</i>	1PL.EXC skin
<i>kumbu-yom</i>	2PL leg	<i>kuli-yom</i>	2PL skin
<i>kumbu-n</i>	3PL leg	<i>kuli-n</i>	3PL skin

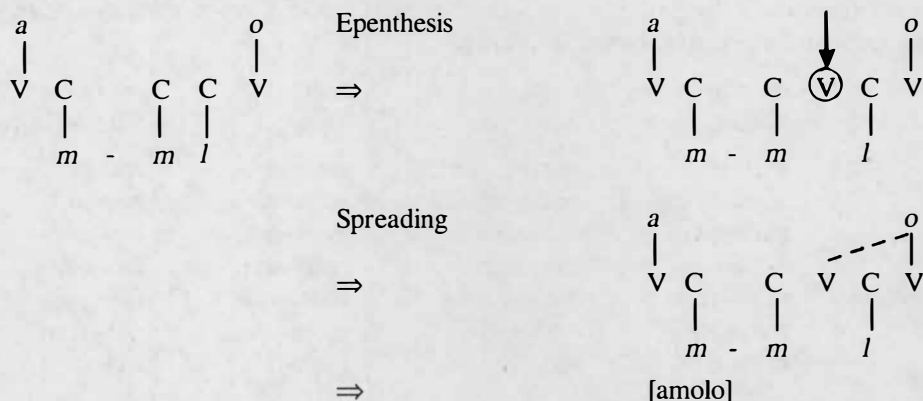
In addition to these full paradigms, consider the following forms:

<i>mata-ana</i>	3SG eye
<i>mata-nda</i>	our (INC) eye
<i>kete-ene</i>	3SG liver
<i>kete-nde</i>	our (INC) liver
<i>kopo-ono</i>	3SG stomach
<i>kopo-ndo</i>	our (INC) stomach
<i>wae-ne</i>	3SG spouse, associate
<i>wae-nde</i>	our (INC) spouse, associate
<i>kwo-ono</i>	3SG mouth
<i>kwo-ndo</i>	our (INC) mouth

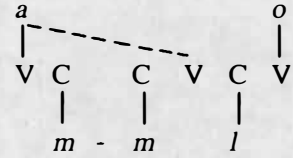
From these examples, the following genitive suffixes can be isolated:

GEN.1SG	-ŋ	
GEN.2SG	-m	
GEN.3SG	-VnV ~ -nV	(with the abbreviated variant occurring following stems ending in two vowels)
GEN.1PL.INC	-ndV	
GEN.1PL.EXC	-iam	
GEN.2PL	-iom	
GEN.3PL	-n	

Once these suffixes are added to a stem, their further modification is accounted for by: 1) Rule 6 (Desyllabification of /i/) and 2) Rule 7 (Progressive Spreading). Note that progressive spreading must apply *after* regressive spreading in order to yield the correct derivations. Consider the form /am-mlo/ '1PL.EXC jump across', which has the following derivation:

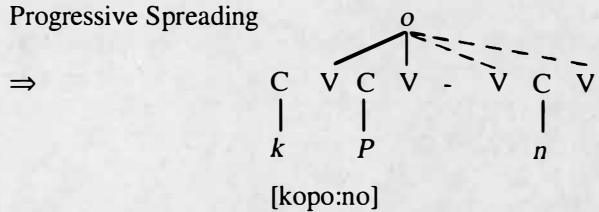
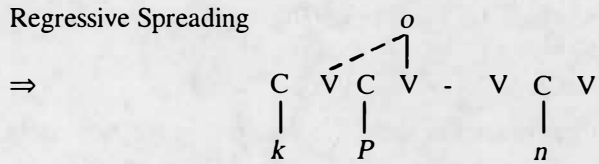
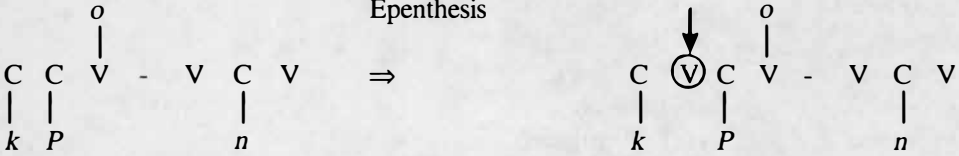


and not



⇒ ****[amalo]**

The form /kPo-VnV/ ‘3SG stomach’ has the following derivation:



Here regressive vowel spreading first applies, specifying the quality of the epenthesised V element before the [o], and then progressive spreading applies to the V elements of the genitive suffix.

One other alternation exhibited by forms having inalienable genitives needs to be discussed. It is a *morphologically conditioned* alternation of the stems. While stems containing the vowels /i, e, u, o/ are invariant in their shape, those containing /a/ exhibit alternations between [a] and [o] like the following:

	<i>tm</i> [a,o] ‘father’	<i>nm</i> [o,a] ‘hand’	<i>mt</i> [o,a]- ‘eye’	<i>iw</i> [a,o] ‘sibling-in-law’
1SG	<i>tama-ŋ</i>	<i>nomo-ŋ</i>	<i>moto-ŋ</i>	<i>iwa-ŋ</i>
2SG	<i>tomo-m</i>	<i>nomo-m</i>	<i>moto-m</i>	<i>iwo-m</i>
3SG	<i>tama-ana</i>	<i>nama-ana</i>	<i>mata-ana</i>	<i>iwa-ana</i>
1PL.INC	<i>tama-nda</i>	<i>nama-nda</i>	<i>mata-nda</i>	<i>iwa-nda</i>
1PL.EXC	<i>tomo-yam</i>	<i>nomo-yam</i>	<i>moto-yam</i>	<i>iwo-yam</i>
2PL	<i>tomo-yom</i>	<i>nomo-yom</i>	<i>moto-yom</i>	<i>iwo-yom</i>
3PL	<i>tama-n</i>	<i>nama-n</i>	<i>mata-n</i>	<i>iwa-n</i>

Note that the only contrast between stems ending in [a, o] and those ending in [o, a] is in the first person singular. Aside from this, the paradigms are identical.

Rule 38: Vowel Alternation

$$V \Rightarrow [+round] / _ + \text{GEN.1SG, GEN.2SG, GEN.1PL.EXC, GEN.2PL} \\ \left[\begin{array}{l} +back \\ -round \end{array} \right]$$

The stems ending in [a] which fail to undergo rounding in the first person singular (here indicated as [a, o]), which are quite few in number, need to be lexically marked as having a deviant first person singular form in [a] rather than [o].

The historical source for this rule almost certainly lies in the form of the Proto Oceanic genitive suffixes. Ross (1988) postulates these as being:

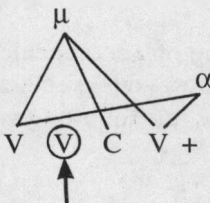
<u>1SG</u>	* -gu
<u>2SG</u>	* -mu
<u>3SG</u>	* -ñā
<u>1PL.INC</u>	* -da
<u>1PL.EXC</u>	* -mami
<u>2PL</u>	* -miu
<u>3PL</u>	* -dra

The underlined person-number categories are the ones that are associated with rounding of [a] to [o] in the Mangap-Mbula rule of Vowel Alternation. Note that in Proto Oceanic three of these ended in /u/, providing a likely source for the process of rounding. A problem arises, however, with the first singular and first plural exclusive protoforms. As postulated, they provide no explanation for: 1) the lack of a round vowel in the irregular Mangap-Mbula first singular forms, and 2) the presence of a round vowel in the Mangap-Mbula first plural exclusive forms. These forms are, therefore, attributed to irregular change. In the case of the irregular first person plural exclusive forms, the source of the change might be an analogical change to make the form *vocalically* similar to the second person plural form, with which it shares a common [y...m] consonantal form.

2.4.5 SUMMARY LISTING OF HIGHER LEVEL SEGMENTAL MORPHOPHONEMIC RULES

This now completes the presentation of the segmental morphophonological rules/alternations. There are, then, in Mangap-Mbula some twenty-four of these alternations. The output after these rules have applied is a form at more or less the classical phonemic level. Such a form would then serve as input to the low-level rules of §2.3. For ease of reference, all of the rules are reproduced below.

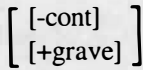
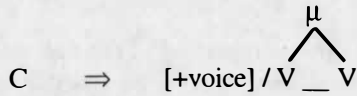
Rule 1: Penultimate Lengthening



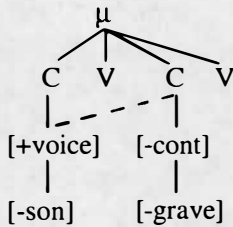
A penultimate vowel is lengthened when it is followed by a single consonant and an identical vowel, all of which are in the same morpheme.

Rule 2: Morpheme Internal Intervocalic Lenitions

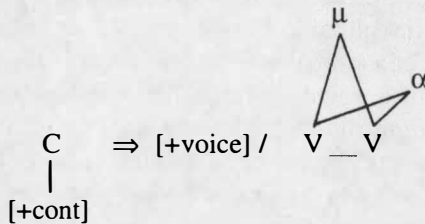
(for /P/ and /K/)



(for /T/)

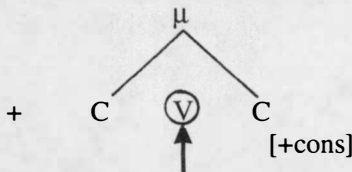


(for /S/)



Oral obstruents which are underlyingly intervocalic become voiced. This is always the case for the archiphonemes /P/ and /K/. /T/ voices intervocalically only when it is also preceded by a voiced *oral* obstruent. /S/ voices only when it occurs between two identical underlying vowels.

Rule 3: Morpheme-Internal Epenthesis



Sequences of two consonants at the beginning of a morpheme, in which the second consonant is not a glide, are broken up by an epenthetic vowel. The epenthesised vowel receives its quality from the first following vowel by Rule 5 (Regressive Spreading).

Rule 4: Prefix Epenthesis

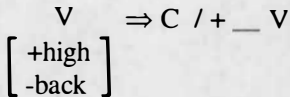


Morphemes consisting of a single consonant and which are adjoined to a following morpheme always have an epenthetic vowel inserted following the consonant. This rule applies cyclically, as often as its structural description is met.

Rule 5: Regressive Spreading



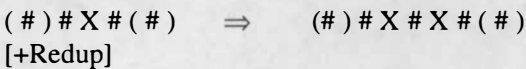
Rule 6: Desyllabification of /i/



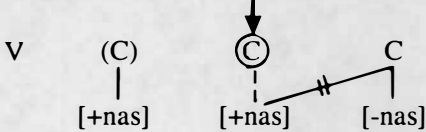
Rule 7: Progressive Spreading



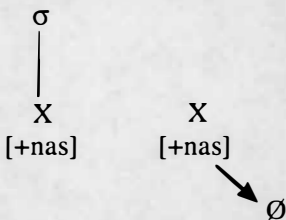
Rule 22: Complete Reduplication



Rule 23: Nasal Articulation Dissociation

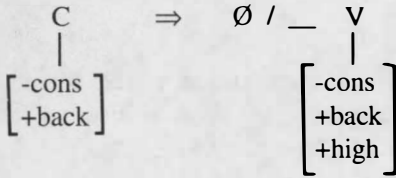


Rule 24: Squeezed Nasal Deletion

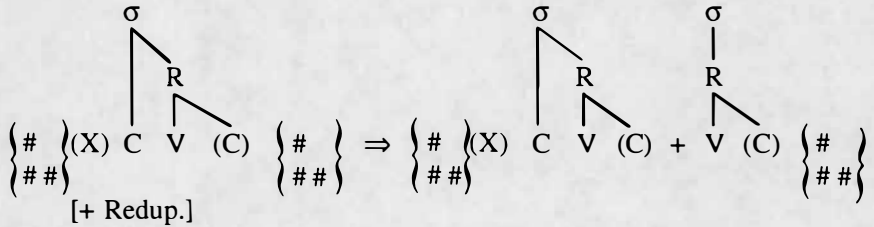


Nasals which are preceded by another nasal segment and are not associated with a syllable are deleted.

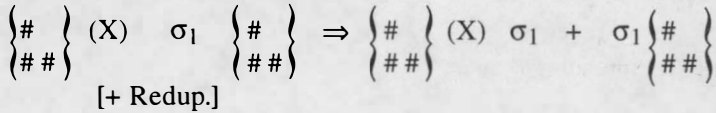
Rule 25: W-Swallowing Before U



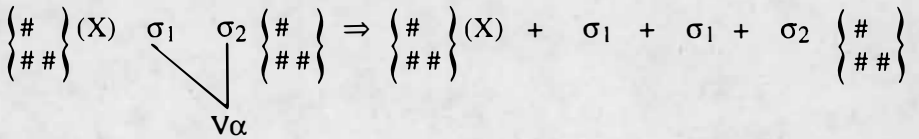
Rule 26: Rhyme Reduplication



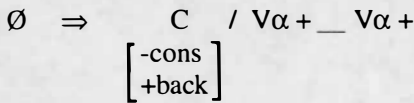
Rule 27: Final Syllable Reduplication



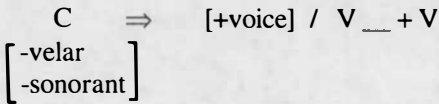
Rule 28: Penultimate Syllable Reduplication



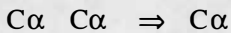
Rule 29: W-Insertion Between Homorganic Vowels



Rule 30: Morpheme-Final Intervocalic Lenition



Rule 31: Geminate Consonant Cluster Reduction



Rule 32: Obstruent Voicing Assimilation

$$\begin{array}{ccc}
 C & \Rightarrow & [+voice] / \%C \\
 | & & | \\
 [-son] & & \left[\begin{array}{c} -son \\ +voice \end{array} \right]
 \end{array}$$

Voiceless obstruents adjacent to another voiced obstruent become voiced. The rule applies both morpheme internally and across ordinary morpheme boundaries.

Rule 33: Apocope

$$V\alpha \Rightarrow \emptyset / V\alpha V\alpha C _ = V \#\#$$

Rule 34: /T/ and /l/ conflation

$$\begin{array}{ccc}
 & \emptyset & \\
 & \uparrow & \\
 V & C & + & C \\
 & \# & \text{---} & \# \\
 & [-lat] & & [+lat] \\
 & | & & \\
 & \left[\begin{array}{c} -cont \\ -bilabial \\ -velar \end{array} \right] & &
 \end{array}$$

Rule 35: Syncope

$$\begin{array}{ccc}
 C\alpha & (C) & V \Rightarrow C\alpha / _ + C\alpha (C) V \left\{ \begin{array}{l} \# \\ \#\# \end{array} \right\} \\
 [-cons] & & [-cons]
 \end{array}$$

Condition: occurs in fast speech.

Rule 36: Syllable Reduction In Reduplications

$$\begin{array}{ccc}
 & \sigma_\alpha & \\
 & / \quad \backslash & \\
 C & & V & & C \\
 / \quad \backslash & & & & / \quad \backslash \\
 \left[\begin{array}{cc} +son & -son \\ +nas & -nas \end{array} \right] & & & & \Rightarrow & \left[\begin{array}{c} \sigma_\beta \\ / \quad \backslash \\ C & & V \\ \left[\begin{array}{c} +son \\ +nas \\ -bilabial \\ -velar \end{array} \right] \end{array} \right. & & / \quad \backslash & + & \left[\begin{array}{c} \sigma_\alpha \\ / \quad \backslash \\ C & & V & & C \end{array} \right.
 \end{array}$$

Condition: occurs in fast speech.

Rule 37: Velar Assimilation to /i/

$$\begin{array}{c} \text{C} \\ \left[\begin{array}{l} +\text{back} \\ +\text{velar} \\ -\text{voice} \end{array} \right] \end{array} \Rightarrow \begin{array}{c} / _ + \\ \left[\begin{array}{l} -\text{back} \\ -\text{velar} \end{array} \right] \end{array} + \begin{array}{c} \text{V} \\ \left[\begin{array}{l} -\text{back} \\ +\text{high} \end{array} \right] \end{array}$$

The phoneme /k/ becomes /t/ when it is followed by /i/ at a morpheme boundary.

Rule 38: Vowel Alternation

$$\begin{array}{c} \text{V} \\ \left[\begin{array}{l} +\text{back} \\ -\text{round} \end{array} \right] \end{array} \Rightarrow [+round] / _ + \text{GEN.1SG, GEN.2SG, GEN.1PL.EXC, GEN.2PL}$$

2.5 SEGMENTAL DISTRIBUTION

2.5.1 CONSONANTS

The following general restrictions are observed with regard to consonant distribution.³⁸

1. Morpheme finally, all obstruent manner contrasts are neutralised. Also, the glide /w/ does not occur. Thus, the only word-final segments occurring in this environment are: /P', T', K', S, m, n, ŋ, l, r/. In the environment

$$_ \left\{ \begin{array}{l} + \text{C} \dots \\ \# \# \end{array} \right\}$$

the archiphonemes /P', T', K', S/ all have voiceless realisations. In the environment $_ + \text{V}$, the archiphonemes /P', T', S/ have voiced realisations.

2. There is a loss of contrast between voiced and voiceless oral stops when they occur in the *underlying* environment $+ \text{C V} _ \text{V} \dots +$. In this environment, only /b/, /g/, and /d/ ~ /t/ occur. The alternation between /d/ and /t/ is conditioned by the preceding consonant. If it is a voiced oral obstruent, then [d] occurs. Otherwise [t] occurs.
3. There is also a loss of contrast between voiced and voiceless oral stops when they occur in the *underlying* environment $+ \text{C} _ \text{V} \dots +$. In this environment, although both voiced and voiceless oral stops occur phonetically, they are in complementary distribution. If the preceding consonant is a voiced oral obstruent, then the voiced stops occur. Otherwise the voiceless ones occur.
4. In the *underlying* environment $\text{V} \alpha _ \text{V} \alpha$, where both vowels are part of the same morpheme, there is no contrast between /s/ and /z/; only /S/ (= [z]) occurs.
5. Morpheme medially, prenasalised stops do not occur following voiced oral or voiced prenasalised stops.

³⁸ Some of these restrictions have already been discussed in §2.2.1.1ff.

2.5.2 VOWELS

Underlying vowels are observed to distribute freely with respect to all underlying consonants. All five vowels may begin morphemes, but morpheme-initial /e/ is observed only in interjections. No verb stem, however, underlyingly begins with a vowel.³⁹

Regarding co-occurrence restrictions in heterorganic vowel clusters, the only non-occurring clusters in the native lexicon are /ea/ and /oa/. Of these, the latter occurs once in the Jâbem term *goloa* ‘congregation’, which is relatively recently borrowed (i.e. this century). In terms of frequency of occurrence, the clusters are ranked as follows:

Cluster	Number of Instances
/ai/	64
/ia/	51
/au/	37
/ou/	29
/ie/	18
/io/	15
/eu/	12
/iu/	12
/ua/	9
/ao/	9
/ei/	8
/oi/	8
/uo/	5
/ae/	4
/ui/	3
/eo/	1
/œ/	1
/ue/	1
/oa/	(only in the Jâbem borrowing <i>goloa</i>)
/ea/	0

The vast majority of heterorganic vowel clusters occur in the final syllables of morphemes. These final syllables may be either open – as in *ɲeu* ‘joke’ and *-rie* ‘to fly’ – or closed – as in *-maol* ‘to be lazy’, and *taun* ‘calm weather’. The only heterorganic clusters which occur morpheme initially are /ai/ (eight instances) and /ao/ (one instance).

2.6 STRESS PLACEMENT

Word-level stress differences are not particularly pronounced in Mangap-Mbula. To the ear, many sequences of syllables seem almost evenly stressed. Slight differences in amplitude can, however, be heard. The placement of stress⁴⁰ is predictable, but several interacting rules are required.

³⁹ See §2.4.1.1.4 for further details.

⁴⁰ Here primary stress is represented by the acute accent (´) and secondary stress by the grave (`).

In most words, primary stress falls on the initial syllable:

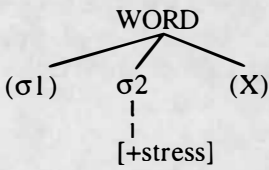
[mólo]	long
[mólolo]	long (of plural objects)
[bá:da]	you (SG) carry
[mútu]	island
[ábal]	mountain
[tómtom]	person
[pósop]	you (SG) finish
[pósopsop]	you (SG) be finishing

The Subject prefixes on verbs, however, are extrametrical: they are ignored for purposes of initial stress assignment. For example:

[aŋbó:bo]	I call
[timénder]	they stand
[tipómbol]	they CAUS-be.strong

This suggests, then, the following rule of Initial Stress Placement:

Rule 39: Initial Stress Placement

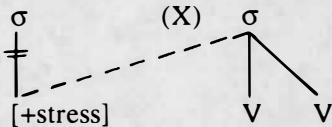


(σ1 = extrametrical subject prefix)

Assuming such a rule, two further stress adjustment rules are required. The first of these adjustments shifts stress to a following vocoid cluster or lengthened vocoid, if one is present. It is evidenced by forms like the following ones:

[kumbú:nu]	3SG leg
[aŋbobó:bo]	I am/was calling
[tomó:to]	man, male
[ikokóu]	3SG be white
[aŋgaráu]	I approach

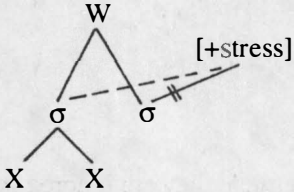
Rule 40: Stress Attraction to Following Vocoid Clusters or Lengthened Vocoids



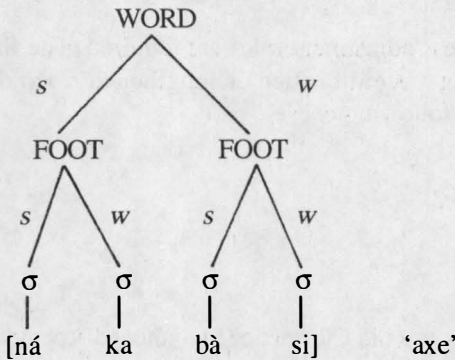
The second adjustment overrides the extrametricality of Subject Prefixes consisting of two phonemes (i.e. all of them except for the third singular prefix *i-*) when they are followed by a verb stem consisting of just a single syllable. It is evidenced by forms like the following ones:

[áṅbot]	I stay
[tíla]	they go
[kóso]	you (PL) say

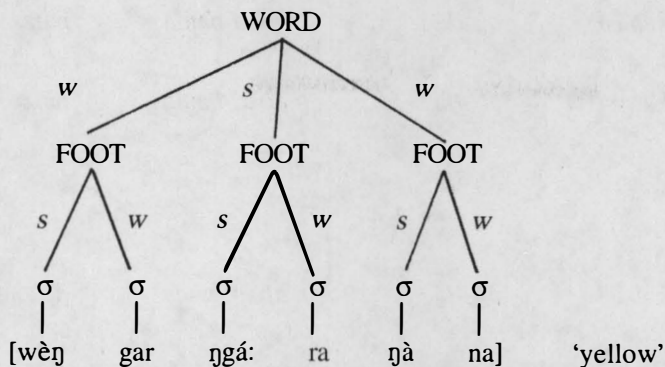
Rule 41: Extrametricality Overriding in Two-Syllable Words



The vast majority of stems in the language are three syllables or less in length and are accounted for by the above three rules. The forms which contain four or more syllables suggest a revision to the rule of Initial Stress Placement. Instead of just assigning stress to the first syllable of a word, syllables of a word are grouped into two syllable rhythmic clusters (termed 'Feet'), beginning with the first syllable⁴¹ of a word (or an internal word, see below) and working towards the right. In every Foot, the first syllable is more prominent and therefore receives a secondary stress. In words of three or more syllables which contain an odd number of syllables, the last Foot is defective, since it will contain only a single syllable. Such defective Feet are not stressed. Among Feet, the penultimate Foot receives the greatest stress. Thus, it is the stressed syllable of a penultimate Foot which receives primary stress. Using a labelled tree structure in which s(trong) represents greater prominence and w(eak) represents lesser prominence, we can represent these more complicated stress patterns as follows:

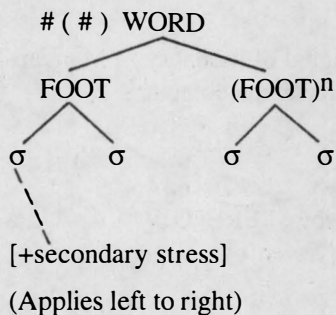


⁴¹ The extrametrical Subject Prefixes are, of course, still ignored.

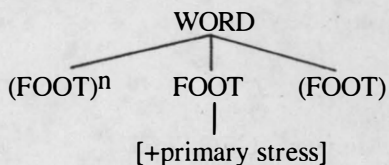


In such representations, a greater number of occurrences of *s* associated with a syllable indicates greater relative prominence of that syllable. The revised account of initial stress placement is formulated in the following two rules:

Rule 42: Foot Creation



Rule 43: Penultimate Foot Stressing



The next set of examples illustrate three further morphological contexts in which secondary stress is observed:

## pá:za# ŋà-na ##	something planted
## pá:za# ŋò-ŋ ##	something I planted
## tí#ré# ì ##	they see him
## tí-kís# kîs ##	they keep holding

These are: 1) the nominalising suffix /-ŋa/, 2) the Accusative pronominal post-clitics =*i* '3SG' and =*u* '2SG', and 3) complete reduplications. All of these are posited to be adjoined with an internal word boundary, because of the secondary stress they trigger.

As illustrations of the interaction between the different stress rules, some sample derivations are given below:

	<i>nakabasi</i>	<i>aŋ #la</i>	<i>ti #bad-ba:da</i>	<i>pa:za #ŋa-na</i>
Foot				
Creation	<i>nàkabàsi</i>	<i>aŋ #là</i>	<i>ti #bàd-ba:da</i>	<i>pà:za #ŋò-ŋ</i>
Extrametricality				
Overriding		<i>àŋ #la</i>		
Penultimate				
Foot				
Stressing	<i>nákabàsi</i>	<i>áŋ #la</i>	<i>ti #bád-ba:da</i>	<i>pá:za #ŋò-ŋ</i>
Stress				
Attraction			<i>ti #bad-bá:da</i>	
	'axe'	'I go'	'they be carrying'	'something I planted'

2.7 INTONATION AND HIGHER LEVEL PHONOLOGY

Intonation is in some instances the only overt signal of modality in Mangap-Mbula. For example, all polar questions exhibit a high-rising intonational contour:

- (9) *Nu la pa Mosbi kek na?*
 NOM.2SG 2SG+go REF Port.Moresby PERF GIV
 You have already been to Port Moresby, haven't you?
- (10) *Nu la pa Mosbi zen na?*
 NOM.2SG 2SG+go REF Port.Moresby NEG.PERF GIV
 You haven't been to Port Moresby yet, have you?
- (11) *Nu la pa Mosbi zen?*
 NOM.2SG 2SG+go REF Port.Moresby NEG.PERF
 Haven't you been to Port Moresby?

Rhetorical questions which are used to express the speaker's doubt of a proposition are encoded with rising-falling contour.

- (12) *Ni ko i-rao?*
 NOM.3SG UC 3SG-able
 Will s/he be (really) able?

Commands, non-polar/information questions, and final clauses in indicative utterances share a low-falling terminal contour. In information questions, the question word is pronounced with elevated pitch and amplitude (indicated here by " "), regardless of its position of occurrence. For example:

- (13) "(Niom) "ka-la "le yom!
 NOM.2PL 2PL-go RECX-GEN.2PL
 You get out of here!
- (14) To ni i-la pa "su.
 then NOM.3SG 3SG-go REF bush
 Then he went to the bush.
- (15) "Asiq i-kam buza "tio?
 who(SG) 3SG-get knife LOC.1SG
 Who took my knife?
- (16) Nu kam "asiq buza kini?
 NOM.2SG 2SG.get who? knife LOC.3SG
 Whose knife did you get?

Note in particular the intonational similarity of positive commands and statements. There is no overt signal of modality in positive commands. Thus, only the context differentiates statements from positive commands. This contrasts with negative commands, where sentence-final adverbs like *pepe* 'prohibitive' and *rimos* 'cessative' serve to overtly signal modality.

In connected discourse, thematic elements, which somehow provide a setting for the remainder of an utterance are typically pronounced with a high pitch on the last word of the phrase and are often followed by a slight pause before proceeding on to the following predication. Note, however, that this pause frequently *follows* any conjunction which links the two elements. Thus, a frequent configuration is:

topical phrase (linking conjunction) (pause) following predication

Compare the following examples (in which '/' indicates the slight pause, and '//' a longer pause).

- (17) Tomtom "taingi / "ni za-ana "Misek.
 person DEM NOM.3SG name-GEN.3SG Misek
 This person, his name is Misek.
- (18) "Neeri / am-kam uraata pa "kopra.
 yesterday 1PL.EXC-do work REF copra
 Yesterday, we did copra work.

- (19) *..ma i-meete. // I-meete maŋ to / ...*
 and 3SG-die 3SG-die after then
 and he died. After he had died, then...

Non-final clauses in indicative utterances are similarly pronounced with rising intonation on their final lexical item. Clauses conjoined with the conjunction *ma* do not, however, exhibit this rising intonation, and *ma* is not normally followed by a pause. Instead, they tend to be pronounced under a single intonational contour with no pauses.

- (20) *To ti-pun=i ma i-meete.*
 then 3PL-hit=ACC.3SG and 3SG-die
 Then they killed him.

This phonological unity of clauses conjoined with *ma* is one of the pieces of evidence in favour of analysing them as cosubordinate predication combinations.

High pitch and extra stress are used to encode emphasis (contrastive or otherwise) on particular words or phrases.

- (21) *Mbulu "ti-na ta ti-kam pa "Yesu.*
 behaviour this-GIV SPEC 3PL-do REF Jesus
 It was THIS way they behaved towards Jesus.

- (22) *Kam ko-ŋ "rais sa*
 2SG.get CON.RECX-GEN.1SG rice some
ma i-mar aŋ-kan.
 and 3SG-come 1SG-eat
 Bring me some RICE to eat. (Nothing else will do.)

A final characteristic of higher level phonology to be noted is that, in phonological phrases terminated by pauses, the last syllable of the phrase is often articulated with a pronounced glottal stop if it is open. For example:

- (23) *Lwoono "ta ? / "nio ? / niam-ŋa-n*
 time SPEC NOM.1SG
 NOM.1PL.EXC-NMS-GEN.3PL

zin me tio "ru ? /
 PL dog LOC.1SG two

niam "tel am-la "su //
 NOM.1PL.EXC three 1PL.EXC-go bush
 One time the three of us, I with my two dogs, went to the bush.

2.8 ORTHOGRAPHY

Throughout the rest of this grammar, a traditional phonemic transcription is used, in order that the pronunciation of the examples will be maximally transparent. Thus, phonetically long vowels are represented as sequences of two vowels, while phonetically short vowels are represented as single vowels, even if these short vowels are really due to epenthesis. Despite the neutralisations and near neutralisations of contrast between the voiced oral stops and their voiceless and prenasalised counterparts, all three series are distinguished in the examples. Similarly, [z] is always distinguished from [s], even though the contrast between the two is neutralised in some environments. The orthographic conventions are given below:

Sound	Symbolisation
[p]	<i>p</i>
[t]	<i>t</i>
[k]	<i>k</i>
[s]	<i>s</i>
[b]~[β]	<i>b</i>
[d]	<i>d</i>
[g]	<i>g</i>
[z]	<i>z</i>
[^m b]	<i>mb</i>
[ⁿ d]	<i>nd</i>
[^ŋ g]	<i>ŋg</i>
[m]	<i>m</i>
[n]	<i>n</i>
[ŋ]	<i>ŋ</i>
[l]	<i>l</i>
[r]	<i>r</i>
[w]	<i>w</i>
[i]	<i>y / +_V</i> <i>i elsewhere</i>
[i:]	<i>ii</i>
[i]	<i>i</i>
[e:]	<i>ee</i>
[e]	<i>e</i>
[a:]	<i>aa</i>
[a]	<i>a</i>
[o:]	<i>oo</i>
[o]	<i>o</i>
[u:]	<i>uu</i>
[u]	<i>u</i>

Samples of the transcription that will be used are given below:

Underlying Form	Transcription	Meaning
/mlo/	<i>molo</i>	long
/mVlo/	<i>moolo</i>	ants
/kndVre/	<i>kendeere</i>	cuscus

<i>/baT-bVTa/</i>	<i>badbaada</i>	be carrying
<i>/am # ndVPe/</i>	<i>amdeebe</i>	we (EXC) cut down
<i>/t # p-m-pVla/</i>	<i>tapamapaala</i>	we (INC) accidentally break
<i>/k # pVSe/</i>	<i>kepeeze</i>	you (PL) paddle
<i>/k # wVlu/</i>	<i>kuuulu</i>	you (PL) help
<i>/kmbu-VnV/</i>	<i>kumbuunu</i>	leg GEN.3SG
<i>/k-io/</i>	<i>tio</i>	my, to me
<i>/boP-bVPo/</i>	<i>boboobo</i>	you (SG) be calling
<i>/pSiS/</i>	<i>pisip</i>	name
<i>/biP-iP'/</i>	<i>bibip</i>	big ones/leaders

CHAPTER 3

WORD CLASSES AND MORPHOLOGY

3.1 INTRODUCTION

Word structure is not an area of great complexity in Mangap-Mbula. Inflection of both nouns and verbs is minimal, and derivational processes are few in number. In the following presentation, the various word classes evidenced in the language are presented and illustrated first; then compounding, derivation, and the functions of reduplication are described.

In accordance with the isomorphism hypothesis that “the natural condition of language is to preserve one form for one meaning and one meaning for one form” (Bolinger 1977:x), an effort is made throughout this chapter to point out partial or complete resemblances in form between lexical items which seem to have some semantic basis. Although some of these hypothesised correlations may ultimately turn out to be unwarranted, it seems better at this stage of investigation to err on the side of correlating too much rather than too little, given the general paucity of knowledge of languages in the area. As the area becomes better described linguistically, it should ultimately be possible to re-evaluate some of these proposed correlations according to the principle that *cross-linguistically recurrent* associations of “etically different” meanings reflect underlying emic unity (Haiman, ed. 1985:26-30).

3.2 WORD CLASSES

Two types of criteria are used for establishing word classes: 1) distributional, and 2) morphological. In the maximally clear instances, both of these will delineate the same sets of items. It is possible, however, that the two may disagree. In such instances, distributional criteria are given greater weight for purposes of classification. Thus, two items which can occur in exactly the same syntactic slots will be assigned to the same class, even though they might exhibit some morphological differences. For instance, we have no hesitation about assigning both alienable and inalienable nouns to the larger class of Noun, even though there is a marked morphological difference between them. This is because their *external* syntax – their distribution in phrases and clauses – is identical.

The major word classes of Mangap-Mbula are:

Nouns

 Nouns having Alienable Genitives

 Nouns having Inalienable Genitives

Pronouns

Verbs

 Inflected

 Uninflected

Adverbs

Quantifiers

- Prepositions
- Demonstratives
- Complementisers
- Conjunctions
- Interjections

Each of these will now be examined.

3.2.1 NOUNS

There is no syntactic distinction between nouns and adjectives in Mangap-Mbula. Nouns are syntactically distinguished by the following three characteristics.

1. They may function *in isolation* (i.e. without any further syntactic modification) as arguments in a predication, a property that distinguishes them from non-inflecting stative verbs. Compare the following two examples:

- (1) *Tomtom/Biibi ko i-mar kaimer.*
 person/big.one UC 3SG-come later
 The leader (lit. person/big one) will come later.
- (2) ***Ambai ko i-mar kaimer.*
 good UC 3SG-come later
 Something good will come later.

Example (2) is ungrammatical because the non-inflecting stative verb *ambai* is being used by itself as a term/argument of a predication.

The following evaluative frame is useful for identifying nouns:

_____ *kini tana, ambai (som).*
 LOC.3SG that be.good NEG
 That _____ of his/hers is (not) good.

2. When functioning as heads of noun phrases, nouns occur phrase initially with all modifiers following:¹

- (3) *man tio bibip ru ta-na*
 bird LOC.1SG big+RED two SPEC-GIV
 those two big birds of mine

¹ Therminated genitives constitute an apparent exception to this generalisation. For example, in an inalienable genitive expression like *nio tama-ŋ* 'I father-my' the ostensible genitive NP *nio* 'I' precedes the head noun *tamaŋ* 'my father'. Alienable genitive constructions, too, exhibit a variant in which the genitive NP precedes the head noun. For example,
Nio aŋ-re me ki Silas.
 NOM.1SG 1SG-see dog LOC Silas
 I saw Silas' dog.
 alternates with
Nio aŋ-re Silas me kini.
 NOM.1SG 1SG-see Silas dog LOC.3SG
 I saw Silas' dog.
 These exceptions are accounted for, however, if we consider the initial 'genitives' as being a kind of pragmatic 'Theme' to the noun phrase. For further details, see §4.2.3.1.1 and §4.2.3.2.1 of the syntax chapter.

3. A subclass of nouns is morphologically distinguished by being obligatorily inflected with a set of genitive suffixes.²

There are eight semantic features of noun referents which are especially important for characterising the morphosyntactic behaviour of Mangap-Mbula nouns. These are:

1. human referent;
2. animate referent;
3. potent (the referent of the noun can be viewed as the ultimate cause of some process which affects another entity);
4. concrete (the noun can potentially refer to a physical location to which, at which, or from which an event takes place);
5. temporal (the noun may be used to delineate the time at which an event takes place);
6. potentially consumable (the referent of the noun can be eaten or drunk);
7. individuated/count (the referent of the noun may be easily separated from its environment and may not be divided without changing its essential nature/character);
8. inalienable genitive (the referent of the item is inherently associated with some other entity).

In addition, a scalar parameter of the prototypical *size* of a noun's referent is relevant for determining whether concrete nouns occurring as oblique arguments are more likely to encode Instruments or Locations. Obviously, nouns like *abal* 'mountain', whose prototypical referents are extremely large, are not likely to encode Instruments.

The morphosyntactic consequences of the first seven of the above features will now be described. The eight feature is addressed in detail in §3.2.1.1.

1. Nouns having *human* referents are distinguished from those with *non-human* ones by WH words. Human referents are questioned using the forms *asiŋ* 'who (SG)?' and *ziŋoi* 'who (PL)?', as in examples (4) and (5), whereas non-human referents, both singular and plural, are questioned with *sokorei* 'what?' as in examples (6) and (7):

- (4) *Nu re asiŋ?*
 NOM.2SG 2SG+see who(SG)
 Who do you see?

*Aŋ-re tama-ŋ / **me / **pat.*
 1SG-see father-GEN.1SG / dog / stone
 I see my father/a dog/a stone.

- (5) *Ziŋoi ti-la?*
 who(PL) 3PL-go
 Who all went?

***Silas /lutu-ŋ bizin ru /zin wal /**pat*
 Silas / child-GEN.1SG plural two /PL group / stone
 Silas/my two children/a group of people/stones

² See §3.2.1.1.

- (6) *Nu re sokorei?*
 NOM.2SG 2SG+see what
 What do you see?

*Aŋ-re **Silas / me / pat.*
 1SG-see Silas / dog / stone
 I see Silas/a dog/a stone.

- (7) *Sokorei ti-pet? : Me ti-pet.*
 what 3PL-appear dog 3PL-appear
 What came? : Dogs came.

(Note that the criterion of plurality is not relevant for the questioning of [-human] nouns.)

2. Nouns having *animate* referents are distinguished from those having *inanimate* ones in two ways, as set out below.

(a) When nouns having animate referents occur in sentence-initial position as marked Themes, they are indexed by a pronoun copy as in example (8). Nouns having inanimate referents which function as marked Themes do not exhibit such indexing, as shown in example (9).

- (8) *Lutu-m, nio aŋ-kam=i mi le-ŋ.*
 child-GEN.1SG NOM.1SG 1SG-get=ACC.3SG and RECX-GEN.1SG
 Your child, I have taken him and he is mine.

- (9) *Lele ku, niam am-ur-pe Ø kek.*
 place LOC.2SG NOM.1PL.EXC 1PL.EXC-put-right PERF
 Your place, we have already straightened it up.

This test reflects a typical (but not obligatory) restriction of pronominalisation to *animate* given referents. *Inanimate*, contextually given referents, on the other hand, are simply omitted.³

(b) Nouns having animate referents and encoding Sites or Goals are *never* governed by the REF(erent) preposition *pa*. Instead, they require the LOC(ative) preposition *ki* as in example (10). Most nouns having inanimate referents, on the other hand, are never governed by *ki* when they encode Sites or Goals. Instead, they take *pa* as in (11).⁴

- (10) *Aŋ-la ki Ibop/me/**pat/**ke.*
 1SG-go LOC Ibop/dog/stone/tree
 I went to Ibop /the dog /the stone /the tree.

- (11) *Nio aŋ-la pa/**ki ke taŋga.*
 NOM.1SG 1SG-go REF/**LOC tree DEM
 I went to that tree over there.

It should be noted here that animacy is a matter of *degree*. The most animate entities are people and quickly moving animals. As one moves towards the lower, less-mobile 'living' creatures (like sea cucumbers), nouns referring to such entities tend to be treated like those referring to clearly inanimate entities such as 'stone' and 'tree'.

³ For an extended treatment of participant reference, see Chapter 6.

⁴ For further discussion of these two prepositions, see §3.2.6.1 and §3.2.6.2.

3. It has just been noted that one of the characteristics of nouns having animate referents is that they may not be governed by the preposition *pa* when they encode Goals or Sites. Nouns having *potent* referents are a *superset* of those having animate referents. They are syntactically distinguished by the fact that they are governed by the preposition *ki* when they encode Sites or Goals. Compare example (10) above with the following one:

- (12) *Aŋ-la ki/pa tai/yok.*
 1SG-go LOC/REF sea/river
 I go to the sea/river.

The two sets of nouns having potent referents and those having animate referents are by and large coextensive. The only forms having simultaneously [-animate] and [+potent] referents are items like *tai* 'ocean', *yok* 'river/water', *miiri* 'wind', and *yenyeenge* 'earthquake', whose referents are able to initiate effects upon other entities even though they lack the capacity for volition. When such items function as Sites or Goals, they may be governed by either *ki* or *pa*, as in example (12) above.

4. Nouns having *concrete* referents are syntactically distinguished by their ability to function as arguments encoding Sites and Goals. Such nouns may occur in answers to questions containing the WH word *swoi* ~ *sugoi* 'where?':

- (13) *Zin ti-la swoi? : Ti-la ki pikin.*
 NOM.3PL 3PL-go where 3PL-go LOC child
ki/pa tai.
 LOC/REF ocean
pa su.
 REF (rain)forest
 ***pa aigule.*
 REF daytime
 ***pa za-ana.*
 REF name-GEN.3SG
 Where did they go? : They went to the child.
 the ocean.
 the forest.
 **the daytime.
 **his name.

All nouns referring to entities which exist in space can express location. It is only the abstract and temporal ones which are excluded.

5. Nouns having *temporal* referents are distinguished by their ability to function as arguments encoding the time at which an event takes place. When they function in this way, they are governed by the preposition *pa*. These are also the only nouns which may occur in answers to questions containing the interrogative word *ŋiizi* 'when?':

- (14) *Nu la ŋiizi? Aŋ-la pa mbeŋ / **woŋgo.*
 NOM.2SG 2SG+go when? 1SG-go REF nighttime / **canoe
 When did you go? : I went at night /**canoe.

6. Nouns having *consumable* referents are distinguished in dative constructions.⁵ Such nouns are semantically compatible with the form *ka-* ~ *ko-*, which indicates that something is received or possessed with the intention that it will be consumed in the imminent future. A second form *le-* is used when items are received or possessed but are not intended for *immediate* consumption. Both *le-* and *ka-* are inflected with the inalienable genitive suffixes.

- (15) *Kam ko-ŋ pin /mok /**nakabasi.*
 2SG+do CON.RECX-GEN.1SG banana /taro / axe
 Bring me a banana/some taro /an axe to eat.
- (16) *Nio ko-ŋ pin /**nakabasi (i-mbot).*
 NOM.1SG CON.RECX-GEN.1SG banana / axe 3SG-stay
 I have a banana/taro/an axe to eat.
- (17) *Ni le buk /nakabasi /woongo (i-mbot).*
 NOM.3SG RCX+GEN.3SG book /axe /canoe 3SG-stay
 He/She has a book/an axe/a canoe.
- (18) *Nio le-ŋ pin be aŋ-rai.*
 NOM.1SG RCX-GEN.1SG banana NF 1SG-distribute
 I have bananas to sell.

Example (18) illustrates that nouns having consumable referents may co-occur with *le-* when there is no intention to consume an item in the immediate future. The topic of genitives is addressed in more depth in §3.2.1.1ff. of this chapter and in Bugenhagen (1986).

7. The semantic distinction between *non-count/non-individuated* nouns and *count/individuated* nouns is necessary to account for certain co-occurrence restrictions between nouns and some quantifiers, especially numerals. Non-count nouns such as *mburu* 'possessions', *su* 'jungle, bush', and *saamba* 'sky' do not occur with numerals in the following frame:

_____ *ta/ru/tel...*
 one/two/three...

Count nouns like *ŋge* 'pig', *pat* 'stone', and *tomtom* 'person' may co-occur with numerals. Many quantifiers are not restrictive in this regard. For example *boozo* 'much, many' and *pakan* 'some, several' may occur with either count or non-count nouns.

Some forms are ambiguous with respect to this distinction of individuation. For example, *yok* has two senses: 1) 'river' and 2) 'the substance water'. In the first sense it is an individuated noun, while in the second sense it is a non-individuated one. The context normally disambiguates between the two senses.

3.2.1.1 NOUNS OBLIGATORILY INFLECTED WITH THE GENITIVE SUFFIXES (INALIENABLE/DIRECT POSSESSION)

Mangap-Mbula, like many Oceanic languages (Lichtenberk 1985:93), exhibits a special sort of genius when it comes to genitive constructions. The most fundamental semantic

⁵ A 'dative construction' is one which either: 1) asserts, denies, questions, or commands an individual's present ownership of some object, or 2) encodes transfer of ownership.

distinction among the different genitive constructions has to do with whether or not the relationship being encoded is inalienable or somehow inherent. This inherency can be formulated as follows:

X-Y GENITIVE SUFFIX

If one thinks about X,
 one will think about something else (=Y).
 I think you know who/what Y is.⁶

Nouns which are obligatorily⁷ inflected with the genitive suffixes are semantically inalienable; that is they have these components in their meanings. Note in particular the last component, which is intended to convey the fact that the genitive entity is always contextually *given*. The genitive suffixes can, therefore, be viewed as a kind of morphologically bound pro-form.

Recall from the phonology chapter⁸ that the forms of the genitive suffixes which are added to nouns are:

-ŋ	GEN.1SG	
-m	GEN.2SG	
-VnV	GEN.3SG	(V represents a vowel homorganic to the final vowel of an inalienable noun root. If the root ends in a vowel cluster, the first of the homorganic vowels in the suffix is not present.)
-ndV	GEN.1PL.INC	
-yam	GEN.1PL.INC	
-yom	GEN.2PL	
-n	GEN.3PL	

Before going into further details about the Mangap-Mbula inalienable genitives, we first recapitulate some of Lichtenberk's (1985) study of Oceanic possessive constructions, because it provides a convenient terminological framework for discussing genitive

⁶ This paraphrase/explication of the meaning of the inalienable genitive construction using a controlled lexicon of semantically basic lexical items like *I*, *think*, *you*, and *know* is based upon an approach to semantics developed by Anna Wierzbicka. For arguments advocating this approach, see Wierzbicka (1980) Chapter 1 and Wierzbicka (1988) Introduction.

⁷ There are a handful of forms which appear to occur both with and without genitive morphology. Cf. /mta-/ 'eye' and /mat/ 'light', /spji-/ 'blood' and /siŋ/ 'blood relative', /ru-/ 'leaf, fur, hair' and /ro/ 'a leaf of tobacco or piece of paper money'. Note, however, that the non-inflected forms are usually slightly different in both form and meaning. For the vast majority of nouns having inalienable genitives, there are no such corresponding non-inflected forms. Given this fact of obligatory inflection, one might wonder how speakers refer to unpossessed referents of such nouns. What one does is to use a generic possessor. For example, to refer to a branch, one would say *ke namaana* 'tree its-hand', and to refer to a leg, one would say something like *koron kumbuunu* 'thing its-leg', *mbili kumbuunu* 'domestic animal its-leg' or *tomtom kumbuunu* 'person his/her-leg'.

⁸ Section 2.4.4 of the phonology contains a number of complete paradigms of nouns having inalienable genitives.

constructions.⁹ Lichtenberk (p.95) delineates three types of possessive constructions for Oceanic languages. These, along with their constituent elements, are given below.

Direct	{ Possessed, Possessor }
Indirect	{ Possessed, Possessor, Classifier }
Prepositional	{ Possessed, Possessor, Preposition }

Possessive classifiers express different types of relationship between the possessed and possessor and are defined (p.96) as follows:

A classifier is a form that appears in a possessive construction in addition to the possessed and the possessor, and carries a possessive affix or stands in some more or less well-defined semantic opposition to at least one other such form.

Two of the classifiers Lichtenberk reconstructs for Proto Oceanic are **na* 'general classifier' and **ka* 'food/subordinate'. Subordinate here refers to "actions over which the possessor has no control (where he is the patient, target, or involuntary experiencer)" (Pawley 1973:162). Ross (1988:186) postulates another general possessive classifier for the North New Guinea Cluster: **le*.

In Mangap-Mbula there are clearly cognate forms for the classifiers: *le-* and *ka-*. In this grammar, however, these Mangap-Mbula forms are analysed as inalienably possessed *nouns* and not as a distinct, 'classifier' part of speech. 'Indirect possessive constructions' in Mangap-Mbula are analysed as instances of a syntactic construction which we term a 'noun complex'. This construction consists of sequences of juxtaposed nouns, in which each subsequent noun serves to further restrict the reference of the head noun.¹⁰ We examine the senses of these forms in detail in other sections, but it will be noted here that, like Lichtenberk's **ka*, the Mangap-Mbula *ka-* has two senses: *ka*₁ 'food', and *ka*₂ 'subordinate or passive relationships'.

Returning now to 'direct' possession, Lichtenberk notes that in direct possessive constructions, the possessor may be realised by a possessive affix, a separate word, or both. Direct possessive constructions in Oceanic languages are said (p.104) to typically express the following semantic categories:

- (a) part-whole relations
- (b) kinship relations
- (c) spatial relations
- (d) the concept of 'alone', emphatic '-self'
- (e) the actor or patient in nominalisations
- (f) physical and mental states or attributes

Mangap-Mbula is a typical Oceanic language, since nouns occurring in direct genitive constructions commonly express the following semantic relationships:

⁹ Note that Lichtenberk's term 'possessive' corresponds to the term 'genitive' in this grammar. He notes (p.94) that "A possessive construction may or may not express true possession." It is because of the ambiguity between the semantic sense of the term possession and its use as morphosyntactic category label that the term genitive is preferred in this grammar as a categorial label.

¹⁰ For further details regarding noun complexes, see §4.2.2.

- (a) kinship relationships which are assumed to be part of everyone's personal experience;
- (b) part-whole relationships in which the part: 1) does not normally have a prior existence apart from the whole, and 2) does not normally become spontaneously detached from the whole;
- (c) spatial relationships. Crowley (1991:30) describes the link between part-whole relationships and spatial ones as follows:

The semantic connection between these [position] relationships and part-whole constructions is also fairly clear, as the position that is referred to cannot be expressed except as part of something else. Thus, an 'edge', for example, cannot exist except as the edge of something.

The inalienable kin terms in the language are listed below:

<i>gobo-</i>	remote ancestor
<i>tumbu-</i>	grandrelative
<i>n[a,o]-</i> ¹¹	mother, aunt
<i>t[a,o]m[a,o]-</i>	father, paternal uncle
<i>wo-</i>	maternal uncle, a man's sister's child
<i>to-</i>	older sibling or cousin
<i>tizi-</i>	younger sibling or cousin of the same sex
<i>lu-ri</i>	younger sibling or cousin of the opposite sex
<i>lutu-</i>	child, nephew, niece
<i>kusi- ~ wae-</i> ¹²	spouse
<i>iw[a,o]-</i>	siblings-in-law
<i>rwo-</i>	parents-in-law, son-in-law, daughter-in-law

A few of the more distant or less common interpersonal relationships, which are not necessarily personally experienced by most people, are not encoded by direct genitive constructions. Instead, they are encoded by noun complex constructions¹³ headed by the inalienable nouns *le-* and *ka₂-*.¹⁴ *Le-* is used when the relationship is viewed as being beneficial, while *ka₂-* is used when the relationship is viewed as being somehow unfortunate. Examples of interpersonal relationships being encoded in this way can be found in §3.2.1.3-4.

Inalienable kinship nouns are distinguished from other animate nouns by exhibiting a unique plural encoding. Most animate nouns are explicitly pluralised by *preposing* a form identical to the third person plural pronominal form *zin*:

¹¹ The [a,o] here is used to indicate that this form has an irregular first person singular form ending in /a/ rather than /o/. Recall that all nouns having inalienable genitives and containing the phoneme /a/ exhibit a morphologically conditioned alternation between /a/ and /o/. For details, see §2.4.4.

¹² Although both forms are used to refer to one's spouse, only *kusi-* obligatorily means 'spouse'. The form *wae-*, on the other hand, can be used to refer to any close associate. *Wae-* is frequently used, however, to refer to one's spouse because of the taboo sexual connotations of the term *kusi-*.

¹³ Noun complexes are treated in §4.2.2.

¹⁴ *Ka₂-* is to be distinguished from the form *ka₁-*, which is used to encode entities that are intended for immediate consumption. For further details, see §3.2.1.3 and §3.2.1.4.

- (19) *Zin pikin ti-loondo.*
 PL children 3PL-run
 The children ran.

However, inalienable kinship nouns are pluralised by *postposing* the form *bizin*:

- (20) *Tomo-yam i-mar.*
 father-GEN.1PL.EXC 3SG-come
 Our father came.
- (21) *Tomo-yam bizin ti-mar.*
 father-GEN.1PL.EXC PL 3PL-come
 Our fathers came.

Inalienable kin terms and personal names are the only forms which co-occur with *bizin*. In the case of personal names, *bizin* functions collectively, indicating a group of people closely associated with named person. Thus, an expression like *Silas bizin* is used to refer to Silas' immediate family, household, or some other group of people very closely associated with him. Other inalienable nouns do not co-occur with this form; they are either mass nouns (and thus cannot be pluralised), or are pluralised by explicit quantifiers or reduplication.

A list of the most common inalienable nouns which occur in direct genitive constructions and encode part-whole relationships is given below:

<i>bege-</i>	armpit, wing
<i>beze-</i>	pith inside breadfruit
<i>ndeme-</i>	back
<i>ni-</i>	being, euphemism for sexual organs
<i>ɲuzu-</i>	back of neck
<i>ɲono-</i>	body, fruit, truth
<i>tiro-</i>	bone
<i>zuzu-</i>	breast
<i>mbule-</i>	buttocks
<i>paŋa-</i>	cheek
<i>keze-</i>	chin
<i>puke-</i>	collarbone
<i>mbasaŋa-</i>	crotch
<i>talŋa-</i>	ear
<i>mata-</i>	eye
<i>kere-</i>	face
<i>sisira-</i>	dorsal/anal fin of a fish, dander of a cat
<i>maza-</i>	flesh, meat
<i>ndomo-</i>	forehead
<i>zoŋo-</i>	fork of a tree
<i>rumu-</i>	fur
<i>kusu-</i>	gall bladder
<i>ru-</i>	hair, leaf, feather ¹⁵

¹⁵ The form *ru-* is used for most feathers of birds. Large tail feathers which are used for decorations, however, are expressed using a noun complex construction headed by *ka-*, e.g. *man ka iili* 'the tail feathers of the bird'.

<i>ki-</i>	handle, stem of sago frond
<i>nama-</i>	hand, arm
<i>ute-</i>	head
<i>lele-</i>	insides
<i>mbuku-</i>	joint
<i>kumbu-</i>	leg, foot
<i>zuru-</i>	lip
<i>kete-</i>	liver
<i>kwo-</i>	mouth
<i>leke-</i>	nape of the neck
<i>puo-</i>	nut, flower
<i>kuku-</i>	(finger/toe)nail
<i>pese-</i>	navel
<i>kuzu-</i>	nose
<i>paka-</i>	part of something divided along its long axis
<i>suru-</i>	part of something divided across its long axis
<i>kuti-</i>	penis
<i>ngauli-</i>	scale of a fish
<i>iwe-</i>	seed
<i>rege-</i>	shoulder
<i>gili-</i>	side
<i>zilŋa-</i>	side, edge
<i>kuli-</i>	skin
<i>kopo-</i>	stomach
<i>wi-</i>	tail
<i>lembe-</i>	testicle
<i>suki-</i>	thigh
<i>ngure-</i>	throat
<i>mia-</i>	tongue
<i>zoŋo-</i>	tooth
<i>lwo-</i>	torso, trunk of a tree
<i>kende-</i>	vagina
<i>sili-</i>	waist

A number of other body parts are indicated by embedded direct genitive constructions containing two of the above body-part terms, or a body-part term plus a kin term. For example:

<i>nama-ngureene</i>	wrist (lit. throat of hand)
<i>nama-mbukuunu</i>	elbow (lit. joint of hand)
<i>kumbu-mbukuunu</i>	knee (lit. joint of leg)
<i>nama-naana</i>	thumb (lit. mother of hand)
<i>kumbu-naana</i>	big toe (lit. mother of leg)
<i>nama-lutuunu</i>	finger (lit. child of hand)
<i>kumbu-lutuunu</i>	toe (lit. child of leg)
<i>nama-keteene</i>	palm (lit. liver of hand)
<i>kumbu-keteene</i>	sole of foot (lit. liver of leg)
<i>nama-ndemeene</i>	back of hand

nama-kukuunu fingernail
nama-lwoono forearm (lit. torso of arm)

- (22) *Kumbu-ŋ mbuku-unu i-kam kuruk.*
 leg-GEN.1SG joint-GEN.3SG 3SG-do spraining
 My knee is sprained (lit. the joint of my leg is sprained).

As is the case with some kin terms, there are some body parts which are encoded not by a direct genitive construction, but by a noun-complex construction headed by the form *ka-*. For examples and discussion, see §3.2.1.4.

Body-part nouns occurring in direct genitive constructions are also used to convey many spatial notions:

- (23) *Silas i-mbot ruumu lele-ene.*
 Silas 3SG-stay house insides-GEN.3SG
 Silas is inside the house.
- (24) *Lup-ŋ-ana i-pet kar kete-ene.*
 meet-NMS-GEN.3SG 3SG-appear village liver-GEN.3SG
 The meeting is taking place in the centre of the village.

The principal body-part nouns having spatial extensions to their meanings are:

Term	Body-Part meaning	Spatial Extension
<i>ndeme-</i>	back	behind
<i>mata-</i>	eye	in front of, in the presence of
<i>kere-</i>	face	in front of, in the presence of
<i>ute-</i>	head	on top of solid objects
<i>lele-</i>	insides	inside
<i>kete-</i>	liver	flat area in the center of some location
<i>kwo-</i>	mouth	entrance, opening
<i>zilŋa-</i>	side, edge	beside, along
<i>kuli-</i>	skin	on the surface of liquids
<i>lwo-</i>	torso	middle

There are four nouns which occur in direct genitive constructions and express only spatial relationships:

muri place, position
lukutu- in the center of
mazwa- between
mbarma- underneath

Most bodily products are expressed using inalienable nouns. Examples of this are: *tie-* 'faeces', *mbasiri-* 'urine', *kuzi-* 'scent', *mbuŋi-* 'any bodily product', *siŋi-* 'blood', *lulu-* 'tears', *kauzi-* 'saliva which is no longer located near the mouth', and *si-* 'fart'. Compare, however, *ka-toptoobo* 'saliva in or near the mouth' and *ka-uze* 'sweat', in which bodily products are expressed using a noun-complex construction.

Some other, less easily classifiable, inalienable nouns occurring in direct genitive constructions are listed below:

<i>kalŋa-</i>	voice, language, sound
<i>ku(i)nu-</i>	soul, shadow, image
<i>toro-</i>	close associate
<i>swo-</i>	life span
<i>mbuŋi-</i>	luck
<i>buga-</i>	obligation
<i>za-</i>	name, namesake, authority, reputation
<i>kado-</i>	price, equivalent
<i>uru-</i>	reputation, report
<i>u-</i>	source/origin, reason, base
<i>mbura-</i>	strength, power

The remaining forms obligatorily taking the genitive suffixes are:

1. the nominalising suffix *-ŋa*
2. the two recipient-experiencer nouns *le-* and *ka₁-* and the passive genitive noun *ka₂-*
3. the reflexive-emphatic pronoun *itu-* 'self'

A paradigmatic example of the inflection of *-ŋa* can be found in §3.4.2.1 of this chapter. Paradigms of the other three forms are given below:

	Reflexive-Emphatic	Recipient-Experiencer Nouns	
		Item Intended for Immediate Consumption	Item Not Intended for Immediate Consumption
		(also Passive Genitive)	
1SG	<i>ituŋ</i>	<i>koŋ</i>	<i>leŋ</i>
2SG	<i>itum</i>	<i>kom</i>	<i>lem</i>
3SG	<i>itunu</i>	<i>ka(na)</i>	<i>le(ne)</i>
1PL.INC	<i>itundu</i>	<i>kanda</i>	<i>lende</i>
1PL.EXC	<i>ituyam</i>	<i>koyam</i>	<i>leyam</i>
2PL	<i>ituyom</i>	<i>koyom</i>	<i>leyom</i>
3PL	<i>zitun~ditun</i>	<i>kan</i>	<i>len</i>

Note that the paradigms of these forms differ slightly from those of most inalienable nouns. Here, the third person singular forms either have no affixation (\emptyset) or *-nV* rather than *-VnV*. Each of these three forms has a significant role to play in the syntax of Mangap-Mbula and therefore will receive its own discussion.

The next topic to be addressed is a more detailed examination of the reflexive-emphatic, recipient-experiencer, and passive genitive forms.

3.2.1.2 REFLEXIVE-EMPHATIC NOUNS HAVING INALIENABLE GENITIVES (*itu-*)

These forms are based on the stem *itu-* 'self'. The third person plural stem is irregular, however, alternating between *zitu-* and *ditu-*:

- (25) *Ni i-taara itu-nu.*
 NOM.3SG 3SG-cut REFL-GEN.3SG
 He/she cut himself/herself.
- (26) *Nio aŋ-kilaala itu-ŋ.*
 NOM.1SG 1SG-recognise REFL-GEN.1SG
 I realise what I am like.

It is not a categorial requirement that the reflexive-emphatic forms be used whenever there is co-reference with the Subject. There are a number of ‘middle’ predicates which require their Objects to be co-referential with their Subjects. The Objects of these predicates always occur in the *Accusative* case. A sentential example of one such predicate is given here:

- (27) *Aŋ-lu yo su-la yok.*
 1SG-propel ACC.1SG descend-go water
 I jumped into the water (lit. I propelled myself into the water.)

For further details regarding these middle predicates, see §6.6.2.

The reflexive-emphatic nouns, then, are used to *emphasise*¹⁶ participants who are co-referential with the Subject or a genitive NP modifying the Subject. For example:

- (28) *Nio itu-ŋ ta na, aŋ-rao pa uraata som.*
 NOM.1SG REFL-GEN.1SG SPEC GIV 1SG-able REF work NEG
 By myself, I can’t do the job.
- (29) *Ko-ŋ miaŋ pa itu-ŋ.*
 PASS.GEN-GEN.1SG shame REF REFL-GEN.1SG
 I am ashamed of myself.
- (30) *Niom itu-yom men ko-yom*
 NOM.2PL REFL-GEN.2PL only CON.RECX-GEN.2PL
mba? Niam tomini.
 fruit.tree NOM.1PLE.EXC too
 Are *you* the only ones who have fruit trees? We have them too.
- (31) *Koroŋ kini i-la ki itu-nu.*
 thing LOC.3SG 3SG-go LOC REFL-GEN.3SG
 His things should go to *him* (not to someone else).

The reflexive-emphatic forms are necessarily co-referential with all prototypical Subjects (i.e. Agent-Topics). In body-image constructions the ostensible *genitive* noun phrase controls reflexivisation:

- (32) *Nio itu-ŋ lele-ŋ ma aŋ-so.*
 NOM.1SG REFL-GEN.1SG insides-GEN.1SG and 1SG-say
 I said it because I wanted to. (It was my own desire; no one else made me.)
- (33) *Moto-m i-ŋgal itu-m.*
 eye-GEN.2SG 3SG-pierce REFL-GEN.2SG
 Consider yourself./Watch yourself.

¹⁶ The nature of this emphasis is described in §6.6.2.

In actuality, the 'genitive' NP in these examples is not a nominal modifier but rather has ascended to become the Subject NP of a complex predicate consisting of the body part plus a following verb, should one be present.¹⁷

3.2.1.3 RECIPIENT-EXPERIENCER NOUNS HAVING INALIENABLE GENITIVES (*le* AND *ka*₁) (INDIRECT POSSESSION)

The two Recipient-Experiencer nouns *le-* and *ka*₁-,¹⁸ which are glossed in this grammar as REC(ipient-E)X(periencher) and CON(sumable) REC(ipient-E)X(periencher) occur in indirect possessive constructions and usually indicate some sort of ownership relationship. Recall, however, that sequences of *le/ka* plus a noun are being analysed here simply as a tight sequence of juxtaposed *nouns*. Such sequences are termed noun complexes and are described in §4.2.2.

In transitive clauses, the forms *le-* and *ka-* are used to encode a participant *to whom* an item is in the process of being transferred:

- (34) *Am-po le-yam saŋarai*
1PL.EXC-tie RECX-1PL.EXC.GEN temporary.house

i-se Karapo kek.
3SG-ascend Karapo PERF

We have built ourselves a temporary house in Karapo.

- (35) (*Kam*) *ko-ŋ pin sa i-mar.*
2SG+do/get CON.RECX-GEN.1SG banana NON.REF 3SG-come

Bring me some bananas to eat.

(Note: often the verb *-kam* is omitted in requests that something be brought.)

Recipient-Experiencers are always animate and may or may not be co-referential with the entity initiating the transfer process. The forms *le-* and *ka*₁- are differentiated according to whether or not the item being transferred is intended for consumption. *le-* encodes Recipient-Experiencers of entities not intended for consumption, while *ka*₁ encodes Recipient-Experiencers of entities which are intended for consumption.

Regarding example (35), it can be noted that there is no lexical verb 'to give' in the language. The notion of 'give' is expressed by a causative construction with the verb *-kam* 'do/get' and the Recipient-Experiencer nouns *le-* and *ka-*.

Some of the more distant kin relationships which are not assumed to be personally experienced by everyone and which are viewed as being beneficial are also expressed by noun-complex constructions headed by the form *le-*. These are listed below:

- (36) *le-ŋ saaza*
RECX-GEN.1SG great.grandrelative
my great-grandparent/grandchild

¹⁷ See §4.7 for further details about the syntax of body-image constructions.

¹⁸ The form /ka-/ alternates morphologically with /ko-/. See §2.4.4 of the phonology chapter for details.

- (37) *le-m keruunu*
 RECX-GEN.2SG great.great.grandrelative
 your great-great-grandparent/grandchild
- (38) *le mbor*
 RECX+GEN.3SG man.married.to.the.sister.of.his.brother's.wife
 the man who married his brother's wife's sister
- (39) *le-m tamori*
 RECX-GEN.2SG more.distant.female.cousins
 your more distant female cousins (upon whom you can count for help)
- (40) *le-m tomooto*
 RECX-GEN.2SG male
 your male second cousins (upon whom you can count for help)

3.2.1.4 PASSIVE/SUBORDINATE GENITIVES (*ka*₂)

We now turn our attention to another, very different type of relationship expressed by noun complexes headed by the form /*ka*-. This is the so-called 'passive' or 'subordinate' genitive relationship. The referents of passive genitives are usually (but not necessarily) non-human and very often inanimate. The key semantic characteristic of passive genitives is that they encode relationships which are not brought about by wilful action on the part of the genitive NP referent. Passive genitives are used to encode a number of different types of relationships. These will now be illustrated under (a) - (h) below.

(a) Non-human datives-benefactives:

- (41) *Nangaj ti-po man ka-n ruumu.*
 young.man 3PL-build bird PASS.GEN-GEN.3PL house
 The young men built a house for the birds.

(b) Cause/source/reason:

- (42) *Ni ka u-unu toro.*
 NOM.3SG PASS.GEN+GEN.3SG reason-GEN.3SG other
 It has another reason.

(c) Parts of complex manufactured items like canoes and houses, which had existence prior to their incorporation in the manufactured item (note: Crowley (1991:28-29) describes a similar function for Paamese linked nouns):

- (43) *ruumu ka kataama*
 house PASS.GEN+GEN.3SG door
 door of a house
- (44) *ruumu ka kitiimbi*
 house PASS.GEN+GEN.3SG post
 house posts
- (45) *wooggo ka saama*
 canoe PASS.GEN+GEN.3SG outrigger
 outrigger of a canoe

- (46) *woŋgo ka teke*
 canoe PASS.GEN+GEN.3SG outrigger.pole
 outrigger pole of a canoe
- (47) *woŋgo ka pedede*
 canoe PASS.GEN+GEN.3SG outrigger.peg
 outrigger peg of a canoe
- (48) *woŋgo ka kaata*
 canoe PASS.GEN+GEN.3SG platform
 canoe platform

The form *korŋga-*, a nominalisation of *korŋ* 'thing', is used in noun complex constructions with *ka-* as a general term for 'part'.

- (49) *Ina ka korŋ-ŋa-na boozo*
 that.one PASS.GEN+GEN.3SG thing-NMS-GEN.3SG many
 That has many parts.

(d) Some internal body parts which are only infrequently referred to:

- (50) *ko-ŋ siel*
 PASS.GEN-GEN.1SG pieces.of.wood.in.houses.to.which.thatching.is.attached
 my ribs
- (51) *ko-ŋ mooto*
 PASS.GEN-GEN.1SG snake
 my backbone
- (52) *ko-ŋ lolot*
 PASS.GEN-GEN.1SG lungs
 my lungs
- (53) *ko-ŋ wer*
 PASS.GEN-GEN.1SG spleen
 my spleen
- (54) *ka ipip*
 PASS.GEN+GEN.3SG kidneys
 his/her kidneys

(e) Some parts of plants. Many parts of the coconut, which are culturally highly salient because they are so useful, are expressed in this way:

- (55) *ni ka korkooro*
 coconut PASS.GEN+GEN.3SG bud
 coconut embryo
- (56) *ni ka mbooro*
 coconut PASS.GEN+GEN.3SG shell
 coconut shell
- (57) *ni ka kupunpun*
 coconut PASS.GEN+GEN.3SG husk
 coconut husk

(58) *ni ka palpaanga*
 coconut PASS.GEN+GEN.3SG frond
 coconut frond

(59) *teu ka wol*
 sugar.cane PASS.GEN+GEN.3SG section
 section of sugar cane

(60) *teu ka momoozo*
 sugar.cane PASS.GEN+GEN.3SG fuzz
 fuzz of sugar cane

(61) *kun ka kiliizi*
 breadfruit PASS.GEN+GEN.3SG seed
 seed of breadfruit

(f) Some bodily products:

(62) *Ko-yom uze i-pet.*
 PASS.GEN-GEN.2PL sweat 3SG-appear
 You sweated.

(63) *ka toptoobo*
 PASS.GEN+GEN.3SG saliva.near.the.mouth
 his/her/its spittle (Note: The inalienable noun *kauzi-* is used to refer to spittle which is no longer near the mouth.)

(g) Some 'unfortunate' interpersonal relationships:

(64) *ko-ŋ koi bizin*
 PASS.GEN-GEN.1SG enemy PL
 my enemies

(65) *ka nooro*
 PASS.GEN+GEN.3SG widow.of.one's.brother
 his/her brother's widow

(66) *ka moori / tomooto*
 PASS.GEN+GEN.3SG female male
 his/her mistress/lover

(67) *ko-ŋ kes*
 PASS.GEN-GEN.1SG widower.of.one's.sister
 my dead sister's husband

(h) Otherwise uncontrolled notions:

(68) *Ko-m ndaama i-rao zen.*
 PASS.GEN-GEN.2SG year 3SG-able NEG.PERF
 You are not old enough (lit. your years are not adequate yet).

(69) *Ti-zzo ko-m sua.*
 3PL-say+RED PASS.GEN-GEN.2SG talk
 They are talking about you.

The two, semantically distinct, functions of the form /ka-/ could be due to two different historical sources which have phonologically coalesced. Lynch (1982) in his description of Proto Oceanic possessive systems postulates the following proto encodings:

- * \emptyset direct/inalienable possession
- *na active, manipulative possession
- *kan active eating possession, in which the referent has been, is being, or is to be eaten by the possessor
- *ka passive possession, in which the possessor is patient, target, or involuntary experiencer

It is not very difficult to imagine Lynch's *ka* and *kan* phonologically coalescing into a single *ka-*. On the other hand, Lichtenberk (1985:119) rejects the postulation of distinct 'food' and 'subordinate' classifiers for Proto Oceanic, because he has found no language having a formally distinct subordinate classifier.

3.2.1.5 OTHER USES OF THE FORMS *le-*, *ka₁-*, AND *ka₂-*

Noun phrases headed by *le-* and *ka₁-* are used predicately to assert, deny, or question ownership in constructions like the following:

- (70) *Le-m korog boozo.*
 RECX-GEN.2SG thing much
 You have many things.
- (71) *Nio ko-ŋ kini sa som.*
 NOM.1SG CON.RECX-GEN.1SG food NON.REF NEG
 I don't have any food to eat.

A different construction involving the nouns *le-* and *ka₂-* is one in which they are incorporated into the predicate immediately after a verb. In such instances, they function to make the state of affairs expressed by the verb more 'experiential'. This use is most frequently observed with intra-directive predicates like 'go', 'bathe', 'stay', 'walk', and 'get up', but it is also observed with some transitive predicates. Consider the following set of examples:

- (72) *I-we.*
 3SG-bathe
 He bathed.
- (73) *I-we le-ne.*
 3SG-bathe RECX-GEN.3SG
 He is cooling off (in the water).
- (74) *Ti-so ti-re le-n Kumbai.*
 3PL-say 3PL-see RECX-GEN.3PL Kovai
 They want to see for themselves the part of the island where the Kovai people live (out of curiosity or for pleasure).
- (75) *Ni i-kwara le dol.*
 NOM.3SG 3SG-carry RECX+GEN.3SG doll
 He is carrying the doll (for pleasure).

- (76) *Nio aŋ-maŋga.*
 NOM.1SG 1SG-get.up
 I got up.
- (77) *Nio aŋ-maŋga le-ŋ.*
 NOM.1SG 1SG-get RECX-GEN.1SG
 I woke up.
- (78) *Ni i-mbot.*
 NOM.3SG 3SG-stay
 He stayed.
- (79) *Ni i-mbo-re-ne.*
 NOM.3SG 3SG-stay-RECX-GEN.3SG
 He stayed behind. or He was left behind.
- (80) *Ti-la le-n.*
 3PL-go RECX-GEN.3PL
 They were carried away. or They went away.

The presence of the *le-* forms in the above utterances has the semantic consequence of making the Actor less of an instigator or Causer of an event and more of an Experiencer, one to whom the event ‘happens’ and who feels something (usually pleasant) as a result. This sense is somewhat reminiscent of the ‘Have a drink/walk/stroll’ construction in English (Wierzbicka 1988:chapter 5). The *le-* construction also exhibits a second sense, in which the event is something undergone by someone and is not willed by them as in examples (77), (79) and (80). The two senses of the *le-* construction are formulated more precisely below:

X VERB *le-*genitive suffix indexing X

- A. Someone (X) thinks like this.
 ‘If I do VERB, it will feel good.’
 Because of this, X does it.
 Because of this, X feels something good.
 X does not do it because X thinks this:
 ‘I want something else to happen.’
- B. Something (=VERB) happens to someone (X).
 It does not happen because X thinks like this:
 ‘I want this to happen.’

When *ka-* is incorporated into the nuclear predicate, it adds the component ‘someone thinks something bad will happen to X’, where X is the individual indexed by the genitive suffix on *ka-*. Examples with *ka-* tend to have an ominous sound to them.

- (81) *Ko i-se ko-m.*
 UC 3SG-ascend PASS.GEN-GEN.2SG
 It will come back to haunt you (i.e. cause you trouble).
- (82) *Ko la ko-m lele sa?*
 UC 2SG+go PASS.GEN-GEN.2SG place NON.REF
 There will be no escape for you (lit. will you be able to go (i.e. flee) anywhere?).

Despite the fact that one finds in these constructions the same surface sequence of VERB *le/ka* as one finds in the constructions encoding transfer, adverb placement possibilities indicate a different constituency. Consider the following two transitive examples:

- (83) *Zin ti-kemem **sorok le-n*
 NOM.3PL 3PL-steal+RED w.o.basis RECX-GEN.3PL

sorok pat.

w.o.basis stone/money

They are stealing the money for fun, for no (good) reason.

- (84) *Nio aŋ-kam (sorok) le-n*
 NOM.1SG 1SG-do w.o.basis RECX-GEN.3PL

(***sorok*) *mburu pakan (sorok).*

w.o.basis possessions some w.o.basis

I gave them some things for free.

Note that in (83) *sorok* may not occur before *len*, while in (84) it does. And in example (83) *sorok* occurs after *len*, while in (84) it may not. This provides evidence that in (83) the syntactic bracketing is [tikemem len] [pat], while in (84) the bracketing is [aŋkam] [len mburu pakan]. The sequence [-kem le-] in (83) is, therefore, a kind of phrasal predicate, into which the *le-* has become incorporated. In the case of the verb *-mbot* 'stay', the incorporation is also phonological and not just syntactic. This is evidenced by the application of phonological Rule 34: /t/ and /l/ conflation:

-mbot-le- ⇒ *-mbore-*

A final use of phrases headed by the form *ka₂-* is as attributive modifiers in the noun phrase. This is illustrated in the following two examples:

- (85) *Niom ka-kan-la ŋgar kizin*
 NOM.2PL 2PL-eat-go thinking LOC.3PL

toono ka-na ta-na pepe.

ground PASS.GEN-GEN.3SG SPEC-GIV PROH

Don't you fall for that worldly thinking of theirs.

- (86) *Niam Yaŋla ko-yam am-kam som.*
 NOM.1PL.EXC Yangla PASS.GEN-1PL.EXC.GEN 1PL.EXC-get NEG

We people of Yangla village did not get it.

This use of *ka₂-* encodes any sort of passive association between two entities. Structurally, the [NP *ka-*] sequence functions in the same relative position in the noun phrase as other stative nouns functioning as attributive Adjuncts; that is *after* the head noun/noun complex and the Locative pronouns, but *before* all other modifiers, as in example (85).

3.2.1.6 STATIVE NOUNS ENCODING PROPERTIES (ATTRIBUTIVE MODIFIERS)

It was noted in §3.2.1 that no distinct form class of adjectives is distinguished in the language. Properties are frequently encoded by stative nouns like the following:

<i>biibi</i>	big/important one, size, leader
<i>molo</i>	long one, length
<i>munmun</i>	young ones/ young children
<i>musaana</i>	little one
<i>siḡaanabi</i>	huge one
<i>kunaanabi</i>	huge one
<i>toro</i>	other one

Note that these underived stative nouns mostly encode notions of DIMENSION.

In the noun phrase, stative nouns functioning as attributive modifiers occur following the head noun or noun complex and any Locative pronouns but before all other modifiers.

- (87) *Buza tio molo i-saana.*
 knife LOC.1SG long.one 3SG-deteriorate
 My long knife is ruined.
- (88) *Kam ḡge bibip ru ta-na.*
 2SG+do/get pig big.one+RED two SPEC-GIV
 Get those two big pigs.

The class of potential attributive modifiers is considerably supplemented by derived stative nouns formed by adding the nominalising suffix *-ḡa*¹⁹ to many of the intransitive state or process verbs. Examples of such derived stative nouns would be: *ambaḡana* ‘good one’, *ndabokḡana* ‘perfect one, sufficient one’, *sanangḡana* ‘bad one’, *buzbuuzugḡana* ‘rotten one’, and *pareḡana* ‘what kind?’. Note that these derived stative nouns are inflected with the genitive suffixes, a property shared with other inalienable nouns.

A second source of attributive modifiers is the passive genitive form *ka*₂-, which together with a preceding noun forms a phrasal unit meaning ‘associated with N’. Examples would be: *tai kana* ‘having to do with the sea’, *toono kana* ‘earthly, worldly’ (from *toono* ‘land, earth, ground’). Such phrases always occur in the noun phrase immediately following the Locative pronouns, just as the other attributive modifiers do.

Inflecting and non-inflecting stative verbs²⁰ are a means of *predicating* many properties:

- (89) *Iḡgi i-mbol som.*
 this.one 3SG-be.strong NEG
 This is not strong.

When, however, such verbs function as attributive modifiers within the noun phrase, they must be either nominalised with *-ḡa* (90) or relativised (91):

- (90) *Kam korog mbol-ḡa-na.*
 2SG+do/get thing be.strong-NMS-GEN.3SG
 Get something strong.
- *****Kam korog mbol.*
 2SG+do/get thing be.strong
 Get something strong.

¹⁹ Ross (1988:184) states that this use of *-ḡa* was one of the innovations of the North New Guinea Cluster of languages.

²⁰ See §3.2.3.2.2 for further discussion and exemplification of these non-inflecting stative verbs expressing properties.

- (91) *Kam koron ta i-mbol kat.*
 2SG+do/get thing COMP 3SG-be.strong very
 Get something that is really strong.

The non-inflecting stative verbs are a semantically diverse group, encoding notions like the following:

QUALITY	<i>ambai</i>	good
	<i>ndabok</i>	sufficient, complete
	<i>kalansom</i>	bad
SIZE	<i>magor</i>	huge
RELATIONSHIP	<i>bok</i>	full
	<i>raraate</i>	identical
	<i>ndel</i>	different

The inflecting stative verbs are a still larger group, encoding notions like the following:

COLOUR	<i>-kokou</i>	white
	<i>-gabgap</i>	black
	<i>-sinsin</i>	red
	<i>-ngalaŋ</i>	clear
	<i>-milmil</i>	shiny
QUALITY	<i>-mbol</i>	strong, hard
	<i>-pepep</i>	soft
	<i>-saana</i>	bad, ruined, deteriorate
	<i>-ngeeze</i>	smooth, good
	<i>-lomo ~ -luumu</i>	cold
	<i>-bayou</i>	hot
SPEED	<i>-loondo</i>	be/go fast
SHAPE	<i>-minip</i>	thin
	<i>-tum</i>	fat
	<i>-baba</i>	flat
	<i>-puŋpuŋ</i>	swollen, thick

3.2.1.6.1 COMPARISON OF PROPERTIES

Comparison of properties is typically expressed by constructions involving either the adverb *kat* 'very, really' or the verb *-lip* 'to surpass':

- (92) *Ni biibi, mi nu biibi kat.*
 NOM.3SG big.one and NOM.2SG big.one very
 You are bigger than he (lit. he is big and/but you are very big).

- (93) *Ni ngar kini biibi.*
 NOM.3SG thinking LOC.3SG big
I-lip piam ta-boozo-men.
 3SG-exceed REF.1PL.EXC SPEC-many-only
 He is smarter than all of us (lit. his thinking exceeds all of ours).

The degree adverb *ri* 'little' is used to mean 'a little bit more'. Similarly, the degree adverb *pe* 'really' is used in negated predications to mean 'not very'. Through combinations of different degree adverbs, a number of degree gradations in property quality are expressible:

- (94) *biibi pe som*
big really NEG
not very big
- (95) *biibi*
big
- (96) *biibi ri*
big little
sort of big
- (97) *biibi kat*
big very
very big
- (98) *biibi kat, i-lip pa koronj ta-boozo-men*
big very 3SG-exceed REF thing SPEC-many-only
the biggest thing of all (lit. very big, exceeding everything)

3.2.2 PRONOUNS AND OTHER PRO-FORMS WHICH FUNCTION AS CLAUSAL ARGUMENTS

Mangap-Mbula pronouns distinguish first, second and third persons; singular, dual (in the Nominative series only), and plural numbers; and in first person non-singular forms, whether or not the hearer is included. Consider the following paradigms:²¹

	Nominative	Accusative	Referent	Locative
1SG	<i>nio</i>	<i>yo</i>	<i>pio</i>	<i>tio</i>
2SG	<i>nu ~ niwi</i> ²²	<i>=u</i> ²³	<i>pu ~ piwi</i>	<i>ku ~ kiwi</i>
3SG	<i>ni</i>	<i>=i</i>	<i>pini</i>	<i>kini</i>
1DU.INC	<i>ituru</i>			
1DU.EXC	<i>niamru</i>			
2DU	<i>niomru</i>			
3DU	<i>ziru</i>			
1PL.INC	<i>iti</i>	<i>iti, =ti</i>	<i>piti</i>	<i>kiti</i>
1PL.EXC	<i>niam</i>	<i>yam</i>	<i>piam</i>	<i>tiam</i>
2PL	<i>niom</i>	<i>yom</i>	<i>piom</i>	<i>tiom</i>
3PL	<i>zin</i> ²⁴	<i>zin</i>	<i>pizin</i>	<i>kizin</i>

²¹ These are Yangla dialect forms. For the pronominal forms of other dialects, see §1.2.5.

²² The alternation in the second person singular forms between the *-u* variants and the *-iwi* ones is stylistic, with the longer forms being favoured in more formal contexts (for example in public prayers).

²³ The second and third singular accusative pronominal clitics are written adjoined to verb stems when the verb stem ends in a consonant and as separate words when they end in a vowel.

²⁴ Another, non-pronominal, use of the form *zin* is to encode explicit plurality in noun complexes like *zin me* 'dogs'. It is distinguished from the pronominal *zin* by being non-anaphoric.

Most of the pronouns appear to be composed of an initial case marker plus a person-number formative. The case markers are:

<i>n-</i> ~ \emptyset -	Nominative
\emptyset -	Accusative
<i>p-</i>	Referent
<i>k-</i> ~ <i>t-</i>	Locative

The person-number formatives are:

<i>-io</i>	1SG
<i>u</i> ~ <i>wi</i>	2SG
<i>-i</i> ~ <i>(i)ni</i>	3SG
<i>-(i)ti</i>	1PL.INC
<i>-iam</i>	1PL.EXC
<i>-iom</i>	2PL
<i>-zin</i>	3PL
<i>-ru</i>	two ²⁵

Note that most of these person-number pronominal formatives differ from the inalienable genitive suffixes.

Illustrations of the use of each of the pronoun series will now be given.

3.2.2.1 NOMINATIVE SERIES AND DEMONSTRATIVE PRONOUNS

The Nominative series of pronouns is generally used to encode *animate* participants: 1) whose identity is clear from the linguistic or extra-linguistic context (i.e. they are 'contextually given'), 2) who are thematised for pragmatic purposes of contrast and/or topic re-establishment,²⁶ and 3) bear the Subject or Genitive syntactic role/function. As examples, see (99)-(102):

(99) *Nio* *aŋ-kan* *kini* *kek*.
 NOM.1SG 1SG-eat food PERF
 I have already eaten.

(100) *Niom* *ke-mel* *pepe*.
 NOM.2PL 2PL-stumble PROH
 Don't you stumble!

(101) *Ni* *i-peebe* *niam* *tomo-yam*.
 NOM.3SG 3SG-produce NOM.1PL.EXC father-GEN.1PL.EXC
 He sired *our* father.

(102) *Ina*, *ŋge* *kini* *kizin*.
 that.one pig food LOC.3PL
Nu \emptyset *ku* *i-mbot*.
 NOM.2SG (=food) LOC.2SG 3SG-stay
 That's the *pigs'* food. *Yours* is here.

²⁵ Compare this with the numeral *ru* 'two'.

²⁶ The use of the Nominative (and other) series of pronouns is described in more depth in Chapter 6.

Syntactically similar to the Nominative pronouns are the three demonstrative pronouns: *iŋgi*²⁷ 'this one, these ones', *ina* 'that one, those ones', and *iŋga* 'that one over there, those ones over there', which encode Subject or Thematized non-Subject arguments in a predication:

- (103) *Iŋga* *i-kaam* *so?*
 that.one.over.there 3SG-do+RED what
 What is that one/thing over there doing?
- (104) *Iŋgi* *nio* *tizi-ŋ.*
 this.one NOM.1SG younger.sibling-GEN.1SG
 This is my younger brother.

Ina frequently functions as a kind of counterpart to the third person pronouns *ni* and *zin*, often being used to refer to *non-human*, contextually given participants, whereas *ni* and *zin* typically refer to *animate or human*, given participants. In discourse, *ina*'s major function is to (re-)establish an already introduced participant as Topic or single him/her out for a parenthetical comment:

- (105) *Wa* *ma la* *ma so=be* *me ti-se*
 2SG+walk+RED and 2SG+go and say=NF dog 3PL-ascend
 You keep walking until the dogs happen to come upon
- ki ta-sa* *na, re.*
 LOC SPEC-NON.REF GIV 2SG+look
 one (a wallaby), and then look out.
- Pa ina,* *so=be* *me mboŋ,* *to-na*
 for that.one say=NF dog hunter then-GIV
 For it (=the wallaby), the dogs, if they are good hunters, then
- ti-kam=i.* *Mi so=be* *me tau* *napumon=i*
 3PL-get=ACC.3SG and say=NF dog SPEC bad.hunter=PROX
 they will get it. But if they are bad hunters,
- na, ina* *i-rao* *ti-kam=i* *som.*
 GIV that.one 3SG-able 3PL-get=ACC.3SG NEG
 then it (the tree kangaroo), they will not be able to get it.
- (106) *Nio,* *so=be* *mete* *i-kam* *yo,* *na*
 NOM.1SG say=NF illness 3SG-get ACC.1SG GIV
 I, if I get sick, then
- lele-ŋ* *be* *ti-kam* *yo* *ma*
 insides-GEN.1SG NF 3PL-get ACC.1SG and
 I want them to take me
- aŋ-la* *Butawen.* *Pa ina,* *hausik*
 1SG-go Butawen REF that.one hospital
 to Butawen. For that one, it is a

²⁷ *Iŋgi* also functions as a modal adverb meaning 'this is true now', and as a morphological component of the demonstratives *iŋgi* and *taiŋgi*. *Ina* also occurs in the demonstratives *tina* and *tana*, and *iŋga* in the demonstratives *iŋga* and *taiŋga*. The form *tana* also functions as a causal conjunction.

biibi mi le marasin boozo.
 big.one and RECX+GEN.3SG medicine much
 a big hospital and has a lot of medicine.

Note in (105) that there is a clear topic shift from the individual walking in the bush to the wallaby, with this shift being marked by the use of *ina*. In (106), the individual switches from talking about herself to Butawen hospital, giving the reason why Butawen is a better place to go.

3.2.2.2 ACCUSATIVE SERIES

The Accusative series of pronouns is used to encode *animate* participants whose identity is clear from the context and which function syntactically as Objects:

- (107) *To ti-pun=i ma i-meete.*
 then 3PL-hit=ACC.3SG and 3SG-die
 Then they killed him.
- (108) *Nu moto yo pa-so?*
 NOM.2SG 2SG+fear ACC.1SG REF-what
 Why do you fear me?

Inanimate Objects whose identity is clear from the context, on the other hand, are simply omitted. This is especially the case when they are singular:

- (109) *I-kam woongo tio mi i-pa-saana Ø.*
 3SG-do/get canoe LOC.1SG and 3SG-CAUS-go.bad 3SG.ACC
 He took my canoe and ruined it.

Thus, whereas pronominalisation of Subjects and Genitives typically indicates some sort of contrast or a topic switch *in addition to* contextual givenness, pronominalisation of Objects (and also Oblique noun phrases) indicates *only* givenness. In order to encode contrastiveness of an Object or a switch to an Object or Oblique Topic, it is necessary that the noun phrase occur in clause-initial position as a marked Theme. Compare example (107) above with the following one:

- (110) *Ni, ti-pun=i ma i-meete.*
 NOM.3SG 3PL-hit=ACC.3SG and 3SG-die
 As for him, they killed him.

3.2.2.3 REFERENT SERIES

The Referent pro-forms (more specifically pro-prepositional phrases) all begin with *p-* and are semantically very generic. They encode contextually given, animate oblique arguments bearing almost any semantic role. The roles encoded include: SOURCE (111), REFERENCE LOCATION (112), BENEFACTIVE (113), MALEFACTIVE (114), 'about' or 'concerning' (115), and ADDRESSEE (116).

- (111) *Nio aŋ-ko pini.*
 NOM.1SG 1SG-flee REF.3SG
 I fled from him.

- (112) *Ti-par-mbot molo pizin.*
 3PL-REC-stay long.distance REF.3PL
 They kept far away from each other.
- (113) *Ti-kam uraata pio.*
 3PL-do/get work REF.1SG
 They worked for me.
- (114) *Pooto kini i-pol pini.*
 veranda LOC.3SG 3SG-collapse REF.3SG
 His veranda collapsed, hurting him.
- (115) *Am-pit mbol pini.*
 1PL.EXC-tell story REF.3SG
 We told a story about him.
- (116) *I-so pio be aḡ-la gaaga.*
 3SG-say REF.1SG NF 1SG-go tomorrow
 He told me to go tomorrow.

Regarding the label 'Referent' for this series of pronouns, it is intended to indicate that these forms somehow refer (or associate) the event in a predication to some other entity. Other possibilities for a label would have been Associative, Applicative or even simply Oblique. Whatever label is chosen, it should be as semantically nondescript as possible.

3.2.2.4 LOCATIVE SERIES (PREPOSITIONAL ALIENABLE GENITIVES)²⁸

This series of pro-forms (more precisely, pro-prepositional phrases) is used to indicate an *animate* or *potent*²⁹ LOCATION *toward which* an action is taking place in dynamic predications, or *at which* an item is located. For example:

- (117) *Nio aḡ-la kizin.*
 NOM.1SG 1SG-go LOC.3PL
 I went to them.
- (118) *Buza tio i-mbot kini.*
 knife LOC.1SG 3SG-stay LOC.3SG
 He has my knife (lit. my knife is at him).

The series is never used to indicate location *away from which* an action takes place. Only the Referent series can encode SOURCES.

Within the noun phrase, the Locative series of pronouns is used to express relationships which are: 1) alienable, 2) enduring, and 3) (typically) controlled. *Ownership*, therefore, is expressed using this series, as in examples (118) and (119).

²⁸ The functions of these Locative forms are also discussed and exemplified in Bugenhagen (1986).

²⁹ Recall that 'potent' entities are ones which can be the *ultimate* cause of something happening to something else. They do not, however, necessarily act with volition. All animate entities are potent. Examples of inanimate potent entities would be: earthquakes, the sea, and the sun.

- (119) *Nu kem nakabasi tio pa-so?*
 NOM.2SG 2SG+steal axe LOC.1SG REF-what
 Why did you steal my axe?

The use of a locative form to encode possession is not surprising. Clark (1978) documents many languages in which existential, locative, and possessive constructions are formally related. The semantic connection between the three types of constructions is relatively transparent given the observations below.

1. An existential construction expresses the idea that an object exists. For an object to exist, it must be *located* somewhere.
2. A locative construction expresses that an object exists in a particular location.
3. If someone *has* a particular object then that object is typically *located* near him/her.

As noun phrase modifiers, the Locative pronouns prototypically encode participants who control or have produced the head noun, and/or have been closely associated with it for a long period of time. In addition to indicating more-or-less 'pure' ownership, *k-* ~ *t-* (or its free/non-bound variant *ki*) also expresses a wide variety of other semantic relationships between the genitive and head noun. For example:

- (120) *sua kini*
 talk LOC.3SG
 his words, what he said
- (121) *kar kini*
 village LOC.3SG
 his village
- (122) *mete kini*
 illness LOC.3SG
 his illness (with which he is afflicted or which he passed on to me)
- (123) *wal kini*
 group LOC.3SG
 his relatives
- (124) *mbol kini*
 story LOC.3SG
 his story (the story he told or the story about him)

The form *ki* ~ *k-* ~ *t-* seems to be semantically encroaching upon the passive genitive form *ka-*, with the result that occasionally the two forms appear to overlap. For instance, the second meaning of example (124) could also be expressed as *ka mbol*.

3.2.2.5 ACCOMPANIMENT/COMBINATORY PRONOUNS

Accompaniment constructions are a device for indicating that two or more entities bear a similar role in a predication but are not completely equal in topicality. One means of encoding accompaniment in Mangap-Mbula at the clause level is the form *raama* plus an Accusative argument and is favoured when the participants accompanying each other are of very unequal topicality:

- (125) *Ni ko i-mbot raama yom totomen.*
 NOM.3SG UC 3SG-stay together ACC.2PL always
 He will always be with you. (From a sermon about God's attributes.)

Noun phrase internally, prepositional phrases headed by the form *ramaki* express accompaniment.

- (126) *Ti-kam ko-ŋ bisket ta rama-ki ti.*
 3PL-do/get CON.RECX-GEN.1SG biscuit SPEC together-LOC tea
 They got me a biscuit, along with some tea.

Another construction is favored when several participants are both *somewhat topical* and involved in the doing or experiencing of an event, but in which one participant (the first one mentioned) is relatively *more topical*. It involves the use of a series of 'combinatory pronouns' in the following structure:

(More Topical Noun Phrase)	Combinatory pronoun	(Noun phrase specifying the less topical accompanying participant)
-------------------------------	---------------------	---

In §4.2.5 it is suggested that these 'combinatory pronouns' are best treated as a kind of NP internal conjunctive device which happens to also encode the person-number of the conjoined noun phrase as a whole. As such, they defy neat categorisation, being a kind of blend of conjunction plus pronoun.³⁰ Examples of combinatory pronouns are given below:

- (127) *Nio niamru wae-ŋ am-la.*
 NOM.1SG NOM.1DU.EXC associate-GEN.1SG 1PL.EXC-go
 I, together with my wife, went.
- (128) *Nio ko aŋ-pit pa*
 NOM.1SG UC 1SG-recount REF
 Ø *niamru Bob uraata tiam.*
 1SG NOM.1DU.EXC Bob work LOC.1PL.EXC
 I will tell a story about my work together with Bob.
- (129) *Ti-la ti-sou ŋge kini*
 3PL-go 3PL-catch pig LOC.3SG
zi-ŋa-ŋ lutu-unu bizin.
 3PL-NMS-GEN.3PL child-GEN.3SG PL
 They went and caught his pig together with her piglets.

Note in (127) that, when a Subject NP containing a combinatory pronoun occurs, it is the person-number of the combinatory pronoun that is cross-referenced on the verb.

The combinatory pronouns come from the two sources below.

1. If only two participants are involved, then the combinatory pronoun is identical to the normal Nominative dual pronoun: *niamru* 'we (EXC) two', *ituru* 'we (INC) two', *niomru* 'you two', and *ziru* 'they two'.
2. If more than two participants are involved in the resulting combination, then the combinatory pronoun is formed from the Nominative plural pronouns plus the third

³⁰ Note that Tok Pisin exhibits a similar sort of construction in phrases like *Mitupela John* 'I and John' and *Yutupela Salme* 'You and Salme'.

person plural form of the nominalising suffix *-ŋa*: *niamŋan* 'we (EXC) together', *itiŋan* 'we (INC) together', *niomŋan* 'all of you together', *ziŋan* 'they together'.

To give a little more support to the claim that the conjuncts in combinatory pronoun constructions are more equal in topicality than those of accompaniment constructions, consider the 'Topic Continuity'³¹ statistics presented in the chart below. The RD (Referential Distance) figures represent the average number of clauses before the combinatory pronoun one must look in order to find a reference to the NP₁ or NP₂ referent. The PER (Persistence) figures represent the average number of consecutive clauses following the clause containing the combinatory pronoun in which overt reference is made to the NP₁ or NP₂ referent. Thus, a low RD figure means that the NP is typically more given from the preceding context, and a high PER figure means that the NP tends to be referred to in the immediately following context.

NP ₁		Combinatory Form	NP ₂	
RD	PER		RD	PER
4.7	6.3	<i>ziŋan, ziru</i> (3PL)	7.7	3.7
5.2	3.3	<i>niamŋan, niamru</i> (1PL.EXC)	13.2	2.5
-	-	<i>ramaki, raama</i>	13.3	0.4

The reason that the chart contains figures for only two persons of the combinatory pronouns is that instances of the second plural and first plural inclusive combinatory forms are so much rarer that numerical values would not have been all that significant. From the chart, it can be seen that, relatively speaking, NP₁ referents are more given from the preceding context and tend to be talked about more in the subsequent discourse than NP₂ referents. In this kind of construction, NP₁s are frequently omitted altogether or pronominalised, whereas NP₂s are typically full noun phrases. Since textually new NPs are arbitrarily given RD values of 20, the RD figures for *niamŋan* are highly inflated by five discourse-initial instances of the form *nio niamŋan/niamru* NP 'I we.together/we.two NP'. The first singular form *nio* in such instances, although *textually* new (because there was no preceding discourse), is clearly given from the speech situation. Note that the NPs following *ramaki* or *raama* are statistically even less topical than those following the combinatory pronouns. This is shown by their particularly low persistence figure.

3.2.2.6 INTERROGATIVE PRO-FORMS (WH WORDS)

The interrogative words in the language are:

<i>ziŋoi</i>	who, whom (plural)? (for human nouns only)
<i>asiŋ</i>	who, whom (singular)?
<i>sokorei</i>	what thing?/what things
<i>so</i>	what event?

³¹ For more details about this methodology, see §6.4.

<i>swoi ~ sugoi</i>	where to, where at?
<i>piizi</i>	how much?
<i>pispiizi</i>	how much really?
<i>ŋiizi</i>	when?
<i>iŋgoi</i>	which one?
<i>parei</i>	how?
<i>paso</i>	why?
<i>pareiŋana</i>	what kind?

Mangap-Mbula exhibits a ‘replacement’ strategy of interrogation, whereby the interrogative pro-form occurs in the normal syntactic position of the item being questioned.

- (130) *Ziŋoi ti-pun=u?*
 who(PL) 3PL-hit=ACC.2SG
 Who hit you?
- (131) *Nu pun asiŋ?*
 NOM.2SG 2SG+hit who(SG)
 Whom did you hit?
- (132) *Nu ko pa asiŋ?*
 NOM.2SG 2SG+flee REF who(SG)
 From whom did you flee?
- (133) *Niom ke-re zin ŋiizi?*
 NOM.2PL 2PL-see ACC.3PL when
 When did you see them?
- (134) *Wal ta-na ti-kaam so?*
 group SPEC-GIV 3PL-do+RED what
 What is that group of people doing?
- (135) *Tomtom piizi ti-mar?*
 person how.many 3PL-come
 How many people came?
- (136) *Lele-m pa buk iŋgoi?*
 insides-GEN.2SG REF book which.one
 Which book do you want?

3.2.3 VERBS

The characteristic syntactic function of verbs is to act as the nuclei or HEADS of the predications in which they occur. They are defined by the following cluster of properties.

1. They typically³² index the person and number of the Subject of the sentence with the following set of Subject prefixes:³³

³² A subset of the verbs does not exhibit inflection for person and number of Subject. These are discussed in §3.2.3.2ff.

³³ For a number of complete verb paradigms, see §2.4.2 of the phonology chapter.

1SG	<i>aŋ-</i>
2SG	$\emptyset \sim ku$ - ³⁴
3SG	<i>i-</i>
1PL.INC	<i>t</i> - ³⁵
1PL.EXC	<i>am-</i>
2PL	<i>k-</i>
3PL	<i>ti-</i>

2. They may contain the transitivity-altering prefixes described in §3.4.3ff. and usually³⁶ can be nominalised with the suffix *-ŋa*.

3. They may not function as noun-phrase modifiers in a frame like the following:

Koroŋ _____ *ti*
 thing _____ this
 This _____ thing

unless they are nominalised or occur in a relative clause as in example (137). Similarly, they may not occur as the head noun in the frame:

_____ *kini* _____ *ti* *ambai*.
 _____ LOC.3SG this is.good
 This _____ of his/hers is good.

unless they are nominalised as in (138).

(137) ***Ni* _____ *i-kam* _____ *koroŋ* _____ *saana* _____ *ti*.
 NOM.3SG 3SG-do/get thing deteriorate this
 He got this bad thing.

Ni _____ *i-kam* _____ *koroŋ* _____ *sanan-ŋa-na* _____ *ti*.
 NOM.3SG 3SG-do/get thing deteriorate-NMS-GEN.3SG this
 He got this bad thing.

Ni _____ *i-kam* _____ *koroŋ* _____ *ta* _____ *i-saana*.
 NOM.3SG 3SG-do/get thing SPEC 3SG-deteriorate
 He got something that had gone bad.

(138) ***Rak* _____ *kini* _____ *ti* _____ *ambai*.
 dance LOC.3SG this be.good
 This dance of his is good.

Rak-ŋa-na _____ *kini* _____ *ti* _____ *ambai*.
 dance-NMS-GEN.3SG LOC.3SG this be.good
 This dancing of his is good.

³⁴ Speakers of the Gauru dialect use the *ku-* prefix before all verb stems not beginning with the consonant /k/. If a verb stem begins with /k/, then the Gauru speakers use the null prefix. All other dialects always use the null prefix, regardless of the form of the verb stem.

³⁵ When *t-* or *k-* is added to verb stems, all of which are underlyingly consonant-initial, an epenthetic vowel is inserted to break up the consonant cluster. For further discussion, refer to §2.2.2.2 and §2.4.2 of the phonology chapter.

³⁶ Not all inflected verbs can be nominalised. For example, no verbs of cognition like *-ute* 'know' and *-kilaala* 'recognise' can be nominalised. The lack of nominalisations for such forms may, however, be due to the presence of semantically similar underived nouns like *ŋgar* 'thinking, knowledge' and *kilalan* 'sign' which obviate the need for a nominalisation.

3.2.3.1 VERB STRUCTURE

The maximal structure of Mangap-Mbula verbs is given below.

	SUBJECT Prefix	Transitivity Prefixes	Derivation	Verb Stem	Reduplication
		(-par-) REC	(-p-) CAUS	(-m-) DETR	
(139)	<i>I</i> 3SG He/she/it keeps slashing.			<i>-tar-kat</i> cut-very	<i>-tarkat.</i> -RED
(140)	<i>To</i> 1PL.INC We (INC) are always strengthening.		<i>-po</i> CAUS	<i>-mbol</i> be.strong	<i>-mbol.</i> -RED
(141)	<i>Ti</i> 3PL They advise.			<i>-so-taara.</i> say-cut	
(142)	<i>I</i> 3SG It breaks.			<i>-ma</i> DETR <i>-paala.</i> break	
(143)	<i>Ti</i> 3PL They are making each other afraid.	<i>-par</i> REC	<i>-pa</i> CAUS	<i>-moto</i> fear	<i>-to.</i> -RED
(144)	<i>I-</i> 3SG He/she/it accidentally spills something.		<i>-pa</i> CAUS	<i>-mi</i> DETR <i>-liŋ.</i> pour	

The Mangap-Mbula verb contains no reference to time. Thus, a form like *aŋ-la* '1SG-go' can actually be glossed three ways:

I go
I went
or I will go

It is the discourse context and the presence of various modal and temporal adverbial elements, which fix the temporal reference of a clause. For example:

- (145) *Mbeŋ to, aŋ-la.*
night then 1SG-go
I will go tonight (lit. once it's dark then I'll go).
- (146) *Nio iŋgi buri aŋ-la=i.*
NOM.1SG at.this.moment now 1SG-go=PROX
I am going right now.
- (147) *Neeri, nio aŋ-la Birik.*
yesterday NOM.1SG 1SG-go Birik
Yesterday I went to Birik.

- (148) *Ni i-la kek.*
 NOM.3SG 3SG-go PERF
 He/she has/had already gone.
- (149) *Ni i-la zen.*
 NOM.3SG 3SG-go NEG.PERF
 He/she has not/had not gone yet.

Thematised temporal adverbs like *neeri* in example (147) or the phrase *lwoono ta* 'one time, once' are typically used at the outset of a text to provide temporal orientation. After that, no further temporal expressions are used as long as events occur in chronological sequence with no large temporal gaps between any two successive events. When temporal continuity is broken, temporal expressions are again utilised to reset the temporal frame.

3.2.3.2 INFLECTED VERSUS NON-INFLECTED VERBS

An important morphological division among verbs has to do with whether or not they exhibit inflection for the person and number of the Subject. Most verbs exhibit such inflection, but there are some which do not. These morphologically defective verbs can be notionally subdivided into the following four subgroups: 1) stative experiential verbs, 2) stative verbs encoding properties, 3) verbs of manner, and 4) aspectual verbs.

All of these non-inflecting verbs function *only* as predicates in clauses. Thus they cannot function as heads of noun phrases and they cannot function as restrictive modifiers of nouns unless they are relativised or nominalised.³⁷

- (150) ***Kam kini ambai.*
 2SG+do/get food be.good
 Get some good food.
- (151) *Kam kini ambai-ŋa-na / ta ambai.*
 2SG+do/get food be.good-NMS-GEN.3SG SPEC be.good
 Get some good food/food which is good.

In these three *distributional* respects, they resemble the inflected verbs. They are distinguished, however, by their lack of Subject-indexing morphology.

3.2.3.2.1 NON-INFLECTING STATIVE EXPERIENTIAL VERBS

The non-inflecting stative experiential verbs are all transitive, 'middle' verbs whose Subjects and Objects must be co-referential. Thus far, only six have been observed: *petel* 'be hungry', *kaipa* 'be gloating', *uze* 'be sweaty', *menmeen* 'be happy', *basma* 'be hungry for savory food', and *miri* 'be thirsty'. Being stative, such forms do not reduplicate. Note especially in the following example the occurrence of the *Accusative* pronoun *yo* following *miri*. Elsewhere, Accusative pronouns occur following only transitive verbs and prepositions.

³⁷ Note that all of the different classes of uninflected verbs may be nominalised, for example *wisŋana* 'quick' and *bokŋana* 'full'.

- (152) *Nio miri yo.*
 NOM.ISG be.thirsty ACC.ISG
 I am thirsty.

3.2.3.2.2 NON-INFLECTING STATIVE VERBS EXPRESSING PROPERTIES

There are four non-inflecting intransitive verbs expressing properties: *ambai*³⁸ 'be good', *kalansom* 'be bad', *ndel* 'be different', and *ndabok* 'be good, perfect, sufficient':

- (153) *Ke ti-na ambai som.*
 tree this-GIV be.good NEG
 That tree isn't good.
- (154) *Ni-ini ambaimbai.*
 body-GEN.3SG be.good+RED
 He was getting better.

3.2.3.2.3 NON-INFLECTING VERBS OF MANNER

The principal non-inflecting verbs of manner are given below:

<i>kaŋkaŋ</i>	directly, straight
<i>kuŋkuŋ</i>	vigorously
<i>ruŋruŋ</i>	go in a group
<i>tiktik</i>	briskly, vigorously
<i>sabumsabum</i>	plunge in
<i>burup</i>	suddenly
<i>bil-pa-ta-men</i>	very suddenly, in a flash
flash-REF-SPEC-only	
<i>wis(-pa-ta-men)</i>	move (very) quickly
quick(-REF-SPEC-only)	
<i>res</i>	slither/flow quickly (used of snakes and water)
<i>bam</i>	straight down
<i>ruk</i>	go a little ways
<i>pok</i>	popping into view
<i>wekwek</i>	moving straight up

These typically, though not necessarily, precede the predication they semantically modify and are conjoined with the cosubordinating conjunction *ma*:

- (155) *To burup ma i-maŋga.*
 then do.suddenly and 3SG-get.up
 Then she suddenly got up.

³⁸ All of these forms may also occur in the predicate phrase following the object as manner adverbs. See §3.2.4.2.3 for an example. They are, therefore, postulated to have two syntactic categories: V and ADV.

3.2.3.2.4 NON-INFLECTING ASPECTUAL VERBS

The non-inflecting aspectual verbs 1) have a telic component in their meanings, 2) typically occur *following* the predication they modify, and 3) are also conjoined with the conjunction *ma*.

<i>bok</i>	completely full
<i>ŋak</i>	stuffed
<i>ŋek</i>	perfectly fitting
<i>ŋes</i>	completely broken in two
<i>pus</i>	all the way through
<i>put</i>	completely severed
<i>sam</i>	(move) completely out of sight
<i>sek</i>	disappeared
<i>sik</i>	completely covered
<i>kup</i>	completely dead
<i>tuj</i>	completely tight
<i>kutkut</i>	completely full
<i>ŋor</i>	completely asleep
<i>zaza</i>	do to excess

Two examples of their use are:

- (156) *Aŋ-se-boogo teu ma ŋes.*
 1SG-ascend-divide sugar.cane and completely.broken
 I broke the sugar cane in two.
- (157) *Ti-su-la ma sam.*
 3PL-descend-go and go.out.of.sight
 They sunk out of sight.

Another item occurring in the same sort of syntactic construction is a form that is homophonous with the negative *som* and encodes frustration:

- (158) *Ti-ru=i ma som.*
 3PL-look=ACC.3SG and do.in.vain
 They looked for him in vain.
- (159) *Niom ti-na ko som kat.*
 NOM.2PL this-GIV UC do.in.vain really
 You are really hopeless.

Unlike the other members of this class, however, *som* also has the potential to occur sentence finally without a preceding *ma*:

- (160) *Zin ti-mar som.*
 NOM.3PL 3PL-come NEG
 They did not come.

Two analyses suggest themselves. Either *som* is bicategorical – uninflected verb and adverb – or there is a predicate formation rule which allows some adverbs to function as predicates. Since the form *som* can also undergo derivation with the causative prefix (*pa-som* ‘denigrate, belittle’), the bicategorical analysis is adopted here.

3.2.3.3 PARTIAL VERSUS COMPLETELY REDUPLICATED VERBS

A second, morphophonological, classification of verbs has to do with the form of their reduplications. Reduplications may be either complete: *-mbotmbot* 'be staying, living' and *-lala* 'be going'; or partial: *-kamam* 'be eating', *-kowo* 'be fleeing or moving quickly', *-wesweeze* 'be paddling'. Since the distinction is not predictable, lexical entries of verbs must contain a specification for the type of reduplication.

3.2.3.4 STATIC VERSUS DYNAMIC VERBS

A third classificatory parameter is aspectual in nature; that is whether verbs are static or dynamic. Static verbs like *-baba* 'to be flat', *-ute* 'know', and *-guubu* 'to be ripe', which encode a state of affairs that is constant over an interval of time, do not undergo reduplication, whereas dynamic verbs like *-pol* 'to collapse' or *-paala* 'to break', which encode a state of affairs that changes over time, do. Reduplications of dynamic verbs can express: 1) ongoing or progressive aspect, 2) plurality of participants, or 3) habitual aspect.³⁹

3.2.3.5 CLASSIFICATION OF VERBS ACCORDING TO TYPE OF NOMINALISATION

Verbs are also distinguished according to whether their nominalisations are: 1) Actor-Oriented, 2) Undergoer-Oriented, or 3) Action-Oriented. In Actor-oriented nominalisations, thematised inalienable genitives in the noun phrase encode Actors, and *ki* Locative prepositional modifiers encode Undergoers.

- (161) *Nu moori taŋtaŋ-ŋo-m.*
 NOM.2SG female cry+RED-NMS-GEN.2SG
 You are a cry baby. (Addressed to a young girl.)

- (162) *zin mboro-ŋa-n tiam*
 PL watch.over-NMS-GEN.3SG LOC.1PL.EXC
 our village elders (lit. our watching over ones/the ones who watch over us)

Undergoer-oriented nominalisations are the inverses of Actor-oriented ones. In these, thematised inalienable genitives in the noun phrase encode Undergoers, and *ki* prepositional phrases encode Actors.

- (163) *sua t-ur-ke-ŋa-na*
 talk ?⁴⁰.put-hide-NMS-GEN.3SG
 a secret (lit. hidden talk)
- (164) *mbili ambai-mbai-ŋa-n*
 domestic.animal be.good-RED-NMS-GEN.3PL
 good domestic animals

³⁹ For further details about the meanings of reduplication, see §3.5 of this chapter.

⁴⁰ The *t* here is perhaps related to POC ***tuqu* 'stand'. Note, however, that the current form in the language for 'stand' is *-mender* (< POC **madriRi* 'stand').

- (165) *sua mbuk-ŋa-na kizin*
 talk tie-NMS-GEN.3SG LOC.3PL
 their agreement (lit. the talk that they tied)

Action-oriented nominalisations do not co-occur with Thematised inalienable genitives, but may have an alienable genitive encoded with *ki* which expresses the Actor performing the action:

- (166) *Zooro-ŋa-na kini ambai som.*
 rebel-NMS-GEN.3SG LOC.3SG be.good NEG
 His rebellion is not good.

Classification of verbs according to nominalisation type is largely predictable from the transitivity of verbs. Intransitive verbs have either Actor or Action oriented nominalisations, while transitive verbs expressing events in which a Patient undergoes a profound change have Undergoer oriented ones. The nominalisations of transitive verbs expressing events in which a Patient does not undergo a profound change of state are more idiosyncratic.

3.2.4 ADVERBIALS (MODIFIERS OF CONSTITUENTS OTHER THAN NOUNS)

3.2.4.1 INTRODUCTION

'Adverbials' constitute a large and heterogeneous class of items in Mangap-Mbula. This is not surprising when one considers that the term 'adverb' is negatively defined as "modifiers of constituents other than nouns" (Schachter 1985:20). Semantically, such forms typically encode notions of time, aspect, manner, and modality.

A broad division can be made among 'adverbials' between those items which are inherently adverbial, exhibiting no syntactic similarity to any other part of speech (and thus properly belong to an 'adverb' part of speech category), and other items which do not belong to an adverb part of speech category but which function in certain conventionalised constructions to convey notions which could be loosely termed 'semantically adverbial'. As examples of what is meant by a non-adverb functioning 'adverbially', consider the following four examples:

- (167) *Pikin i-kan kini ma i-map.*
 child 3SG-eat food and 3SG-end
 The child ate up the food.
- (168) *Nio kaŋkaŋ ma aŋ-mar kar.*
 NOM.1SG straight and 1SG-come village
 I came straight to the village.
- (169) *Mbeŋ to ti-la.*
 night then 3PL-go
 Once it is night then they will go (lit. it being night, following, they go).
- (170) *Am-bot ma mbeŋ.*
 1PL.EXC-stay and night
 We stayed until dark (lit. we stayed and it was night).

Examples (167) and (168) illustrate two extremely common constructions in which a verb (inflected in the case of *-map* and non-inflected in the case of *kaŋkaŋ*) is conjoined to another

predication under a single intonational contour with the cosubordinating conjunction *ma*. Example (167) is the normal means of expressing that an entity was affected in such a way that nothing more could be done to it, that is telic aspect. In example (168) the uninflected manner verb *kaḡkaḡ* ‘go directly, straight to’ occurs in a cosubordinate construction conjoined to a following verb whose manner is being specified. Examples (169) and (170) illustrate the use of adjoined temporal existential constructions to provide a temporal setting for a predication.

The various types of ‘adverbial’ constructions in which *non*-adverbs occur are examined in more detail in §3.2.4.3ff. First, however, the true adverbs will be discussed.

3.2.4.2 ADVERBS

Adverbs are syntactically characterised as modifiers of constituents other than nouns. They are never inflected and do not occur as arguments of predicates. With the exception of the modal adverbs of class 9, they always follow the constituent they modify, unless they occur sentence initially as Themes. In the classification of adverbs given below, reference will be made to nine different combinations of distributional possibilities. Table 3.1 summarises these combinations.

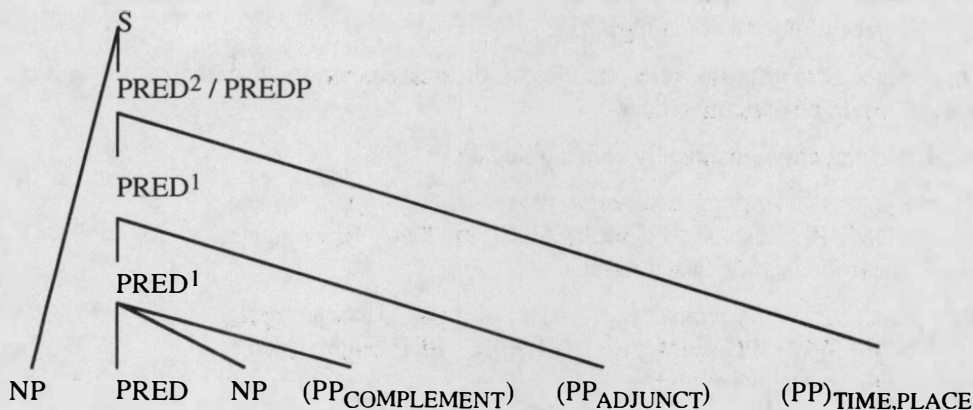
TABLE 3.1: SYNTACTIC ENVIRONMENTS OF ADVERBS

	Environments							
	Sentence-Initial				⇒	Sentence-Final		
	1	2	3	4	5	6	7	8
Class 1		x						
Class 2		x	x					
Class 3			x					
Class 4	x			x				
Class 5				x				
Class 6					x			
Class 7			x			x		
Class 8		x	x			x	x	
Class 9	x							x

Syntactic Environments:

1. Occurs as a sentence-initial Theme
2. Ad-PRED⁰: Occurs following the predicate and before an Object if one is present
3. Ad-PRED¹: Occurs after the Object or any oblique argument in a predication except Specifiers for Time and Outer Location
4. Ad-PREDP: Occurs following all PREDP Specifiers for Time and Place, but before any of the sentence final adverbs
5. Ad-S: Occurs sentence finally
6. Ad-NP Occurs following any semantically compatible NP
7. Ad-XP: Occurs after minor phrase types; that is quantifier phrases, and adverb phrases
8. Occurs between the subject and the predicate

It will be noted that a structural configuration along the following lines has been assumed:⁴¹



Examples of each of these environments will now be given.

1. Clause/sentence-initial Theme:

- (171) *Neeri nio aŋ-la Birik.*
 yesterday NOM.1SG 1SG-go Birik
 Yesterday, I went to Birik.

2. Ad-PRED⁰: Following the predicate and before the Object:

- (172) *Ti-so sorok sua ta-na.*
 3PL-say w.o.basis talk SPEC-GIV
 They said that without any basis.

3. Ad-PRED¹: Occurs after the Object or any oblique argument in a predication except Specifiers for Time and Outer Location:

- (173) *Zin ti-kam (**karau) uraata (karau) pa nakabasi (karau).*
 NOM.3PL 3PL-do quickly work quickly REF axe quickly
 They worked quickly with the axe.
- (174) *Zin ti-kam (**karau) uraata karau pa mbej (**karau).*
 NOM.3PL 3PL-do quickly work quickly REF night quickly
 They worked quickly at night.

4. Ad-PREDP: Occurs following all PRED¹ and PRED² constituents and non-sentential PRED² Specifiers, but before any sentence final adverbs:

- (175) *Zin ti-uulu yam pa sa zen.*
 NOM.3PL 3PL-help ACC.1PL.EXC REF NON.REF NEG.PERF
 They have yet to help us.

⁴¹ Justification for this structure can be found in §4.3.1.

5. Occurs sentence finally:

- (176) *Ni i-kam uraata pa mbeḡ som.*
 NOM.3SG 3SG-do work REF night NEG
 He/she did not work at night.

In (176), to place *som* after the verb, the Object, or in any position other than at the end of the sentence, would be ungrammatical.

6. Occurs following any semantically compatible NP:

- (177) *Zin tomini ti-yaamba yam pa mbeḡ.*
 NOM.3PL also 3PL-scold ACC.1PL.EXC REF night
 They, too, scolded us at night.
- (178) *Zin ti-yaamba yam pa mbeḡ tomini.*
 NOM.3PL 3PL-scold ACC.1PL.EXC REF night also
 They scolded us at night too.

7. Following all minor phrase types:

- (179) *Tomtom boozo kat ti-mar.*
 person many very 3PL-come
 Very many people came.
- (180) *Ni i-kam uraata ambai kat.*
 NOM.3SG 3SG-do work well very
 He/she worked very well.

8. Between the Subject and the predicate:

- (181) *Ni ko i-mar.*
 NOM.3SG UC 3SG-come
 He will come.

3.2.4.2.1 CLASS 1: ADVERBS WHICH OCCUR ONLY IMMEDIATELY AFTER THE PREDICATE (Ad-PRED⁰ MODIFIERS)

The four adverbs in Class 1 are all manner adverbs which add a directional component to motion predicates and predicates expressing location:

<i>kiṅa</i>	divergingly
<i>pirik</i>	scattering
<i>e</i>	moving horizontally
<i>leṅaleṅa</i>	be dispersed

- (182) *Nangṅa ti-ko kiṅa pa lele ta-na.*
 young.man 3PL-flee divergingly REF place SPEC-GIV
 The young men fled in all different directions from that place.
- (183) *La e ki Silas.*
 2SG+go horizontally LOC Silas
 Go over towards Silas.

3.2.4.2.2 CLASS 2: ADVERBS WHICH CAN OCCUR IMMEDIATELY AFTER THE PREDICATE, THE OBJECT, OR PREPOSITIONAL PHRASES EXCEPT SPECIFIERS FOR TIME AND OUTER LOCATION (Ad-PRED⁰, PRED¹ MODIFIERS)

Class 2 contains four manner adverbs and one modal form. The manner adverbs are listed below:

<i>ɲoobo</i>	incorrectly
<i>supurpuuru</i>	half-way
<i>sorok</i>	without basis, uselessly, in vain
<i>mini</i>	again

- (184) *Ni i-pa-saana (sorok)*
 NOM.3SG 3SG-CAUS-deteriorate w.o.cause
- ɲge tio (sorok) pa mbeɲ (**sorok).*
 pig LOC.1SG w.o.cause REF night w.o.cause
 He hurt my pig at night for no reason.

The one modal member of this class is *ten*, a form which is used when one makes a mild suggestion that someone do something. Thus, the force of the form is something like: 'I want you to do it, but if you do not want to do it, you do not have to do it.' *Ten* most frequently co-occurs with the verb *-toombo* 'try'.

- (185) *Toombo (ten) uraata ti (ten).*
 2SG+try suggest work this suggest
 Go ahead and try this work.

3.2.4.2.3 CLASS 3: ADVERBS WHICH FOLLOW THE OBJECT OR ANY OBLIQUE ARGUMENT EXCEPT THE PREDP SPECIFIERS FOR TIME AND PLACE (Ad-PRED¹ MODIFIERS)

Whereas the adverbs in Classes 1 and 2 have the potential to occur *between* a predicate and its Object, those in Class 3 always occur *after* the Object and before any Specifiers for Time and Outer Location. They are, therefore, analysed as modifiers of the PRED¹ constituent. The members of this class are mostly manner adverbs:

<i>lup</i> ⁴²	each member of a set of participants was affected
<i>pataaŋa</i>	already, at once
<i>parei ~ padei</i>	how, in what manner? (an interrogative questioning the nuclear PRED ¹ constituent) for PRED ¹)
so	what? (an interrogative questioning the expanded PRED ¹ constituent)
<i>rimen</i> ⁴³	for a short time
<i>molo</i>	for a long time
<i>ambai</i>	well
<i>ndel</i>	apart, divergingly, differently

⁴² Compare the verb *-lup* 'to meet'.

⁴³ This form seems to be composed of the degree adverb/quantifier *ri* 'a little bit' and the adverb *men* 'still, only'.

<i>ndabok</i>	very well
<i>kalansom</i>	poorly
<i>riḡa</i>	slowly, carefully
<i>karau</i>	quickly
<i>loḡa</i>	quickly, suddenly

(186) *Ni i-kas (**lup) zin lup pa nakabasi (lup).*
 NOM.3SG 3SG-cut.down all ACC.3PL all REF axe all
 He killed (lit. cut them all down) with an axe.

(187) *Zin ti-kam uraata (karau) pa nakabasi (karau).*
 NOM.3PL 3PL-do work quickly REF axe quickly
 They worked quickly with an axe.

(188) *Zin ti-kam uraata (karau) pa mbeḡ (**karau).*
 NOM.3PL 3PL-do work quickly REF night quickly
 They worked quickly at night.

Other members of this class are formed by reduplicating the numerals and adding the suffix *-ḡa*. The resultant forms mean 'The Objects were affected in groups of X', where X is the reduplicated numeral. Examples for the first three numerals are:

<i>tataḡa</i> ⁴⁴	one by one
<i>ruruḡa</i>	in groups of two
<i>teltelḡa</i>	in groups of three

(189) *Aḡ-kam zin ruru-ḡa.*
 1SG-do/get ACC.3PL two+RED-ADVS
 I got them in pairs.

The forms *padei* and *take((mbe)i)(na)*, in conjunction with the verb *-kam* 'do/get' function as pro-forms for the inner predicate phrase (= predicate plus its complements):

(190) *Ko aḡ-kam padei pa wal tiro-n ti?*
 UC 1SG-do how? REF group bone-GEN.3PL this
 What am I to do with these bones of the people?

The form *so*, in conjunction with the verb *-kam*, is used as an interrogative pro-form for the *expanded PRED*¹ constituent; that is the predicate plus its complements and adjuncts but minus any Time or Outer Location specifiers. Compare (190) above with the following example:

(191) *Neeri niom ka-kam so (**pizin)?*
 yesterday NOM.2PL 2PL-do what REF.3PL
 Yesterday, what did you do (to them)?⁴⁵

Six forms in this class are bicategorical. In addition to functioning as adverbs, *rimen* functions as a temporal noun, *molo* as a stative noun, and *ambai*, *ndel*, *ndabok*, and *kalansom* as uninflected verbs. Consider the following two examples:

⁴⁴ The form *tataḡa* also functions as a quantifier meaning either 'a few' or 'each'.

⁴⁵ The Benefactive pro-form *pizin* is a *PRED*¹ Adjunct, and therefore cannot co-occur with a pro-form for the *expanded PRED*¹.

- (192) *Ti-kam uraata ambai su lele ta-na.*
 3PL-do/get work well descend place SPEC-GIV
 They worked well in that place.
- (193) *Ti-kam uraata su lele ta-na ma ambai.*
 3PL-do/get work descend place SPEC-GIV and well
 They worked well in that place.

In (192) the form *ambai* is clearly functioning as an adverb modifying the PRED¹ constituent [*tikam uraata*]. It is not a noun phrase modifier, since, as an uninflecting verb, it must either be nominalised or relativised in order to occur noun phrase internally.⁴⁶ In (193) on the other hand, *ambai* is functioning as a predicate conjoined with the cosubordinating conjunction *ma*. Because there is a general tendency in the language not to have too much information in a single clause, use of these forms as PRED¹ adverbs is most common when there is no overt Object and/or peripheral PREDP arguments. For relatively complex predications like the one in the first clause of (193), however, cosubordinate adverbial constructions are preferred. Such constructions may well have been the original source of the present adverbial instances of these forms (via loss of the *ma* and gradual incorporation into the preceding clause).

As illustrations of the use of *rimen*, see the following:

- (194) *Ti-mbot rimen su lele ta-na.*
 3PL-stay short.time descend place SPEC-GIV
 They stayed a short time in that place.
- (195) *Rimen to ta-la.*
 short.time then 1PL.INC-go
 Soon we will go.

Example (194) illustrates *rimen* functioning as an adverb, whereas in (195) it is functioning as a temporal noun in an existential adverbial construction.

3.2.4.2.4 CLASS 4: ADVERBS WHICH OCCUR IN THE PREDICATE PHRASE FOLLOWING ALL PREDP SPECIFIERS BUT BEFORE ANY SENTENTIAL ADVERBS AND WHICH CAN BE THEMATISED (Ad-PREDP MODIFIERS)

The end of the predicate phrase before any *clausal* PREDP constituents is the position of occurrence for a number of different temporal adverbs. The major characteristics distinguishing these PREDP adverbs from those attached directly under the S node is their obligatory positioning *after* all *non-clausal* PREDP constituents (196) and *before* any *clausal* PREDP constituents (197) and/or Ad-S forms (198):

- (196) *Ni ko i-mar pa mbeŋ koozi.*
 NOM.3SG UC 3SG-come REF night today
 He will come today, at night.
- (197) *Ni i-kamam uraata totomen be i-kam*
 NOM.3SG 3SG-do+RED work continually NF 3SG-do/get

⁴⁶ See §3.2.3.2ff. of this chapter for further discussion of uninflected verbs.

le *pat.*
 RECX+GEN.3SG stone/money
 He is continually working to get himself some money.

- (198) *Mar gaaga pepe.*
 2SG+come tomorrow PROH
 Do not come tomorrow.

The adverbs in this class are listed below:

<i>mun̄gu</i>	before, first
<i>kaimer</i>	later, afterwards
<i>uriiza</i>	three days ago
<i>uriizi</i>	two days ago
<i>neeri</i>	yesterday
<i>mbeŋi</i>	last night (cf. <i>mbeŋ</i> 'night time')
<i>mankwooni</i>	this morning (cf. <i>mankwoono</i> 'morning time')
<i>koozi</i>	today (cf. <i>koozo</i> 'day')
<i>huri</i>	now
<i>gaaga</i>	tomorrow
<i>malama</i>	two days from now
<i>upeele</i>	three days from now
<i>irin</i>	four days from now
<i>saaga</i>	five days from now
<i>ŋiizi</i>	when?
<i>totomen</i>	continually
<i>totomentotomen</i>	all the time

In texts the temporal adverbs of this class typically occur sentence initially as Themes (199). In responses to 'when?' questions, however, they occur sentence finally (200).

- (199) *Koozi, iti ko te-leŋ le-nde*
 today 1PL.INC UC 1PL.INC-hear RECX-1PL.INC.GEN

mbol ki mbia.

story LOC bat

Today, we will hear (for pleasure) a story about bats.

- (200) *Zin ti-la ŋiizi? : Ti-la neeri.*
 NOM.3PL 3PL-go when 3PL-go yesterday
 When did they go? : They went yesterday.

As additional examples of the use of these temporal adverbs, see:

- (201) *Ko aŋ-so nio tiro-ŋ ta*
 UC 1SG-show NOM.1SG bone-GEN.1SG SPEC

huri na som.

now GIV NEG

I am not going to show my strength (lit. bones) right *now*. (I will do it later.)

- (202) *Gaaga to ta-la.*
 tomorrow then 1PL.INC-go
 Tomorrow, we will (definitely) go (lit. tomorrow, then we go).

- (203) *Gaaga ko ta-la.*
 tomorrow UC 1PL.INC-go
 Tomorrow we (might) go.

Example (201) illustrates a clefted temporal construction with the form *ta*. Preceding temporal elements (201), *ta* encodes contrastive emphasis. Examples (202) and (203) illustrate the syntactic contrast between expressing *relatively certain* future events which are due to happen at a *definite* time (202) and *uncertain* ones (203). Note in particular that the certain definite future construction in (202) lacks the modal verb *ko*. Events which are *certain* to happen at some *indefinite* time in the future are expressed with the modal adverb *kola*.

Two examples of the use of the *non-deictic* temporal adverb *mungu* ‘first, before’ are given below. *Kaimer* ‘later, afterwards’ functions similarly.

- (204) *Nu la mungu.*
 NOM.2SG 2SG+go before
 You go first.
- (205) *Mungu, tomtom ti-kam ta-kei som.*
 before person 3PL-do SPEC-like NEG
 In the old days (lit. before) people did not do like that.

3.2.4.2.5 CLASS 5: Ad-PREDP MODIFIERS WHICH MAY NOT BE THEMATISED

The non-thematisable Ad-PREDPs are aspectual: *kek* ‘perfect aspect’, and *zen* ‘negative perfect aspect’:

- (206) *Zin ti-mar kek, na?*
 NOM.3PL 3PL-come PERF GIV
 They have already come, haven’t they?
- (207) *Som, ti-mar zen.*
 no 3PL-come NEG.PERF
 No, they haven’t come yet.

3.2.4.2.6 CLASS 6: SENTENCE-FINAL ADVERBS WHICH MAY NOT BE THEMATISED (Ad-S MODIFIERS)

The members of Class 6 are all somewhat modal in nature. Three of them are imperative adverbs: *pepe* ‘prohibitive’ (208), *rimos* ‘cessative’ (209), and *lak*, a form which strengthens commands⁴⁷ and can be glossed as: ‘I want this *now!*’ (210):

- (208) *Niom ko-mbot lele ta-na pa mbeḡ pepe.*
 NOM.2PL 2PL-stay place SPEC-GIV REF night PROH
 Do not stay in that place at night.
- (209) *Nu nok yok lala-ḡa-na rimos.*
 NOM.2SG 2SG+persist water go+RED-NMS-GEN.3SG CESS
 Quit going to the water all the time.

⁴⁷ Ordinary positive commands are identical to statements.

- (210) *I-mbot lak!*
 3SG-stay I.want.this.now
 Leave it alone right now. or Let him/her stay (I do not want him/her to come).

Another member of the class is the demonstrative *na*.⁴⁸ When it is pronounced with rising intonation, it functions as a tag question marker:

- (211) *Nu kankaana pio, na?*
 NOM.2SG 2SG+confused REF.1SG GIV
 You are confused about me, aren't you?
 (= You accept the proposition that you are confused about me, don't you?)

Na also occurs at the end of various types of sentential Complements, functioning to delineate the boundary of the embedded sentence.

- (212) *Nio aŋ-ute ta ni i-mar som*
 NOM.1SG 1SG-know SPEC NOM.3SG 3SG-come NEG

na som.
 GIV NEG
 I did not know that he hadn't come.

Grammaticalised ellipsis using the negative *som*⁴⁹ is another member of this subclass. It is the ordinary means of encoding yes-no questions:

- (213) *Ni ko i-rao, som som?*
 NOM.3SG UC 3SG-adequate or NEG
 Will he be adequate or (will he) not?

Three other members of this class are post-clitics which are restricted to declarative main clauses and encode a combination of: 1) affirmation, 2) evidentiality, and 3) aspect. The forms and their semantic explications using a controlled metalanguage are given below:

1. =(g)i⁵⁰ 'proximate event'

I say:

One can see this here now.⁵¹

Because of this,

I say:

I know this.

(used mainly in encoding visible progressive events (214) and inceptives (215))

- (214) *Ni i-la=(g)i.*
 NOM.3SG 3SG-go=PROX
 He/she is going now (I can see him/her).

⁴⁸ *Na* is a demonstrative formative encoding nearness to the hearer and, by extension, given information within a discourse.

⁴⁹ The form *som* also encodes logical disjunction 'or'.

⁵⁰ There does not seem to be any semantic difference between the forms with /g/ and those lacking it. The variants with /g/ only occur following vowels, whereas the *i*, *a*, and *o* variants may occur following either vowels and consonants.

⁵¹ Note that in such explications, indenting corresponds to structural embedding.

- (215) *Ni iŋgi (be) i-la=(g)i.*
 NOM.3SG now NF 3SG-go=PROX
 He/she is right on the verge of going.

2. =(g)a ‘non-visible proximate event’

I do not say:

One can see this here now.

I say:

I know this.

This happened at a time not very different from now.

(used to encode *invisible* or *remote* progressive action (216) or recently completed action (217)):

- (216) *Ni i-nmbot=a.*
 NOM.3SG 3SG-stay+RED=NON.VIS.PROX
 He/she is there. (in some place where I cannot see him/her well).

- (217) *Aŋ-pekəl sua ta awo-ŋ*
 1SG-reply.to talk SPEC maternal.uncle-GEN.1SG
i-so=(g)a.
 3SG-say=NON.VIS.PROX
 I will reply to what my uncle just said.

3. =(g)o ‘certain non-proximate event’

I do not say:

One can see this here now.

I say:

This happened a long time before now.

When it happened, I was there.

Because of this,

I say:

I know this.

(used to assert the occurrence of a past event which the speaker personally witnessed:

- (218) *Ni i-la=(g)o.*
 NOM.3SG 3SG-go=REM
 He/she went a long time ago.

The form =*i* also occurs at the end of relative clauses which encode propositions that are viewed as being: 1) presently true, or 2) in the process of becoming true. In subordinate clauses, =*i* may co-occur with negative modality:

- (219) *Iti irao tu-uulu zin wal*
 NOM.1PL.INC should 1PL.INC-help PL group
[ta le-n koron som=i.]RelativeClause
 SPEC RECX-GEN.3PL thing NEG=PROX
 We should help those who are in need (lit. who do not have anything).

The final member of this class is the negator *som*.⁵²

- (220) *Niam am-kem mburu ku som.*
 NOM.1PL.EXC 1PL.EXC-steal possessions LOC.2SG NEG
 We did not steal your things.

It is possible to have more than one occurrence of the negator *som* at the end of a complex sentence:

- (221) [*Ni i-rao* [*i-kam kini*
 NOM.3SG 3SG-able 3SG-do/get food
ma i-ma] *som* *na*] *som*.
 and 3SG-come NEG GIV NEG
 He won't refuse you food (lit. he is not able to not give you food).

In this example, the first *som* negates the sentential complement *ikam kini ma ima* 'give you food', while the second one negates the matrix sentence. Note also the form *na*, which functions in constructions containing embedded sentences to delineate the boundary of the embedded sentence. When *som* follows *na*, it negates the matrix sentence rather than the Complement; when it precedes *na* it negates the Complement. Compare example (221) with the following one, in which only the matrix sentence is negated:

- (222) [*Ni i-rao* [*i-kam kini*
 NOM.3SG 3SG-able 3SG-do/get food
ma i-ma] *na*] *som*.
 and 3SG-come GIV NEG
 He is not able to give you food.

3.2.4.2.7 CLASS 7: ADVERBS THAT MAY OCCUR FOLLOWING ANY NOUN PHRASE OR IN THE PRED¹ CONSTITUENT (Ad-NP, Ad-PRED¹ FORMS)

Class 7 contains three members: *tomini* 'also, too', *men* 'still, only', and *tau* 'emphasis'. The differing placements of these forms correspond to differing scopes of modification. The scope rule is that the major constituent immediately preceding the adverb is the one which is modified. For example:

- (223) *Zin (tomini) ti-kam (**tomini) uraata (tomini) pa mbeŋ (tomini).*
 NOM.3PL also 3PL-do also work also REF night also
 They, too, worked at night.
 They also worked at night.
 They worked at night too.

⁵² An uninflected verb *som* occurs in constructions like the one below, encoding frustrated activities.

Niam am-ru i. ma som.
 NOM.1PL.EXC 1PL.EXC-search ACC.3SG and do.in.vain
 'We searched for him in vain.'

Compare the virtually identical Tok Pisin construction: *Mipela painim em, painim painim na nogat.* 'We (EXC) looked for him, and looked and looked and no.' Note also that the Mangap-Mbula form *som* also encodes disjunction 'or'.

- (224) *Zin (tomini) ti-la (tomini).*
 NOM.3PL also 3PL-go also
 They also went.
 They went too.

Illustrations of the use of *men* 'only, still' are now given.

- (225) *Zin men ti-mbot.*
 NOM.3PL only 3PL-stay
 They were the only ones who stayed.
- (226) *Ni i-kam uraata ambai men.*
 NOM.3SG 3SG-do work well only
 He never works poorly (lit. he only works well).
- (227) *Zin ti-nmbot men.*
 NOM.3PL 3PL-stay+RED still
 They are still alive.
- (228) *Aŋ-so aŋ-pa pa mbalus men.*
 1SG-say 1SG-walk REF plane only
 I want to travel only by plane.

The meaning of *tau* is difficult to specify. In long, carefully-constructed narratives, it is frequently used when introducing or reintroducing key participants. Occasionally, it has a contrastive flavour; that is *X tau* = 'X, not someone or something else'.

3.2.4.2.8 CLASS 8: DEGREE ADVERBS OCCURRING IN NOUN, ADVERB, QUANTITY, AND PREDICATE PHRASES

The forms in Class 8 are all degree adverbs:

<i>kat</i>	very
<i>mete</i>	too much
<i>pe</i>	really, well (bound to negative environments)
<i>ŋana</i>	a bit
<i>ri</i>	a little bit

Syntactically, they may modify stative noun phrases encoding gradable properties (229), adverb phrases (230), quantity phrases (231), and PRED⁰ and PRED¹ constituents (232).

- (229) *Ti-kam ŋge biibi kat.*
 3PL-get pig big very
 They got a very big pig.
- (230) *La karau mete pepe.*
 2SG+go quickly too PROH
 Do not go too quickly.
- (231) *Tomtom boozo ŋana ti-mar.*
 person many a.bit 3PL-come
 A fair number of people came.

- (232) *Zin ti-kam (kat) uraata (kat).*
 NOM.3PL 3PL-do really work really
 They really did the work well.

3.2.4.2.9 CLASS 9: PRE-PREDICATE MODAL ADVERBS

Adverbs of the final class are all modal in nature. As adverbs, they are exceptional in that they always occur before the predicate, rather than after it. They may occur either before or after the Subject NP. Consider the following two examples:

- (233) *Yoan ko i-mar (**ko) gaaga (**ko).*
 John UC 3SG-come UC tomorrow UC
 John will come tomorrow.
- (234) *Ko Yoan i-mar gaaga.*
 UC John 3SG-come tomorrow
 John will perhaps come tomorrow.⁵³

Note here that *ko* may occur either before the Subject *Yoan* or immediately after it, but not post-verbally or sentence finally.

All the following modal elements exhibit this kind of distribution:⁵⁴

<i>irao</i>	ability, obligation, permission ⁵⁵
<i>so((m)be)</i>	if, when
<i>kozo</i>	must ('If this doesn't happen, it will be bad.')
<i>ko</i>	uncertainty on the part of the speaker
<i>kola</i>	relatively high certainty on the part of the speaker that a proposition will come to be true
<i>be</i>	non-assertion of factuality ⁵⁶
<i>bela</i>	necessity ('If this doesn't happen, something else cannot happen.')
<i>ingi</i>	This happens now.

Two of the above forms are obviously verbal in origin: *so((m)be)* and *irao*. *So((m)be)* comes from the verb *-so* 'say, want, intend, think', while *irao* comes from the verb *-rao* 'able, adequate, sufficient'. The modal adverbs are distinguished from the verbs by their ability to occur *preceding* a Subject noun phrase and their lack of Subject-indexing morphology. In the case of *irao*, the modal adverb contains frozen third singular Subject-indexing morphology, whereas in the case of *so((m)be)* the modal has no verbal morphology whatsoever. With these forms, there are often two possible encodings for a modal notion: 1) modal adverb + predicate phrase, or 2) fully inflected verb plus sentential complement, with no apparent semantic difference between the two. This is illustrated in the following example:

- (235) *Zin so(=mbe) / ti-so(=mbe) ti-mar,*
 NOM.3PL say(-NF) 3PL-say(-NF) 3PL-come

⁵³ Note that placement of the *ko* sentence initially yields a more tentative flavour to the example.

⁵⁴ Most of these forms are discussed in more depth in Bugenhagen (1989b).

⁵⁵ Compare Tok Pisin *inap*, which has a similar range of uses.

⁵⁶ Frequently *be* is cliticised onto an immediately preceding modal element, if one is present.

ina-ko nio aŋ-mar mi aŋ-re zin.
 GIV-UC NOM.1SG 1SG-come and 1SG-see ACC.3PL
 If they come, I will come and see them.

It is not necessary for any of these modal forms to be present in a sentence. If they are omitted and no temporal adverbs are present, then the sentence is normally interpreted as having *factual* modality:

[...Ø...]s

I know a time.

This time is not after now.

At this time this (=S) happened/was.

In extended discourses, however, modally unmarked clauses often occur following a clause with overt modal marking when the same modality is being maintained. This can be seen in example (235) above, where *aŋ-re zin* has no overt modal marking even though it is still part of the conditional apodosis. Thus, there is a principle of economy. Only *changes* in modality are normally marked overtly.

These various modal forms will now be illustrated, beginning with the obligative (236), permissive (237), and abilitative (238) uses of *irao*:

(236) *Iti irao ti-ziiri zin ŋge na som.*
 NOM.1PL.INC OBL 1PL.INC-send.away PL pig GIV NEG
 We shouldn't send the pigs away.

(237) *To tisa tio i-so irao=be nio aŋ-la tomini.*
 follow teacher LOC.1SG 3SG-say PERM=NF NOM.1SG 1SG-go also
 Then my teacher said I could go too.

(238) *Niam am-rao/irao am-kan*
 NOM.1PL.EXC 1PL.EXC-able/ABLE 1PL.EXC-eat
mok mini som. Pa i-map kek.
 taro again NEG for 3SG-end PERF
 We can't eat taro any more, because it is finished.⁵⁷

In abilitative examples like (238), the verb *-rao* tends to occur more often than the adverb *irao*.

So is used to encode hypothetical and counterfactual modalities (239), (240). The fully inflected verb *-so* can encode intent (241).

(239) *So(=mbe)* *zin* *(ti)-so(=mbe)* *ti-kam bakai*
 say(=NF) NOM.3PL 3PL-say(=NF) 3PL-do mistreatment
pini, ina-ko i-kan zin.
 REF.3SG GIV-UC 3SG-bite ACC.3PL
 If they mistreat him, he will bite them.
 (Note: In both this example and the following one, one or the other of the underlined constituents is necessary in the protasis, but both do not occur.)

⁵⁷ A taro beetle infested Umboi island in the sixties, and currently makes it impossible to successfully grow taro in the coastal areas (a state of affairs lamented by all!).

- (240) *Be/So zin be/(ti-)so ti-mar,*
 NF/say NOM.3PL NF/(3PL-)say 3PL-come
so nu re zin.
 say NOM.2SG 2SG+see ACC.3PL
 If they had come, you would have seen them.⁵⁸
- (241) *Aŋ-so(=mbe) aŋ-la aŋ-re lele taŋga.*
 1SG-say(=NF) 1SG-go 1SG-see place over.there
 I intend to go see that place over there.⁵⁹

The modal adverb *kozo* indicates strong desire or a feeling of inner compulsion on the part of the speaker that a state of affairs obtains, with the further component that it will be bad if it fails to obtain. It is frequently used in threats.

Kozo X

I do not say:

I know a time.

At this time this (=X) happened.

I say:

I want this to happen.

If this does not happen, it will be bad.

- (242) *Kozo nio aŋ-la mutu ta taŋga.*
 must NOM.1SG 1SG-go island SPEC over.there
 I must go to that island over there.

The non-factual adverb *be* frequently accompanies *kozo*, *rao* and *so*. This is illustrated in several of the examples above. *Be* is usually phonologically adjoined to the preceding word if that word ends in a vowel. *Be* also occurs in the protases of counterfactual conditionals (example (240) above) and encodes events which *almost* took place:

- (243) *Ti-pun=i ma=be i-meete.*
 3PL-hit=ACC.3SG and=NF 3SG-die
 They hit him almost killing him.

In conjunction with *iŋgi*⁶⁰ and the proximate adverb =*i*, *be* encodes incipience.

- (244) *Nio iŋgi be aŋ-la=i.*
 NOM.1SG now NF 1SG-go=PROX
 I am just about to go now.

The different functions of the form *be* are semantically unifiable as *non-assertions of factuality*:

⁵⁸ In the protasis of *counterfactual* conditionals, *be* and *so* appear to be used interchangeably, with no apparent difference in meaning. This contrasts with *hypothetical* conditionals, where only *so* occurs in the protasis.

⁵⁹ This instance of *so* is *not* an adverb, because *-so* is *obligatorily* inflected with Subject-indexing morphology and may not occur before the Subject. It is simply a predicate taking a sentential Complement. It is adduced here in order to illustrate another important modal use of the form /*so*/.

⁶⁰ In addition to being a demonstrative pronoun, the form *iŋgi* functions as an adverb meaning 'now' and as a morphological component in the demonstratives *tiŋgi* and *taŋgi*.

Be X

I do not say:

I know a time.

This time is not after now

At this time this (=X) happened/was.

The form *ko* is used to encode uncertainty on the part of the speaker as to whether or not the state of affairs encoded is true; that is 'I do not say I know this. I say I think this.' It most frequently occurs in utterances having future temporal reference (245), but it can also occur in utterances having past temporal reference (246):

- (245) *Mar pepe, pa kar ko ti-pun=u.*
 2SG+come PROH REF village UC 3PL-hit=ACC.2SG
 Don't come, because the village might/will beat you up.
- (246) *Ko tomooto ti-sou nge sa kek.*
 UC male 3PL-catch.in.a.net pig NON.REF PERF
 Perhaps the men have caught a pig.

The form *bela* encodes necessity, and most frequently occurs in conditional utterances like the following:

- (247) *(Bela) nu (bela) le-m*
 necessary NOM.2SG necessary RECX-GEN.2SG
paspot, tona nu la lele molo.
 passport then NOM.2SG 2SG+go place long
 You must have a passport in order to go to a faraway place.

The final member of this class, *kola*, is a counterpart of *ko*, which is used to encode future events which the speaker feels to be quite certain to take place, even though he doesn't know exactly when. It is textually very rare, because, according to one Mangap-Mbula speaker, there are very few future events about which one can be completely sure!

- (248) *Yesu kola i-milli ma i-su toono mini.*
 Jesus CERT.FUT 3SG-return and 3SG-descend earth again
 Jesus will definitely return to earth (some day).

Both *bela* and *kola* appear to be bi-morphemic, consisting of the verb *la* 'go' plus either *ko* or *be*. Both forms are used to encode high speaker certainty regarding a potential state of affairs. With *bela* the certainty is:

bela X (to Y)

I do not say:

I know a time

This time is not after now.

At this time this (=X) happened/was.

I say:

If this does not happen/is not,

then some other thing (=Y) cannot happen/be.

With *kola*, the certainty is:

kola X

I do not say:

I know a time

This time is not after now.

At this time this (=X) happened/was.

I say:

I know this:

After now this will happen/be.

The *la* 'go' element in both forms seems, therefore, to add an element of certainty to the utterance.

3.2.4.2.10 SUMMARY LISTING OF ADVERBS

By way of a summary, a listing of the principal adverbs according to their syntagmatic classes is given in Table 3.2:

TABLE 3.2: SUMMARY LISTING OF ADVERBS

Syntagmatic Class	Notional Class	Item	Meaning
1. (Ad-PRED ⁰)	Manner	<i>kiŋa</i>	divergingly
		<i>pirik</i>	scattering
		<i>e</i>	horizontally
		<i>leŋaleŋa</i>	be dispersed
2. (Ad-PRED ⁰ , PRED ¹)	Manner	<i>ŋoobo</i>	incorrectly
		<i>supurpuuru</i>	half-way
		<i>sorok</i>	without basis, uselessly, in vain, just
		<i>mini</i>	again
3. (Ad-PRED ¹)	Modal	<i>ten</i>	mild suggestion
	Manner	<i>lup</i>	each member of a set of participants was affected
		<i>pataaŋa</i>	at once, already
		<i>molo</i>	for a long time
		<i>rimen</i>	for a short time
		<i>ambai</i>	well
		<i>ndel</i>	differently
		<i>ndabok</i>	very well
		<i>kalansom</i>	poorly
		<i>riŋa</i>	slowly, carefully
		<i>karau</i>	fast
		<i>loŋa</i>	quickly, suddenly

		<i>tataŋa</i>	one by one
		<i>ruruŋa</i>	in groups of two
		<i>teltelŋa</i>	in groups of three
		<i>paŋpaŋa</i>	in groups of four (and so on)
		<i>parei ~ padei</i>	how, in what manner
		<i>take((mbe)i)(na)</i>	like that
		<i>so</i>	what? (used as PRED ¹ pro-form)
4. (Ad-PREDP)	Temporal		
		<i>muggu</i>	before, first
		<i>kaimer</i>	later, afterwards
		<i>uriiza</i>	three days ago
		<i>uriizi</i>	two days ago
		<i>neeri</i>	yesterday
		<i>mbeŋi</i>	last night (cf. <i>mbeŋ</i> 'night')
		<i>mankwooni</i>	this morning (cf. <i>mankwoono</i> 'morning')
		<i>koozi</i>	today (cf. <i>koozo</i> 'day')
		<i>buri</i>	now
		<i>gaaga</i>	tomorrow
		<i>malama</i>	two days from now
		<i>upeeŋe</i>	three days from now
		<i>irin</i>	four days from now
		<i>saaga</i>	five days from now
		<i>ŋiizi</i>	when?
		<i>totomen</i>	continually
		<i>totomentotomen</i>	all the time
5. (Ad-PREDP, non-Thematisable)	Aspectual		
		<i>kek</i>	perfect
		<i>zen</i>	negative perfect
6. (Ad-S)	Modal		
		<i>pepe</i>	prohibitive
		<i>rimos</i>	cessative
		<i>lak</i>	I want this now
		<i>na</i>	tag question marker, Complement delimiter
		<i>som som</i>	yes-no question construction
	Evidential	<i>=(g)i</i>	proximate
		<i>=(g)a</i>	non-visible proximate
		<i>=(g)o</i>	certain, non-proximate
	Negative	<i>som</i>	negative

7. (Ad-NP, PRED ¹)	Particles	<i>men</i> <i>tomini</i> <i>tau</i>	still, only also, too emphatic particle
8. (Ad-XP)	Degree	<i>kat</i> <i>mete</i> <i>pe</i> <i>ɲana</i> <i>ri</i>	very, really too much really, well (bound to negative environments) a bit a little bit
9. (pre-PREDP)	Modal	<i>rao</i> <i>so((m)be)</i> <i>kozo</i> <i>ko</i> <i>kola</i> <i>be</i> <i>bela</i> <i>iŋgi</i>	ability, obligation, permission if, when must uncertainty certain future non-assertion of factuality necessity 'This happens now.'

3.2.4.3 'ADVERBIAL' USES OF NON-ADVERBS TO ENCODE SOME TEMPORAL, MANNER, AND ASPECTUAL NOTIONS

In this rather strangely named and perhaps somewhat anglocentric section, we survey some uses of forms other than adverbs to encode 'adverbial' notions such as specification for manner, modality, aspect, and time. Section 3.2.4.2ff. described forms which are *only* used to encode such notions and thus instance syntactic categories other than nouns, verbs, and prepositions. In this section, we consider some of the ways in which nouns, verbs, and prepositions are used to encode similar sorts of noticns.

The constructions in which non-adverbial forms function to encode adverbial notions are primarily of four types: 1) existential constructions (249), 2) cosubordinate⁶¹ combinations of predications conjoined with the form *ma* (250), and 3) extensions of a predication by an propositional satellite (251):

- (249) *Mbeŋ to ta-la.*
night then 1PL.INC-go
Once it is night, then we will go (lit. it being night, then, we go).

- (250) *Ti-map ma ti-la.*
3PL-end and 3PL-go
They all went.

⁶¹ Cosubordination is discussed §5.5.1.

- (251) *Niam am-rak pa mbeŋ.*
 NOM.1PL.EXC 1PL.EXC-dance REF night
 We danced at night.

3.2.4.3.1 TEMPORAL EXISTENTIAL ADVERBIAL CONSTRUCTIONS

Temporal nouns like the ones below frequently occur in existential adverbial constructions like the following (252) when they provide temporal settings for events:

<i>aigule</i>	daytime
<i>koozo</i>	daytime
<i>mbeŋ</i>	night time
<i>(r(o(u)))rou</i>	afternoon time
<i>mankwoono</i>	morning time
<i>kozare</i>	morning time
<i>palakuutu</i>	noon time
<i>lw(o)ono</i>	middle, time
<i>mazwaana</i>	space, point in time
<i>gorgor</i>	period of time
<i>molosom</i>	not a long time
<i>rimen</i>	a short time
<i>ndaama</i>	year
<i>puulu</i>	moon, month

- (252) *Ndaama toro to aŋ-la.*
 year other then 1SG-go
 Next year, then I'll go.

3.2.4.3.2 PREPOSITIONAL PHRASE ADVERBIALS

Extension of predications with prepositional phrases containing temporal nouns is another frequent device for expressing temporal adverbial notions:

- (253) *Niam am-la pa mbeŋ.*
 NOM.1PL.EXC 1PL.EXC-go REF night
 We went at night.

Class 4 temporal *adverbs* like *mbeŋi* 'last night' and *koozi* 'today' are distinguished from these temporal *nouns* by two syntactic tests:

1) temporal nouns may be governed by the Referent preposition *pa* (example (253) above), whereas temporal adverbs may not:

- (254) ***Nio aŋ-la pa mbeŋ-i.*
 NOM.1SG 1SG-go REF night-PROX
 I went last night.

2) Temporal nouns do not occur clause/sentence initially unless they are in an existential adverbial construction (example (252) above) or are explicitly marked as Themes by the demonstrative *na* (255), (256), whereas temporal adverbs lack this requirement (257).

- (255) *Mbeŋ na, ti-keene.*
 night GIV 3PL-sleep
 At night, they slept.
- (256) ***Mbeŋ nio aŋ-la.*
 night.time NOM.1SG 1SG-go
 At night I went.
- (257) *Koozi, nio aŋ-la Lablab.*
 today NOM.1SG 1SG-go Lablab
 Today I went to Lablab.

Morphologically, many of the temporal adverbs appear to contain the evidential adverbs =i or =a.

Some adverbial notions of *manner* are encoded by prepositional phrases headed by the preposition *raama* 'with':

- (258) *Ni i-so sua raama mbura-ana.*
 NOM.3SG 3SG-say talk with power-GEN.3SG
 He spoke powerfully/with power.

3.2.4.3.3 COSUBORDINATE ADVERBIAL CONSTRUCTIONS WHICH PRECEDE THE SEMANTICALLY MODIFIED PREDICATION

Manners of action are frequently expressed by uninflected verbs occurring in cosubordinate constructions like the following:

- (259) *Mooto res ma i-la le-ne.*
 snake slither.quickly and 3SG-go RECX-GEN.3SG
 The snake quickly slithered away.
- (260) *Zoŋ mata-ana pok ma i-se.*
 sun eye-GEN.3SG pop.into.view and 3SG-ascend
 The sun popped up (over the horizon) into view.

3.2.4.3.4 COSUBORDINATE ADVERBIAL CONSTRUCTIONS WHICH FOLLOW THE SEMANTICALLY MODIFIED PREDICATION.

This type of adverbial construction is a counterpart to the preceding one. Like the preceding construction, this one is formed by conjoining a predicate to another predication with the cosubordinating conjunction *ma*. However, whereas the adverbial predicates in the preceding construction *precede* the predications they semantically modify, those occurring in this construction *follow*. The forms involved mainly encode various types of telic aspect. For example:

- (261) *Aŋ-se-boogo teu ma ŋes.*
 1SG-ascend-divide sugar.cane and completely.broken
 I broke the sugar cane in two.

- (262) *Ni i-yebut nama-ana lutu-unu*
 NOM.3SG 3SG-cut hand-GEN.3SG child-GEN.3SG

ma put.

and completely.severed

He cut off his finger.

Continuative aspect is encoded by the verb *-mbot* 'stay, live, be at' occurring in this sort of construction:

- (263) *I-taptaj pa tizi-ini ma i-mbot.*
 3SG-cry+RED REF y.sibling-GEN.3SG and 3SG-stay
 He continued to cry about his younger brother.

The uninflected verb *som* 'do in vain', which is homophonous with the negative adverb *som*, occurs in this construction expressing frustration:

- (264) *Niam am-toombo ma som.*
 NOM.1PL.EXC 1PL.EXC-try and do.in.vain
 We tried in vain.

Another item occurring in this construction is the form *makij*, which is used to encode presupposed events which have perfect aspect. The form can usually be glossed as 'after that had happened' and typically occurs in Tail-Head constructions like the following:

- | | TAIL | HEAD | |
|-------|---|----------------------|-------|
| (265) | <i>..to aŋ-win ti.</i> | <i>Aŋ-win makij,</i> | |
| | then 1SG-drink tea | 1SG-drink | after |
| | <i>mi aŋ-zem kar.</i> | | |
| | and 1SG-leave village | | |
| | ...then I drank some tea. After I drank it, I left the village. | | |

3.2.4.3.5 *-map*, A FORM THAT OCCURS IN COSUBORDINATE ADVERBIAL CONSTRUCTIONS BOTH PRECEDING AND FOLLOWING THE SEMANTICALLY MODIFIED PREDICATION

The verb *-map* 'to end' frequently occurs in cosubordinate adverbial constructions. As an aspectual adverbial, it encodes total affectedness or participation. When it precedes the modified predication, there must be a plural Subject, and the combination indicates that all of the potential referents of the Subject NP took part in the event (266). When it follows the modified predication, it encodes telic aspect – total affectedness of the Object, that it is not possible to do any more of the same activity to it (267), (268):

- (266) *Niam a-map ma am-la.*
 NOM.1PL.EXC 1PL.EXC-end and 1PL.EXC-go
 We all went. (No one was left behind.)
- (267) *Ti-kan kini ma i-map.*
 3PL-eat food and 3SG-end
 They ate up all the food. (None of it was left over.)

- (268) *Ti-po ruumu ma i-map.*
 3PL-build house and 3SG-end
 They finished building the house.

3.2.5 QUANTIFIERS

Quantifiers are uninflected forms which always occur in noun phrases following nouns, Locative/alienable genitive *pronouns*, and attributive stative nouns, but before determiners, Locative/alienable genitive prepositional phrases, relative clauses and demonstratives. Thus, the ability to occur in the following two syntactic frames is diagnostic of quantifiers:

<i>korog</i>	<i>biibi/bibip</i>	_____	<i>ta-na</i>
thing	big/big+RED		SPEC-GIV
that/those	_____	big thing(s)	
<i>korog</i>	_____	<i>ki tomtom ta-na</i>	
thing		LOC person SPEC-GIV	
_____	thing(s) of that person		

Below are some sentential examples of numerals and other quantifiers.

- (269) *Tomtom piizi ti-mar?*
 person how.many 3PL-come
 How many people came?
- (270) *Nio aŋ-kam zin me tio bibip ru.*
 NOM.1SG 1SG-get PL dog LOC.1SG big+RED two
 I got my two big dogs.
- (271) *Tomtom boozo kat ti-mar.*
 person many very 3PL-come
 Very many people came.

3.2.5.1 CARDINAL NUMERALS AND OTHER QUANTIFIERS

The non-numeral quantifiers in Mangap-Mbula are:

<i>pakan</i>	some
<i>boozo</i>	many, much
<i>ta-boozo-men</i>	all (from <i>ta</i> 'specific and referential, (the) one (that)' + <i>boozo</i> 'many' + <i>men</i> 'only')
<i>ri</i>	a small amount
<i>piizi</i>	how much/many?
<i>tataŋa</i>	a few, each

To these can be added the form *sa*, 'some/any', which functions as a determiner with count nouns to indicate that they are non-referential, but with mass nouns indicates an indefinite quantity. The semantic invariant of the form would seem to be that a specific entity is not being *isolated* in the real world.

The Mangap-Mbula counting system is based on *lama* 'five' (cf. *nama*- 'hand') and *tomoo* ~ *tomto* ~ *tomtoo* 'twenty' (cf. *tomooto* 'man, male', *tomtom* 'person' and the ten toes plus ten fingers which people have). The numerals are listed below:

<i>ta</i>	one ⁶²
<i>ru</i>	two
<i>tel</i>	three
<i>paŋ</i>	four
<i>lama-ta</i> five-one	one five (=5)
<i>lama-ta mi ta</i> five-one and one	one five and one (=6)
<i>lama-ta mi ru</i> five-one and two	one five and two (=7)
<i>lama-ta mi tel</i> five-one and three	one five and three (=8)
<i>lama-ta mi paŋ</i> five-one and four	one five and four (=9)
<i>laamu-ru</i> five-two	two fives, ten
<i>laamu-ru mi ta</i> five-two and one	two hands and one (=11)
<i>laamu-ru mi ru</i> five-two and two	two fives and two (=12)
<i>lamo-ro-ma-ta</i> five-two-and-one	two and one fives, 15
<i>lamo-ro-ma-ta mi ta</i> five-two-and-one and one	two and one fives and one (=16)
<i>lamo-ro-ma-ta mi ru</i> five-two-and-one and two	two and one fives and two (=17)
<i>tomoo-ta</i> twenty-one	one twenty (=20)
<i>tomoo-ta mi ta</i> twenty-one and one	one twenty and one (= 21)
<i>tomoo-ta (mi) lama-ta</i> twenty-one and five-one	one twenty and one five (=25)

⁶² The same form functions as a demonstrative 'that', a relative clause complementiser, and the indefinite article. Its contextually invariant meaning, therefore, is that of indicating specificity: that there is a particular 'one' being referred to. As such, it contrasts with the form *sa*, which indicates non-referentiality (or at least non-isolatability.) *Ta* is usually glossed in this grammar as 'SPEC', but in the following numeral examples it is glossed as 'one'.

<i>tomoo-ta</i>	(<i>mi</i>) <i>lama-ta mi ta</i>	one twenty and one five and one (=26)
twenty-one	and five-one and one	
<i>tomoo-ta</i>	(<i>mi</i>) <i>laamu-ru</i>	one twenty and two fives (=30)
twenty-one	and five-two	
<i>tomoo-ta</i>	(<i>mi</i>) <i>laamu-ru mi ta</i>	one twenty and two fives and one (=31)
twenty-one	and five-two and one	
<i>tomtoo-ru</i>		two twenties (=40)
twenty-two		
<i>tomtoo-ru</i>	(<i>mi</i>) <i>lamo-ro-ma-ta</i>	two twenties and two and one fives (=55)
twenty-two	and five-two-and-one	
<i>tomto-tel</i>		three twenties (=60)
twenty-three		
<i>tomto-paŋ</i>		four twenties (=80)
twenty-four		
<i>tomto-lama-ta</i>		one five of twenties (=100)
twenty-five-one		
<i>tomto-laamu-ru</i>		two fives of twenty (=200)
twenty-five-two		
<i>munŋaana</i>		400 ~ 1000 ~ very many
<i>munŋaana ru</i>		two 400s (=800) or two 1000s (=2000)

The vernacular numeral system is still extensively used by all age groups. When referring to money, the numerals are used in isolation to indicate the number of ten toea coins; for example, *ta* ‘one’ means ‘ten toea’, *ru* ‘two’ means ‘twenty toea’, etc. Similarly, the forms *ro* ‘leaf’ and *pius* (origin unknown) refer to ten kina notes. Thus *pius/ro ta* is ten kina, and *pius/ro ru* is twenty kina.

When one wants to indicate a number that is greater than one hundred but is not an *even multiple* of one hundred, an expression containing the form *kwoono* ‘its mouth’ is typically used. *Kwoono* occurs after the expression for the number of hundreds. For example, 230 would be *tomtolaamuru kwoono tomoota mi laamuru* ‘ten twenties (=200) its mouth twenty and ten’.

3.2.5.2 QUANTITY CLASSIFIERS

In addition to the quantifiers presented above, there is a system of quantity classifiers which are used for counting some items. For example, coconuts are counted using *me*⁶³ (groups of four) (272) or *se* ‘pair’ (273).

- (272) *ni me ta*
 coconut group.of.four one
 four coconuts (lit. one ‘dog’ of coconuts)

⁶³ *Me* ‘group of four’ is perhaps related to *me* ‘dog’ via the four legs which dogs have.

- (273) *ni se ru*
 coconut pair two
 four coconuts (lit. two pairs of coconuts)

Betel nut, betel pepper, crayfish, taro, sweet potato, and other small, vaguely roundish objects are counted in groups of five, with the form *zaraana* acting as a classifier:

- (274) *mbu zaraana ta*
 betelnut group.of.five one
 five betel nuts (lit. one *zaraana* of betel nut)
- (275) *mbu zaraana ru*
 betelnut group.of.five two
 ten betel nuts (lit. two *zaraanas* of betel nut)

Tobacco is counted in bundles of four to six leaves termed a *peseene*, while edible greens and money are counted in bundles called *zaraaba*. A *zaraaba* of money is equivalent to one hundred kina.

Fish are counted in *tuuru* 'ropes',⁶⁴ or *luluunu* 'group of two'. The form *luluunu* is also used in counting sections of sago thatching. It indicates *three* sections of thatching, however, not two.

3.2.5.3 ORDINAL NUMBERS AND FREQUENCY OF OCCURRENCE

There is no morphological encoding of ordinal numbers in the language. Instead, they are encoded syntactically using the verb *-we* 'become' plus a numeral:

- (276) *Ti-pa pa aigule ru, mi so i-we tel pa na, ...*
 3PL-walk REF day two and say 3SG-become three REF GIV
 They walked for two days, and on the third day, ...
- (277) *Moori i-peebe pikin toro ma i-we lama-ta (pa).*
 woman 3SG-bear child other and 3SG-become five-one REF
 The woman gave birth to her fifth child.

The days of the week are expressed in this way, using the noun *uraata* 'work'.

- uraata iwe ta* first working day/Monday
uraata iwe ru second working day/Tuesday
uraata iwe tel third working day/Wednesday (and so on)

The notion of 'first', however, is encoded by *mataana* 'eye' rather than *ta* 'one':

- (278) *Nu kam mata-ana pa mbulu ta-na.*
 NOM.2SG 2SG+do eye-GEN.3SG REF behaviour SPEC-GIV
 You did that first.
- (279) *aigule mata-ana ka-na*
 day eye-GEN.3SG PASS.GEN-GEN.3SG
 the first day

⁶⁴ A typical rope of fish contains 10-20 fish.

To express that an event has taken place X number of times, a Referent phrase containing a numeral is used:

- (280) *Nio aŋ-la pa ru kek.*
 NOM.1SG 1SG-go REF two PERF
 I have gone twice.

3.2.6 PREPOSITIONS

Prepositions are forms which prototypically govern a single noun-phrase Complement and relate it to a head noun or a predicate. They are prototypically uninflected forms.

The prepositional forms in Mangap-Mbula are: 1) the Referent preposition *pa*, 2) the Locative preposition *ki*, 3) the preposition *kembei* 'like/as', 4) the comitative and manner prepositions *raama*, *ramaki*, and *kitoka*, and 5) a number of 'prepositional' verbs occurring in serialised constructions. The different prepositional forms will now be discussed in more detail.

3.2.6.1 THE REFERENT PREPOSITION *pa*⁶⁵

The Referent preposition *pa* encodes Oblique arguments in a predication. In isolation, Referent prepositional phrases have a wide range of potential interpretations. But in actual examples the ambiguity is minimal because the meaning of the predicate plus that of the noun phrase governed by *pa* usually combine to determine or at least greatly restrict the range of possible interpretations. Both pronominal and phrasal Referents are always the last *non-sentential*⁶⁶ arguments in a sentence, following Nominative, Accusative, and inner Locative arguments.

The following set of examples illustrate some of the range of interpretations which prepositional phrases governed by *pa* exhibit.

- | | | |
|-------|--|--------------------|
| (281) | <i>Aŋ-la (pa) Lablab.</i>
1SG-go REF Lablab
I went to Lablab. | GOAL ⁶⁷ |
| (282) | <i>Aŋ-ko pa Lablab.</i>
1SG-flee REF Lablab
I fled from Lablab. | SOURCE |
| (283) | <i>Aŋ-bot (pa) kar.</i>
1SG-stay REF village
I stayed in the village. | LOCATION |
| (284) | <i>Aŋ-taara ke pa nakabasi.</i>
1SG-cut tree REF axe
I cut the tree with an axe. | INSTRUMENT |

⁶⁵ See also the discussion of the Referent pronominal series in §3.2.2.3.

⁶⁶ Sentential arguments are the last ones in a clause, occurring after all non-sentential ones.

⁶⁷ The preposition *pa* is frequently omitted from inanimate Goals and inner Locations with no apparent change in meaning.

- (285) *Aṅ-la pa Silas.* BENEFACTIVE
 1SG-go REF Silas
 I went instead of (lit. for) Silas.
- (286) *Aṅ-uul=i pa uraata.* FURTHER SPECIFICATION
 1SG-help=ACC.3SG REF work
 I helped him with the work.
- (287) *Aṅ-kam uraata pa mbeṅ.* GENERIC TIME
 1SG-do work REF night
 I worked at night.
- (288) *Aṅ-la skul pa ndaama laamuru.* DURATION
 1SG-go school REF year ten
 I attended school for ten years.
- (289) *Aṅ-la pa ru.* FREQUENCY
 1SG-go REF two
 I went twice.
- (290) *Zin ti-zorzooro*
 NOM.3PL 3PL-rebel+RED
pa u-unu toro. REASON
 REF reason-GEN.3SG other
 They are rebelling for another reason.

About the only semantic role which is not encoded by prepositional phrases governed by *pa* is the conjunction of: 1) animacy or potency and 2) SITE or GOAL. This combination is encoded by the Locative preposition *ki*. Referent *phrases* have a relatively wider range of interpretations than Referent *pronouns*, which are largely restricted to Benefactive-Malefactive, Source, Reason, or Further Specification interpretations.

In addition to governing NP Complements, *pa* can govern sentential REASON Complements.

- (291) *Zin kete-n malmal pa ni*
 NOM.3PL liver-GEN.3PL fight REF NOM.3SG
i-pa-saana mokleene kizin.
 3SG-CAUS-deteriorate garden LOC.3PL
 They are angry because he ruined their garden.

3.2.6.2 THE LOCATIVE PREPOSITION *ki*⁶⁸ (DIRECT, ALIENABLE GENITIVES)

Prepositional phrases containing the form *ki* and functioning as sentential arguments encode: 1) animate and/or potent GOALS *towards which* some entity moves (292), 2) SITES *at which* some entity is located (293), and 3) body parts which perceive something (in this case *ki* alternates with *pa*) (294).

⁶⁸ Refer also to the discussion of the Locative pronoun series in §3.2.2.4.

- (292) *Nio aŋ-la ki ato-ŋ.*
 NOM.1SG 1SG-go LOC older.sibling-GEN.1SG
 I went to my older brother.
- (293) *Ni i-mbot ki Makele bi.*
 NOM.3SG 3SG-stay LOC Makele old
 He/she is with Makele.
- (294) *Nio aŋ-re i ki/pa moto-ŋ.*
 NOM.1SG 1SG-see ACC.3SG LOC/REF eye-GEN.1SG
 I saw her/him/it with my own eyes.

Wierzbicka (1980:107) analyses the meaning of a word like *see* as follows:

I (can) see something

Something happens *in my eyes* [emphasis RDB],
 because of something that can be said about
 this place.

I can say something about this place because of that.

The use of the Locative preposition *ki* in perception sentences is perhaps a reflection of the underlyingly locative nature of such notions.

By metaphorical extension of their basic locative meaning,⁶⁹ *ki* prepositional phrases also encode controlled and/or enduring alienable relationships within the noun phrase (295), (296), as well as some more generic alienable relationships (297).

- (295) *Buza ki Silas i-saana kek.*
 knife LOC Silas 3SG-deteriorate PERF
 Silas' knife is ruined.
- (296) *Sua ki Silas ambai som.*
 talk LOC Silas be.good NEG
 What Silas said is not good.
- (297) *mbol ki me*
 story LOC dog
 a story about dogs

3.2.6.3 THE PREPOSITION *kembei* 'LIKE/AS'

The form *kembei* (often shortened to *ke(i)*) is used to express resemblance, similarity, or approximate equality:

- (298) *Puulu kembei ta zoŋ.*
 moon like SPEC sun
 The moon was like the sun.
- (299) *Niom ka-kam uraata kembei yam som.*
 NOM.2PL 2PL-do work like ACC.1PL.EXC NEG
 You do not work like us.

⁶⁹ See Lyons (1967), Clark (1978), and Bugenhagen (1986) for further discussion.

3.2.6.4 COMITATIVE AND MANNER PREPOSITIONS

The comitative preposition *ramaki*⁷⁰ encodes accompaniment noun phrase internally (300), whereas *raama* encodes accompaniment (301) and manner (302) in the predicate phrase:

- (300) *Woongo ramaki ka tomtom bizin*
 canoe with PASS.GEN+GEN.3SG person PL

i-nmbot Koobo=a.
 3SG-stay+RED Aramot.Island=NON.VIS.PROX
 The boat with its crew is at Aramot Island.

- (301) *Ni ko i-mbot raama yom.*
 NOM.3SG UC 3SG-stay with ACC.2PL
 He will stay with you.

- (302) *Nu so sua raama ngar som.*
 NOM.2SG 2SG+say talk with thinking NEG
 You did not speak intelligently.

3.2.6.5 PREPOSITIONAL (SERIAL) VERBS

The next set of prepositional forms to be discussed are a number of *optionally inflected*⁷¹ verbs which occur in serialisations functioning as case markers. Being potentially inflected, they depart from the prepositional prototype. They retain, however, the prepositional function of relating a dependent NP to a verbal HEAD.

Most motion verbs can occur in serialisations, being used to more precisely specify the *path* towards a Goal or Site:

-la to go (used to encode Goals and distant Sites)

-su to descend (used to encode Goals and Sites, with an added directional component of 'down'.)

- (303) *Nio aŋ-kam uraata (i-)su Karapo.*
 NOM.1SG 1SG-do work (3SG-)descend Karapo
 I worked at Karapo.

- (304) *Ti-ur mburu (i-)su toono.*
 3PL-put cargo (3SG-)descend ground
 They put the cargo down on the ground.

-sula to go down (from *-su* 'descend' + *-la* 'go'; used to encode Goals and Sites with an added directional component of 'down and away from the speaker'.)

⁷⁰ The Gauru dialect substitutes the form *kitoka* for *ramaki*.

⁷¹ In serialisations, verbs alternate between having the third singular Subject prefix *i-* and having no prefix at all. There appears to be no semantic basis for the alternation. It is simply a reflection of the unstable diachronic status of the forms, as they change syntactic category from verb to preposition.

-lela to go inside (from *-le* 'enter' + *-la* 'go'; used to indicate Goals and Sites with an added directional component of 'in, inside' or 'away from the sea'. This form also adds the semantic component that the motion is directed away from the speaker)

- (305) *Ti-kam uraata (i-)le-la ruumu.*
 3PL-do work (3SG-)enter-go house
 They worked inside the house.

-pera to go out (used to encode Goals and Sites with an added directional component of 'outside' or 'towards the sea' + motion directed away from the speaker)

-se to ascend (used to encode Goals and Sites, with an added directional component of 'up' + motion directed toward the speaker)

-sala to go up (from *-se* 'ascend' + *-la* 'go'; used to encode Goals and Sites, with an added directional component of 'up and over away from the speaker').

- (306) *To i-ndou zin sa-la parpaara.*
 then 3SG-heap ACC.3PL ascend-go shelf
 He heaped them up on the shelf.

Another prepositional verb is *irao*, a form which elsewhere functions both as a modal adverb and as a verb meaning 'to be adequate, sufficient'. As a prepositional verb, it is used to encode duration (307) or extent (308):

- (307) *Aŋ-kam uraata irao ndaama laamu-ru.*
 1SG-do work extend year hand-two
 I worked for ten years.

- (308) *Ti-pa ma ti-la irao Kampalap.*
 3PL-walk and 3PL-go extend Kampalap
 They walked all the way to Kampalap.

3.2.7 DEMONSTRATIVES AND OTHER LOCATIVE ADVERBIAL FORMS (INTRANSITIVE PREPOSITIONS)

There is no morphological distinction in Mangap-Mbula between deictic forms which function to determine noun phrases and those which encode locations in sentences (309), (310). Therefore, they are analysed as constituting a single form class.

- (309) *Ti-kam uraata tanga.*
 3PL-do work over.there
 They worked over there.

- (310) *Ruumu tanga i-saana kek.*
 house over.there 3SG-deteriorate PERF
 That house over there is ruined.

In their locative adverbial use, demonstratives always occur in the outer periphery of the predicate phrase, and as determiners within the noun phrase they always occur at the outermost periphery of the NP.

Other lexical items occurring in the periphery of the predicate phrase and expressing locative notions are: *kolouḡana* 'nearby', *kor* 'above', *meleebe* 'below', *meleeba* 'far below', *mbaaga* 'on the far side of a river' *mbaagi* 'on the near side of a river', *ndapet* 'seaward part of a village', *ndaleya* 'inland part of a village'.

In the predicate phrase, demonstratives and these locative adverbials distribute in exactly the same positions as *pa* prepositional phrases encoding locative clausal arguments. This suggests that there might be some generality gained by conflating the two classes. Such an approach would be along the lines of Klima (1965) and Jackendoff (1972), (1977), in which English locative adverbs are treated as *intransitive* prepositions. The crucial insight of Klima and Jackendoff is that if it is reasonable to assign transitive and intransitive verbs to a single part of speech category despite their subcategorisation differences, then it should also be reasonable to postulate the existence of transitive and intransitive prepositions, depending upon whether or not they take an NP Complement. Intransitive prepositions would be items like locative adverbs in English. The Klima and Jackendoff analyses are based upon paradigms like the following (from Jackendoff (1972:63):

<i>Johnny ran</i>	<i>home</i>
	<i>there</i>
	<i>over there</i>
	<i>over into the house</i>
	<i>into the house</i>
	<i>downstairs</i>
	<i>down the stairs</i>

Parallel Mangap-Mbula examples can be adduced:

- | | | | | | |
|-------|-------------|---------------|---------------|----------------|---------------|
| (311) | <i>Zin</i> | <i>ti-kam</i> | <i>uraata</i> | <i>tagga</i> | |
| | NOM.3PL | 3PL-do | work | over.there | |
| | They worked | | | | |
| (312) | <i>Zin</i> | <i>ti-kam</i> | <i>uraata</i> | <i>meleebe</i> | |
| | NOM.3PL | 3PL-do | work | below | |
| | They worked | | | | |
| (313) | <i>Zin</i> | <i>ti-kam</i> | <i>uraata</i> | <i>pa lele</i> | <i>toro</i> |
| | NOM.3PL | 3PL-do | work | in | another place |
| | They worked | | | | |

In these examples, the Mangap-Mbula demonstrative *tagga* and the locative adverbial *meleebe* are distributionally and semantically parallel to the prepositional phrase *pa lele toro*. This distributional similarity suggests that they could possibly be analysed as instancing the same category (i.e. prepositional phrase). Prepositions, then, would be subdivided into intransitive ones (locative adverbials and demonstratives) and transitive ones (= 'true' prepositions).

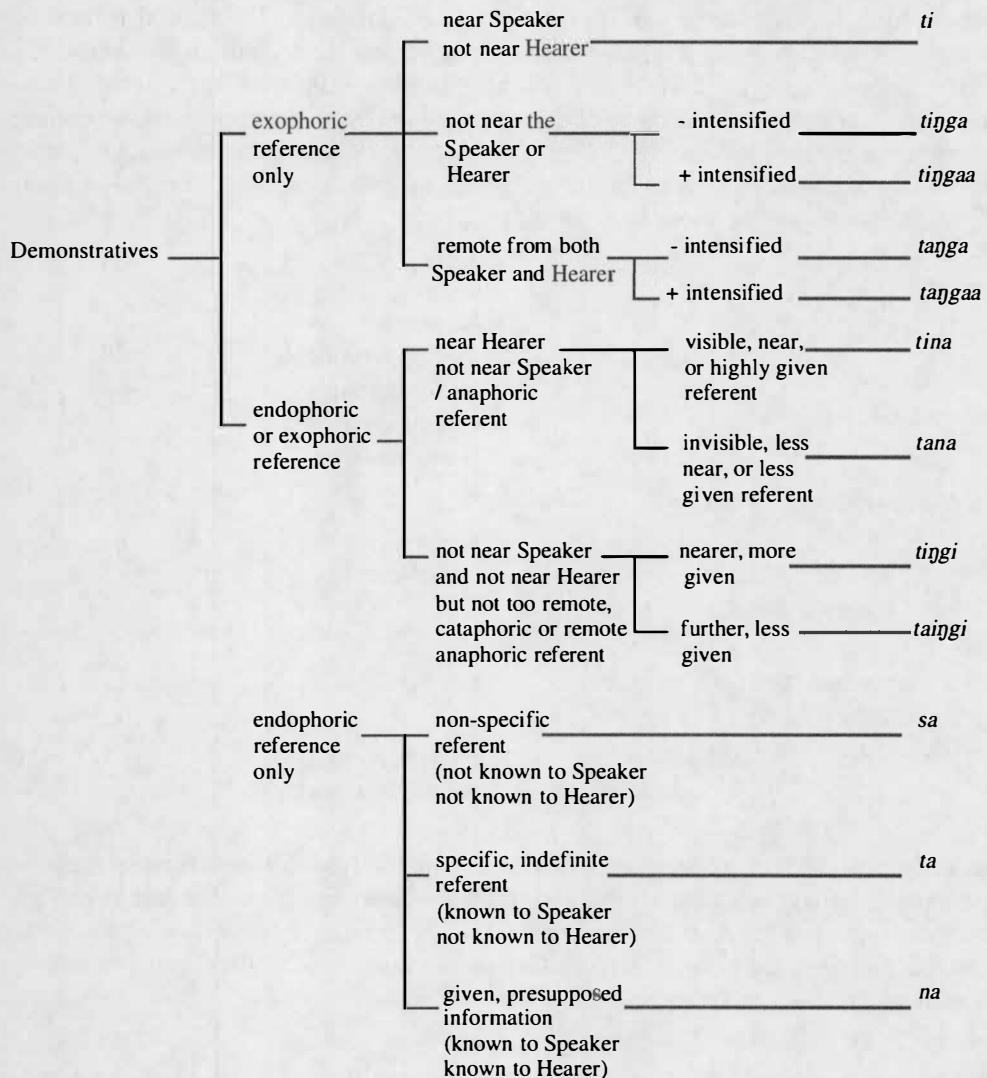
However, such an analysis would have two problems:

- The locative adverbials like *meleebe* and *kor* would need to be excluded from occurring as modifiers in noun phrases. This restriction could, however, be semantically based.
- In the noun phrase, the demonstratives invariably occur following 'true' prepositional phrases containing NP complements. It is somewhat difficult to naturally account for this ordering constraint if the intransitive and transitive prepositions are both members of the same syntactic category.

Because of these problems it does not seem wise to conflate the demonstratives with either the locative adverbials or the 'true' prepositions. Instead, we distinguish a distinct demonstrative form class. The locative adverbials like *kor* 'above' and *meleebe* 'below' can, however, be considered to be instances of intransitive prepositions.

The semantic distinctions between various types of deictic locative forms are outlined using a system network in Table 3.3.⁷²

TABLE 3.3: LOCATIVE DEICTIC FORMS



⁷² Note that this is a *semantically* organised network. The items here belong to several different form classes: 1) the demonstratives, 2) quantifiers (*ta*), and 3) the form *sa*, which is *sui generis*. Both *sa* and *ta* occur in the middle of the noun phrase, whereas the demonstratives occur at the outermost boundary of the NP.

With regard to the terminology of Table 3.3, 'endophoric' is used to indicate reference to entities within a text, while 'exophoric' is used to indicate reference to entities in the extra-linguistic context of utterance.

The only form in Table 3.3 requiring further comment is *na*, a form that is glossed throughout this grammar as (contextually)GIV(en). The form occurs in a number of different morphosyntactic contexts, all of which involve some element of givenness and/or Thematisation. Both of the obligatorily *anaphoric* demonstratives *tana* and *tina* appear to contain it, as do several of the conjunctions like *tona* 'and then, after that', *tana* 'because of that', and *inako* 'then' (in conditionals). It is also present in the demonstrative pronoun *ina*.⁷³ Entities occurring at the beginning of a sentence as marked Themes are frequently set off by this form:⁷⁴

(314) *Mbeŋ na, zin ti-la ti-keene.*
 night GIV NOM.3PL 3PL-go 3P-sleep
 At night, they went and slept.

(315) *Lae na, i-saana kat.*
 Lae GIV 3SG-deteriorate very
 Lae, it is very bad.

Finally, it will be recalled from §3.2.2.1 that many of the Nominative pronouns begin with an *n-*. Since they are typically used to encode given entities which are being (re-)established as discourse Topic, the /n/ in them has been postulated to be related to this given information formative *na*.

The demonstrative system exhibits transparent phonetic iconicity. The vowel /i/, which is produced in a small, constricted mouth cavity, is predominant in forms used to indicate physical proximity to the speaker, while /a/ predominates in forms which do not indicate physical proximity. In addition, greater amounts of phonetic substance in a demonstrative correlate with increased remoteness of the referent from the speaker.

3.2.8 COMPLEMENTISERS

Complementisers are uninflected forms which *only* govern a following sentence. The combination of a complementiser plus a following sentence in turn functions as a constituent in a noun or predicate phrase. Thus, complementisers occur in the following two syntactic frames:

[N [___ S]]NP

[V [___ S]]PREDP

The complementisers of Mangap-Mbula are:

kokena 'lest' (= 'I don't want this to happen')

be ~ Ø 'non-presupposition of factuality' (= 'I do not say this is something which has happened.')

(*ta*)*kembe* 'like' (= 'I think like this.')

⁷³ For further discussion of *ina*, see §3.2.2.1.

⁷⁴ See Chapter 6 for further discussion.

\emptyset	'asserted factuality' ('I say this is something which has happened or is happening.')
<i>ta(u) ~ \emptyset</i>	'presupposed factuality' (= 'I know that this is something which has happened, and I think that you know about it too.')
<i>tabe</i>	'presupposed non-factuality' (= 'I know that this is something which has happened and that you know about it.')
<i>ki</i>	'habitual event' ('This is the kind of thing that is always happening.')

A few examples of complementisers are given below:

- (316) *Aŋ-ur moto-ŋ pini be i-uulu yo.*
 1SG-put eye-GEN.1SG REF.3SG NF 3SG-help ACC.1SG
 I am hoping (lit. putting my eye on him) that he will help me.
- (317) *Nio aŋ-so ta-kembei: Tamakan, ina ambai som.*
 NOM.1SG 1SG-say SPEC-like wedding.market that.one be.good NEG
 I think like this: Wedding markets,⁷⁵ they are not good.
- (318) *Pata-ŋa-na ta-be i-mar=i, ko sorok som.*
 heavy-NMS-GEN.3SG SPEC-NF 3SG-come=PROX UC negligible NEG
 The trouble that is coming will not be anything small.

The topic of complementation is discussed in more detail in §4.6 and 5.3ff.

3.2.9 CONJUNCTIONS

The area of conjunctions is a complex one. There are a number of simplex forms, and many of these can be compounded to form more complex ones. The treatment of conjunctions in this section is relatively brief, since they are addressed in depth in Chapter 5.

All conjunctions have the function of linking two sentential units together. Each of these linked units may consist of a single clause or of several clauses. Thus, a defining syntactic frame in which conjunctions occur can be specified as follows:

Clause ((conjunction) + Clause)ⁿ _____ Clause ((conjunction) + Clause)ⁿ

A number of conjunctive forms are homonymous with other (usually verbal or deictic) forms in the language. These are listed below.

Conjunction	Meaning	Related Form	Meaning
<i>to</i>	then	<i>-to</i>	to follow
<i>tana</i>	therefore	<i>tana</i>	that
<i>inako</i>	then (in conditionals)	<i>ina</i>	that one
		<i>ko</i>	uncertain
<i>som</i>	or	<i>som</i>	negative

⁷⁵ *Tamakan* is a practice (distinct from brideprice) whereby on the day of a wedding, anyone even remotely related to the bride can bring goods of various kinds – bales of rice, baskets of sago, pigs, wooden dishes, etc. – and people related to the groom are obliged to buy these things at whatever price the person(s) bringing them set(s). If all of the things are not bought, the groom and his closer relatives are made to feel ashamed.

<i>pa</i>	because	<i>pa</i>	Referent preposition
<i>be</i>	when	<i>be</i>	non-factual adverb

Lakoff and Johnson (1980:26) discuss a basic “metaphor we live by”: DISCOURSE IS SPACE.

We speak in linear order; in a sentence, we say some some words earlier and others later. Since speaking is correlated with time and time is metaphorically conceptualized in terms of space, it is natural for us to conceptualize language metaphorically in terms of space.

Given this, it comes as no surprise that demonstratives come to function as conjunctions that point to preceding linguistic material, or that the verb ‘to follow’ plays an important role in indicating temporal or topic succession in discourse.

The principle conjunctive forms of Mangap-Mbula are summarily listed below:

Temporal Conjunctions

<i>ma</i>	indicates a cosubordinate predicate combination encoding simultaneous or successive aspects of a <i>single event</i> , and co-ordination of very closely associated noun phrases (like husband and wife, or day and night).
<i>mabe</i>	(a combination of <i>ma</i> plus the non-factual adverb <i>be</i>) indicates a sequence of events which almost, but did not, take place. Thus, to ‘hit’ someone <i>mabe</i> ‘they die’ encodes the proposition that they were <i>almost</i> killed.
<i>mi</i>	indicates a predicate combination encoding <i>distinct events</i> . The distinct events may be simultaneous, successive, or mildly contrastive: ‘and, but’.
<i>makijmi</i>	In the structure [clause ₁ <i>makij mi</i> clause ₂], the combination of the adverbial <i>makij</i> and <i>mi</i> encodes: 1) close temporal succession between the two events, 2) perfect aspect in clause ₁ , and 3) presupposition of the event encoded by clause ₁ : ‘and after that had happened...’.
<i>mana</i>	(probably a combination of <i>mi</i> + <i>na</i> , with vowel harmony, rather than <i>ma</i> + <i>na</i>) indicates a predicate combination encoding <i>distinct</i> , successive events, in which the first event is presupposed: ‘and after that’.
<i>to</i>	indicates succession involving a large amount of temporal, topical, or action discontinuity between two events: ‘then’.
<i>tona</i>	indicates succession involving a large amount of temporal, topical, or action discontinuity between two events, the first of which is explicitly presupposed: ‘after that, then’.
<i>tonabe</i>	(a compound form of <i>tona</i> and the non-factual adverb <i>be</i>) indicates distal succession between two non-factual (and typically future) events: ‘after that, then will’.
<i>makijto(na)</i>	In the structure [clause ₁ <i>makij to(na)</i> clause ₂], the combination of the temporal adverbial <i>makij</i> and <i>to(na)</i> encodes: 1) distant temporal succession between the two events, 2) perfect aspect in clause ₁ , and 3) presupposition of the event encoded by clause ₁ : ‘after that had happened, then’.

- na* In the structure [clause₁ *na* clause₂], *na* indicates a semantically unspecified relationship between the two propositions, in which the event encoded by clause₁ is presupposed. The *interpretation* of the relationship may be one of temporal simultaneity, succession, or condition and consequence.
- makij na* In the structure [clause₁ *makij na* clause₂], the combination of the temporal adverbial *makij* and *na* encodes: 1) temporal succession between the two events which is unmarked for proximity, 2) perfect aspect in clause₁, and 3) presupposition of the event encoded by clause₁: 'after that'.
- be(so)... na* In the structure [*be(so)* clause₁ *na* clause₂], the sequence *be(so) ... na* bracketing clause₁ indicates presupposition of close temporal sequence: 'when'.

Disjunction

<i>som</i>	or
<i>o</i>	or ⁷⁶

The sequence *som som* 'or not' added at the end of a sentence with high rising intonation is the ordinary means of encoding yes-no questions. Haiman (1978a) notes ties between disjunction and interrogation in a number of languages, while Colburn (1981) discusses the utilisation of a single form in the Papuan Erima language to encode both disjunction and negation. Thus, it is not too surprising that in Mangap-Mbula the same form is used to encode negation, disjunction, and yes-no questions.

Adversative/Antithetical Conjunctions

- mi* indicates mild contrast: 'but'.
- tamen* (from *ta* 'specific' plus *men* 'only') indicates strong contrast: 'however, in spite of that...'

Conditional Conjunctive Forms

- so(mbe)... (o)inako* The structure [*so(mbe)* clause₁ (*o*)*inako* clause₂] is used to encode hypothetical conditionals: 'If clause₁ is true, then clause₂ will eventuate'.
- so(mbe)...to/na* The structure [*so(mbe)* clause₁ *to/na* clause₂] is also used to indicate hypothetical conditionals.
- so(mbe)/be...so* The structure [*so(mbe)/be* clause₁ *so* clause₂] is used to encode counterfactual conditionals: 'If clause₁ had been true then clause₂ would have been true'.

Causal Conjunctive Forms

- ta* The structure [clause₁ *ta* clause₂] is used to encode presupposed results and asserted reasons: 'The reason why clause₂ is that clause₁'.

⁷⁶ This form seems to be a Tok Pisin borrowing, and is used interchangeably with *som* by many speakers of the language. Some speakers distinguish the two, however, using *som* for exhaustive lists and *o* for non-exhaustive ones.

<i>tana</i>	The structure [clause ₁ <i>tana</i> clause ₂] is used to encode presupposed reasons and asserted results: 'Because of clause ₁ , clause ₂ ' or 'clause ₁ (and) therefore clause ₂ '.
<i>tanata</i>	The structure [clause ₁ <i>tanata</i> clause ₂] is used to encode results and reasons which are <i>both</i> presupposed: 'It was because of clause ₁ that clause ₂ '.
<i>tabe</i>	(possibly a combination of <i>ta</i> plus the non-factual adverb <i>be</i>) <i>Tabe</i> is favoured over the <i>tana</i> forms when the causation being encoded is <i>less direct</i> . It is also favoured when the result is something which <i>did not happen</i> : 'and so'.
<i>pa</i>	(from the Referent preposition <i>pa</i>) encodes result-reason relationships, in which neither the result nor the reason is presupposed: 'for, because'.
<i>be</i>	introduces purpose clauses: 'in order to'.

3.2.10 INTERJECTIONS

As in any language, there are a number of interjections in Mangap-Mbula which do not really participate in the grammar of the language, but which serve to convey concisely the speaker's attitudes and intentions. These always occur sentence initially and include the following forms:

Form	Meaning
<i>a</i>	I want to say something now.
<i>a lagoi</i>	I think you did something good.
<i>ai₁</i>	Listen to me.
<i>ai₂</i>	You have done something bad.
<i>ais</i>	I want something.
<i>aiyo</i>	I want to talk about something different now.
<i>(y)alei₁</i>	I think this is good.
<i>(y)alei₂</i>	Something bad has happened to you and I feel something bad because of that.
<i>eeraa₁</i>	I think this is good. (only said by women)
<i>eeraa₂</i>	I think something bad happened to you, and I feel something bad because of that (only said by women).
<i>ha</i>	I hear something, and I don't know what it is.
<i>hai</i>	Come here.
<i>hai₂</i>	You did something bad.
<i>ii</i>	I don't know.
<i>iŋgis</i>	Listen to this. or Look at this.
<i>lo</i>	Do it quickly.
<i>lak</i>	I want to ask you something.
<i>oi</i>	I am here (said in response to someone's calling for you)
<i>o yae</i>	I want something to happen. I think if it happened, I would feel good.

<i>X ra</i>	I think something bad will happen/happened to X. I feel something bad, because of that.
<i>re ki</i>	I want you to stop what you are doing. If you don't, something bad may happen.
<i>sai</i>	I don't want to say now.
<i>som</i>	I say I do not agree with you.
<i>tau</i>	I heard what you said. I think something different.
<i>wa</i>	I think you did something bad.
<i>waa</i>	I think what you say is not true.
<i>wai(i/s)</i>	I know something bad happened. I feel something bad because of that.
<i>wais₂</i>	I don't want to do it.
<i>wait</i>	Something happens. I wouldn't have thought such a thing could happen. I feel something because of that.
<i>we</i>	I think something bad happened. I feel something bad because of that.
<i>wei</i>	I know something bad happened. I feel something bad because of that.
<i>yeei</i>	I think something bad could happen. I feel something bad because of that.
<i>yo(o)</i>	I say you did something good.
<i>yo barau</i>	I say you did something good.
<i>ywe</i>	I think you are bad.

3.3 ON DIFFICULTIES IN DEFINING SYNTACTIC CATEGORY

Having presented the various syntactic categories which are postulated for Mangap-Mbula, it is appropriate at this point to address some of the problems which the attempt at such classification raises. The basic assumption behind classifying is that categories are *discrete*, that it is meaningful to say 'X belongs to category Y and not to category Z'. In Mangap-Mbula, this is usually the case. A form like *pat* 'stone' is clearly a noun, a form like *pa* 'Referent preposition' is clearly a preposition, and a form like *-pun* 'hit' is clearly a verb.

There are a number of instances, however, where the proper categorisation of a form is not so clear. For example, there appears to be a cline between prototypical verbs and prototypical prepositions. The grades along such a cline would include:

1. forms inflected with the Subject prefixes which function syntactically only as predicates in sentences (most verbs);
2. forms not inflected with the Subject prefixes which syntactically function only as predicates in sentences (the uninflected verbs discussed in §3.2.3.2ff. of this chapter);
3. forms potentially exhibiting Subject agreement inflection which function syntactically as both predicates in sentences and in serial constructions (the prepositional verbs discussed in §3.2.6.5);
4. forms never exhibiting inflection and which function syntactically only as prepositions ('true' prepositions like the forms *pa* and *ki*, which are discussed in §3.2.6.1 ff.).

The stage-three elements of this cline are the ones that are difficult to classify, the possibilities being: preposition, verb, both, or neither.

A similar sort of cline could be constructed for items ranging between adverbs and verbs:

1. forms which can occur immediately after the predicate and never function as a predicate in an adjacent cosubordinate adverbial construction (i.e. adverbs like *kiga* 'divergingly', *noobo* 'incorrectly', *mini* 'again', and *kat* 'really');⁷⁷
2. forms which occur immediately after the Object and never function as predicates in an adjacent cosubordinate adverbial construction (i.e. adverbs like *lup* 'each one was affected');⁷⁸
3. forms which can occur as modifiers in the predicate phrase after the Object or occur as uninflected verbs in an adjacent cosubordinate adverbial predication conjoined with *ma* (i.e. a form like *ambai* 'be good, well');⁷⁹
4. uninflected verbs which never occur as modifiers within the predicate phrase, but which can occur in either a preceding or following cosubordinate adverbial predication conjoined with *ma* (i.e. *kaŋkaŋ* 'straight to', *put* 'completely severed');⁸⁰
5. inflected verbs which never occur as modifiers within the predicate phrase, and can occur in either a preceding or following cosubordinate adverbial predication conjoined with *ma* (i.e. *-map* 'end' and *-mbot* 'stay');⁸¹
6. inflected verbs which never occur as modifiers within the predicate phrase, and never occur in cosubordinate adverbial predications conjoined with *ma* (i.e. most verbs).

In this listing, the stage 1 and 2 forms clearly belong to an adverb part of speech category, being syntactically distinct from nouns, verbs, and prepositions. The forms in stage six, on the other hand, are clearly verbal, resembling adverbs neither semantically nor morphosyntactically. The stage-three items are difficult to classify.

A final categorial problem is raised by verb-instrumental noun pairs like the following, in which there is no overt derivational morphology indicating the direction of derivation:

<i>didi</i>	wall	<i>-didi</i>	to wall in
<i>peeze</i>	paddle	<i>-peeze</i>	to paddle
<i>kor</i>	implement for sweeping	<i>-kor</i>	to sweep up using this implement
<i>ris</i>	a line	<i>-ris</i>	to draw a line

Summing up, we can say that assigning a syntactic category is sometimes problematic for:

1. prepositions and verbs
2. verbs and adverbs
4. verbs and instrumental nouns

This is because some forms exhibit characteristics of both of each of the above paired categories. Conceptually, such forms could be viewed as being either: 1) multi-categoried, or 2) archi-categoried/underspecified.

⁷⁷ For further details, see § 3.2.4.2.1, §3.2.4.2.2, and §3.2.4.2.8.

⁷⁸ For further details, see §3.2.4.2.3.

⁷⁹ These are also discussed in §3.2.4.2.3.

⁸⁰ See §3.2.4.3.3 and §3.2.4.3.4.

⁸¹ See §3.2.4.3.4 and §3.2.4.3.5.

A third possibility is to draw upon the notion of prototypes Rosch (1973,1975). Under such an analysis, there is the possibility of having prototypes of particular categories (the first and last elements in the above clines) and then various *intermediate* categories. Such a treatment of grammatical and/or semantic categories have been proposed by a number of authors.⁸²

Hopper and Thompson (1984) suggest a possible discourse motivation for non-discrete categories, stating (p.709):

...the discourse role of the form seems to be the prime factor which conditions its appearance as a central vs. peripheral member of its category.

Regarding nouns, they state (p.710):

From the discourse viewpoint, nouns function to introduce participants and 'props' and to deploy them. To the extent that a linguistic form is carrying out this prototypical function, it will be coded as N, and will manifest the full possible range of nominal trappings conventional in the language. Forms which fail in some way to refer to concrete, deployable entities will typically lack some or all of these trappings.

According to Hopper and Thompson's hypothesis, non-specific NPs, incorporated NPs, compound NPs, predicate nominals, negated NPs, and anaphoric NPs are all likely to exhibit deficiencies in nominal morphology.

Prototypical verbs are stated by Hopper and Thompson (p.708) to "assert the occurrence of an event." Thus, stative, existential, copulative, irrealis, negated, and serialised verbs are all likely to exhibit some deficiencies in morphology. It comes as no surprise, then, that in Mangap-Mbula there are stative verbs which lack inflection for Subject person and number, and that verbs occurring in serialised constructions exhibit optional inflection.

If we put the two observations together that: 1) lexical items do change their syntactic category over time, and 2) there is a correlation between morphosyntactic characteristics and discourse function, then a possible scenario for diachronic category change is: 1) the occurrence of a form in a wide range of discourse environments, 2) the gradual loss of morphological features which are not appropriate to particular discourse environments, and the possible adoption of other features which are appropriate until some sort of threshold is reached in which an item clearly ceases to be a member of a one category and becomes a member of another category. The benefactive use of the Referent preposition *pa* in Mangap-Mbula would seem to be an instance of such a complete category shift, *pa* having arisen from the POc verb **pani* 'to give' (Ross 1988:118).

Given the phenomenon of category shift and the gradual nature of diachronic change, it seems an unavoidable consequence that synchronic grammars of languages in which category shifts are underway must treat some items as being either multicategoried or 'archicategoried'. But given the existence of clines with *four or five* different points like some of the ones above, an archicategory solution is not feasible. Instead, a multicategoried analysis, in which some forms are members of *both* category X and category Y, seems better, with the provision that many of these multicategoried items are really instances of in-progress syntactic category changes. Borrowing an analogy from engineering, such forms

⁸² See Ross (1972), (1973), (1974), Givón (1986), Lakoff (1977), (1986), and Hopper and Thompson (1980), (1984) for examples.

have more *degrees of freedom* than forms like *pat* 'stone', *-paala* 'break', and *ɲoobo* 'incorrectly', which are more prototypical exemplars of their respective categories of noun, verb, and adverb. Context, then, is what determines which category a particular instance of a multicategoried form is assigned to.

As one American baseball umpire put it: "Some pitches are balls, others are strikes, and others ain't anything until I call them".

3.4 DERIVATION

Up to this point in the chapter, focus has been upon the syntactic categories and morphology of *simple roots*. Now we shall consider various ways of deriving new forms from these simpler roots. The derivational processes are discussed in the following order: 1) compounding of nouns and verbs, 2) creation of nouns by means other than compounding, 3) derivational devices which alter the transitivity of verbs, and 4) some further minor derivational processes. Following the discussion of derivation, there is a final section on reduplication.

3.4.1 COMPOUNDING

Compounds are defined as sequences of two or more *distinct*⁸³ root morphemes which can substitute for the head morpheme of a single word. In Mangap-Mbula, compounding is not a very productive morphological process, but there are clear instances of noun and verb stems which are formed via the adjunction of several root morphemes. The maximum number of roots observed in any compound stem thus far is three. Two examples of compounds containing three roots are given here:

(319) *ya-su-reege*
pull-go.down-destroy
tear down

(320) *to-ŋ-ma-tizi-ŋ* *kini*
o.sibling-GEN.1SG-and-y.sibling-GEN.1SG LOC.3SG
his brother (unspecified for age)⁸⁴

Typically, however, compound stems consist of only two morphemes.

Compounds are distinguished from phrases⁸⁵ in several ways. First, they manifest only a single primary stress. The following two examples illustrate the difference in stress between a compound (321) and a phrase (322):

(321) *kon-kwó:no*
spirit-mouth+GEN.3SG
gable of a house

⁸³ The requirement that the constituent morphemes of a compound be *different* is necessary in order to distinguish compounds from reduplications.

⁸⁴ The first singular genitive suffix *-ŋ* is morphologically frozen. Thus, the genitive of *toŋmatizij* is encoded using an *alienable* genitive construction.

⁸⁵ By 'phrases', is meant any sequence of two or more *distinct words* which functions as a syntactic constituent.

- (322) *Kón kwó:no i-kaaga.*
 spirit mouth+GEN.3SG 3SG-open
 The mouth of the spirit opened.

Secondly, there are several phonological processes which serve to indicate that compounds are a single word. In the case of compounds consisting of two single syllable verb roots, their unitary phonological status is indicated by the failure of phonological Rule 41 (Extrametricality Overriding In Two-Syllable Words) to apply. Consider the following two examples:

- (323) *Tí-so.*
 3PL-say
 They said it.
- (324) *Ti-so-táara yam.*
 3PL-say-cut ACC.1PL.EXC
 They advised us.

In (323) the normally unstressed subject prefix *ti-* attracts stress because of the brevity of the verb stem. In (324), if *-taara* were not part of the verb stem, we would expect stress to again be attracted to *ti-*. This is not the case, however. In a form like *-pera* (< *-pet* 'appear' plus *-la* 'go'), the application of phonological Rule 34 (/t/ And // Conflation) demonstrates the phonological unity of the form.

An important morphological criterion for distinguishing compound verbs from serialisations is that only one Subject-agreement prefix is attached to a compound stem. Contrast the following compound and serialisation constructions:

- (325) *I-zuk-kaala zin. **I-zuk-i-kaala zin.*
 3SG-wrap-cover ACC.3PL 3SG-wrap-3SG-cover ACC.3PL
 It enfolded them.
- (326) *Zin ti-ur (i-)su toono.*
 NOM.3PL 3PL-put (3SG-)descend ground
 They put it down on the ground.

The compound verb in example (325) never takes more than one set of Subject prefixes, whereas in the serialisation in (326), the prepositional verb *-su* has the potential of being inflected with a Subject prefix.

Another characteristic of compounds is that their constituents are not normally interruptible by pauses or further morphological material. Thus, in example (322) above it is possible to modify *kon* with NP modifiers like attributive nouns and demonstratives yielding an example like (327) below, but in example (321) no such modification is permitted.

- (327) *kon sanan-ḡa-na ta-na kwo-ono*
 ghost bad-NMS-GEN.3SG SPEC-GIV mouth-GEN.3SG
 that bad ghost's mouth

Similarly, in example (324) above it would not be possible to interpose the Object *yam* or any manner adverbs between *-so* and *-taara*.

A fourth characteristic of compounds is that their meanings are often not readily predictable from the meanings of their component morphemes. Example (321) above illustrates this, as does the following example:

- (328) *Aŋ-zem-ke yo.*
 1SG-leave-hide ACC.1SG
 I was in a deep sleep.

The meanings of serialisations, on the other hand, are far more predictable from their constituents. Once one has heard the following example, it is not difficult to guess that *kam buk ila* (*ila* = '3SG-go') means 'take the book':

- (329) *Kam buk i-mar.*
 2SG+do/get book 3SG-come
 Bring the book.

3.4.1.1 COMPOUND NOUNS

Compound nouns are typically formed by the adjunction of two noun roots (330), (331). There are also instances of compound nouns derived from the sequence Noun + Verb (332). No other syntactic categories combine with nouns to create compound nouns.

- (330) *kuzi-zaala*
 rat-road/path
 bottom plate of a house (the bottom piece of timber in a wall, where rats usually run)
- (331) *man-kwo-ono*
 bird-mouth-GEN.3SG
 morning (the time when birds call)
- (332) *mbete-ŋgal*
 sore-shoot
 boil/sore which penetrates deeply into the skin

3.4.1.2 COMPOUND VERBS

Compounding is much more common in verbs than in nouns. The following types of compound verbs have been observed: Verb + Adverb (333), Verb + Noun (334), Verb + Verb (335), (336). For example:

- (333) *ur-pe*
 put-very/well
 fix
- (334) *ur-koi*
 put-enemy
 to be an enemy of someone
- (335) *zem-ke*
 leave-hide
 to fall into a very deep sleep
- (336) *so-taara*
 say-cut
 to advise or notify

Many motion verbs are compounds consisting of a verb root indicating the spatial orientation of motion plus another form indicating the deictic orientation of motion with respect to the speaker and hearer. This is illustrated in the following table of motion verb stems and examples:

Spatial Orientation of Motion	Deictic Orientation		
	Towards Speaker	Towards Hearer, not Towards Speaker	Towards neither Speaker nor Hearer
unoriented	- <i>mar</i>	- <i>ma</i>	- <i>la</i>
up	- <i>se</i>	- <i>sa -ma</i>	- <i>sa-la</i>
down	- <i>su</i>	- <i>su -ma</i>	- <i>su-la</i>
inwards	- <i>le</i>	- <i>le -ma</i>	- <i>le-la</i>
outwards	- <i>pet</i>	- <i>pet-ma</i>	- <i>pe-ra</i>

- (337) *Ni ko i-su.*
 NOM.3SG UC 3SG-descend
 He will come down to me.

- (338) *Nio ko aŋ-ma Mande.*
 NOM.1SG UC 1SG-come.to.you Monday
 I will come to you on Monday.

- (339) *Nio ko aŋ-su-ma.*
 NOM.1SG UC 1SG-descend-come.to.you
 I will come down to you.

The form *-kaala* 'cover/protect/shield' is a frequent element in Verb-Verb compounds.

- (340) *las-kaala*
 roast-protect
 to preserve something by smoking it

- (341) *mender-kaala*
 stand-protect
 to stand guard over

Another frequent element of compound verbs is the verb *-paala* 'to break', which is further specified with other verb roots in order to express the exact *manner* in which the breaking is done:

- (342) *kot-paala*
 break.with.a.stone-break
 to completely smash something with a stone

- (343) *tar-paala*
 cut-break
 to split (wood)

Verbal compounds containing the forms *ki* ‘with fingers, claws’, *-ŋgor* ‘bite’, and *-pa* ‘move (on foot)’⁸⁶ specify the instrument with which an action is done, for example *-ki-raaza* ‘scratch with claws’, *-ŋgor-paala* ‘break with one’s teeth’, *-pa-ramut* ‘break by stepping on’.

3.4.2 DERIVATION OF NOUNS

3.4.2.1 DERIVATION BY THE NOMINALISING SUFFIX *-ŋa*

The suffix *-ŋa*, a reflex of Proto Oceanic **(a)ŋa*, is a very productive nominalising form in the language. Derived stems containing this form are inflected with the inalienable genitive suffixes. A complete paradigm is given below:

- (344) *sorok-ŋa-*
w.o.basis-NMS-
insignificant, unimportant
- (345) *Nio sorok-ŋo-ŋ.*
NOM.1SG w.o.basis-NMS-GEN.1SG
I am an insignificant person.
- (346) *Nu sorok-ŋo-m.*
NOM.2SG w.o.basis-NMS-GEN.2SG
You are an insignificant person.
- (347) *Ni sorok-ŋa-na.*
NOM.3SG w.o.basis-NMS-GEN.3SG
He/she/it is insignificant.
- (348) *Iti sorok-ŋa-nda.*
NOM.1PL.INC w.o.basis-NMS-1PL.INC.GEN
We are insignificant people.
- (349) *Niam sorok-ŋo-yam.*
NOM.1PL.EXC w.o.basis-NMS-1PL.EXC.GEN
We are insignificant people.
- (350) *Niom sorok-ŋo-yom.*
NOM.2PL w.o.basis-NMS-GEN.2PL
You are insignificant people.
- (351) *Zin sorok-ŋa-n.*
NOM.3PL w.o.basis-NMS-GEN.3PL
They are insignificant people.

Forms derived with *-ŋa* may function as either the head of a noun phrase or as attributive modifiers within the noun phrase. Nominalisations of transitive verbs typically may function as either NP heads or modifiers (352), (353), whereas intransitive state and process verbs yield stative nouns that more typically function as NP modifiers (354), (355). Derivations of intransitive verbs encoding actions usually function only as NP heads (356). For example:

⁸⁶ The form *ki* ‘with fingers, claws’ does not occur by itself, whereas the forms *-ŋgor* ‘bite’ and *-pa* ‘move (on foot)’ do function independently as verbs.

- (352) *Ingi koronŋ ŋgiimi-ŋa-na.*
 this.one thing buy-NMS-GEN.3SG
 This is something for sale (to be bought, not given away).
- (353) *Moori ŋgiimi-ŋa-na i-map.*
 woman buy-NMS-GEN.3SG 3SG-end
 The buying of the woman ended.
- (354) *Aŋ-po ruumu mbol-ŋa-na.*
 1SG-tie/build house be.strong-NMS-GEN.3SG
 I built a solid house.
- (355) *Kam zin tomtom ambaimbai-ŋa-n.*
 2SG+get PL person be.good+RED-NMS-GEN.3PL
 Get (some) good people.
- (356) *Ko zoro-ŋa-na kini i-map?*
 UC rebel-NMS-GEN.3SG LOC.3SG 3SG-end
 Will his rebellion (ever) end?

Note from (354) and (355) that if a singular noun is modified by a form ending in *-ŋa*, then the third singular genitive suffix is added, and if a plural noun is modified then the third plural genitive suffix is added.

The suffix *-ŋa* attaches to a wide variety of word classes: adverb, noun, stative verb, and dynamic verb. The combinations (1 - 6) are illustrated below.

1. ADVERB + *-ŋa* ⇒ Stative Noun

- (357) *pikin kaimer-ŋa-na*
 child later-NMS-GEN.3SG
 last-born child
- (358) *Nu kam buza parei-ŋa-na?*
 NOM.2SG 2SG+get knife how?-NMS-GEN.3SG
 What kind of bush knife did you get?
- (359) *muŋgu-ŋa-na*
 before-NMS-GEN.3SG
 old
- (360) *alok-kek-ŋa-na*
 a.long.time-PERF-NMS-GEN.3SG
 something that has been around for a long time

2. NOUN + *-ŋa* ⇒ N (with resulting intensification of meaning)

- (361) *mbo-ŋa-na*⁸⁷
 hunter-NMS-GEN.3SG
 a really good hunter

⁸⁷ The base morpheme is really *mboŋ*, but there is a reduction of the *ŋ + ŋ* cluster to a single *ŋ*. Similarly, the base form in the following example is *nəŋgəŋ*.

3. NOUN + *-ŋa* ⇒ N (with no apparent change in intensity)

- (362) *naŋga-ŋa-na*
 young.male-NMS-GEN.3SG
 young (one)
- (363) *ŋono-som-ŋa-na*
 fruit-NEG-NMS-GEN.3SG
 something fruitless/useless
- (364) *tomtom za-n-ŋa-n*
 person name-GEN.3PL-NMS-GEN.3PL
 famous people

4. Third person plural nominalisations of kin terms which function as plural vocatives
 N ⇒ N

- (365) *Tizi-ŋa-n, ke-leŋ sua tio.*
 y.sibling-NMS-GEN.3PL 2PL-hear talk LOC.1SG
 My younger brothers, listen to my talk.

5. STATIVE VERB + *-ŋa* ⇒ Stative Noun

Recall that stative verbs in Mangap-Mbula are divided into two subclasses depending upon whether or not they exhibit Subject indexing morphology. Illustrations of the syntax of items from the two subclasses when they are *not nominalised* with *-ŋa* are first given here:

- (366) *Yok i-lomo.*
 water 3SG-be.cold
 The water is cold.
- (367) *Yok tingi ambai.*
 water DEM be.good
 This water is good.

Now compare (366) and (367) with the following two examples:

- (368) *Aŋ-so aŋ-win yok lomo-ŋa-na.*
 1SG-say 1SG-drink water be.cold-NMS-GEN.3SG
 I want to drink some cold water.
- (369) *Iŋgi yok ambai-ŋa-na.*
 this.one water be.good-NMS-GEN.3SG
 This is good water.

Note in (368) that *-lomo* has lost its Subject-indexing morphology.

6. DYNAMIC VERB + *-ŋa* ⇒ N

- (370) *Nu moori taŋtaŋ-ŋo-m.*
 NOM.2SG female cry+RED-NMS-GEN.2SG
 You are a cry baby. (Addressed to a young girl.)

- (371) *sua t-ur-ke-ŋa-na*
talk ?⁸⁸-put-hide-NMS-GEN.3SG
a secret (lit. hidden talk)
- (372) *sua mbuk-ŋa-na kizin*
talk tie-NMS-GEN.3SG LOC.3PL
their agreement (lit. their tied talk)
- (373) *Zooro-ŋa-na kini ambai som.*
rebel-NMS-3SG LOC.3SG be.good NEG
His/her rebellion is not good.
- (374) *zin mboro-ŋa-n tiam*
PL watch.over-NMS-GEN.3SG LOC.1PL.EXC
our watching over ones/the ones who watch over us/our village elders

Semantically, derivations with *-ŋa* tend to convey the idea of generic, habitual, or characteristic actions. Contrast the nominalisation in the preceding example with the semantically similar relativisation in the next example:

- (375) *zin tomtom ta ti-mboro yam*
PL people SPEC 3PL-watch.over ACC.1PL.EXC
the people that watch(ed) over us

In (374) the nominalisation obligatorily refers to people who *characteristically* or *habitually* watch over or lead. In (375), however, the relative clause can encode people who either: 1) characteristically watch over, or 2) watch over only at a particular point in time in a particular situation.

In addition to conveying the idea of an enduring quality or characteristic, a second factor involved in the use of nominalisations with *-ŋa* is the need to *reify* actions as entities which can be observed (376), evaluated (377), or begun or ended (378). Such conceptualisations are possible because of the ontological metaphor that IDEAS or EVENTS ARE OBJECTS (Lakoff and Johnson 1980:25-32).

- (376) *Nio aŋ-la be aŋ-re woŋgo yaaru-ŋa-na.*
NOM.1SG 1SG-go NF 1SG-see canoe pull-NMS-GEN.3SG
I went to see the canoe-pulling. (i.e. pulling logs through the forest which are eventually going to be shaped into canoes).
- (377) *Bia win-ŋa-na, ina ambai som.*
beer drink-NMS-GEN.3SG that.one be.good NEG
Beer drinking, that is not good.
- (378) *Moori ŋgiimi-ŋa-na i-map.*
female buy-NMS-GEN.3SG 3SG-end
The bride-price ceremony is ended.
- (379) *Ke-zem zooro-ŋa-na tiom.*
2PL-leave rebel-NMS-GEN.3SG LOC.2PL
Quit rebelling!

⁸⁸ The *t* here could possibly be related to POC ***tuqu* 'stand'. Note, however, that the current form in the language for 'stand' is *-mender* (< POC **madriRi* 'stand').

A final factor in the frequent use of derivations in *-ŋa* is the non-existence of a class of adjectives in the language. Derivations with *-ŋa* are a way of creating attributive modifiers.

Derivation with *-ŋa* has been discussed and exemplified relatively extensively because of its great productivity and frequency as a morphological process.

3.4.2.2 NOMINALISATION BY THE SUFFIX =i

In addition to *-ŋa*, there is a second, less productive nominalising form: the suffix *-i*. Compare the following two examples:

(380) *I-ŋguŋ men.*
3SG-cough still
He is still coughing.

(381) *Ŋguŋ-i kini i-map kek.*
cough-NMS LOC.3SG 3SG-end PERF
His cough is finished.

Some other examples of such derived nouns are: *pa-i* 'way of life, journey' (< *-pa* 'to walk'), *ŋoŋ-i* 'quarrel' (< *-ŋooŋo* 'to quarrel'), *bob-i* 'a call' (< *-boobo* 'to call'), *koi* 'enemy, one who causes you to flee' (< *-ko* 'to flee'), and *loni* 'race' (< *-loondo* 'run').

3.4.2.3 IRREGULAR NOMINALISATIONS

There are a number of verb–noun pairs which exhibit irregular formal correspondences but still seem to be somewhat related. Examples of these are given below:

VERB		NOUN	
<i>-beede</i>	write	<i>bude</i>	(hand) writing
<i>-peeze</i>	to paddle	<i>puze</i>	paddling
<i>-paaza</i>	to plant	<i>puze</i>	planting
<i>-po</i>	to tie	<i>pu</i>	sorcerer (one who ties fetishes)
<i>-so</i>	to say	<i>sua</i>	talking, speech, words
<i>-mbo</i>	to sing	<i>mboe</i>	song
<i>-ŋgeele</i>	to talk	<i>ŋgele</i>	discussion
<i>-peebe</i>	give birth	<i>pepe</i>	birth
<i>-kilaala</i>	recognise	<i>kilalan</i>	sign, omen

3.4.2.4 DEVERBAL NOUNS

It remains to be noted that a large number of forms may function as either nouns or verbs, with no further derivational affixation being necessary to indicate a change of syntactic category. This is illustrated by the following two examples:

(382) *Nio aŋ-re peeze i-mbot taŋga.*
NOM.1SG 1SG-see paddle 3SG-stay DEM
I saw the paddle over there.

- (383) *Aŋ-peeze woŋgo.*
 1SG-paddle canoe
 I paddle the canoe.

Further illustrative pairs are: *-peene* 'to shoot' and *peene* 'a bow and arrow', *-ris* 'to draw a line' and *ris* 'a line', *-boogo* 'to break or divide something' and *boogo* 'something divided, twins', *-didi* 'to make walls' and *didi* 'wall', *-guugu* 'to pound sago' and *guugu* 'instrument used for pounding sago'.

3.4.3 TRANSITIVITY DERIVATION

The transitivity of predicates may be altered by adding one or more of the following three prefixes:

- | | |
|------------------------|--|
| <i>p-</i> ~ <i>pa-</i> | causative/transitivity increasing, a reflex of Proto Oceanic * <i>pa</i> |
| <i>par-</i> | reciprocal, a reflex of Proto Oceanic * <i>paRi</i> |
| <i>m-</i> | transitivity reducing, a reflex of Proto Oceanic * <i>ma</i> that forms process ⁸⁹ predicates from action-process ones. |

Note that the causative prefix has two allomorphs. Which allomorph a particular predicate takes is lexically governed, but the non-vocalic version is far more common. Since the morphophonemic results of the attachment of these prefixes are described in §2.2.2.3 and §2.4.2 of the phonology chapter, this section emphasises more the syntax and semantics of the forms.

3.4.3.1 CAUSATIVE PREFIX *p-* ~ *pa-*

Creation of causative forms with the prefix *p-* ~ *pa-* is an extremely productive morphological process. The prefix is typically added to single place predicates and low transitivity two-place predicates (i.e. those which encode low volitionality or do not encode a pronounced change of state in the Patient), and the result is a predicate whose valency is increased by the addition of a Causer argument. This Causer always functions as the Subject.

- (384) *Tomtom ta-na, ŋgar kini i-mbol kat.*
 person SPEC-GIV thinking LOC.3SG 3SG-be.strong very
 That person, he is very stubborn (lit. his thinking is very strong).
- (385) *Aŋ-so aŋ-po-mbol⁹⁰ tomtom ta-na.*
 1SG-say 1SG-CAUS-be.strong person SPEC-GIV
 I want to encourage that person (lit. I want to make that person strong).

⁸⁹ The terms 'process' and 'action-process' are drawn from Chafe (1970:98-101) and characterise different types of situations. In processes, something *happens*; something undergoes a *change* in its condition. Actions are things which people (or other animate entities *do*). Action-processes are things which someone or something *does* which result in something undergoing a *change*.

⁹⁰ In this and the following examples, it will be noted that the vowel in the surface form of the causative morpheme is homorganic with the first following vowel. This is the result of an epenthetic vowel being inserted after the *p-* causative morpheme. For further details, see §2.2.2.2 and §2.4.2 of the phonology chapter.

- (386) *Kini i-bayou.*
 food 3SG-be.hot
 The food is hot.⁹¹
- (387) *Aṅ-pa-bayou kini.*
 1SG-CAUS-be.hot food
 I heated up the food.
- (388) *Nio ko aṅ-gaaba yom mi ta-kam uraata.*
 NOM.1SG UC 1SG-accompany ACC.2PL and 1PL.INC-do work
 I will accompany you and we'll work together.
- (389) *Nu koroṅ ku na, i-mbot ndel*
 NOM.2SG thing LOC.2SG GIV 3SG-stay elsewhere

Pa-gaaba ∅ la koroṅ kizin pepe.
 2SG+CAUS-accompany 3SG.ACC go thing LOC.3PL PROH
 Your things should be kept separate. Don't mix them up with their things.
- (390) *Aibike i-pa-saana buza tio.*
 Aibike 3SG-CAUS-deteriorate knife LOC.1SG
 Aibike (accidentally or intentionally) ruined my knife.

Note from example (390) that the causation in such constructions may be either intentional or accidental.

Some *high transitivity* two-place predicates also undergo derivation with *p-*, but with a different semantic result. In these cases, instead of increasing valency by adding a Causer argument, the addition of *p-* expresses an increased amount of effort or struggle on the part of the Agent:

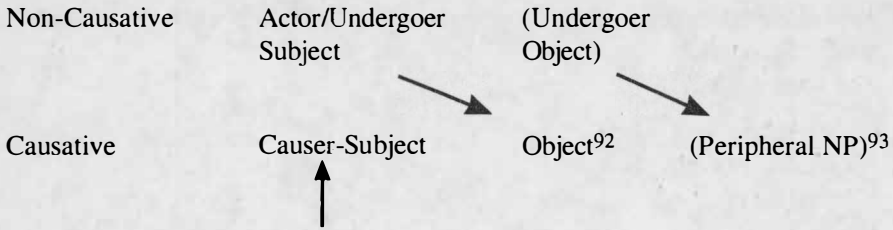
- (391) *Aṅ-kaaga kataama.*
 1SG-open door
 I open the door.
- (392) *Aṅ-pa-kaaga kataama.*
 1SG-CAUS-open door
 I managed to get the door open.

Given the importance of prestige in the Mangap-Mbula culture, a causative verb formed by adding *pa-* to the form *som* 'do in vain' is quite commonly heard:

- (393) *Ti-pa-som yo.*
 3PL-CAUS-do.in.vain ACC.1SG
 They denigrated/belittled me.

From examples (384) - (393) it can be seen that the typical syntactic effects of causativisation can be diagrammed in the following manner:

⁹¹ *Bayou* appears to contain the form *you* 'fire'. *Ba*, however, does not occur elsewhere in the language as a meaningful element.



3.4.3.2 RECIPROCAL PREFIX *par-*

The prefix *par-* is used to encode situations of logical symmetry. Formally such a relation can be represented as: X and Y are symmetrical with respect to some relation *r* if and only if $X r Y$ and $Y r X$ are both true. Haiman (1985:74) characterises this notion of symmetry for combinations of clauses/predications as follows:

Where clauses rather than people are defined by some relationship, we may say that they are symmetrical under the following (most frequently encountered) conditions:

- They denote events which occur simultaneously.
- They denote events which occur in alternation.
- They denote events which are mutually dependent.

As an illustration of the use of *par-*, contrast the following two examples:

- (394) *Nio aŋ-uul=i mi ni i-uulu yo.*
 NOM.1SG 1SG-help=-ACC.3SG and NOM.3SG 3SG-help ACC.1SG
 I help him and he helps me. or I helped him and (then) he helped me.
- (395) *Niamru am-par-uulu yam.*
 NOM.1DU.EXC 1PL.EXC-REC-help ACC.1PL.EXC
 We two help each other.

While the coordinate construction in (394) *can* encode symmetry, it by no means has an obligatory symmetrical interpretation, as the second gloss illustrates. Example (395), on the other hand, obligatorily (and economically) encodes such a relationship. Reciprocal derivation is a very productive morphological process. Further examples are now given:

- (396) *Nio aŋ-pa-saan=i.*
 NOM.1SG 1SG-CAUS-deteriorate=ACC.3SG
 I ruined him/her. or I worked sorcery on him/her.
- (397) *Niamru am-par-pa-saana yam.*
 NOM.1DU.EXC 1PL.EXC-CAUS-deteriorate ACC.1PL.EXC
 We two ruined each other.
- (398) *Nio aŋ-pe-kel buza ku.*
 NOM.1SG 1SG-CAUS-replace knife LOC.2SG
 I returned your knife.

⁹² Example (392) illustrates an Object remaining an Object under causativisation.

⁹³ Example (389) illustrates an Object being demoted to oblique status.

- (399) *Ti-par-pe-kel* *ye mi serembat.*
 3PL-REC-CAUS-replace fish and sweet.potato
 They exchanged fish and sweet potato.

Intransitive predicates occasionally exhibit an alternate encoding of reciprocals, in which the form *par* occurs as a free form adverbial after the verb. The two possible encodings are illustrated in the following two examples:

- (400) *Niamru* *am-par-seenge* *piam.*
 NOM.1DU.EXC 1PL.EXC-REC-laugh REF.1PL.EXC
 We two laughed at each other.
- (401) *Niamru* *am-seenge* *par* *piam.*
 NOM.1DU.EXC 1PL.EXC-laugh REC REF.1PL.EXC
 We two laughed at each other.

In body image constructions containing an inalienable noun (and optionally a following *intransitive* verb), this alternate encoding is the only means of expressing reciprocity:

- (402) *Iti* *lele-nde* *par* *piti.*
 1PL.INC insides-1PL.INC.GEN REC REF.1PL.INC
 We like each other (lit. our insides are for each other).

In body image constructions containing an inalienable noun and a following *transitive* verb, the normal reciprocal construction is used:

- (403) *Zin* *mata-n* *par-ngal* *zin.*
 NOM.3PL eye-GEN.3PL REC-pierce ACC.3PL
 They remembered/looked after each other.

3.4.3.3 DETRANSITIVISING PREFIX *m-*

The prefix *m-* derives process predicates from action-process predicates by eliminating the Agent argument. The resulting derived predicate frame contains only the Patient that undergoes a change of state. This type of transitivity derivation is much more lexically restricted than the previous two, being exhibited by only a handful of verbs. The effects of this sort of derivation are illustrated in the following examples:

- (404) *Aŋ-paala* *ke* *pa* *nakabasi.*
 1SG-break wood REF axe
 I broke up the wood with an axe.
- (405) *Wooŋo* *i-ma-paala.*
 canoe 3SG-DETR-break
 The canoe broke up.
- (406) *Aŋ-liŋ* *yok* *i-se* *kapa.*
 1SG-pour water 3SG-ascend corrugated.iron
 I poured the water onto the corrugated iron.
- (407) *Yok* *i-mi-liŋ.*
 water 3SG-DETR-pour
 The water spilt.

A few predicates can function either as action-process predicates or as process predicates, with no overt morphological marking of a change in transitivity:

- (408) *Aŋ-kaaga kataama.*
 1SG-open door
 I opened the door.
- (409) *Kataama i-kaaga.*
 door 3SG-open
 The door opened.

3.4.3.4 DERIVED TRANSITIVITY COMBINATIONS/*UNCONTROLLED* CAUSATION/INITIATION

It is possible for the different transitivity altering prefixes to co-occur. This is illustrated in the following two examples:

- (410) *Ti-par-pa-moto zin.*
 3PL-REC-CAUS-fear ACC.3PL
 They frighten each other.
- (411) *Ni i-pa-mi-liŋ yok.*
 NOM.3SG 3SG-CAUS-DETR-pour water
 He unintentionally/accidentally spilt the water.

Note from example (411) that the combination of *p-* and *m-* with a transitive predicate serves to encode an *unintentional* or *uncontrolled* event.

3.4.4 MINOR DERIVATIONAL PROCESSES

There are several additional derivational processes in the language which are exhibited only by small numbers of lexical items.

3.4.4.1 DERIVATION OF MANNER ADVERBS BY *-ŋa*

The form *-ŋa* derives manner adverbials:

- (412) *ri-ŋa*
 little-ADVS
 softly, carefully, slowly
- (413) *lo-ŋa*
 run-ADVS
 quickly, suddenly

Distributive manner adverbs are likewise obtained by adding *-ŋa* to the reduplicated form of a numeral.

- (414) *Aŋ-kam zin ruru-ŋa.*
 1SG-do/get ACC.3PL two+RED-ADVS
 I got them in twos.

3.4.4.2 DERIVATION OF DEICTIC TIME ADVERBS BY *-(g)i*

Most deictic *non-future* time adverbials are observed to end in a final /i/. For example:

<i>bur-i</i>	now
<i>kooz-i</i>	today (cf. <i>koozo</i> 'daytime')
<i>mankwoon-i</i>	this morning (cf. <i>mankwoono</i> 'morning')
<i>mbeŋ-i</i>	last night (cf. <i>mbeŋ</i> 'night')
<i>neer-i</i>	yesterday
<i>uriiz-i</i>	the day before yesterday
<i>uriiz-a</i>	three days ago
<i>gorgor-i</i>	all the time (cf. <i>gorgor</i> 'period of time')

In contrast to this, all *future* time adverbials do not end in /i/:

<i>gaaga</i>	tomorrow
<i>malama</i>	the day after tomorrow
<i>upeele</i>	three days from now
<i>irin</i>	four days from now

The vowels /i/, /a/, and /o/ are observed to recur as formatives of deictic items in a number of different areas of the grammar. For example, all demonstratives end in either /i/ or /a/. There are also the three sentence-final adverbs specifying the 'remoteness' of an event which end in these vowels: *=(g)i*, *=(g)a*, and *=(g)o*.

The deictic temporal adverbials ending in /i/ seem to contain this deictic formative /i/. This is particularly evident from the forms for 'today', 'this morning' and 'last night'. And it is reasonable that there is a switch in the ending of the temporal adverbs from /i/ to /a/ once one reaches a point in time three days ago, given the typically greater remoteness that is encoded by /a/.

There is a further, phonological, argument for considering forms like *neeri*, *koozi*, *mankwooni*, and *uriiza* to be polymorphic. These, along with the form *moori* 'woman, female' are the only items in the language which exhibit phonetically lengthened vocoids that are followed by a different vocoid. If they are bimorphic, a ready explanation emerges for their apparent violation of the general phonological restriction of such lengthened vocoids to the environment:

C _ C V[identical].

Since there is a general fast speech process of Apocope in which the final vowel of morphemes containing lengthened vocoids is lost before pronominal clitics consisting of a single vowel (see §2.4.2.1 of the phonology chapter for further discussion and exemplification), these forms could underlyingly be */nere-i/*, */koso-i/*, and so on.

If this analysis is accepted, then /i/ and /a/ must be posited also to have the function of deriving deictic temporal adverbs.

3.4.5 POSSIBLE RELICS OF THE PROTO OCEANIC TRANSITIVE SUFFIXES **-aki(ni) ~ *-i*

In accordance with Ross's (1988:101) statement that the Proto Oceanic transitive suffixes were lost in almost all of his North New Guinea Cluster languages, Mangap-Mbula exhibits no productive synchronic use of reflexes of these suffixes. However, there are a handful of

verbs that occur in pairs in which one member ends in a final *-i* or *-ki* and the other does not and whose meanings seem to differ mainly in transitivity. Consider the following pairs:

<i>-pa</i>	to walk	versus	<i>-pa-i</i>	to wake someone up (to get them walking??)
<i>-pet</i>	to appear		<i>-pe-i</i>	to cause to appear
<i>-se</i>	to ascend		<i>-se-i</i>	to be self-motivated to do something
<i>-ko</i>	to flee away		<i>-ko-ki</i>	to carry someone away
<i>-re</i>	to see, look		<i>-re-ki</i>	take heed, think
<i>-po</i>	to tie		<i>-po-i</i>	to carry something in a string bag suspended from the head (as women usually do)

Given the small number of items involved, it is hard to determine whether the resemblances in form are accidental or principled. At any rate, they are adduced here as the only *possible* relics of the POc transitive suffixes that have been observed.

3.5 REDUPLICATION

Since the *forms* of reduplication are extensively discussed in §2.4 and following of the phonology chapter, the presentation here will focus upon its *functions*.

The effects of reduplication upon a morpheme's meaning are quite varied. In general, they are a selection from or combination of the following: 1) plurality (especially of inanimate objects), 2) distribution, 3) intensification, 4) diminution, and 5) habitual-durative action, action that is somehow 'extended'. Note that effects 1) and 5) are rather inflectional in nature, whereas effects 3) and 4) are more derivational. Thus, reduplication is an intermediate morphological process, lying somewhere between the two poles of inflection and derivation.

Many of the meanings of reduplication can be considered to be instances of the more general semantic notion of EXTENSION. The use of an increase in phonological material to express such increased extension is a *prima facie* case of iconicity in language. Lakoff and Johnson (1980), in their discussion of how metaphors can give meaning to linguistic forms, note the metaphor MORE OF FORM STANDS FOR MORE OF CONTENT. They characterise the outworking of this metaphor in the following manner (p.128):

A noun stands for an object of a certain kind. More of the noun stands for more objects of that kind.

A verb stands for an action. More of the verb stands for more of the action (perhaps until completion).

An adjective stands for a property. More of the adjective stands for more of the property.

A word stands for something small. More of the word stands for something smaller.

Although their last statement is perhaps forcing the point a bit, the first three seem quite reasonable. The general metaphor MORE OF FORM STANDS FOR MORE OF CONTENT would seem to be a valid generalisation about the use of reduplication in Mangap-Mbula, and in many other languages (Moravcsik 1978 and Mayerthaler 1988:85-87), to express such concepts as plurality, intensity, and extension of action.

Some examples of the meanings of reduplicated forms will now be given.

Plurality of Inanimate Objects

- (415) *worwooro*
vine+RED
vines
- (416) *kataama kizin kwo-n+kwon*
door LOC.3PL mouth-GEN.3PL+RED
doorways of their houses
- (417) *mbutmbuutu*
grass+RED
grass/grasses
- (418) *Ti-we bibip / **biibi.*
3PL-become big.one+RED big.one
They grew large.
- (419) *I-we biibi / **bibip.*
3SG-become big.one big+RED
It grew large.

Plurality of a Patient/Undergoer is often also encoded by reduplication on the verb, as in the following examples (420) - (422):

- (420) *I-kezes kun nama-n+naman.*
3SG-follow.along+RED breadfruit hand-GEN.3PL+RED
It crawls along the breadfruit tree's (many) branches.
- (421) *Ni i-pun zin ma ti-metmeete lup.*
NOM.3SG 3SG-hit ACC.3PL and 3PL-die+RED all
He killed them all.
- (422) *Ke ti-ndomdom.*
tree 3PL-come.up+RED
The trees grew.

Distribution

- (423) *To ti-suj pa merere kizin+kizin.*
then 3PL-pray REF lord LOC.3PL+RED
Each of them prayed to their own gods.
- (424) *Ni i-watwaata za-n+zan.*
NOM.3SG 3SG-call+RED name-GEN.3PL+RED
He called each of their names.

Intensification (often ambiguous with plurality)

- (425) *ambaimbai-ŋa-na*
be.good+RED-NMS-GEN.3SG
something very good
- (426) *ambaimbai-ŋa-n*
be.good+RED-NMS-GEN.3PL
many good things

- (436) *Niom ko-mbotmbot, mi tomtom ta i-pun*
 NOM.2PL 2PL-stay+RED and person SPEC 3SG-hit
lutu-yom bizin ma ti-metmeete ma ti-map lup.
 child-GEN.2PL PL and 3PL-die+RED and 3PL-end all
 While you were staying (here), somebody killed all of your children.

There appears to be very little contextual variation in the interpretation of reduplicated *non-verbal* elements. With reduplicated *verbs*, however, there can be quite extensive differences of interpretation. For example, when the item *-meete* 'die' is reduplicated, it may have interpretations ranging from 'each one died,' to 'started to die,' to 'unconscious,' to 'while X was/is dying...'

A final note regarding the syntax of reduplicated forms is that stative nouns occurring as attributive modifiers to plural nouns are usually reduplicated. This is illustrated by the following pair of examples:

- (437) *man biibi*
 bird big.one
 a big bird
- (438) *man bibip ru*
 bird big.one+RED two
 two big birds

CHAPTER 4

SYNTAX

4.1 INTRODUCTION

4.1.1 THE SCOPE OF SYNTAX

Matthews (1981:1) defines syntax as “the branch of grammar dealing with the ways in which words, with or without appropriate inflections, are arranged to show connections of meaning within the sentence”. According to this definition, syntax has both a formal component (arrangements of words) and a semantic one (‘connections of meaning’). To characterise adequately the syntax of a language, it is necessary, then, to describe:

1. the formal characteristics of linguistic expressions: arrangements of words, case marking, and intonation;
2. the meanings they encode.

The meanings encoded by syntax have two basic aspects:

1. situational – who the participants are and what roles they play in the situation;
2. pragmatic – the relationship between speaker and hearer, their assessments of each other’s knowledge, their conversational goals and interests, and so on.

The *relative importance* of different formal characteristics varies from language to language. For example, in a non-configurational language like the Australian Aboriginal language Warlpiri,¹ there is very little correlation between the order of words and the types of situations they encode. Instead, case-marking suffixes are used to delineate the participants in situations and indicate the roles they play. A configurational language like English, on the other hand, relies heavily upon word order for delineating the participants in situations and the roles they play. In languages where the correlation between word order and the type of situation being encoded is minimal, increased scope is to be had for the *pragmatic* determination of word order.

Whether word order correlates more with the type of situation or with pragmatics, it is important to bear in mind that *all formal characteristics are meaningful*. As Wierzbicka (1988:1) notes:

Nothing is more easily overlooked, or as easily forgotten, as the most obvious truths. The tenet that language is a tool for expressing meaning is a case in point. Nobody would deny it – but many influential schools and trends in modern linguistics have ignored it. . .

Language is an integrated system, where everything ‘conspires’ to convey meaning – words, grammatical constructions, and illocutionary devices (including intonation).

¹ See Hale (1983) for a discussion of the Warlpiri data.

Some of the other theoretical assumptions and distinctions that are reflected in this analysis of Mangap-Mbula syntax will now be outlined.

4.1.2 STRUCTURAL ASPECTS OF SYNTAX

4.1.2.1 DOMINANCE VERSUS LINEAR PRECEDENCE

It seems advantageous to factor the notion of constituent structure into the two, logically independent, components of: 1) dominance/constituency (i.e. what structural elements make up a particular unit) and 2) linear precedence/order (i.e. the order in which those units occur), as proposed by Gazdar et al. (1985:Chapter 3).² By way of formalism, the fact that a constituent X consists of the daughter constituents Y and Z, is represented by the *immediate dominance* (ID) rule $X \Rightarrow Y, Z$. Such a rule makes no claims about the *relative ordering* of Y and Z, and therefore can represent either of the following two structures:



The relative ordering of sister constituents like Y and Z is handled by a second type of rule: a *linear precedence* (LP) rule of the form $Y < Z$ or $Z < Y$, where $<$ means 'precedes'. By distinguishing these two components of phrase structure, it is easier to factor out cross-categorical ordering generalisations. As Gazdar et al. (p.47) put it, "ID/LP format grammars capture generalisations by stating constituent order for the grammar as a whole, rather than on a one-rule-at-a-time basis..." For example, the three facts about English that: 1) Objects follow verbs, 2) adpositions precede rather than follow their associated NPs, and 3) complementisers are initial rather than final, can be captured by a single linear precedence rule which states that '*lexical heads* of structures precede the Complements for which they are sub-categorised'. This rule, like many linear precedence rules, relies on the notion of a 'head' constituent. We now turn to this notion.

4.1.2.2 HEADS OF CONSTITUENTS

Pollard and Sag (1987:53) characterise HEADS in the following way:

The notion of the *head* of a phrase is one with a long history, stemming from traditional grammar and playing a central role in recent syntactic frameworks such as GB [=Government and Binding Theory, RDB] and GPSG. The underlying intuition is simply that each phrase contains a certain word which is centrally important in the sense that it determines many of the syntactic properties of the phrase as a whole; that word is called the *lexical head* of the phrase...More generally, the *head* of a phrase is that daughter (immediate constituent) of the phrase which either is or contains the phrase's lexical head.

Pike and Pike (1977:27) note some other important characteristics of HEAD constituents (which they term "nuclei"):

1. They more frequently have the option of representing the entire unit, of which they are a part, in larger units.
2. They are members of larger classes.

² The framework of Gazdar et al. is referred to as Generalised Phrase Structure Grammar (=GPSG).

3. They occur in more kinds of grammatical slots than do the marginal classes.
4. They have a more central semantic role.

For most phrasal categories, the identity of the HEAD seems pre-theoretically clear. Nouns are the HEADS of noun phrases, verbs are the HEADS of verb phrases, adjectives are the HEADS of adjective phrases, and prepositions are the HEADS of prepositional phrases.

The only phrasal categories which are possibly controversial with regard to their HEADS are sentences and Complement clauses. In this grammar, predicate phrases³ are considered to be the HEADS of sentences. Such treatment seems reasonable because the predicate phrase is obligatory (except in answers to questions), whereas an overt Subject NP is optional and in fact more frequently absent than present. (Note, however, that even when there is no overt Subject NP, indexing on the verb typically indicates the identity of the Subject.)

With Complement clauses, deciding upon a HEAD constituent is more difficult. In a language like English, because of the strong co-occurrence restrictions between the type of complementiser and the verb forms⁴ occurring in the Complement clause, there are good arguments for considering the complementiser to be the HEAD. This is the analysis of Government and Binding theory.⁵ In Mangap-Mbula, since there is no finite versus non-finite distinction among verbs, it is harder to decide one way or the other. Given the fact that elsewhere in the language, in constructions consisting of a single lexical item which precedes a phrasal constituent, this lexical item is arguably the HEAD, it seems wisest to consider the complementiser analogically to be the HEAD.

4.1.2.3 COMPLEMENTS AND ADJUNCTS

The daughter elements of a constituent are, therefore, divided into HEADS and non-HEADS. Non-HEADS, in turn, are divided into Complements and Adjuncts. Again, the pre-theoretical intuition is relatively clear: Complements are somehow more nuclear or 'tightly' bound up with the HEAD than Adjuncts. In addition to the obvious criterion that obligatory non-HEAD elements in a construction are Complements, Pollard and Sag (1987:135-139) list some further distinctions between Complements and Adjuncts, as set out below:

1. order-dependence of content: "The contribution of adjuncts to semantic content can depend upon their relative order in a way which does not apply to optional complements."
2. constancy of semantic contribution: "In general, a given adjunct can co-occur with a relatively broad range of heads while seeming to make a more or less uniform contribution to semantic content across that range. A given optional complement, by contrast, is typically limited in its distribution to co-occurrence with a small (and often semantically restricted) class of heads. In addition, the semantic contribution of the complement is idiosyncratically dependent upon the head."

³ Predicate phrases have been substituted for the verb phrase category in order to generalise the syntactic structures of sentences containing both verbal and non-verbal predicates. The predicate phrase generally consists of everything in the sentence after the Subject. See §4.1.2.5 for further details.

⁴ For example, *to* takes only infinitives, whereas *that* requires finite verb forms.

⁵ For arguments supporting such an analysis, see Radford (1988:499-508) and Chomsky (1986a:3).

3. iterability: "In general, two or more instances of the same adjunct type can combine with the same head, but this is impossible for complements."
4. relative order: There is a tendency for complements to be ordered before adjuncts.

Some further distinguishing characteristics of core (=Complement) versus peripheral (=Adjunct) *clausal level* constituents are given by Foley and Van Valin (1984:79-80):

The main coding feature distinguishing core from peripheral arguments is that core arguments tend to occur in unmarked morphological or syntactic forms and peripheral arguments in marked, often adpositional, codings.

...Correlating with the unmarked morphological status of core arguments is the possibility of their being cross-referenced on the verb.

...the ability to be 'subject' is a crucial property of core arguments.

Although the pre-theoretical distinction between Complements and Adjuncts or Core versus Periphery seems relatively clear, in practice making hard and fast distinctions can sometimes be difficult. For example, some Complements are optional, whereas others are obligatory. Thus, the verb *like* in English obligatorily takes an Object Complement, whereas with *eat* the Object Complement is optional. Similarly, some prepositional phrases are more peripheral than others. For example, temporal PPs like *at night* and outer Locatives⁶ would seem to be extremely peripheral, co-occurring with almost any predicate, whereas Benefactive and Instrumental PPs are more restricted in regard to the predicates with which they can occur:

??It is red for you

??It is red with an axe

??He died with a knife

??It rotted for you.

Thus, the Complement-Adjunct distinction is probably not simply a *binary* opposition, but rather a *cline*. This is not surprising, since a number of different syntactic and semantic characteristics are being used to distinguish Complements from Adjuncts. For Mangap-Mbula, the following parameters are used in characterising the *degree* to which a given constituent is a Complement:

1. obligatory;⁷
2. existence, typically, of some sort of morphological cross-referencing between the HEAD and the constituent;

⁶ The underlined prepositional phrase of the following example is an *outer* Locative: *He wrote the letter at home.*

It specifies the location of an event as a whole. An *inner* locative, on the other hand, specifies the location of just one participant in a predication. In the example *He sent the letter to Mary*, *to Mary* is an inner locative, because it specifies the location of just the letter.

⁷ 'Obligatory' here is not equal to 'always overtly expressed'. Subjects are frequently not encoded by overt noun phrases. The Subject prefixes on most verbs, however, indicate the identity of the Subject. And even with the non-inflecting verbs, if the Subject noun phrase is omitted, it is because the identity of the Subject is clear from the context. Thus, even in those cases where there is no overt Subject NP, a speaker of the language is still able to identify the Subject. Note, however, that there is one class of predicates which appear to be Subjectless: temporal nouns and adverbs occurring in existential adverbial constructions like the following:

Mbej to ta-la.

night then IPL.INC-go

When it is night, then we will go.

	1	2	3	4	TOTAL SCORE	COMPLEMENT
Inalienable Genitive (the suffix)	+	+	+	1	4	
Attributive Nouns	-	+ ⁸	+	.5	2.5	
Alienable Genitive	-	-	+	.75 ⁹	1.75	
Quantifiers	-	-	-	0	0	
Relative Clauses	-	-	-	0	0	
Demonstratives	-	-	-	0	0	
						ADJUNCT

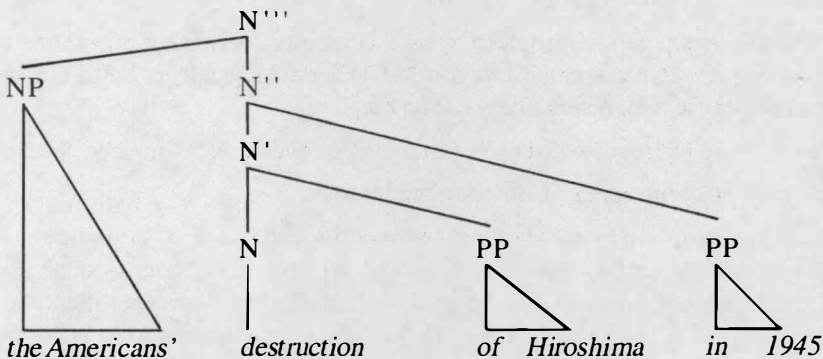
4.1.2.4 CROSS-CATEGORIAL SYMMETRIES/X BAR SYNTAX

In accordance with the current emphasis in linguistic theory, attempts have been made to¹⁰ highlight cross-categorial symmetries in phrase structure in this description. Examples of such symmetries are the well-known correlation between verb–Object ordering and whether a language is prepositional or postpositional. A slightly more involved instance would be the similarity of English nominalisation and sentence pairs like the following:

the Americans' destruction of Hiroshima in 1945
The Americans destroyed Hiroshima in 1945.

Hiroshima's destruction by the Americans in 1945
Hiroshima was destroyed by the Americans in 1945.

The structure of the first nominalisation is:

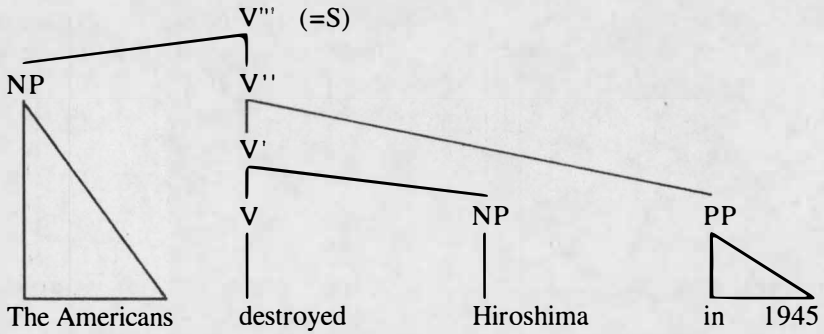


The structure of the corresponding sentence is:

⁸ Attributive stative nouns may morphologically cross-reference the noun they modify in two ways: 1) they are reduplicated when modifying a plural noun, 2) the genitive suffixes on inalienable nouns agree with the HEAD noun. See §3.4.2.1 and §3.5 for further details and examples.

⁹ Alienable genitives occur before attributive stative nouns when pronominal, but after them when non-pronominal. The .75 value is intended to reflect this positional ambiguity.

¹⁰ See, for example, Chomsky (1970), Jackendoff (1977), Stowell (1981), Gazdar et al. (1985, Chapters 3 and 6), and Pollard and Sag (1987, Chapter 7).



Note from these tree diagrams that noun and verb phrases are postulated to contain a significant amount of hierarchical structure rather than just consisting of a flat string of constituents. The different levels of structure are represented by apostrophes or numbers.¹¹

Chomsky (1986b:82-83) makes the following somewhat bold statements regarding the potential of X-bar analyses for linguistic description:

The end result of this work has been to suggest that the phrase structure component can be entirely eliminated, apart from certain parameters of X-bar theory...

...it follows that there are no phrase structure rules – a highly desirable consequence...

Therefore, it is to be expected that the phrase structure rules should be eliminable insofar as they merely restate, in another form, the essential content of lexical entries. In fact, it seems that such rules are eliminable generally, that there are no rules of this type in language.

Thus, Chomsky proposes a program which attempts to *totally eliminate* the phrase structure component of a grammar in favour of: 1) lexical subcategorisation frames and 2) a few language-specific parameters like the following:

- (a) the ordering of Heads with respect to their Complements, Adjuncts, and Specifiers;
- (b) the amount of hierarchical structure in phrases.

It remains to be seen, however, whether this program can succeed. In particular, it remains to be seen whether for each language in the world, all verb, noun, adpositional, and adjective phrases, sentences and so forth can be analysed as ultimately having identical structural characteristics while: 1) still maintaining full descriptive coverage, and 2) not doing violence to the data. On the other hand, there do seem to be strong *tendencies* towards cross-categorial ‘harmony’ in language which should be captured.

In Mangap-Mbula, phrase structure seems to be organised along the following lines:

- X² (=XP) ⇒ X¹, (YP)* (Specifier Rule)
- X¹ ⇒ X¹, (YP)* (Adjunct Rule)
- X¹ ⇒ X⁰, (YP)* (Complement Rule)

Thus, the term ‘Complement’ will be used to refer to (frequently obligatory) phrasal modifiers which occur adjacent to a HEAD of category X⁰ and which exhibit strong collocational restrictions with it. The term ‘Adjunct’ will refer to (optional) modifiers which

¹¹ The following are notational equivalents: X' = X¹, X'' = X², X''' = X³. The highest bar-level of a phrase is also represented as a VP, NP, ADJP, and so on.

are added to an X^1 constituent and which exhibit less collocational restrictions or semantic interaction with the HEAD. Specifiers are optional modifiers which expand X^1 into X^2 . Specifiers generally function to locate an entity or event in time or space and exhibit almost no collocational restrictions with their phrasal HEADs.

Some sentential Complements always occur sentence finally and thereby appear to constitute an exception to this general correlation between Complement status and occurrence in the nuclear X^1 constituent immediately adjacent to the HEAD. Here we shall consider such examples as being instances of a process of Extraposition. For details, see §4.3.1 and §4.3.6.

A significant difference between noun-phrase structure and predicate-phrase structure is that there is a wider variety of predicate-phrase Complement possibilities.

The hypothesis that *all* major phrase types have an identical amount of hierarchical structure is a dubious one for Mangap-Mbula. In particular, adverb and prepositional phrases seem to have a much simpler structure than noun and predicate phrases. It is, of course, always possible to add non-branching intervening nodes in order to fill out the number of bar levels, but this would just be an ad hoc device for making all phrase types look superficially similar. Accordingly, different numbers of bar levels are used for different phrase types, depending upon the potential complexity they evidence.

4.1.2.5 NON-VERBAL PREDICATES, ENDOCENTRICITY, AND PREDICATE PHRASES

One aspect of the classical formulation of X-Bar syntax which raises a descriptive problem is the endocentricity constraint. Radford (1988:259) formulates this in the following manner:

ENDOCENTRICITY CONSTRAINT

All possible Phrase Structure Rules are of the form

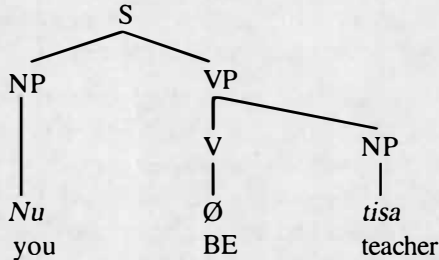
$$X^n \Rightarrow \dots X^{n-1} \dots$$

An implication of this constraint is that the ultimate HEAD of every phrasal category is a lexical item of the *same category*. Given this assumption, a problem arises because of the fact that in Mangap-Mbula no copular verbs are used when non-verbal categories are used predicatively. Consider the following four examples:

- (1) *Nu tisa.*
NOM.2SG teacher
You are a teacher.
- (2) *Iŋgi molo mete pio.*
this.one long.one too.much REF.1SG
This is too long for me.
- (3) *Nio lele-ŋ be aŋ-la*
NOM.1SG insides-GEN.1SG NF 1SG-go
mi aŋ-re Atai kar kini.
and 1SG-see Atai village LOC.3SG
I want to go see Atai's village.

- (4) *Nio mburo-ŋ pa kini som.*
 NOM.1SG strength-GEN.1SG REF food NEG
 I don't want any food (lit. my strength is not for food).

The above four examples are all complete, well-formed sentences, even though they contain no verb. In X-Bar syntax, however, sentences are commonly treated as projections of the *verb phrase*.¹² In the face of this apparent contradiction, three solutions suggest themselves. First, one could postulate the existence of an abstract copula BE which has no phonetic realisation. Under this analysis, example (1) above would have the following structure:



Although postulation of a null copula would maintain S as ultimately being a projection of V, it has a forced flavour to it as an analysis. It is also difficult to verify, since it is somewhat difficult to study something which never surfaces!

A second possibility is to allow for multiple sentence structures and abandon the idea that all sentences are projections of a verb phrase. Verbal sentences would still be headed by verb phrases, but sentences containing non-verbal predicates would have different structures. Thus, we might postulate rules like the following:

$$\text{S} \Rightarrow \text{NP} \left\{ \begin{array}{l} \text{VP} \\ \text{NP} \end{array} \right\}$$

Examples (2), (3) and (4), however, pose a difficulty for this analysis. Note that the non-verbal predicates in these examples exhibit a range of Complements almost as wide as that exhibited by verbal predicates. In example (2) a point of reference for the stative noun *molo* is encoded as a Referent phrase following the noun. In example (3) the desired state of affairs following *lelej* is encoded as Complement clause introduced by *be*. In example (4) the thing not desired is encoded as a Referent phrase. To account for such sentences, we would need to add additional sentence rules along the following lines:

- S --> NP NP (PP)
 S --> NP NP (PP) (Complement Clause)

Such rules, however, start largely to recapitulate the sentence structure of sentences having verbal predicates. It is certainly no accident that prepositional and clausal Complements occur *following* these non-verbal predicates, just as they do when they occur with verbal predicates. Such an analysis suffers from a lack of generalisation.

¹² See Pollard and Sag (p.53) and Jackendoff (1977:47) for instances of the treatment of S as a projection of VP. Government and Binding theory presents an alternative analysis, in which S is an IP, a projection of the verbal inflectional morphology I. I in turn takes the VP as its Complement.

Another possibility, is to relax the endocentricity constraint for the predicate formation (V^0) rules. In particular, one could permit rules like the following:

$$V^0 \Rightarrow \left\{ \begin{array}{l} V^0 \\ NP \end{array} \right\}$$

Such a treatment would be economical and also avoid the postulation of abstract predicates which never surface. Under this analysis, however, speaking of V^0 , V^1 , V^2 , and VP constituents would be somewhat misleading in the case of VPs headed by non-verbal predicates. Such units are better termed *predicates* and *predicate phrases* than verbs and verb phrases. Accordingly, we shall abandon use of the category VP and replace it with a predicate phrase (=PREDP), which is neutral as to the category of its ultimate HEAD. It is this predicate phrase which is the HEAD of a sentence.

4.1.2.6 MANGAP-MBULA LINEAR PRECEDENCE RULES

The following cross-categorial linear precedence constraints are observed in Mangap-Mbula.

1. NP < HEAD [bar-level 2] < ~NP

Given this rule, Subjects of sentences and thematised genitives in examples like the following one are correctly predicted to *precede* their phrasal HEADS:

Ti-pa-saana *Silas me kini.*
 3PL-CAUS-deteriorate Silas dog LOC.3SG
 They hurt Silas' dog.

2. HEAD [bar-level=0,1] < XP

In phrases whose HEAD is bar level zero or one, the HEAD always precedes its Complements, regardless of their syntactic category.

4. Among sister modifiers, the ordering is: NP < QUANTP < PP < DEM < S

Note that the net effect of these rules is generally to order constituents according to their degree of *syntactic heaviness*. The notion of syntactic heaviness is intuitively clear, but it can be more precisely defined as the number of nodes in the tree structure of a constituent. The ordering of constituents according to syntactic heaviness agrees with the following observation by Dik (1981:192):

There is a language-independent preferred order of constituents (LIPOC) according to which constituents are preferably placed from left to right in increasing order of complexity. LIPOC can be set up as follows:

- (1) PROcl < PRO < NP < NPP < V < NP < PNP < SUB¹³

¹³ Abbreviations which are specifically Dik's are as follows: PROcl = pro-clitic, PRO = pronoun, NPP = postpositional phrases, PNP = prepositional phrases, and SUB = subordinate clause.

4.1.2.7 STRUCTURAL VERSUS SEMANTIC BRACKETING WITHIN THE CLAUSE

The conceptual similarity between the multiple hierarchical levels of *formal* X-bar treatments of phrase structure and the layered analysis of clauses into: 1) nucleus, 2) core, and 3) periphery proposed in the functional approach to syntax advocated by Foley and Van Valin (1984:77-80) is obvious. Dik (1981) makes a similar distinction between “nuclear predications” and “extended predications” in his book on functional grammar, saying (p.17) “Any nuclear predication can be extended by means of ‘satellites’ which specify further properties of the nuclear state of affairs”. The notions of: 1) different X-bar levels, 2) clausal core versus clausal periphery, and 3) nuclear predications versus extended predications all share a common intuition: Among clausal constituents, there are different degrees of ‘tightness’ of relationship.

Formal and functional approaches agree in considering the verb (or predicate) plus its non-Subject Complements to be an extremely tight unit to which peripheral Adjuncts can be added. They differ, however, over the status of Subjects. In formal approaches like that of Jackendoff (1977), Subjects are *not* analysed as forming an inner constituent with the predicate and its Complements, whereas in functional approaches the Subject, predicate, and predicate Complements are treated as together constituting a ‘core’ or ‘nucleus’. The distinction between the two approaches seems, in large part, to be due to a conflict between *structural* dependencies and *semantic* ones. Structurally, in languages exhibiting a VP/PREDP, the predicate plus its Complements and Adjuncts, but minus the Subject, function as a constituent. Semantically, however, the interpretations of both Subjects and non-Subject predicate Complements appear to be constrained by the meaning of the predicate in a way that the semantic interpretation of Adjuncts is not. These differences can be represented with labelled bracketing in the following way:

Semantic Bracketing

[[[]]]
Subject	Predicate	Complements	Adjuncts	
[[[]]]

Structural Bracketing

One partial solution to this conflict is to follow Marantz (1984:23ff.) and Chomsky (1986b:59-60) and say that it is not *just* the predicate which assigns a semantic role to the Subject, but rather the *predicate plus its Complements*. In support of this position, Marantz adduces a number of idiomatic examples like the following:

John threw a party (threw a fit, threw the ball)

John broke his arm (broke the window)

John killed a cockroach.

John killed an evening (watching TV)

John killed a bottle.

In these examples, the semantic roles of the Subjects appear to be determined by the meanings of the *verb phrases* with which they collocate rather than just the meanings of the verbs. Accepting Marantz and Chomsky’s analysis, the compositional semantics of a sentence is along the following lines:

((Predicate plus non-Subject Complements) Subject) Adjuncts)

However, this still leaves the puzzling question of why Adjuncts, which are *semantically more peripheral* than Subjects, are *structurally less peripheral* in those languages which exhibit a VP/PREDP constituent. The solution to this question probably lies in the natural information structuring of utterances and the typical association of Subjects with topical or given entities about which the the rest of the sentence makes a comment. Thus, information pragmatics brackets a sentence as:

[[Subject] [Predicate Complements Adjuncts]]
 TOPIC COMMENT

while the compositional semantics bracket it as:

[[Subject [Predicate Complements]] Adjuncts]

The fact that a sentence must *simultaneously* encode both pragmatic and situational meanings would seem to be the ultimate source of the ambiguous status of Subjects and verbal Adjuncts. At any rate, the syntactic description of a language like Mangap-Mbula, which exhibits a PREDP constituent, must take into account both semantic and structural bracketing of constituents.

4.1.3 PRAGMATIC MEANINGS ENCODED BY SYNTAX

One area of Mangap-Mbula syntax where different pragmatic meanings are expressed is the noun phrase. The choice between null reference, a pronoun, a full noun phrase, a noun phrase with a demonstrative, or a noun phrase with *ta* 'specific' has to do with the speaker's assessment of how accessible the NP's referent is to the consciousness of the hearer (i.e. its contextual 'givenness').

Another area of syntax expressing pragmatic meanings is word order. The primary areas of word order variability in Mangap-Mbula are: 1) the position of some genitive modifiers within the noun phrase, 2) occurrence of NP constituents in their normal position versus sentence initial *Thematic* position, and 3) the placement of some temporal adverbs either sentence initially or sentence finally. The major controlling parameters of word order variation are: 1) topicality, 2) whether or not some entity is being explicitly contrasted with some other entity, 3) syntactic 'heaviness' of constituents, and 4) whether or not a constituent bears new information focus. Word-order variation is described in more detail in the sixth chapter of this grammar. In this chapter, the emphasis is upon highlighting aspects of syntax which are determined by structural constraints and therefore not pragmatically governed.

4.1.4 SEMANTIC ASPECTS OF SYNTAX

The third constraint upon syntax is the type of situation being encoded. To what extent is the type of situation or event being expressed *directly* (or *iconically*) reflected by its syntactic encoding? In a language like Mangap-Mbula, in which the possibilities for structurally transforming sentences are minimal (i.e. there are no processes such as passivisation and dative-shift which 'shuffle' grammatical relations), something has to determine what argument is going to be encoded as Subject NP, Object NP, Oblique PP, and so on. This 'something' is the type of situation. More particularly, as Bugenhagen (1989a)

seeks to show, for predicates having multiple-core arguments, the clause in Mangap-Mbula is a kind of *icon* of event structure, in which the following pertain.

1. Sentence-initial occurrence as Subject is associated with entities that are conceptualised as CAUSING an event. This is especially the case when: 1) the predicate is transitive, 2) the Subject is animate, and 3) the Subject is indexed on the predicate by Subject prefixes.
2. Sentence-medial occurrence as: 1) *le-/ka-* Recipient-Experiencer nouns which are incorporated into the PRED⁰ constituent, or 2) as Recipient-Experiencer nouns occurring in the Object position as the HEAD of a noun complex, is associated with entities that are conceptualised as Animate experiencers of an event. Experiencers obligatorily know that an event is happening and can feel things because of it happening.
3. Final occurrence as Object or as a final noun in a noun complex is associated with entities that are conceptualised as being passively AFFECTED by the activity initiated by the Subject or the GOAL thereof.

Thus, the typical linearisation of participant roles is:

CAUSER > EXPERIENCER > AFFECTED PARTICIPANT

A somewhat reminiscent phenomenon is exhibited by PRED¹ Adjuncts governed by the preposition *pa*, whereby Benefactive (animate) ones must precede Instrumental (inanimate) ones. Thus, in both the core clausal syntax and among the predicate phrase Adjuncts, one can see the operation of the following two semantic principles:

1. Animates first, Inanimates last
2. Causers first, Affected entities last

Given the lack of relation-changing operations to alter this hierarchy, this means that the ordering of arguments in a clause is *totally fixed by the semantic roles they encode*. In the terminology of Foley and Van Valin (1984:115-117), Mangap-Mbula is a language having a “semantic pivot”¹⁴. While Foley and Van Valin place great emphasis upon pivot typology and whether a language’s pivot is semantically or pragmatically determined, in Mangap-Mbula it is not just the pivot that is semantically determined, but *all* of the core arguments. In this respect, the language has a very ‘semantic’ core syntax.

4.1.5 A BRIEF SYNTACTIC OVERVIEW OF MANGAP-MBULA

In order to avoid not seeing the syntactic ‘forest’ for all the ‘trees’ (pun intended!), before plunging into the detailed description of Mangap-Mbula syntax, five of the major typological characteristics of the language will first be briefly outlined.

1. The basic word order in sentences is [Subject Verb Object PP* S] (5).

¹⁴ Note: their term ‘pivot’ is largely equivalent to Subject.

Subject Verb Object Prepositional Phrase

- (5) *Ni i-kel toono pa kumbu-unu.*
 NOM.3SG 3SG-dig ground REF leg-GEN.3SG
 He dug up the ground with his feet. (Transitive Subject as Actor)

2. Core NPs are delineated according to the nominative-accusative pattern, in which Subjects of both transitive and intransitive verbs receive identical morphosyntactic treatment, and Objects of transitive verbs are distinguished. Subjects are indexed on most verbs by Subject prefixes, as in examples (5) - (8).

- (6) *Ni i-meete kat.*
 NOM.3SG 3SG-die really
 He really died. (Intransitive Subject as Undergoer)

- (7) *Ni i-loondo.*
 NOM.3SG 3SG-run
 He ran. (Intransitive Subject as Actor)

- (8) *Tizi-ŋ bizin ti-pun=i.*
 y.sibling-1SG.GEN PL 3PL-hit=ACC.3SG
 My younger brothers hit him.

3. The language is basically HEAD first. This has the ramifications set out in (a) to (d) below.

(a) Most NP modifiers follow the head noun:¹⁵

- | | HEAD | GEN | NP | QUANT | DEM |
|-----|---------------------------------------|------------|------------|--------------|------------------|
| (9) | <i>I-kem</i> | <i>man</i> | <i>tio</i> | <i>bibip</i> | <i>ru ta-na.</i> |
| | 3SG-steal | bird | LOC.1SG | big+RED | two SPEC-GIV |
| | He stole those two big birds of mine. | | | | |

(b) Adverbial modifiers follow the items they modify (example (6) above).

(c) The language is prepositional:

- (10) *Ibop i-la ki tama-ana musaana.*
 Ibop 3SG-go LOC father-GEN.3SG small
 Ibop went to his uncle.¹⁶

(d) Complementisers precede their sentential Complements.

4. Word order is relatively fixed except for the occurrence of constituents at the beginning of sentences and noun phrases for pragmatic purposes:

- (11) *Nge ta na, niam am-kan=i*
 pig SPEC GIV NOM.1PL.EXC 1PL.EXC-eat=ACC.3SG
(i-)su zaala lwo-ono. Mi ru na,
 (3SG-)descend road middle-GEN.3SG and two GIV
 One pig, we ate along the way. And two,

¹⁵ The only NP modifiers preceding the Head are thematised genitives.

¹⁶ Animate or potent goals of motion are encoded by Locative prepositional phrases headed by the form *ki*.

am-sij zin ma am-pet kar.
 1PL.EXC-carry ACC.3PL and 1PL.EXC-appear village
 we carried back to the village.¹⁷

5. *Non-sentential Complements precede non-sentential Adjuncts, which in turn precede all sentential modifiers:*

(12) *Nio aŋ-so sua pini pa mankwoono*
 NOM.1SG 1SG-say talk REF.3SG REF morning
 I told him in the morning

be i-la i-kam uraata.
 NF 3SG-go 3SG-do work
 to go do some work.

With these preliminary remarks, we will now proceed to the detailed description of Mangap-Mbula phrase structure. The order of presentation will be: 1) noun phrases, 2) predicate phrases, 3) other minor phrase types, 4) simple sentence structure, and 5) the syntax of body-image expressions. At the end of the grammar, there is an Appendix entitled 'How to say things'. Being, like Grace (1981), an often frustrated reader of grammars which do not really tell you how to say anything, I have determined that at least my own righteousness will "exceed that of the Scribes and Pharisees" (Gospel of Matthew 5:20). Therefore, a semantically organised brief set of examples is given in this Appendix which illustrates how to express some common notions such as: location, existence, possession, perception, motion, feelings, knowledge, believing, saying, promising, carrying and killing.

4.2 NOUN PHRASE STRUCTURE

4.2.1 INTRODUCTION

Omitting for the moment the genitive modifiers, a first approximation to the overall structure of noun phrases as strings is:

Head Noun (Modifier)ⁿ

with the modifiers basically being ordered according to structural complexity. The exact linear ordering of non-genitival noun phrase modifiers is:

(Head Noun Complex) (NP) (QP) (*sa*) (Rest.RC) (DEM) (,Non-Rest. RC)
 (,APP NP)

where:

Head Noun Complex = a sequence of from one to three nouns that is progressively ordered from less to more specific
 NP = noun phrase functioning as an attributive modifier
 QP = quantifier phrase
sa = a form used to mark non-referential entities or indefinite quantities of mass nouns.

¹⁷ The sentence-initial placement of the Objects in these sentences as Themes encodes contrastive emphasis.

Rest.RC	=	restrictive relative clause
DEM	=	demonstrative
,Non-Rest.RC	=	non-restrictive/appositional relative clause (which is typically set off intonationally)
,APP NP	=	appositional NP (which is typically set off intonationally)

Regarding this formula, several points need to be emphasised. First, the ordering of modifiers is quite rigid; no other permutations are acceptable. In fact, the only way to circumvent this ordering and have an inner modifier occur further towards the end of the NP is for it to occur in a relative clause. Secondly, *recursive* modification by the same syntactic category is impossible. Thus, there are no noun phrases of the type a *nice, cosy house*. Finally, although demonstratives are listed here as following restrictive relative clauses, in practice they are almost mutually exclusive, since both devices have the *same function* of helping to identify the referent of a noun phrase. Demonstratives are typically used when the referent is *more contextually given* than is the case with relative clauses.¹⁸ In my corpus of data, there are only two examples of demonstratives co-occurring with relative clauses.

Some examples of noun phrases are given below:

- (13) *man bibip ru sa*
bird big.one+RED two NON.REF
(any) two big birds
- (14) *man ambaimbai-ŋa-n pakan*
bird be.good+RED-NMS-GEN.3PL some
some good birds
- (15) *man tatariigi ta-na*
bird chicken SPEC-GIV
that chicken
- (16) *niam kolman moori*
NOM.1PL.EXC old.person woman
we old women
- (17) *moori sa ta-na*
female NON.REF SPEC-GIV
that (hypothetical) woman (about whom I am talking)
- (18) *Ti-re korog kokou-ŋa-na*
3PL-see thing be.white+RED-NMS-GEN.3SG
ta i-to zaala ma i-mar.
SPEC 3SG-follow road and 3SG-come
They saw the white thing that came along the road.
- (19) *Ti-pet yok lwo-ono ta, ta li kat.*
3PL-appear water middle SPEC SPEC deep very
They came to the middle of a river that was very deep.

¹⁸ For further discussion of some of the parameters governing the use of demonstratives versus relative clauses, see §6.4.2ff.

(20) *ke ta nu mbotmbot pa ta-na*
 tree SPEC NOM.2SG 2SG+stay+RED REF SPEC-GIV
 that tree where you are staying

(21) *Iŋgi mbol ki kolman ta,*
 this.one story LOC old.person SPEC

ta muŋgu ni i-ute
 SPEC before NOM.3SG 3SG-know

tubudu kalŋa-n som.
 European language-GEN.3PL NEG

This is a story about an old person who didn't know the Europeans' language.

Examples (18) - (21) illustrate relative clauses, which are normally introduced by the complementiser *ta*.¹⁹ In examples (13) and (17), note the use of *sa* to indicate that the noun phrase does not refer to any *particular, isolatable* entity in the real world. Example (17) comes from a procedural text about how to do love magic. In the text, constant reference is made to a hypothetical woman upon whom the love magic is being performed. Thus the same *hypothetical* entity is being tracked and referred to. Note in example (13) that the stative noun *biibi* 'big (one)' occurs in its reduplicated form, and in example (14) the derived stative noun *ambaimbaiŋan* is both reduplicated and inflected with third person plural genitive morphology. Attributive stative nouns normally (though not necessarily) exhibit agreement with the head noun by: 1) being inflected for the person and number of the head noun if the stative noun is inflected with genitive morphology, and 2) being reduplicated when the head noun is plural.

4.2.2 NOUN COMPLEXES

Examples (15) and (16) above illustrate what is meant by the term 'noun complex'. The forms *man* 'bird' and *tatariigi* 'chicken' in (15) can each function independently as the head of a noun phrase. Similarly each of the forms *niam* 'we (EXC)', *kolman* 'old person', and *moori* 'female' in (16) can function independently as the head of a noun phrase. Here, however, they are simply juxtaposed, forming a 'noun complex'. Important characteristics of noun complexes are set out below.

1. There is no pronounced phonological juncture between the combined nouns.
2. Each noun receives a primary stress.
3. No modifiers may intervene between any of the combined nouns.
4. If the noun complex contains a pronominal element, it always precedes any non-pronominal members of the complex.
5. For non-pronominal nouns, when there is a clear difference in specificity of reference, the less specific forms must precede the more specific ones.
6. Only the HEAD of the noun complex can be an inalienable noun. The restricting nouns must all be alienable.

¹⁹ The same phonetic sequence also functions as the numeral 'one', the indefinite article, and as a demonstrative formative.

7. Semantically, the successive forms serve to restrict the reference of the head noun.

Characteristics one and three would seem to mitigate against any sort of appositional analysis, while characteristic two prevents an analysis in terms of compounding. Characteristic three is a particularly important diagnostic for deciding whether or not a sequence of nouns constitutes a noun complex or is an instance of a noun being modified by a stative noun Adjunct. If the Locative series of pronouns may intervene between a noun and another modifying nominal form, then that other form is an N¹ Adjunct. Consider the following two sets of examples:

- (22) *zin kolman moori kizin*
 3PL old.person woman LOC.3PL
 their old women (Note: the same notion could also be expressed as *zin moori kolman kizin*.)
- **zin kolman kizin moori*
 3PL old.person LOC.3PL woman
 their old women (This example really means ‘the old people among the women’.)
- (23) *korog kizin molo*
 thing LOC.3PL long.one
 their long thing
- **korog molo kizin*
 thing long.one LOC.3PL
 their long thing

In (22) *kolman* and *moori* are both constituents of a noun complex; therefore the Locative pronoun *kizin* cannot intervene between them. In (23), however, because *molo* is an N¹ Adjunct, *kizin* occurs between it and the head noun *korog*.

These tight sequences of nouns at the core of the noun phrase are here termed noun complexes.

A frequent use of noun complexes headed by the form *zin* is to encode explicit plurality. In isolation, *zin* functions as the anaphoric Nominative or Accusative third person plural pronoun ‘they, them’, but as a noun complex head it simply encodes plurality, without the further semantic component that the identity of the plural referent is assumed to be known to the hearer. Thus, a sequence like *zin tomtom pakan* ‘they person some’ (= ‘some people’) does not mean ‘the people’ or ‘some of the people’.

Whether an attributive noun functions as a noun complex constituent at the N⁰ level or an Adjunct at the N¹ level seems to largely be a function of the meaning of the noun. Nouns encoding a *single property* like *molo* ‘long one’ or *ambaiqana* ‘good one’ occur as N¹ Adjuncts, whereas more specific nouns encoding the conjunction of several properties like *kolman* ‘old + person’, *moori* ‘person + female’, *tatariigi* ‘chicken’ occur as constituents in noun complexes. In this regard, it is instructive to consider a polysemous form like *biibi* ‘big/important one, leader’. When it has the sense ‘big/important one’, it occurs as an N¹ Adjunct as in (24) below. When it has the sense ‘leader’ (i.e. ‘important + person’) it occurs as a head noun or as a constituent in a noun complex (25):

(24) *koron kizin bibip (**kizin)*
 thing LOC.3PL big.one+RED
 big things of theirs

(25) *zin (**kizin) bibip kizin*
 PL big.one+RED LOC.3PL
 their leaders

The most frequent heads of noun complexes are: 1) the plural personal pronouns; 2) generic nouns like *man* 'bird', *ke* 'tree', *ye* 'fish', *tomtom* 'person', and *moori* 'female'; 3) kin terms; and, as §4.2.3.1.2, will show; 4) the possessive 'classifiers' *le-* and *ka-*.

Noun complexes obviously resemble classifier constructions. However, given Schachter's (1985:39) definition of classifiers as those words which:

...are required by the syntax of certain languages when a noun is modified by a numeral. (In some languages, such as Mandarin Chinese, classifiers are also required when nouns are modified by demonstratives, or by one of certain non-numerical quantifiers...

the head nouns in Mangap-Mbula noun complexes would not qualify as classifiers, since their presence or absence is not *required* by any other NP constituent.

4.2.3 GENITIVES

Having presented the more straightforward aspects of NP structure, we now turn our attention to the more difficult topic of genitives. There are four different constructions, as listed below, which are used to encode relationships between a Head Noun and some other NP.

- 1) [Inalienable Noun+Genitive Suffix] (i.e. 'direct'²⁰/inalienable genitives)
- 2) [*le*+Genitive Suffix Restricting Noun] (This indirect genitive construction is used to encode ownership and several of the more distant kin relationships which are viewed as somehow being 'good'.)
- 3) [*ka*+Genitive Suffix Restricting Noun] (This indirect genitive construction is used to encode items intended for consumption, 'unfortunate' relationships, some internal body parts, and other passive or uncontrolled relationships.)
- 4) [Head Noun *ki* Genitive NP] (This prepositional genitive construction is used to encode alienable, stable, enduring relationships which are typically under the control of the genitive NP referent.)

4.2.3.1 DIRECT (INALIENABLE) GENITIVES

The first type of genitive construction is that consisting of an inalienable noun stem which is obligatorily inflected with a genitive suffix.²¹

²⁰ The classification of possessive constructions into 'direct', 'indirect', and 'prepositional' genitives is drawn from Lichtenberk (1985:95). A brief recapitulation of his analysis is given in §3.2.1.1.

²¹ Full paradigms of several inalienable nouns can be found in §2.4.4 of the phonology chapter.

- (26) *Tama-ŋ bizin ti-metmeete lup.*
 father-GEN.1SG PL 3SG-die+RED all
 All of my fathers/uncles died.

Note especially the form *bizin*. The function of this form is to encode plurality of the *possessed item*. In the morphology chapter it was observed that only inalienable kin terms and personal names co-occur with this form. When personal names are followed by *bizin*, the resulting phrase has a collective interpretation. For example, the phrase Silas *bizin* is used to refer to Silas along with his family or other people associated with him.

In noun complexes headed by inalienable nouns, the inalienable noun always occurs initially as the HEAD of the complex, and the form *bizin* always occurs at the end of the entire complex before any of the other NP modifiers. Thus, one finds examples like the following:

- (27) *lutu-ŋ moori bizin*
 child-GEN.1SG female PL
 my daughters

The fact that inalienable nouns always occur initially in noun complexes can be accounted for by their genitive morphology, which is *inherently pronominal*, and the following linear precedence constraint:

N	<	N	<	N
+pronominal		-pronominal less specific		-pronominal more specific

The fact that no other linguistic material can occur between a noun complex and *bizin* indicates that they form a tight syntactic unit. Noun complexes plus *bizin* are here postulated to form one kind of N¹ unit. The complete set of N¹ immediate dominance rules is given below:

$$N^1 \Rightarrow \left\{ \begin{array}{l} H^0 \text{INALIENABLE N} , (N^0 \text{ALIENABLE})^* , (bizin) \\ H^0 \text{ALIENABLE N} , (N^0 \text{ALIENABLE})^* \\ H^0 \text{PERSONAL NAME} , (bizin) \end{array} \right\}$$

In these and other expansion rules, $A^x \Rightarrow \dots H_y^z \dots$ represents an expansion of a category A of bar level x into constituents including a HEAD of the same category which belongs to the subclass y and has a bar-level z.

4.2.3.1.1 THEMATISED DIRECT/INALIENABLE GENITIVES

Up to this point, no mention has been made of inalienable/direct genitives whose referents are further identified by a *free NP*. It now behooves us to consider them. When direct genitives are specified by a free NP in addition to the genitive suffix, this free NP occurs *preceding* the HEAD noun, as in the following example:

- (28) *SILAS lutu-unu moori bizin*
 Silas child-GEN.3SG female PL
 Silas' daughters

Note that preposed noun phrases encoding direct genitives are usually intonationally prominent.

Two questions arise: 1) what is the structural status of these preposed direct genitives within the NP, and 2) how do they relate to the genitive suffixes? In answering these questions, it is important to bear in mind that one never has *just* a preposed direct genitive NP, but rather a preposed NP *plus* a co-referring genitive suffix. Since these suffixes obligatorily indicate the person and number of the genitive entity, they are a kind of pronoun. In fact, rather than speaking of nouns having inalienable genitives, it would perhaps be more precise to speak of forms which sub-categorise for an *obligatory, pronominalised* genitive, which happens to be phonologically bound. In addition to this obligatory, pronominal genitive, one has the option of further specifying the identity of the genitive entity by adding a noun phrase before the HEAD noun.

In determining the structural status of these free noun phrases encoding direct genitives, it is helpful to consider the following set of prepositional genitive examples:

- | | | |
|-----|-----------------------------|--|
| (a) | <i>ŋge kini</i> | pig LOC.3SG = his pig |
| (b) | <i>ŋge ki Silas</i> | pig LOC Silas = Silas' pig |
| (c) | <i>Ni/Silas ŋge kini</i> | he/Silas pig LOC.3SG
= <i>his/Silas'</i> pig (and not someone else's) |
| (d) | <i>**Silas ŋge</i> | Silas pig |
| (e) | <i>**Silas ŋge ki Silas</i> | Silas pig LOC Silas = Silas Silas' pig |
| (f) | <i>**Silas ŋge tio</i> | Silas pig LOC.1SG = Silas my pig |

When the referent of a prepositional genitive is contextually highly given (which is the case 75 per cent of the time in extended texts), the prepositional genitive is encoded by just a Locative pronoun, as in (a). When the referent is not clear from the context and is non-topical, it is encoded by a Locative prepositional phrase, as in (b). From text counts, such encoding is exhibited 18 per cent of the time. When it is topical but non-given (i.e. it is in the process of being *established* as a topic) or is contrastive, it is encoded by a preposed free NP *plus* a Locative pronoun, as in (c). Such encoding is also frequently observed when the direct genitive is a syntactically heavy noun phrase. If the preposed NP is a pronoun, it is in the Nominative case. From (d) - (f) it can be seen that these preposed prepositional genitives are not always permitted. One must have a Locative *pronoun* present in the NP (as in (c)) in order for them to be grammatical. Example (f) demonstrates that the Locative pronoun and preposed genitive must also be *referentially compatible*.

Summarising, we can say that a preposed prepositional genitive is permitted if and only if *the noun phrase also contains a referentially compatible Locative pronoun copy*. An alternative formulation of this generalisation would be that a Locative pronoun *licenses* the occurrence of a referentially compatible preposed genitive NP.

Pragmatically, these preposed prepositional genitives are somewhat similar to marked sentential Themes²² like the following:

- (29) *Lwoono ta, tomtom ta, ni i-la su.*
 time SPEC person SPEC NOM.3SG 3SG-go bush
 Once upon a time, a man, he went into the bush.

²² For further discussion of sentence-level Themes, refer to §4.5.5 and §6.3.

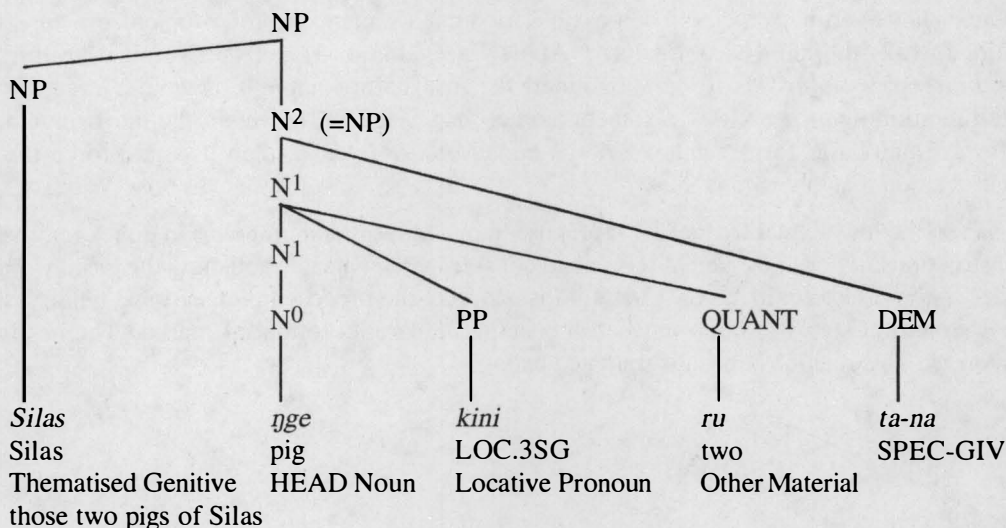
(30) *Aibike, ni i-toor=i kek.*
 Aibike NOM.3SG 3SG-turn=ACC.3SG PERF

Mi wal pakan na, zen.
 and group some GIV NEG.PERF

Aibike has repented. But *the others* have not.

These marked sentential Themes are used to: 1) establish new participants as discourse topics (29), and/or 2) contrastively emphasise a participant (30). In addition, it is common for syntactically heavy non-Subject constituents to occur sentence initially as Themes.

The preposed prepositional/alienable genitives seem to be a kind of *noun phrase-internal* counterpart to Themes at the sentence level. That they are, in fact, internal to the noun phrase and not just Themes at the sentence level is demonstrated by their potential to occur in any noun phrase in the sentence. The structural analysis of these preposed or *Thematised* alienable genitives seems to be as follows:



Returning now to the direct/inalienable genitives, we find that the presence versus the absence of a preposed *Nominative pronoun* in such genitives pragmatically corresponds to the difference between prepositional genitives which are encoded by a free pronoun in addition to a Locative pronoun and those which are encoded only by a Locative pronoun (examples (c) and (a) above).²³ In counts of extended texts, 70 per cent of direct genitives were highly given and therefore encoded by only the genitive suffixes. Such encoding is, therefore, the norm. Some 13 per cent of direct genitives were encoded by free Nominative pronouns in addition to the genitive suffixes. When these free pronouns were not third person forms, their typical function was to encode contrastive emphasis = 'This one, not that one'. Third person direct genitives which were also encoded by free Nominative pronouns were slightly less given than those encoded by just the genitive suffixes and tended to have elevated topicality, being referred to more in the following discourse.

Seventeen per cent of the direct genitives were encoded by a preposed non-pronominal NP in addition to a genitive suffix. These typically referred to contextually non-given entities

²³ See §6.3.2.5 for a discussion of the pragmatics of different genitive encodings based upon text counts.

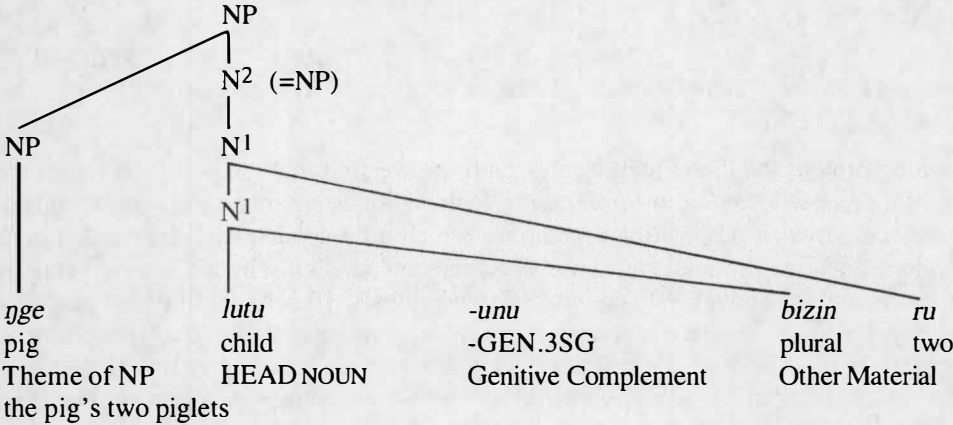
which were not referred to again in the following discourse. Thus, they pragmatically corresponded to the *ki* + NP encoding of prepositional genitives (example (b) above).

Summarising, we can say that *normally* direct/inalienable genitives are contextually highly given and non-contrastive, and are therefore encoded by just the genitive suffixes. It is only the *departures from the norm* whose encodings involve a preposed free NP or a pronoun in addition to the suffixes. As a further illustration, contrast the following two sentences:

- (31) *Silas i-kam lutu-unu ma ti-la Lae.*
 Silas 3SG-do/get child-GEN.3SG and 3PL-go Lae
 Silas_j took his_{j,k} child with him to Lae.
- (32) *Silas i-kam Apu lutu-unu ma ti-la Lae.*
 Silas 3SG-do/get Apu child-GEN.3SG and 3PL-go Lae
 Silas took Apu's child with him to Lae.

In example (31), the natural interpretation is that the child is Silas'. Given an appropriate context, however, it would also be possible for such a sentence to refer to someone else's child. In (32) the child is obligatorily Apu's. In example (31), if the Nominative third singular pronoun *ni* was to be substituted for *Apu* before *lutuunu*, it would force the interpretation that the child was someone other than Silas'. If, however, the third singular reflexive-emphatic form *itunu* was to be added before *lutuunu*, then it would force the interpretation that the child is Silas'.

Given the low textual frequency of preposed noun phrases and pronouns in direct genitive constructions, it does not seem advisable to consider them when establishing the basic word order of the direct genitive construction. Instead, like the preposed prepositional genitives, their structural status in noun phrases appears to be parallel to that of marked Themes in sentences. This relationship is diagrammed below:



One never observes free direct/inalienable genitive noun phrases occurring *after* the head noun, as in the following example:

- (33) ***tama-ana Silas*
 father-GEN.3SG Silas
 Silas' father

For the same reason one does not find prepositional genitive examples like:

- (34) ***me kini Silas*
 dog LOC.3SG Silas
 Silas' dog

Once the genitive slot in the noun phrase has been filled by a genitive pronoun (which may be a free form like *kini* or a bound form like *-VnV*), there is nowhere for another *genitive* NP to go. Thus, the only way to include a further NP in a noun phrase whose genitive structural slot is already filled is to add it as a kind of Theme to the noun phrase as a whole.

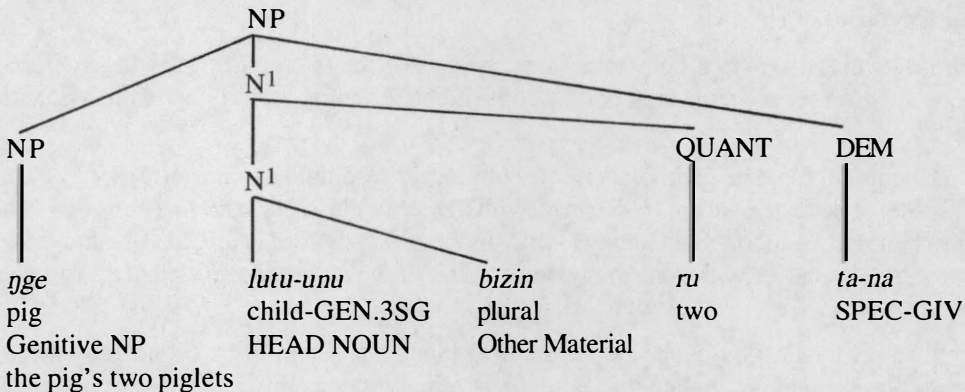
What then is the position of direct genitive Complements with respect to the HEAD noun? Like their prepositional genitive counterparts, their position is *following* the NP: the genitive suffix. Thus, typologically, Mangap-Mbula exhibits NOUN-GENITIVE word order.

Formally, the structures of both alienable and inalienable genitive noun phrases are accounted for by having the feature set [+pronominal, α AGR(EEMENT)] which is introduced by pronominalised genitive Complements and is permitted to percolate up the noun phrase. The following immediate dominance rule:

$$\text{NP} \Rightarrow \left(\begin{array}{c} \text{(NP)} \\ [\alpha\text{AGREEMENT}] \end{array} \right) \text{ , } \left[\begin{array}{c} \text{HEAD} \\ +\text{pronominal genitive} \\ \alpha\text{AGREEMENT} \end{array} \right]$$

will insure that: 1) NP Themes are introduced only in noun phrases containing pronominal genitives, and 2) the NP Themes that are introduced are referentially compatible with the pronominal genitive.

An alternative, and perhaps less controversial, analysis would simply be to analyse direct/inalienable genitives as instancing a completely different construction than prepositional ones. In this construction, direct genitive modifiers would occur as NP Specifiers of inalienable phrasal HEADS at the N^2 structural level.



Being noun phrases, they would occur before their phrasal HEADS by the same linear precedence rule which locates Subjects before the Predicate Phrase:

$$\text{NP} < \text{HEAD [bar level 2]} < \sim\text{NP}$$

Even if this alternative analysis of preposed direct/inalienable genitives is adopted, one must still postulate a structure like the following in order to account for the preposed alienable genitives:

$$[(\text{NP}_{\text{THEME}}) [\text{HEAD N Pronominal Prepositional Genitive}] \text{NP}] \text{NP}$$

Since this structure is *necessary* if one wants to account for the preposed alienable genitives and also *can* characterise the preposed direct genitives, it is more economical to use it in describing the direct genitives than to postulate an ad hoc structure just for them. Furthermore, the clearly marked pragmatic status of at least the preposed free pronouns occurring in direct and prepositional genitive constructions supports their analysis as some sort of marked word ordering. The case for pragmatic markedness is less compelling for direct genitives which are encoded by a non-pronominal NP. However, given the fact that in extended texts the vast majority (70%+) of both direct and prepositional genitives have referents which are contextually highly given, even these direct genitives encoded by full NPs could be argued to be somehow more marked.

4.2.3.1.2 THE POSSESSIVE 'CLASSIFIERS' *le-* AND *ka-* (INDIRECT GENITIVES)

Lichtenberk (1983), (1985) refers to the notion of possessive "classifiers" in Oceanic languages. He states (1985:96):

Like the more common numeral classifiers, possessive classifiers also classify entities on the basis of some semantic criteria. The difference between the two types of classifier system lies in the nature of the classifying criteria. In numeral classifier systems, entities are classified on the basis of some of their properties (permanent or more or less temporary), such as shape, size, consistency, etc. In the possessive classifier systems of Oceanic languages, the classifying criteria are the types of relationship that obtain between two entities, the possessed and the possessor.

A classifier is a form inflected with inalienable genitive morphology which occurs in genitive constructions to specify the type of relationship being encoded. Following Pawley (1973), Lichtenberk reconstructs the classifiers **ka* 'food/subordinate', **ma* 'drink', and **na* 'general'. To these, Ross (1988:186) adds another 'general' classifier for North New Guinea Cluster languages: **le*.

The term 'classifier' is a convenient one, because it begs the issue of what syntactic category such forms are. Are they nouns, adpositions, or some entirely different syntactic category?

In Mangap-Mbula, the forms *ka-* and *le-* obviously resemble the proto-forms **ka* and **le*.²⁴ It seems better, however, to dispense with the term 'classifier' and just consider these forms to be highly generic inalienable *nouns*. 'Indirect possession' examples like *le-ŋ saaza* 'my great-grandrelative' will then simply be instances of the already motivated noun complex construction.

Such an analysis would not be ad hoc, because the possibility of noun complex constructions headed by inalienable nouns has already been illustrated in example (27) above. Further support for the analysis of *le-* and *ka-* as inalienable nouns comes from three facts. First, these forms take the same genitive suffixes as other inalienable nouns. Secondly, noun phrases containing these forms and which refer to people are pluralised with the form *bizin* rather than *zin*; see (35) below. Elsewhere *bizin* occurs only in noun phrases headed by

²⁴ For examples of the uses of these forms, see §3.2.1.3 and §3.2.1.4.

inalienable kin terms and personal names.²⁵ Finally, it is possible to coordinate these [le-/ka- N] sequences with other inalienable nouns:

- (35) *tumbu-unu mi le*
 grandrelative-GEN.3SG and RECX+GEN.3SG
saaza bizin
 great.great.grandrelative PL
 his grandrelatives and great-grandrelatives

Thus, the structures of noun phrases containing inalienable head nouns and noun phrases containing the possessive ‘classifiers’ *le* and *ka* all assimilate to the same syntactic pattern:

[N⁰INALIENABLE HEAD (N⁰)* (*bizin*)] N'

The one difference between *le-* and *ka-* and other inalienable nouns is that they *require* a following specifying noun. However, this requirement can be plausibly viewed as being *semantic* in nature.

4.2.3.2 PREPOSITIONAL (ALIENABLE) GENITIVES

The other formal type of ‘genitive’ modification is that encoded by the Locative pronouns and the Locative preposition *ki*. Recall from §3.2.2.4 and §3.2.6.2 of the morphology chapter that these forms are used in noun phrases to encode alienable, enduring relationships which are typically, but not necessarily, under the control of the referent of the Locative PP or pronoun. Structurally, the Locative pronouns²⁶ occur immediately following the head noun (complex) and before any of the other noun phrase Adjuncts:

- (36) *Ŋerek, kini ki ŋonoono kat ta kun.*
 parrot food LOC.3SG true really SPEC breadfruit
 The parrot, its real food is breadfruit.

When, however, a non-pronominal NP occurs as the Complement of *ki*, the Locative prepositional phrase occurs at the *periphery* of the noun phrase, following any attributive nouns and quantifiers but preceding relative clauses:

- (37) *moni biibi ki Yut ta ti-sengeere piom*
 money big LOC Youth SPEC 3PL-send REF.2PL
 the big money of the Youth (organisation) that was sent to you

This is in accordance with the cross-categorial tendency in the language for ‘heavier’ constituents to occur later in sentences and phrases.

4.2.3.2.1 THEMATISED PREPOSITIONAL GENITIVES

It was noted above in the discussion of direct/inalienable genitives that there is a Thematised variant of the prepositional genitive construction in which a NP coreferential with

²⁵ When *bizin* occurs following personal names, it encodes collectivity. For example, the phrase *Aibike bizin* is used to refer to Aibike and his family or the people associated with him.

²⁶ Strictly speaking, these are really *pro-prepositional phrases*.

a Locative pronoun occurs at the *beginning* of the complete NP. Usually this preposed NP is pronounced with extra stress.

- | | | THEMATISED HEAD | LOCATIVE PRONOUN | |
|------|--|-----------------|------------------|-------------|
| | | NP | | |
| (38) | <i>Iŋgi</i> | <i>nio</i> | (<i>koron</i>) | <i>tio.</i> |
| | this.one | NOM.1SG | thing | LOC.1SG |
| | This is <i>mine</i> (not yours or theirs)! | | | |
| (39) | <i>Nio</i> | <i>iŋgi</i> | <i>aŋ-pit</i> | <i>mbol</i> |
| | NOM.1SG | now | 1SG-tell | story |

	THEMATISED	HEAD	LOCATIVE PRONOUN	
	NP			
	<i>pa</i>	<i>niamru</i>	<i>Bob</i>	<i>uraata tiam.</i>
	REF	NOM.1DU.EXC	Bob work	LOC.1PL.EXC
	I am now going to tell a story about <i>Bob's and my</i> work.			

Thus, prepositional genitives exhibit three possible encodings: 1) a post-nominal Locative pronoun, 2) a post-nominal Locative prepositional phrase consisting of the Locative preposition *ki* plus a full NP, and 3) a preposed NP or free pronoun plus a post-nominal Locative pronoun copy. These three possibilities are illustrated below:

1. *ŋge kini* his pig
2. *ŋge ki Silas* Silas' pig
- 3(a) *ni ŋge kini* his pig, not someone else's
- 3(b) *Silas ŋge kini* Silas' pig

The first possibility is used for contextually given, non-contrastive referents, while the second is used for non-given, non-contrastive referents which are typically not referred to in the following discourse. The third (Thematised) possibilities are used: 1) for less given referents which are going to be referred to again in the following discourse, 2) for contrastive referents, and 3) when the noun phrase Complement of *ki* is syntactically heavy. If the genitive referents are somewhat given, the Theme NP is expressed by a pronoun as in 3a, and if not, then it is expressed by a full NP as in 3b. For further details, see §6.4.2.5.

Locative pronouns and Themes of noun phrases interact as follows: A Locative pronoun *licenses* the *possibility* of a referentially compatible Theme NP and precludes the occurrence of a non-pronominal NP as a Complement of *ki*.

Plural alienable genitives which are encoded by noun-complex constructions superficially seem to constitute an exception to the statement that Locative pronouns preclude the occurrence of a non-pronominal NP as a Complement of *ki*. Consider the following example:

- (40) *Nio aŋ-pit mbol pa mbulu kizin kolman pakan.*
 NOM.1SG 1SG-recount story REF custom LOC.3PL old.one some
 I told a story about the customs of some old people.

Here, the sequence *kizin kolman pakan*, on the surface, seems to consist of a Locative pronoun *kizin* plus a noun phrase *kolman pakan*. In actual fact, the structure is not

[kizin]_{pp} [kolman pakan]_{NP}

but rather

[ki_{PREP} [zin kolman pakan]_{NP}]

with cliticisation of the initial *zin* of the noun complex onto the prepositional form *ki*. That *kizin* here is not an instance of the Locative pronoun *kizin* ‘of them’ can be seen from the fact that the group referred to by the sequence *kizin kolman pakan* is not one whose identity is assumed to be known to the hearer. Thus, *kizin* is not anaphoric.

4.2.4 NOMINALISATIONS

Having discussed the various types of genitive constructions, we now turn to the structure of nominalisations. Consider the following three examples:

- (41) *Zooro-ŋa-na* *kiti* *ambai som*.
 rebel-NMS-GEN.3SG LOC.1PL.INC be.good NEG
 Our rebellion is not good.
- (42) *Aŋ-bel* *naama-ŋo-yom*.
 1SG-do.to.a.great.extent wait.for-NMS-GEN.2PL
 I have waited for you for a long time.
- (43) *Moori ta-na* *ŋgiimi-ŋa-na* *i-map kek*.
 female SPEC-GIV buy-NMS-GEN.3SG 3SG-end PERF
 The buying of that woman is ended.

Example (41) illustrates the fact that the Actor in action nominalisations is encoded by *Locative* prepositional phrases. Example (42) illustrates that contextually given Undergoers are encoded by *genitive suffixes* on the nominalised verb. In example (43) the non-given Undergoer *moori tana* is encoded as a Theme of the noun phrase, with indexing on the nominalisation by the genitive suffix. Note also in example (41) that, even though the nominalised verb *-zooro* ‘dance’ is an *active* intransitive verb (and thus not subcategorised as having an Object), it is still inflected with the third person singular genitive suffix *-ŋa*. In such instances, the suffix would appear to have no meaning. Its presence is simply due to the fact that *-ŋa* is a bound form requiring some sort of genitive suffix.

The nominalisation of many intransitive state and process predicates like: *-saana* ‘deteriorate’, *ambai* ‘be good’ and *-mapaala* ‘break (intransitive)’ yields stative nouns rather than process nouns. Thus, *sananŋana* is ‘something bad’ rather than ‘deterioration’, *ambaiŋana* is ‘something good’ rather than ‘improvement’, and *mapaalana* is ‘something broken’ rather than ‘breaking’. Such forms do not typically function as Heads in noun phrases, but rather as attributive modifiers, occurring after both the Head noun/noun complex²⁷ and the Locative pronouns. For example:

- (44) *ŋge tio* *ambai-ŋa-na*
 pig LOC.1SG be.good-NMS-GEN.3SG
 a good pig of mine

²⁷ Note, however, that the head noun may be omitted when it refers to some inanimate and highly presupposed entity:

Kam \emptyset *ambai-ŋa-na* *i-mar,* *mi* \emptyset *sanan-ŋa-na* *i-mbot*.
 2SG+do good-NMS-GEN.3SG 3SG-come and deteriorate-NMS-GEN.3SG 3SG-stay
 Bring the good (one), and leave the bad (one).

Nominalisations of many action-process predicates may function either as Heads of noun phrases or as attributive modifiers. As one illustration, contrast example (43) above with the following one:

- (45) *Iggi koroŋ ŋgiimi-ŋa-na,*
 this.one thing buy-NMS-GEN.3SG
som nu kam pio sorok?
 or NOM.2SG 2SG+do/get REF.1SG just
 Is this for sale, or are you giving it to me?

In example (43) *ŋgiimiŋana* is not a *type* of woman: it is something done *to* the woman. But here *ŋgiimiŋana* is functioning as an attributive modifier, restricting the reference of the noun *koroŋ* to a particular *type* of thing: something which is to be paid for rather than received as a gift.

4.2.5 COMITATIVE CONSTRUCTIONS AND COORDINATION

It is somewhat difficult to draw a line between accompaniment and coordination in Mangap-Mbula because of the existence of a construction type involving the use of 'combinatory pronouns',²⁸ which appears to constitute an intermediate step between true coordination and comitative constructions. Consider the following examples of noun phrases containing these combinatory pronouns:

- (46) *Nio niam-ŋa-n zin pikin*
 NOM.1SG NOM.1PL.EXC-NMS-GEN.3PL PL child
am-sa yom ma som.
 1PL.EXC-wait ACC.2PL and do.in.vain
 I, together with the children, waited for you in vain.
- (47) *Tama-ŋ zi-ŋa-n zin me kini*
 father-GEN.1SG 3PL-NMS-GEN.3PL PL dog LOC.3SG
ru ti-wa ma ti-la.
 two 3PL-walk+RED and 3PL-go
 My father, with his two dogs, walked along.

Note in particular that it is the person-number of the *combinatory pronoun* that is indexed on the verb. The maximal expansion of this construction is:

NP₁ combinatory pronoun NP₂

NP₁ and/or NP₂ may be omitted if their referents are clear from the context, but the combinatory pronoun is obligatory. No linguistic material is ever observed to intervene between any of the three components, and no modification of either the combinatory pronoun or the NP-combinatory pronoun-NP unit as a whole is possible. Of the two NPs, NP₁ is always more topical and thus more frequently omitted.

The pragmatic function of this construction is to encode semi-coordinate participation, in which the participants are almost, but not completely, equal in topicality. In this regard, it is

²⁸ For further discussion and exemplification of these forms, see §3.2.2.5 of the morphology chapter.

instructive to compare this construction with unequivocal NP coordination (48), and an unambiguous comitative construction (49).

(48) *Atai ma Namongo ti-mar ti-re yam.*
 Atai and Namongo 3PL-come 3PL-see ACC.1PL.EXC
 Atai and Namongo came to see us.

(49) *Woongo ramaki ka tomtom*
 canoe together.with PASS.GEN+GEN.3SG person
bizin i-nmbot Koobo=a.
 PL 3SG-stay+RED Aromot.Island=NON.VIS.PROX
 The boat, together with its crew, is over at Aromot Island.

In contrast to example (48), in which the two members of the set of participants {Atai, Namongo} are completely equal in prominence and topicality, example (49) encodes a set of participants {boat, its crew}, in which much greater prominence is placed upon the boat. The combinatory pronoun construction constitutes a compromise between these two extremes of: 1) *complete equality*, and 2) *pronounced inequality*, because it encodes two participant groups that are only *slightly unequal* in prominence.

The question of what structure these combinatory noun phrases instantiate is a bit problematic. There are three logical possibilities:

1. [NP₁] [combinatory pronoun] [NP₂]
2. [NP₁ combinatory pronoun] [NP₂]
3. [NP₁] [combinatory pronoun NP₂]

Although the non-omissibility of combinatory pronouns and their being indexed on verbs when they are Subjects could be seen as arguments for their somehow being the HEAD of the construction, a coordinate analysis (i.e. the first possibility) seems better. This is because both the second and third analyses lead to the problem of having a 'left-over' NP constituent which must be attached somewhere in an ad hoc manner. The lack of any possibility of modifying the construction as a whole indicates that it is an NP level constituent. Accordingly, the combinatory pronoun construction is analysed as a type of coordination which encodes the conjunction of NPs that are not *completely equal* in topicality. The combinatory pronoun, then, is really a kind of NP internal conjunctive device, which just happens to also encode the combined person and number of the conjuncts.

This leaves prepositional phrases of the type N *ramaki* NP as the means for encoding accompaniment *within* the NP. Although clear instances of the noun phrase-internal use of *ramaki* like the one given in example (49) can be found, comitative notions are more commonly encoded by prepositional phrases governed by the form *raama* which function as Adjuncts at the (PRED¹) level.

(50) *Ni i-mbot raama zin buzur saṅsaṅ-ṅa-n.*
 NOM.3SG 3SG-stay with PL animal wild-NMS-GEN.3PL
 He/she stayed with the wild animals.

As a noun-phrase constituent, accompaniment modification occurs as an N¹ Adjunct in the same relative position as other non-pronominalised prepositional phrases.

This brings us now to the topic of noun-phrase coordination. This has already been touched on above, where it was noted that constructions involving the combinatory pronouns can be considered as a combination of conjuncts that are nearly (but not quite) equal in topicality and prominence. True coordination, then, is reserved for encoding conjuncts that are completely equal in topicality. There are actually *two* conjunctions which occur in noun phrases: *mi* and *ma*. Although they often seem to be used interchangeably, there are strong tendencies for *ma* to be used when the combination of conjuncts is more formulaic. Consider the following examples:

<i>mbeŋ ma aigule</i>	night and day/all the time
<i>moori ma tomooto</i>	men and women, people
<i>ti ma suga</i>	tea and sugar
<i>tamaana manaana</i>	father and mother/parents
<i>zoŋ ma yaŋ</i>	sun and rain
<i>namaana ma kumbuunu</i>	hands and legs/limbs

Since the same form *ma* is also used to conjoin cosubordinate combinations of predications,²⁹ one wonders whether the function of *ma* in these formulaic combinations of noun phrases is somehow related: it expresses a view that the combination of conjuncts constitutes a *single, complex whole*. The complex whole can be: 1) an exhaustive listing of possible states of affairs, 2) a listing of commonly associated entities, or 3) a listing of entities sharing some common semantic component. The conjunction *mi*, on the other hand, is used to conjoin more arbitrary lists of NPs, as in the following two examples:

- (51) *serembat, mi tuumbu, mi zeere*
 sweet.potato and pitpit and edible.green.plant
was ma motam
 type.of.plant and type.of.plant
 sweet potatoes, pitpit, and edible green leaves of the *was* and *motam* varieties
- (52) *Zin kolman mi na-nda bizin*
 PL old.person and mother-1PL.INC.GEN PL
ti-yok piti som.
 3PL-agree REF.1PL.INC NEG
 The old men and our mothers won't agree for us to do it.

With regard to the types of nominal constituents which may be coordinated, the following three have been observed:

1. N⁰-N⁰

- (53) *[niam [moori ma tomooto]] kizin golea*
 NOM.1PL.EXC female and male LOC.3PL congregation
 we women and men of the congregation
- (54) *[lutu-unu mi tumbu-unu] bizin*
 child-GEN.3SG and grandrelative-GEN.3SG plural
 his children and grandchildren

²⁹ See §5.5.1 for details about such constructions.

2. N¹ - N¹

- (55) *[[Lutu-ŋ bizin] mi [tumbu-ŋ*
 child-GEN.1SG plural and grandchild-GEN.1SG
bizin]] ta ti-nmbot Lae na
 plural SPEC 3PL-stay+RED Lae GIV
ti-uluulu yo pe som.
 3PL-help+RED ACC.1SG not.very NEG
 My children and grandchildren who are in Lae don't help me very much.
- (56) *[[mbili kizin] mi [mburu kizin*
 animal LOC.3PL and possessions LOC.3PL
taboozomen]] ta ti-kam su ta-na
 all SPEC 3PL-do/get descend SPEC-GIV
 their animals and all of their (other) possessions which they got there
- (57) *[[narabu lamata] mi [ye ru]] ta-na*
 bread five and fish two SPEC-GIV
 those five pieces of bread and two fish

3. N² - N²

- (58) *[ŋge taiŋgi] mi [ŋge tina]*
 pig DEM and pig DEM
 this pig and that pig

Note, however, that noun phrases like the following one, in which a single Locative pronoun would have two conjoined expanded N¹ constituents within its scope, are impossible:

- (59) ***me ru mi ŋge kini tel*
 dog two and pig LOC.3SG three
 his two dogs and three pigs

4.2.6 APPPOSITION

The only instances of apposition observed thus far have all involved non-restrictive relative clauses as in (60) below, or the addition of the proper name of an entity following a noun phrase which refers to it (61), (62):

- (60) *Ni i-re tomtom ta, ta ni*
 NOM.3SG 3SG-see person SPEC SPEC NOM.3SG
i-mbot sa-la ke.
 3SG-stay ascend-go tree
 He saw a man, who was up in a tree.
- (61) *Ti-pet yok musaari toro, Izwon.*
 3PL-appear water little other Izwon
 They came to another small river, (named) Izwon.

- (62) *Me kini ru, Kerosin mi Kombom, ti-kam ηge.*
 dog LOC.3SG two kerosene and drum 3PL-get pig
 His two dogs, Kerosene and Drum, got a pig.

4.2.7 RELATIVE CLAUSES

The topic of relativisation is treated in depth in §5.2, but a few comments will also be made here. In Mangap-Mbula the head nouns which are restricted by relative clauses can bear any grammatical function; that is it is possible for relative clauses to modify Subjects, Objects, Oblique NPs, Genitives, and so on. Similarly, the relative clause-internal NP which is coreferential with the noun being modified can bear any grammatical relation within the relative clause itself. The encoding of the relative NP varies, however, depending upon the animacy of the referent and the relative NP's grammatical function within the relative clause. Those that are co-referential with *inanimate head nouns* are always omitted, whereas those that are co-referential with *animate head nouns* are obligatorily pronominalised unless they function as the Subjects of the relative clauses in which they occur. Consider the following set of examples:

- (63) *tomtom ta ∅ i-to zin ma*
 person SPEC 3SG-follow ACC.3PL and
i-we laamuru na
 3SG-become ten GIV
 the person who followed them, making it ten people all together (Animate Subject)
- (64) *ro tiom ta ∅ i-mar muggu na*
 leaf LOC.2PL SPEC 3SG-come before GIV
 your letter that came before (Inanimate Subject)
- (65) *tomtom ta ηge i-pee*bi* na*
 person SPEC pig 3SG-produce=ACC.3SG GIV
 the person to whom the pig gave birth (Animate Object)
- (66) *ro ku toro ta Silas i-kam ∅*
 leaf LOC.2SG other SPEC Silas 3SG-get
ma ∅ i-mar
 and 3SG-come
 your other letter which Silas brought (Inanimate Object and Subject)
- (67) *wal ta nu kamam uraata pizin na*
 group SPEC NOM.2SG 2SG+do+RED work REF.3PL GIV
 the group for whom you are working (Animate Oblique NP)
- (68) *ke nama-ana ta ni i-mbotmbot*
 tree branch-GEN.3SG SPEC NOM.3SG 3SG-stay+RED
pa ∅ na
 REF GIV
 the tree branch on which he was staying (Inanimate Oblique NP)

It will be noted that the non-Subject *animate* gaps in (65) and (67) have an overt pronoun, whereas the inanimate gaps in (66) and (68) have nothing. Subject gaps, on the other hand, are basically³⁰ not pronominalised, regardless of whether they are co-referential with an animate (63) or an inanimate (64) head noun. Keenan (1985:146) states:

There appear to be four ways of presenting NP_{REL}: it may be an ordinary personal pronoun, a special pronominal form peculiar to RCS [=relative clauses RDB] (in which case it is called a *relative pronoun*), a full NP, or nothing at all, a gap.

At first glance, Mangap-Mbula would seem to exhibit both Keenan's first and his fourth strategies. However, the question is not quite so straightforward, because the normal discourse referent-tracking strategy in Mangap-Mbula is exactly the same: omitting highly given Subjects, pronominalising somewhat given animate non-Subjects, and omitting highly given inanimate non-Subjects.³¹ This applies both inter- and intra- clausally, and is therefore a *pragmatic* rather than *syntactic* anaphoric device. Thus, the zero reference in relative clauses can also be viewed as a kind of pronominalisation. It is possible, therefore, to consider all relative clauses to instance the pronominalising strategy.

It has already been noted that the position of restrictive relative clauses is at the the end of the NP. This is in accordance with the general tendency in the language for heavier constituents to occur relatively later in the sentence.

4.2.8 NOUN PHRASE OPERATORS

Section 3.2.4.2.7 contains examples of the noun phrase operators *tomini* 'also, too', *men* 'just, only', and *tau* 'emphatic particle'. When these forms modify noun phrases, they are always found at the far right boundary of the NP, following all NP Complements, Adjuncts, and Specifiers. For example:

- (69) *Ni i-mbot kar tiom tina men pepe.*
 NOM.3SG 3SG-stay village LOC.2PL DEM only PROH
 I don't want him to stay in just your village.
- I-rao i-mar kar tiam tomini.*
 3SG-must 3SG-come village LOC.1PL.EXC also
 He must come to our (EXC) village too.

Similarly, the degree adverbs described in §3.2.4.2.8 occur following semantically compatible stative nouns referring to things having gradable properties. For example:

- (70) *korog ambai-ŋa-na kat*
 thing good-NMS-GEN.3SG very
 something very good

³⁰ The only time a pronominal Subject gap is observed is in *non-restrictive* relative clauses, like the one below:

I-re tomtom ta, ta ni i-deebe zaala.
 3SG-see person SPEC SPEC NOM.3SG 3SG-cut.down road
 He saw someone, who was cutting a road.

³¹ See Chapter 6 for a more in-depth treatment of referent-tracking mechanisms.

4.2.9 NOUN PHRASE STRUCTURE RULES

At this point, we have surveyed all the major aspects of noun phrase structure in Mangap-Mbula. It remains, then, to produce a phrase structure account.

The N^1 rule has already been formulated. It is reproduced here for convenience:

$$N^1 \Rightarrow \left\{ \begin{array}{l} H^0 \text{INALIENABLE N} \quad , (N^0 \text{ALIENABLE})^* \quad , (bizin) \\ H^0 \text{ALIENABLE N} \quad , (N^0 \text{ALIENABLE})^* \\ H^0 \text{PERSONAL NAME} \quad , (bizin) \end{array} \right\}$$

The initial occurrence of the head noun in the N^1 constituent is accounted for by the general principle that heads of bar level 0 always precede their Complements. The ordering of the nouns in the noun complex is accounted for by the following linear precedence constraint for noun sequences:

$$N \quad < \quad N \quad < \quad N \\ [+pronominal] \quad \left[\begin{array}{l} -pronominal \\ \text{less specific} \end{array} \right] \quad \left[\begin{array}{l} -pronominal \\ \text{more specific} \end{array} \right]$$

The N^1 constituent can be optionally expanded with: 1) prepositional genitives, 2) attributive stative NPs, 3) quantifier phrases, 4) the determiner *sa*, 5) *ramaki* comitative prepositional phrases, and 6) restrictive relative clauses.

$$N^1 \Rightarrow \left\{ \begin{array}{l} H^1 \\ [-PFORM \ ki] \end{array} \right\} (NP) (QUANTP) (sa) (PP) (RC) \\ \left\{ \begin{array}{l} H^1 \\ [+PFORM \ ki] \end{array} \right\} (PP) [PFORM \ ramaki]$$

These rules state that an N^1 constituent which has the feature [+PFORM *ki*] can be optionally expanded by a prepositional phrase which has this specification, as well as by other Adjuncts, whereas an N^1 constituent with a minus specification cannot. The N^1 and PP receive the [PFORM] feature by inheritance from the lexical items which are the ultimate HEADS of these constituents. Most inalienable nouns cannot be modified with prepositional genitives and are, therefore, [-PFORM *ki*]. Some of the inalienable nominalisations, however, are [+PFORM *ki*].

The ordering of NP Adjuncts is largely predicted by the general LP rule for sister modifiers:

$$NP < QUANTP < PP < DEM < S$$

To this rule we must, however, add two ad hoc principles: 1) pronominalised *ki* prepositional phrases precede noun phrases, and 2) the determiner *sa* occurs immediately after the quantifier phrase.

One can detect a considerable amount of semantic and functional basis for the given ordering of Adjuncts. First, there is the general tendency in the language for heavier constituents to occur towards the end of the phrasal units. The fact that demonstratives occur at the outermost boundary of the NP contravenes this tendency, but is explained if demonstratives are considered (as per much current work on syntax) to be Specifiers functioning at a different bar level. Thus, we shall postulate the following N^2 (=NP) rule:

$$N^2 \Rightarrow H1 \quad , \quad (DEM)$$

The 'heavy things last' principle does not explain why attributive nouns, quantifiers, and the non-referential marker *sa* should be rigidly ordered the way they are. Although the given rules formally predict the correct ordering of adjuncts, they are in no way explanatory of why *this* particular ordering occurs and not some other permutation. Bybee (1985a,b) presents a theory of morphological categories in which the ordering of derivational and inflectional endings is determined by their "degree of relevance". She characterises the notion of relevance for verbs in the following manner (1985a:11-13):

Verbal inflections differ with respect to the extent to which they are *relevant* to the verb, that is, the extent to which their meanings *directly affect the lexical content of the verb stem*. The different degrees of relevance of verbal categories that can be inflectional are reflected diagrammatically in three ways: (1) The more relevant a category is to the verb, the more likely it is to occur in a synthetic or bound construction with the verb: (2) The more relevant a morphological category is to the verb, the closer its marker will occur with respect to the verb stem: (3) The more relevant a morphological category is to the verb, the greater will be the morpho-phonological fusion of that category with the stem.

...The inherent lexical content of a verb stem describes an event or state. A category is relevant to a verb to the extent that it directly modifies the event or state described. A category is less relevant if it affects or refers to other elements in the clause instead of or in addition to the verb...The amount of semantic change ordinarily increases and decreases as relevance does, since the more relevant a category is to the verb, the more profound effect it can have on the meaning of the verb.

It is possible to apply this sort of explanation to syntax as well as to morphology. In particular, this could be the source of most of the inner N¹ Adjunct-ordering restrictions. If we consider two expressions like *a big dog* and *two dogs*, the real-world referent of the former, adjectival expression is a different *type* from that indicated by the quantifier expression: it has the additional feature of bigness. Quantifiers, on the other hand, do not in any way modify the *type* of entity being referred to by the head noun; they just indicate the *amount* of it. Accordingly, they occur relatively further away. The form *sa*, which indicates lack of referentiality, has even less semantic effect on the *type* of entity to which the head noun refers, and is accordingly placed even later. The placement of prepositional and sentential modifiers following these inner modifiers is also derivable from this principle of relevance, since, by necessity, they *relate* the head noun *to some other entity or event outside itself*. Refer again to Bybee's statement (1985a:13) that "A category is less relevant if it *affects or refers to other elements* in the clause *instead of or addition to the verb*" [emphasis RDB]. The placement of prepositional phrases following the inner adjuncts can be seen, then, as being due to their relational nature. They do not *just modify* the head noun; they *link* it with some other entity.

The last formal problem is that of the Thematized genitives. We need a device which will insure that they occur *only* when the noun phrase contains an inalienable noun or a pronominalised prepositional genitive which is referentially compatible. If some sort of feature like [+pronominal genitive, α AGR(eement)] is introduced by the genitive suffixes and pronominalised prepositional genitives and is permitted to structurally percolate up, then a rule like the following will at least be descriptively adequate:

$$\text{NP} \Rightarrow \begin{array}{c} \text{H}^2 \\ \left[\begin{array}{l} \alpha\text{AGR} \\ +\text{pronominal genitive} \end{array} \right] \end{array}, \quad \begin{array}{c} (\text{NP}) \\ [\alpha\text{AGR}] \end{array}$$

A [+pronominal genitive] feature on the HEAD will *license* this phrase structure rule generating thematised genitives. Without it, they are ungrammatical. The AGR feature is necessary to insure that thematised genitives are referentially compatible with the pronominal genitives. When Thematised genitives are present, they occur before the N² HEAD by the same linear precedence principle which locates Subjects before the Predicate Phrase.

For appositional constructions, we postulate no phrase structure rule per se. Such constructions are better analysed as non-structural *pragmatic intrusions* of one utterance into another. There are, of course, some constraints on such intrusion, notably those listed below.

1. The appended constituent(s) always follow(s) the modified NP.
2. There must be some element in common between the NP and the appositional constituent.
3. If both an appositional NP and an appositional relative clause are present, the former precedes the latter.

With regard to the NP operators *men* 'only', *tau* 'emphasis', and *tomini* 'also'³² and degree ad-Verbs/Nominals, a rule optionally expanding NP (= N²) into NP with adverbs from Classes 6 and 7 is required.

$$\text{NP} \Rightarrow \text{H}^2, (\text{ADV}_{6,7})$$

This now concludes the presentation of noun phrase structure.

4.3 PREDICATE PHRASE STRUCTURE

4.3.1 INTRODUCTORY REMARKS (PREDICATE PHRASE ELLIPSIS)

In this section, we examine the structure of the Mangap-Mbula predicate phrase. Recall that a predicate phrase unit is being postulated rather a verb phrase because it allows one to make structural generalisations over both verbal and non-verbal predicates. The order of presentation is: 1) predicate formation rules (PRED⁰), 2) PRED¹ Complements, 3) PRED¹ Adjuncts, and 4) PRED²/PREDP Specifiers. The first task, however, is to establish that there is, in fact, a predicate phrase constituent. On the assumption that only *constituents* can be elided, examples like the following three argue for the presence of a predicate phrase constituent which includes the predicate and its following arguments:

- (71) *Niam ta am-uulu yom.*
 NOM.1PL.EXC SPEC 1PL.EXC-help ACC.2PL
Mi zin Ø som.
 and NOM.3PL NEG
 We are the ones who helped you. They didn't.

³² Refer to §3.2.4.2.7 of the morphology chapter for further discussion of these forms.

- (72) *Zin ti-kam uraata pa mbeŋ,*
 NOM.3PL 3PL-do/get work REF night
mi niam Ø tomini.
 and NOM.1PL.EXC also
 They worked at night, and so did we.
- (73) *Zin ti-kam uraata pa mokleene pa mbeŋ,*
 NOM.3PL 3PL-do/get work REF garden REF night
mi niam Ø pa aigule.
 and NOM.1PL.EXC REF daytime
 They worked in the garden at night, and we during the day.

Comparing the last two examples, we can see that there must be at least two levels of bracketing within the predicate phrase:

[[PREDICATE (Object) (Associated Entity)] (Specifiers for Time/Outer Location)]

Example (73) above illustrates that it is possible to elide everything in the predicate phrase interior to a PRED² Specifier. The following two examples illustrate that it is also possible to elide everything interior to Benefactive (74) and Instrumental (75) Adjuncts:

- (74) *Niam am-kam uraata pa Anutu,*
 NOM.1PL.EXC 1PL.EXC-do work REF God
mi niom Ø pa ituyom.
 and NOM.2PL REF REFL-GEN.2PL
 We work for God but you for yourselves.
- (75) *Nio aŋ-taara ke pa nakabasi*
 NOM.1SG 1SG-cut tree REF axe
mi nu Ø pa buza.
 and NOM.2SG REF knife
 I chopped the tree with an axe and you with a knife.

The following two examples illustrate that it is not possible to elide just the predicate and leave a PRED¹ Complement behind. This is an important test for identifying Complements.

- (76) ****Nio lele-ŋ i-saana pizin,**
 NOM.1SG insides-GEN.1SG 3SG-deteriorate REF.3PL
mi zin Ø pio.
 and NOM.3PL REF.1SG
 I was upset with them and they with me.
- (77) ****Nio aŋ-po ruumu, mi nu Ø diditu.**
 NOM.1SG 1SG-build house and NOM.2SG storehouse
 I built a house and you a storehouse.

Summarising all of this ellipsis data, it is possible to elide either all of PRED² or PRED¹, but not *part* of PRED¹.

There are two main reasons for setting off the PRED² Specifiers from other predicate phrase constituents as a distinct structural level. The first has to do with adverb placement possibilities. There are a number of adverbs from Classes 2 and 3 like *joobo* 'wrong' and

riḡa 'slowly, carefully' which are free to occur after the predicate, the Object, or any prepositional phrase *except* the PRED² Specifiers.

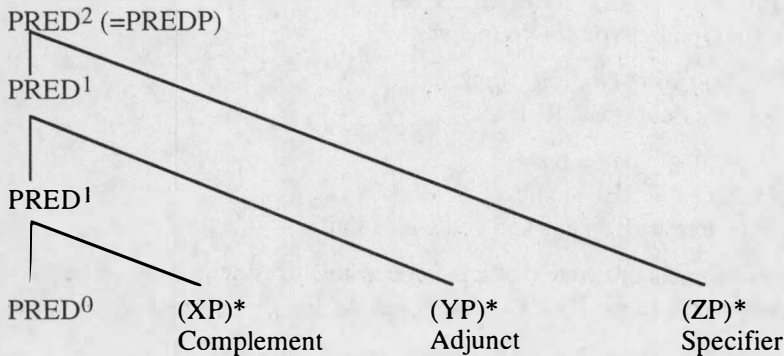
- (78) *Ni i-kam (ḡoobo) mbulu (ḡoobo)*
 NOM.3SG 3SG-do/get wrong behaviour wrong
*pa mbeḡ (**ḡoobo).*
 REF night wrong
 He behaved incorrectly at night.

Other adverbs like the perfect form *kek* and the negative perfect form *zen* obligatorily occur *after* these Specifiers. These two distributional facts that: 1) some adverbs *never* occur following these outermost prepositional phrases, while 2) other adverbs *obligatorily* occur following them, argue for their constituting some sort of structural threshold.

Secondly, there is the fact that the meanings of the prepositional Specifiers are extremely *independent* of those of the predicates with which they co-occur. In this respect, they are quite different from most other PREDP constituents, whose interpretations are often extremely dependent upon the predicates with which they co-occur.

In their function of locating the encoded event in time and space, the outermost prepositional PREDP constituents resemble the demonstrative Specifiers of noun phrases, which textually and spatially locate the referent of the NP.

The constituent structure of the predicate phrase is schematised in the following tree diagram:



Here Complements include: Object noun phrases, inner Locative prepositional phrases, other prepositional phrases whose semantic interpretations are idiosyncratically determined by the meaning of the predicate, and many sentential Complements. Adjuncts are prepositional phrases encoding Instruments, Benefactives, Accompaniment and Manner. Specifiers are prepositional phrases encoding Time, Outer Location, and Frequency, purpose clauses, and some obligatorily extraposed sentential Complements like direct and indirect quotations.

Sentential Complements in the predicate phrase are somewhat problematic because, unlike other types of Complements, they seem to occur at two structural levels: PRED¹ and PRED². The PRED² sentential Complements are here analysed as being obligatorily extraposed to the end of the predicate phrase as in (79) and (80) below. Because they are sentential, they always occur after any prepositional phrase PRED² Specifiers:

- (79) *Nio aŋ-so sua pini pa mbeŋ*
 NOM.1SG 1SG-say talk REF.3SG REF night
be i-la i-re lutu-unu moori.
 NF 3SG-go 3SG-see child-GEN.3SG female
 I told him at night to go see his daughter.
- (80) *Tana aŋ-moto pa mbeŋ kokena ti-pa-saana yo.*
 therefore 1SG-fear REF night lest 3PL-CAUS-deteriorate ACC.1SG
 Therefore I was afraid at night that they would harm me.

In (79), the indirect quotation can freely occur after any predicate phrase modifier, just so long as it occurs sentence finally. Similarly, in (80) the state of affairs which is feared is encoded as an extraposed sentential Complement introduced by *kokena*.

The sentential Complements occurring in PRED¹, on the other hand, are always found immediately following the [PRED⁰ (NP)] sequence. For example:

- (81) *Nio aŋ-re i (**pa mbeŋ)*
 NOM.1SG 1SG-see ACC.3SG REF night
i-la i-re lutu-unu moori.
 3SG-go 3SG-see child-GEN.3SG female
 I saw him (at night) go see his daughter.
- (82) *Nio lele-ŋ (**pa mbeŋ) be aŋ-la pa mbeŋ.*
 NOM.1SG insides-GEN.1SG REF night NF 1SG-go REF night
 I wanted to go at night.

The extraposed sentential Complements obviously pose a problem for the general schema that all predicate Complements occur as constituents of PRED¹ interior to Adjuncts and Specifiers. The same problem arises for English:

I heard on Tuesday that there had been a coup in Russia.
I told John on Tuesday that he should not come.
I said to John on Tuesday that he was in danger.

Most authors would term the underlined portions of these English examples 'sentential Complements', even though they are occurring here *after* VP Specifiers for Time. Some sort of extraposition analysis seems necessary to account for such examples in English and Mangap-Mbula.

We will not further discuss the structural status of extraposed Complements in this grammar. In the discussion of Predicate Phrase Complements, these will also be included in the subcategorisation frames for predicates, despite their peripheral position of occurrence.

With these preliminaries, we shall now proceed to examine in more detail the different levels of PREDP structure.

4.3.2 PREDICATE FORMATION RULES (=PRED⁰)

The most common type of predicate is the verb. It is introduced by the following predicate formation rule:

PRED⁰ ⇒ V

Noun phrases in equative constructions constitute another type of predicate. Recall from §4.1.2.5 that in such instances there is no copular verb:

- (83) *Iggi nio tizi-ŋ.*
 this.one NOM.1SG y.sibling-GEN.1SG
 This is my younger brother.
- (84) *Kado-ono ta-na biibi mete.*
 equivalent-GEN.3SG SPEC-GIV big.one too.much
 That price is too high.

Noun phrases headed by the Recipient-Experiencer inalienable nouns *le-* and *ka-* function predicatively to assert, question, or deny ownership of some entity:

- (85) *Nio le-ŋ koron sa som.*
 NOM.1SG RECX-GEN.1SG thing NON-REF NEG
 I don't have anything.
- (86) *Ni ka kini?*
 NOM.3SG CON.RECX+GEN.3SG food
 Does he have any food to eat?

Nominal predicates are introduced by the following predicate formation rule:

PRED⁰ ⇒ NP

Translative equative predicates are formed by combining the verb *-we* 'become' plus a noun phrase:

- (87) *I-we molo mete.*
 3SG-become long.one too.much
 It became too long.
- (88) *To aŋ-we mboro-ŋa-n.*
 then 1SG-become look.after-NMS-GEN.3PL
 Then I became an elder.

For such predicates, the following predicate formation rule is needed:

PRED⁰ ⇒ *-we*, NP

The phrasal sequence [*-we* NP] is shown to be a single, tight PRED⁰ unit by the fact that no adverbs can intervene between *-we* and the noun phrase. This contrasts with ordinary verb plus Object constructions, where Class 1 and Class 2 adverbs can interrupt the verb and the Object.

Adverbs, too, can function predicatively:

- (89) *Ina neeri.*
 that.one yesterday
 That was (=happened) yesterday
- (90) *Iggi karau mete.*
 this.one quickly too.much
 This is (happening) too quickly.

Thus, we must also have a predicate formation rule for adverbs:

PRED⁰ ⇒ ADVP

The preceding discussion has shown that verbs, noun phrases and adverbs can function predicatively. Conspicuous by their absence are predicative *prepositional* phrases. None have ever been observed in texts, nor has it proven possible to elicit any.

Another type of phrasal predicate is instanced by the experiential constructions in which the inalienable nouns *le-* and *ka-* are incorporated into the PRED⁰ immediately following a verb. The tightness of the [V *le-/ka-*] sequence is again evidenced by the fact that no adverb can intervene between the two forms:

- (91) *Moori i-wa (**sorok) le sorok.*
 woman 3SG-walk+RED just RECX+GEN.3SG just
 The woman was having illicit sexual relations (lit. just wandering around for pleasure).

For further discussion and exemplification of this construction, see §3.2.1.5. The predicate formation rule for these sorts of predicates is given below:

PRED⁰ ⇒ V (*le-*)/(*ka-*)

Another, very important, class of phrasal predicates is composed of the many body-image expressions consisting of an inalienable noun with or without a following verb like *lele-* 'like', and *lele-* (*i*)*saana* 'insides deteriorate' (= 'feel sad, be upset').

- (92) *Lele-ene i-saana.*
 insides-GEN.3SG 3SG-deteriorate
 He is upset.

For these, a predicate formation rule like the following is needed:

PRED⁰ ⇒ NINALIENABLE , (V)

Such predicates can be plausibly viewed as being the result of a process of possessor ascension,³³ whereby the genitive of a body-part noun 'ascends' to become sentential Subject. Using Relational Grammar terminology, the left-over body part becomes a *chômeur*. Having nowhere else to go, it becomes incorporated into the predicate phrase. For further details regarding such constructions in Mangap-Mbula, see §4.7.

Since the adverbs of Classes 1, 2, and 8 may intervene between the PRED⁰ constituent and a following Object,³⁴ they are ad-PRED⁰ forms. Accordingly, there needs to be the following expansion rule for PRED⁰:

PRED⁰ ⇒ H⁰ , (ADV_{1,2,8})

³³ Bell (1983) and Perlmutter and Postal (1983) discuss possessor ascension in Cebuano and Malagasy respectively.

³⁴ They may also occur later in the predicate phrase, but this is not relevant here.

4.3.3 PREDICATE PHRASE (PRED¹) COMPLEMENTS

The PRED¹ unit consists of: 1) an obligatory predicate (which may itself be phrasal,³⁵ 2) possibly an Object NP, and 3) various sorts of obligatory and optional prepositional and sentential Complements. It may also contain adverbs from Classes 2, 3, 7, and 8. The PRED¹ adverbs may occur either before or after any predicate phrase constituent, provided they follow the Object Noun Phrase. No PRED¹ adverb intervenes between a PRED⁰ and an Object. They always follow the HEAD, as is generally the case for modifiers in the language. Accordingly, we can postulate the following general phrase structure schemas:

$$\text{PRED}^1 \Rightarrow \text{H}^0, (\text{NP}), (\text{PP})^*, (\text{Sentential Complement}), (\text{ADV}_{2,3,7,8})$$

As was the case with noun phrases, the PRED¹ Complements are linearly ordered following the HEAD in order of increasing complexity. That is:

$$\text{NP} > \text{PP} > \text{Sentential Complements}$$

Recall also from §4.3.1 that some sentential Complements are obligatorily extraposed, occurring at the periphery of the predicate phrase rather than in the PRED¹ unit. In the following discussion of subcategorisation, these extraposed Complements will also be included in the subcategorisation frames of predicates. In the following discussion, if a sentential Complement occurs peripherally, it is explicitly indicated. Where such indication is absent, the sentential Complement can be assumed to occur within the nuclear PRED¹.

Predicates may be divided into the following subclasses according to the types of Complements with which they co-occur:

1. those which never take a NP, PP, or sentential Complement
2. those which take an optional NP Complement
3. those which take an obligatory NP Complement
4. those which take an optional PP or an optional NP Complement
5. those which take an optional PP Complement
6. those which take an obligatory PP Complement
7. those which take an obligatory NP and an optional PP Complement
8. those which take an obligatory XCOMP¹ Complement
9. those which take an obligatory COMP¹ Complement
10. those which take an optional XCOMP¹ Complement
11. those which take either an obligatory NP plus an optional XCOMP¹ Complement, or optional NP, PP, And COMP¹ Complements
12. those which take an obligatory NP plus an optional PCOMP¹ Complement
13. those which take optional PP and PCOMP¹ Complements
14. those which take either an obligatory NP or an obligatory COMP¹ Complement
15. those which take an optional PP or an optional COMP¹ Complement
16. those which take an obligatory NP and an optional PP or an XCOMP¹ Complement
17. those which take two optional PP Complements, or an optional PP and an optional XCOMP¹ Complement
18. those which take an obligatory NP plus two optional PP Complements, or an obligatory NP plus an optional PP Complement and an optional XCOMP¹ or COMP¹ Complement

These are discussed below (§4.3.3.1 - 4.3.3.18).

³⁵ See the immediately preceding section.

4.3.3.1 PREDICATES WHICH NEVER TAKE AN NP, PP, OR SENTENTIAL COMPLEMENT

[NP __],³⁶ [__]

There are a number of different semantic classes of strictly intransitive predicates which never take any Complements and thus, have the subcategorisation frame [NP __]:

1. state³⁷ and process predicates like: *-baba* 'be flat', *-kokou* 'be white', *-mukmuk* 'be dirty', *-saana* 'deteriorate', *-pu* 'bear fruit', *-ruŋ* 'put forth leaves', *-met* 'snap in two', *-bayou* 'be hot/become hot', *-lomo* 'be cold', *-buuzu* 'rot', *-yaara* 'shine', *-mapaala* 'break (intransitive)', *-maraaza* 'tear (intransitive)', and *-top* 'drop':

(93) *Wooro i-met.*
vine 3SG-snap
The vine snapped.

2. many of the semi-controllable experiential predicates like *-meete* 'die', *-mel* 'stumble', *-ŋguŋ* 'cough', *-martu* 'sneeze', and *-lulu* 'vomit':

(94) *Ni i-meete kek.*
NOM.3SG 3SG-die PERF
He has died.

3. some action predicates like *-kwai* 'go on a long sea journey', and *-yaara* 'go sailing' which are not directed toward or away from some locale and whose location is included in the meaning of the verb

4. manner predicates³⁸ like *kaŋkaŋ* 'go directly' *burup* 'do suddenly', *wis* 'do quickly':

(95) *Kaŋkaŋ ma aŋ-la Lablab.*
go.directly and 1SG-go Lablab
I went directly to Lablab.

5. aspectual predicates³⁹ like: *put* 'completely severed', *ŋak* 'completely full', and *sik* 'completely covered':

(96) *Yok i-lol lele ma sik.*
water 3SG-cover place and completely
Water completely covered the place.

³⁶ In this notation, a representation like [A __ B (C)] represents a predicate which takes two Complements or *internal* arguments B and C, one of which is optional (=C), and one argument A (=Subject) which is *external* to the PREDP. A representation like [__] represents a predicate which takes neither predicate phrase Complements nor a Subject. A representation like [<A> __ B] indicates a predicate which takes both a Subject and an Object, but whose Subject *lacks a semantic role*. Some modal predicates are the only ones exhibiting this sort of sub-categorisation.

³⁷ The terms state, process, action, and action-process are drawn from Chafe (1970:98-101) and characterise different types of situations. In states, nothing *happens* or *changes*. In processes, something *happens*; something undergoes a change in its condition. Actions are things which people (or other animate entities) *do*. Action-processes are things which someone or something *does* which result in something undergoing a *change*.

³⁸ For further details, see §3.2.3.2.3.

³⁹ For further details, see §3.2.3.2.4.

6. temporal adverbs and nouns occurring in existential adverbial constructions (note that the subcategorisation frame for the predicative uses of these forms is different in that it lacks an external (Subject) argument):

[_]

- (97) *Mbeŋ to ta-la.*
 night then 1PL.INC-go
 Once it is night, we will go (lit: it being night, then we will go).

7. weather predicates like *-kimit* ‘be lightening’ and *-kuruŋ* ‘be thundering’ (note that their external argument is locative in nature):

- (98) *Lele i-kimitmit.*
 area 3SG-be.lightning+RED
 Lightning was flashing.

8. a number of different types of non-verbal predicates:

- (99) *Ni biibi tio.*
 NOM.3SG leader LOC.1SG
 He is my leader.
- (100) *Nio le-ŋ buza som.*
 NOM.1SG RECX-GEN.1SG knife NEG
 I don’t have a knife.
- (101) *Ina neeri.*
 that.one yesterday
 That was (=happened) yesterday.
- (102) *Iŋgi karau mete.*
 this.one quickly too.much
 This is happening too quickly.

4.3.3.2 PREDICATES WHICH TAKE AN OPTIONAL NP COMPLEMENT

[NP _ (NP)]

This class contains predicates like *-kan* ‘eat’, *-peeze* ‘paddle’, *-woolo* ‘marry’, *-seŋ* ‘chew (betel nut)’, and *-mbo* ‘sing’, which, if they lack an Object, are understood as implying the presence of some sort of cognate object, whose precise identity is not considered to be important.⁴⁰ For such predicates, a construction like X Y_{PREDICATE} often means:

⁴⁰ It is important to distinguish these instances, in which the lack of an Object indicates action upon something whose precise identity is not considered important, from the ordinary referential tracking strategy of omitting highly given inanimate referents. In these latter cases, the zero Object is a kind of null pronoun and can be glossed as ‘it’. For example:
Koroŋ tana, aŋ-buulu Ø som, aŋ-garau Ø som.
 thing that 1SG-bother NEG 1SG-approach NEG
 That thing, I didn’t bother it; I didn’t (even) go near it.
 Thus, there are two types of ‘zero’. One is indicative of a highly given referent, while the other is indicative of a referent whose precise identity is not considered to be important.

X did Y to something.
 I don't say what this thing was.
 It was the kind of thing that people do Y to.

For example *-kan* without an Object can simply mean 'to have something to eat'.

- (103) *Am-kan ma am-win mi am-keene.*
 1PL.EXC-eat and 1PL.EXC-drink and 1PL.EXC-sleep
 We ate and drank and slept.

Another semantic subclass within this grouping is instanced by predicates encoding physical sensations like *-namut* 'be sweet (to)', *-yes* 'hurt', and *-tuntun* 'itchy, burns one's skin'. Consider the following two examples:

- (104) *Kini i-namut.*
 food 3SG-be.sweet
 The food is/tastes sweet.
- (105) *Kini i-namut yo.*
 food 3SG-sweet ACC.1SG
 The food is/tastes sweet to me.

In example (104), the Subject encodes an entity that causes the sensation of 'sweetness' but no specific Experiencer of that sensation is mentioned, whereas in (105) a specific Experiencer of the sweetness has been added, encoded as a direct Object. The meanings of the two sentences could be paraphrased as: 1) 'the food is the kind of thing that causes people to feel sweetness', and 2) 'The food causes me to feel sweetness'.

Another semantic subclass consists of predicates like *-tooro* 'turn, change', *-kaaga* 'open', *-noi* 'boil', *-kotkaala* 'close', and *-sur* 'wash away', which may encode either processes or action-processes:

- (106) *Kataama i-kaaga.*
 door 3SG-open
 The door opened.
- (107) *Mboro-ja-n i-kaaga kataama zen.*
 look.after-NMS-3PL.GEN 3SG-open door NEG.PERF
 The church elder hasn't opened the door yet.

The lack of overt derivational morphology on these verbs is somewhat exceptional, because process verbs are normally derived from action-processes by the addition of the detransitivising prefix *m-*, or action-process verbs are derived from process or state verbs by the addition of the causative prefix *p-*. Thus, one normally finds pairs like *-paala* 'break (transitive)' and *-mapaala* 'break (intransitive)', and *-bayou* 'be/get hot' and *-pabayou* 'heat up (transitive)'.

4.3.3.3 PREDICATES WHICH TAKE AN OBLIGATORY NP COMPLEMENT

[NP __ NP]

Some of the clearer semantic classes of predicates exhibiting this sort of subcategorisation are:

(a) predicates of conveyance like *-baada* 'carry', *-kuundu* 'carry on the head', *-siŋ* 'carry on a stick', *-uuzu* 'transport':

- (108) *Moori ti-kuundu yok ma ti-mar.*
 woman 3PL-carry.on.head water and 3PL-come
 The women carried the water here on their heads.

(b) cardinal transitive predicates like *-paala* 'break' (and all the other, more specific verbs of breaking like *-kot* 'break with a round instrument', *-ŋgorpaala* 'break with the teeth' inter alia), *-pun* 'hit', *-raaza* 'tear', *-ŋgal* 'pierce, stab', *-yembut* 'cut off', *-taara* 'cut', *-kas* 'cut down':

- (109) *Ti-pun=i ma i-meete.*
 3PL-hit=ACC.3SG and 3SG-die
 They killed him.

(c) predicates of production like *-peebe* 'give birth to, produce', *-po* 'build, tie', *-sese* 'sew', *-we* 'weave', where the Object encodes the entity which is produced

(d) some motion predicates like *-koŋuru* 'go straight to', *-tu* 'settle in', *-sal* 'go along the side of', *-no* 'climb up something', *-konzaala* 'go past', *-lou* 'visit', *-kakat* 'go across', *-kau* 'wrap around', where the Object encodes the site or goal of motion

(e) predicates of exchange like *-ŋgiimi* 'buy, sell', *-ŋgomoono* 'sell', *-kot* 'repay', *-parpekel* 'exchange'

(f) a number of the experiential predicates like *petel* 'be hungry', *-mbel* 'be in trouble', *miri* 'be thirsty', and *menmeen* 'be happy', *-yamaana* 'feel', and *-yoozo* 'smell' (Note that the uninflected experiential predicates are all 'middle' verbs⁴¹ whose Subjects and Objects must be coreferential (110). In the case of the inflected experiential verbs, Subjects encode Experiencers and Objects encode Stimuli (111).) For example:

- (110) *Nio menmeen yo biibi.*
 NOM.1SG be.happy ACC.1SG big
 I was very happy.

- (111) *Me ti-yoozo nge kuzi-ini.*
 dog 3PL-smell pig scent-GEN.3SG
 The dogs smelled the pig.

(g) the verb *-kam* 'do/get' in experiential constructions of the form X *-kam* Y (= 'X happened to Y'), where X is a noun encoding some sort of unpleasant experience like *patana* 'trouble' *tata* 'busyness', *mete* 'disease', *ŋgumtur* 'embarrassment', and the Object Y is the Experiencer.

- (112) *Mete i-kam yo.*
 disease 3SG-do/get ACC.1SG
 I was sick.

In addition to the above semantic classes, there is a wide range of other predicates like: *-tit* 'reject', *-potom* 'cause to be forbidden', *-lul* 'roll up', *-piizi* 'squeeze', *-pakur* 'praise' *-roogo* 'reserve for oneself', and *-karakiti* 'repair, make' which exhibit this subcategorisation.

⁴¹ For further discussion of these middle verbs, see §6.5.2.

4.3.3.4 PREDICATES WHICH TAKE AN OPTIONAL PP OR AN OPTIONAL NP COMPLEMENT

$$[\text{NP} \quad \text{---} \quad \left\{ \begin{array}{l} (\text{PP}) \\ (\text{NP}) \end{array} \right\}]$$

A major semantic class within this grouping consists of the motion predicates which have an *inherent* orientation *to* some location. For example, the verb *-la* 'go' is inherently oriented *towards* some location. Thus, prepositional Complements co-occurring with this verb always encode some sort of GOAL. It is impossible to say (in a single clause) that one has gone *from* some particular place. Rather, one must say something like, 'I was at some place and came':

(113) *Nu mbot swoi ta mar=i?*
 NOM.2SG 2SG+stay where SPEC 2SG+come=PROX
 Where are you coming from?

(114) *Nio aḡ-la (ki Silas) / ((pa) kar toro).*
 NOM.1SG 1SG-go LOC Silas REF village other
 I went (to Silas)/(to another village).

Note in example (114) that the encoding of the GOAL differs, depending upon whether or not it is animate or at least *potent*.⁴² The Locative preposition *ki* is used for potent GOALS, while Referent prepositional phrases or plain noun phrases are used for non-potent ones. This contrasts with the encoding of SOURCES, which are always expressed using the Referent preposition *pa*, regardless of potency. Other examples of GOAL-oriented verbs are: *-loondo* 'run (into)', *-le* 'come in to me', *-se* 'come up to me', *-ma* 'come to you' and *-su* 'come down to me'.

Those intransitive predicates which are oriented neither *to* nor *away from* some locus permit a prepositional or nominal Complement expressing the *Site* where an entity is located or an action takes place. For example:

(115) *Buza i-mbot ((pa) ruumu ti) / (tio).*
 knife 3SG-stay REF house DEM LOC.1SG
 The knife is in this house./I have the knife.

(116) *Zin ti-kenene sa-la ruumu.*
 NOM.3PL 3PL-sleep+RED ascend-go house
 They are sleeping up in the house.

Note especially in (115) the use of a locative construction to assert possession of a *definite* entity.

Other examples of non-directed intransitive action predicates are: *-pa* 'walk, move', *-mender* 'stand', *-we* 'bathe', *-karara* 'crawl', *-ko* 'go quickly', *-mbaala* 'hunt pigs with a net', *-zibuuru* 'catch crayfish', *-rak* 'dance', and *-yaago* 'swim'. For example:

⁴² Recall that potent entities are ones which are capable of *doing* something, albeit not necessarily intentionally. All animate entities are potent. Earthquakes, the sea, and the sun would be examples of inanimate potent entities.

- (117) *Nio aŋ-pa (pa) toono.*
 NOM.1SG 1SG-walk/move REF land
 I travelled by land.

4.3.3.5 PREDICATES WHICH TAKE AN OPTIONAL PP COMPLEMENT

[NP __ (PP)]

Many of the predicates taking an optional PP Complement are experiential verbs like: *-murur* 'be surprised', *-morsop* 'be startled by', *-kankaana* 'be confused by', *-tat* 'be hindered by', and *-ŋu* 'be upset with'. In addition, many of the body-image expressions describing emotional states like *kete-malmal* 'angry' (lit. 'liver fight') have this subcategorisation. With all such predicates, the optional prepositional phrase Complement (which is always governed by the Referent preposition *pa*) encodes the *stimulus* of the experience:

- (118) *Niam am-morsop (pini).*
 NOM.1PL.EXC 1PL.EXC-startled REF.3SG
 We were startled (by him).
- (119) *Kete-ŋ malmal pini.*
 liver-GEN.1SG fight REF.3SG
 I am angry with him.

A second semantic class of predicates exhibiting this kind of subcategorisation are stative nouns expressing quantity like *biibi* 'big one' and *molo* 'long one', and a number of verbs like *-muungu* 'precede', *-kemer* 'come behind', *-lip* 'surpass', *-maol* 'be lazy', *-zwar* 'be slow at', *-sosor* 'be wrong about', *-pandel* 'diverge from'. When these forms are used as predicates, a co-occurring Referent phrase encodes a locus or point of reference:

- (120) *Iggi biibi mete (pio).*
 this.one big.one too REF.1SG
 This is too big (for me).
- (121) *Niom ku-muungu (pini).*
 NOM.2PL 2PL-go.ahead REF.3SG
 You go ahead (of him).
- (122) *Ni i-zwar (pa uraata).*
 NOM.3SG 3SG-slow REF work
 He is slow (at working).

Motion predicates which are inherently oriented *away* from some location may take a Referent prepositional phrase expressing the place from which the motion originates. These include such forms as *-ko* 'flee (away from)', *-beleu* 'escape (from)', and *-yooto* 'go out (from)'. Just as it is impossible to say in a single clause 'Someone *-la* (= 'went') *from* X', it is also impossible to say in a single clause 'Someone *-ko* 'fled' *to* X'. Rather, one must use a cosubordinate⁴³ construction, saying literally, 'Someone fled and went/came to X':

⁴³ See §5.5.1 for a discussion of cosubordination.

- (123) *Tana aḡ-ko pa su ma aḡ-mar kar.*
 therefore 1SG-flee REF forest and 1SG-come village.
 Therefore I fled from the forest and came to the village.

A handful of motion predicates like *-pet* ‘appear’, *-mili* ‘return’, and *-mar* ‘come’ are not inherently oriented. These can encode motion either *to* or *away from* some location (124). The semantic interpretation of Referent prepositional Complements co-occurring with such predicates is contextually determined. For example:

- (124) *Nio aḡ-mar pa Lae.*
 NOM.1SG 1SG-come REF Lae
 I came to/from Lae.

A final semantic subgroup within this class is composed of action predicates like *-taḡ* ‘cry’, *-seeḡge* ‘laugh at’, *-ḡooḡo* ‘quarrel’, and *-kuk* ‘bark’ which encode the making of various types of sounds. These optionally subcategorise for a Referent prepositional phrase encoding something to whom or on whose account the sound is being made. For example:

- (125) *Niam am-taḡ (pini).*
 NOM.1PL.EXC 1PL.EXC-cry (REF.3SG)
 We cried because of what happened to him (lit. we cried to him).

4.3.3.6 PREDICATES WHICH TAKE AN OBLIGATORY PP COMPLEMENT

[NP __ PP]

Thus far only two predicates have been found which require a prepositional Complement: *-pase* ‘rely on someone’ and *-pok* ‘avoid someone’:

- (126) *Niomru ka-pase pini pepe.*
 NOM.2DU 2PL-rely REF.3SG PROH
 Don’t you two rely on him.

4.3.3.7 PREDICATES WHICH TAKE AN OBLIGATORY NP AND AN OPTIONAL PP COMPLEMENT

[NP __ NP (PP)]

The transitive predicates which take an NP Complement and an optional PP Complement fall into several relatively clearly defined semantic classes:

(a) predicates encoding some sort of ‘removal’ like: *-yasaara* ‘snatch away’, *-tatke* ‘take away’, *-kamke* ‘save someone’, *-pas* ‘remove’, *-weene* ‘take out’, *-sepet* ‘dip out’, *-mus* ‘wipe off’, *-pus* ‘cleanse’, *-ser* ‘send away’:

- (127) *To aḡ-tatke ke pa you.*
 then 1SG-take.out stick REF fire
 Then I took the stick out of the fire.
- (128) *Mus yok pa mbalia.*
 2SG+wipe.off water REF bench
 Wipe the water off the table.

(b) predicates of destruction like: *-reege* ‘tear down’, *-pambiriizi* ‘annihilate’:⁴⁴

- (129) *Reege ruumu pa narooگو muri-ini.*
 2SG+tear.down house REF dancing place-GEN.3SG
 Tear the house down from the dance site.

(c) predicates encoding some sort of withholding like: *-turke* ‘hide something (from someone)’, *-watkaala* ‘deny, keep something secret from someone’:

- (130) *Watkaala sua ta-na pizin pepe.*
 2SG+conceal talk SPEC-GIV REF.3SG PROH
 Don’t conceal that talk from them.

(d) many of the communicative predicates like: *-ngeele* ‘discuss about’, *-swe* ‘reveal’, *-pit* ‘recount’, *-kam sua* ‘preach’, *-piyooto* ‘exhibit, display’, *-sotaara* ‘notify’, *-sope* ‘advise’, and *-paute* ‘teach’ (With some of these predicates, the Object encodes the message and the prepositional phrase encodes the recipient of the message (131), while with others the semantic roles encoded by these two constituents are reversed (132).) For example:

- (131) *Swe sua ti pizin pepe.*
 2SG+reveal talk DEM REF.3PL PROH
 Don’t reveal this talk to them.

- (132) *Kolman ti-so-taara yam pa uraata som.*
 old.person 3PL-say-cut ACC.1PL.EXC REF work NEG
 The old men didn’t notify us about the work.

(e) benefactive transitive predicates like *-pomoozo* ‘give something to a stranger’, *-kampe* ‘do something good for someone’, and *-uulu* ‘help’, whose Objects encode the Benefactee, and whose Referent phrases encode either the thing given (133) or what was done for the Benefactee (134):

- (133) *Anutu i-kampe iti pa korog boozo.*
 God 3SG-do.good ACC.1PL.INC REF thing many
 God blesses us with many things.

- (134) *Nangaṅ ti-uulu yo pa uraata.*
 young.man 3PL-help ACC.1SG REF work
 The young men helped me with the work.

(f) most of the periphrastic constructions with the verb *-kam* ‘do/get’ and action nouns and nominalisations like *kuumbu* ‘stealing’, *uraata* ‘work’, *naborou* ‘magic’, *kinkin* ‘striving’, *zoorogana* ‘rebellion’, and *pakaamḡana* ‘deception’ (With these, the associated Referent phrase can encode either the individual or the entity affected by the action (135).)

- (135) *Ni i-kam kuumbu (pio)*
 NOM.3SG 3SG-do/get stealing REF.1SG
 / (*pa pin tio*).
 REF banana LOC.1SG
 He stole (something from me)/(my bananas)

⁴⁴ These could, however, also be viewed as members of the first semantic class.

(g) some predicates of conveyance like *-ur* 'put' *-giibi* 'throw', *-kam* 'do/get' (used to encode notions like 'bring' and 'take'), *-zuru* 'move something aside', *-lu* 'propel', *-wit* 'lift', and *-segeere* 'send something' (With these predicates, the optional prepositional Complement encodes the location *to which* the entity is being conveyed. The prepositional Complements governed by such predicates are headed either by the Referent preposition *pa* or by serialised motion verbs (136). If the motion verb serialisations encoding the GOAL are not analysed as being prepositional but rather as being verbal in nature, then these sorts of predicates exhibit a [[V NP] XCOMP] structure. Given the ambiguous categorial status of serial verbs, deciding between the two analyses is probably a non-issue.)

- (136) *Ti-ur mburu (i-)su toono.*
 3PL-put possessions 3SG-descend ground
 They put the things down on the ground.

4.3.3.8 PREDICATES WHICH TAKE AN OBLIGATORY XCOMP¹ COMPLEMENT AND WHOSE SUBJECTS LACK A SEMANTIC ROLE

[<NP> __ XCOMP¹]

This type of subcategorisation is exhibited by the two modal verbs *-so* and *-rao* when they occur in conditional, abilitative, and obligative constructions like the following:

- (137) *Zin ti-so ti-la pa lup-ŋa-na,*
 NOM.3PL 3PL-say 3PL-go REF meet-NMS-3SG.GEN

ina-ko ti-ndeege pata-ŋa-na
 GIV-UC 3PL-find heavy-NMS-GEN.3SG
 If they go to the meeting, they will get in trouble.

- (138) *Niom ka-rao be ka-kam uraata ti som.*
 NOM.2PL 2PL-able NF 2PL-do work DEM NEG
 You are not able to do this work. or You should not do this work.

Semantically, the protasis of (137) can be represented as (*so (tila pa lupŋana)*) 'I imagine this: (they go to the meeting))', in which *-so* acts as an operator on *tila* expressing the idea that the state of affairs expressed by *tila* is one which the speaker is imagining. Thus, the overt Subject of *-so* does not have a semantic role. It is there more as a placebearer and as a controller of the Subject of *ti-la*, which does bear a semantic role. In (138), too, the Subject of *-rao* lacks a semantic role. Such Subjects are indicated in the subcategorisation frame as <NP>.

The Subjects of these modal predicates control the reference of the Subject of the embedded XCOMP.

4.3.3.9 PREDICATES WHICH TAKE AN OBLIGATORY COMP¹ COMPLEMENT

[NP __ COMP¹]

The only predicates in this class are the cognitive and intentional/desiderative senses of *-so* 'say, think, want':

- (139) *Nio aŋ-so zin ko ti-mar.*
 NOM.1SG 1SG-say/think NOM.3PL UC 3PL-come
 I think they will come.
- (140) *Nio aŋ-so=be zin ti-mar.*
 NOM.1SG 1SG-say/want=NF NOM.3PL 3PL-come
 I want them to come.

4.3.3.10 PREDICATES WHICH TAKE AN OPTIONAL XCOMP¹ COMPLEMENT

[NP __ (XCOMP¹)]

The predicates in this grouping are items like: *-maŋga* ‘get up, start’, *-toombo* ‘attempt, try’, *-seseere* ‘hurry to be the first to do something’, and *-kam* ‘do, get’ (which is used with state and process XCOMP¹s to encode an event which is on the verge of happening). All of these can take an XCOMP¹ whose understood Subject is coreferential with that of the main clause.

- (141) *Ti-toombo be ti-posop uraata.*
 3PL-try NF 3PL-finish work
 They tried to finish the work.
- (142) *Ingi i-kaam be i-saana.*
 this.one 3SG-do/get+RED NF 3SG-deteriorate
 This is about to go bad.

With the exception of the predicate *-kam*, the sentential Complements of all the predicates in this class are extraposed into PRED².

4.3.3.11 PREDICATES WHICH TAKE EITHER AN OBLIGATORY NP AND AN OPTIONAL XCOMP¹, OR AN OPTIONAL NP, PP AND COMP¹

[NP — { NP (XCOMP¹) }
 { (NP) (PP) (COMP¹) }]

The items in this class are mainly verbs of perception and cognition like *-re* ‘see, look, consider’ and *-leŋ* ‘listen, overhear, hear about, obey’. The COMP¹ Complements are introduced by either the form *(ta)kembei* ‘like (this)’ or *kokena* ‘lest’. When the *(ta)kembei* complementiser occurs, these verbs have a cognitive interpretation (i.e. ‘consider’, hear about’) rather than one of direct perception (144). When *-re* co-occurs with a COMP¹ introduced by *kokena*, it has the meaning ‘watch out lest COMP¹ happen’ (145). For example:

- (143) *Aŋ-re pitik tel ta-na na aŋ-morsop.*
 1SG-see star three SPEC-GIV GIV 1SG-be.startled
 When I saw those three stars, I was startled.

- (144) *Nio aŋ-re kembei mailaŋ, ina koron*
 NOM.1SG 1SG-see like feast that.one thing
ambai-ŋa-na som.
 be.good-NMS-GEN.3SG NEG
 I think that feasts are not a good thing.
- (145) *Ke-re (yom) (pizin): kokena ti-pakaam yom.*
 2PL-see ACC.2PL REF.3PL lest 3PL-deceive ACC.2PL
 You must watch (yourselves) (concerning them) lest they trick you.
- (146) *Aŋ-leŋ (sua) (pizin) kembei zin,*
 1SG-hear talk REF.3PL like NOM.3PL
mete i-kam zin.
 sickness 3SG-do/get ACC.3PL
 I heard talk about them that they are sick.

When these predicates encode direct sensory perception, their sentential Complements have no overt complementiser.

- (147) *Koozi te-re ∅ posi tie-ne*
 today 1PL.INC-see cat faeces-GEN.3SG
i-su sorok som.
 3SG-descend w.o.basis NEG
 Today, we don't see cats defecating just anywhere.
- (148) *Aŋ-re=i i-kem buza ku ta neeri.*
 1SG-see=ACC.3SG 3SG-steal knife LOC.2SG SPEC yesterday
 I saw him steal your knife yesterday.

Note in example (148) that the Actor of the embedded sentence is in the *Accusative* case (i.e. *i* rather than *ni*). This shows that the structure of such sentences involves a Object NP plus an XCOMP, with the XCOMP¹ Subject and main clause Object being coreferential.

[Aŋrev [=i] NP [ikem buza tio ta neeri] XCOMP] PREDP

The sentential Complements of cognitive predicates are extraposed to PRED², whereas those of predicates encoding direct sensory perception are PRED¹ constituents.

4.3.3.12 PREDICATES WHICH TAKE AN NP PLUS AN OPTIONAL PCOMP¹ COMPLEMENT

[NP __ NP (PCOMP¹)]

There is only one predicate which exhibits this type of subcategorisation: the verb *-kilaala* 'recognise, come to understand'. The category P(ronoun)COMP is an innovative one, and therefore requires explanation. A PCOMP is a blend of an XCOMP and an ordinary sentential COMP. Like the Subjects of XCOMPS, the Subjects of PCOMPS are obligatorily co-referential with an argument of the matrix sentence. Unlike the Subjects of XCOMPS, however, the Subjects of PCOMPS must be overtly expressed: *as a pronoun*. This is illustrated in the following examples:

- (149) *Nio aŋ-kilaal=u kek.*
 NOM.1SG 1SG-recognise=ACC.2SG PERF
 I have recognised you already.
- (150) *Nio aŋ-kilaal=u [kembei nu*
 NOM.1SG 1SG-recognise=ACC.2SG like NOM.2SG
lele-m pio som.]PCOMP
 insides-GEN.2SG REF.1SG NEG
 I recognise that you don't like me.

4.3.3.13 PREDICATES WHICH TAKE OPTIONAL PP AND PCOMP¹ COMPLEMENTS

[NP — (PP) (PCOMP¹)]

This class also contains a single member: the verb *-urla* 'believe in' (a compound of *-ur* 'put' plus *-la* 'go'). The prepositional phrase is somewhat exceptional, because it is in the *Locative* case rather than the more typical Referent case.

- (151) *Nio aŋ-urla (kini)*
 NOM.1SG 1SG-believe LOC.3SG
(kembei ni ko i-uulu yo).
 like NOM.3SG UC 3SG-help ACC.1SG
 I believe (in him) (that he will help me).

4.3.3.14 PREDICATES WHICH TAKE EITHER AN NP OR A COMP¹ COMPLEMENT

[NP — { NP
 COMP¹ }]

Again, this is a class containing a single member: the verb *-ute* 'know (a person, thing, or event)'. The sentential Complement is typically introduced by a null complementiser, but may also be introduced by *ta* and concluded with *na* in order to delineate precisely the scope of negation.

- (152) *Nio aŋ-ute i som.*
 NOM.1SG 1SG-know ACC.3SG NEG
 I don't know him.
- (153) *Nio aŋ-ute nu kem buza tio*
 NOM.1SG 1SG-know NOM.2SG 2SG+steal knife LOC.1SG
ta neeri.
 SPEC yesterday
 I know that you stole my knife yesterday.
- (154) *Nio aŋ-ute ta nu, mete*
 NOM.1SG 1SG-know SPEC NOM.2SG sickness
i-kam=u na som.
 3SG-do=ACC.2SG GIV NEG
 I didn't know that you were sick.

- (155) *Nio aḡ-ute ta zin ti-mar som na som.*
 NOM.1SG 1SG-know SPEC NOM.3PL 3PL-come NEG GIV NEG
 I didn't know that they didn't come.

In example (153) note that the second singular pronoun is in the Nominative form *nu* rather than the Accusative form *=u*. This shows that it does not bear the Object role in the matrix sentence. This contrasts with an example like (148) above, in which the Actor of the embedded clause is encoded by an Accusative pronoun. Examples (154) and (155) illustrate the use of bracketing with *ta ... na* in order to delineate precisely the scope of negation.

4.3.3.15 PREDICATES WHICH TAKE AN OPTIONAL PP OR AN OPTIONAL COMP¹

[NP — { (PP)
(COMP¹) }]

The forms exhibiting this sort of subcategorisation include: the inflected verb *-miu* 'dream', and a number of body parts like *lele-* 'insides', *mbura-* 'strength', and *ni-* 'body'. The latter are used in body-image constructions to encode notions of 'liking' and 'wanting':

- (156) *Mbeḡi aḡ-miu pa tama-ḡ.*
 last.night 1SG-dream REF father-GEN.1SG
 Last night I dreamt about my father.
- (157) *Nio aḡ-miu pa mbeḡ be aḡ-la Amerika.*
 NOM.1SG 1SG-dream REF night NF 1SG-go America
 I dreamt at night that I went to America.
- (158) *Nio lele-ḡ pini som.*
 NOM.1SG insides-GEN.1SG REF.3SG NEG
 I don't like him.
- (159) *Nio lele-ḡ (**pa mbeḡ) be ti-mar.*
 NOM.1SG insides-GEN.1SG REF night NF 3PL-come
 I wanted them (at night) to come.

From example (157) it can be seen that the sentential Complements of *-miu* are PRED² constituents, while those of the inalienable body-part predicates are PRED¹ constituents (159). Because the sentential Complements of all the predicates in this class encode non-factual states of affairs, they are introduced by the complementiser *be*.

4.3.3.16 PREDICATES WHICH TAKE AN NP AND AN OPTIONAL PP OR XCOMP¹

COMPLEMENT

[NP — NP { (PP)
(XCOMP¹) }]

The predicates exhibiting this subcategorisation are mainly manipulative verbs like *-piyar* 'hurry someone to do something', *-boobo* 'call to someone', *-sokere* 'incite', *-ḡgalsek* 'prohibit', *-pateke* 'permit', *-peteke* 'prevent', *-kolo* 'motion to someone', *-ḡgo* 'send someone', and *-wi* 'ask'. Also in this class are the verbs *-ndemeere* 'trust someone or something to do something', *-naama* 'wait for', and *-paata* 'pronounce'. With the

manipulative verbs and *-naama* 'wait for', the XCOMP¹ encodes the action desired of the individual encoded as the Object. With *-ndemeere* 'trust', the XCOMP¹ encodes what the individual is being trusted to do, and with *-paata* 'call' the XCOMP¹ encodes a pronouncement that is made about an individual. If a Referent phrase occurs, it encodes some entity with respect to which the manipulation is being made:

- (160) *Tana aŋ-piyar zin (pa uraata).*
 therefore 1SG-hurry.up ACC.3PL REF work
 Therefore I hurried them up (with the work).
- (161) *Aŋ-piyar zin be ti-posop uraata.*
 1SG-hurry.up ACC.3PL NF 3PL-finish work
 I hurried them to finish the work.
- (162) *Tomtom ta-kembe na, am-paat=i*
 person SPEC-like GIV 1PL.EXC-call=ACC.3SG
be tomtom ambai-ŋa-na.
 NF person be.good-NMS-GEN.3SG
 A person like that, we call him a good person.

It is instructive to compare an example like (161) above with the following one:

- (163) *Aŋ-piyar zin ma ti-posop uraata.*
 1SG-hurry.up ACC.3PL and 3PL-finish work
 I hurried them into finishing the work.

In (161) the finishing of the work has not yet happened by the time of utterance, whereas in (163) it has. All the manipulative verbs exhibit similar *cosubordinate* constructions with *ma* when the manipulation is encoded as having *already* produced the desired action.

The XCOMPs of manipulative predicates are extraposed to PRED², while those of *-paata* 'call' and *-ndemeere* 'trust' occur in PRED⁰.

4.3.3.17 PREDICATES WHICH TAKE TWO OPTIONAL PPS OR AN OPTIONAL PP AND AN OPTIONAL XCOMP¹

$$[\text{NP} \text{ — } (\text{PP}) \left\{ \begin{array}{l} (\text{PP}) \\ (\text{XCOMP}^1) \end{array} \right\}]$$

This group contains some other manipulative verbs like *-suŋ* 'pray, ask someone to do something', *-so* 'say' (with the sense 'tell someone to do something'), and *-yok* 'agree'. The verb *-mbuuru* 'plot against' is also in this grouping. With all of these verbs, the first PP, if present, encodes the individual *to whom* the action is directed, while the XCOMP¹ encodes the desired outcome:

- (164) *Aŋ-suŋ pa Anutu (be i-uulu yo).*
 1SG-pray REF God NF 3SG-help ACC.1SG
 I prayed to God (that he would help me).

If, instead of an XCOMP¹, a second PP occurs, it encodes an entity regarding which the manipulation is being made (165).

- (165) *Aḡ-suḡ pini pa pata-ḡa-na tio.*
 1SG-pray REF.3SG REF heavy-NMS-GEN.3SG LOC.1SG
 I prayed to him about my trouble.

The XCOMPs of these predicates are all extraposed to the PRED² constituent.

4.3.3.18 PREDICATES WHICH TAKE AN OBLIGATORY NP PLUS TWO OPTIONAL PP COMPLEMENTS, OR AN NP PLUS AN OPTIONAL PP COMPLEMENT AND AN OPTIONAL XCOMP¹ OR COMP¹ COMPLEMENT

[NP — NP (PP) { (PP)
 (XCOMP¹/COMP¹) }]

The items in this grouping are: 1) periphrastic verb constructions consisting of the verb *-kam* 'do/get' plus various action nouns like *ḡgar* 'thinking', *sua* 'talk', etc., 2) *-so* 'say', and 3) other idiomatic sequences like *-mbuk sua* 'promise' (lit. 'tie talk'), *-ḡgeele sua* 'discuss talk', *-ḡgeele ka-kiizi* 'plot' (lit. 'discuss a trap'), *-ur mata-* 'hope' (lit. 'put eye').

- (166) *Nio aḡ-ur moto-ḡ pini pa uraata.*
 NOM.1SG 1SG-put eye-GEN.1SG REF.3SG REF work
 I am relying on him for the work.

- (167) *Zin ti-kam ḡgar pio be ti-uulu yo na som.*
 NOM.3PL 3PL-do thinking REF.1SG NF 3PL-help ACC.1SG GIV NEG
 They didn't think to help me.

The sentential Complements of these predicates are all extraposed to the PRED² constituent.

4.3.3.19 THE VERB *-moto* 'FEAR'

The verb *-moto* 'fear, be afraid' is remarkable in the range of Complement types it exhibits, taking: 1) NPs (168), 2) PPs (169), 3) XCOMP¹s introduced with the non-factual complementiser *be* (170), 4) and negative purpose COMP¹s introduced with the complementiser *kokena* (171), (172):

- (168) *Nio aḡ-moto=i.*
 NOM.1SG 1SG-fear=ACC.3SG
 I am afraid of him.
- (169) *Nio aḡ-moto pini.*
 NOM.1SG 1SG-fear REF.3SG
 I am afraid for him.
- (170) *Nio aḡ-moto be aḡ-la.*
 NOM.1SG 1SG-fear NF 1SG-go
 I am afraid to go.
- (171) *Nio aḡ-moto pa mbeḡ: kokena ti-pun yo.*
 NOM.1SG 1SG-fear REF night lest 3PL-hit ACC.1SG
 I was afraid at night that they would hit me.

- (172) *Nio aŋ-moto pini: kokena ti-pun=i.*
 NOM.1SG 1SG-fear REF.3SG lest 3PL-hit=ACC.3SG
 I am afraid for him that they might hit him.

The sentential Complements of *-moto* are extraposed (171).

4.3.4 PRED¹ ADJUNCTS: INSTRUMENTS, BENEFACTIVES, ACCOMPANIMENT, AND MANNER

PRED¹ Adjuncts occur after all non-extraposed PRED¹ Complements, and before any PRED² Specifiers or extraposed Complements. The PRED¹ Adjuncts are all prepositional phrases and encode the following types of notions: INSTRUMENTS, BENEFACTIVES, ACCOMPANYING ENTITY,⁴⁵ and MANNER. INSTRUMENTS are implements which are intentionally used by someone to perform some action (173), while BENEFACTIVES encode individuals on whose behalf an action is performed (174). If both a BENEFACTIVE and an INSTRUMENT are present in the same sentence (which is extremely rare), the BENEFACTIVE precedes the INSTRUMENT (175). This is in accordance with the general tendency in the language for animate arguments to come before inanimate ones in the same sentence.

- (173) *Nio aŋ-taara ke pa nakabasi.*
 NOM.1SG 1SG-cut tree REF axe
 I cut the tree with an axe.
- (174) *Ngiimi zin to ti-kam uraata pu.*
 2SG+pay ACC.3PL then 3PL-do work REF.2SG
 Pay them and then they will work for you.
- (175) *Nio ko aŋ-kam korog pu pa pat tio.*
 NOM.1SG UC 1SG-get thing REF.2SG REF money LOC.1SG
 I will get something for you with my money.

With regard to collocational restrictions, essentially any predicate encoding an action which someone does intentionally permits an INSTRUMENTAL or BENEFACTIVE Adjunct.

Organs of perception can be viewed as a kind of quasi-INSTRUMENT. In Mangap-Mbula, they may be encoded using either the Referent preposition *pa* or the Locative preposition *ki*, with no apparent difference in meaning.

- (176) *Aŋ-re i pa/ki moto-ŋ.*
 1SG-see ACC.3SG REF/LOC eye-GEN.1SG
 I saw him with my (own) eyes.

⁴⁵ Accompaniment and manner are expressed using the preposition *raama*. Examples can be found in §3.2.6.4.

4.3.5 NON-SENTENTIAL PRED² (=PREDP) CONSTITUENTS (SPECIFIERS FOR TIME, PLACE, AND DISTRIBUTION)

The non-sentential PREDP constituents are mainly Specifiers for TIME and OUTER LOCATION. They also express distributive notions like 'twice', 'once', 'never'. These always occur at the outer periphery of the predicate phrase, following all *non-sentential* PRED¹ Complements and Adjuncts. Sentential Adjuncts and Extraposed *Sentential* Complements occur, however, *following* the PREDP Specifiers. There are essentially no collocational restrictions on what Specifiers can occur with what predicates, except that predicates encoding some sort of punctiliar event semantically clash with TIMES that are extended. Thus, a sentence like ??*The rope snapped in half for two days* sounds quite odd in English, as does its Mangap-Mbula equivalent ??*Wooro imet pa aigule ru*. OUTER LOCATIONS encode the locale at which an event as a whole takes place. Both TIMES and OUTER LOCATIONS may be expressed using the Referent preposition *pa*, but the latter are also frequently expressed using serialised motion verbs (177). Extended TIMES or durations exhibit an alternative serialised encoding with the verb *-rao* (178). Frequency is encoded by the combination of *pa* plus a quantifier (179).

- (177) *Ti-kam uraata pa/i-su Lae.*
 3PL-do work REF/3SG-descend Lae
 They worked in Lae.
- (178) *Ti-kam uraata pa/i-rao ndaama ru.*
 3PL-do work REF/3SG-adequate year two
 They worked in Lae for two years.
- (179) *Niam am-kan pa ru.*
 NOM.1PL.EXC 1PL.EXC-eat REF two
 We ate twice.

When multiple Specifiers are present in a single clause, they exhibit no fixed ordering with respect to each other.

The aspectual and temporal adverbs of Classes 4 and 5 like *neeri* 'yesterday', *kek* 'perfect', and *zen* 'negative perfect' are PREDP operators, obligatorily occurring *after* any non-sentential PREDP constituents, but before sentential ones:

- (180) *Zin ti-kam uraata (**kek) pa ndaama ru kek.*
 NOM.3PL 3PL-do work PERF REF year two PERF
 They have worked for two years.

If both a temporal and an aspectual adverb occur, the temporal adverb precedes the aspectual one:

- (181) *Zin ti-mar neeri kek (**kek neeri).*
 NOM.3PL 3PL-come yesterday PERF
 They had already come yesterday.

4.3.6 SENTENTIAL PREDP CONSTITUENTS (EXTRAPOSED COMPLEMENTS AND PURPOSE CLAUSES)

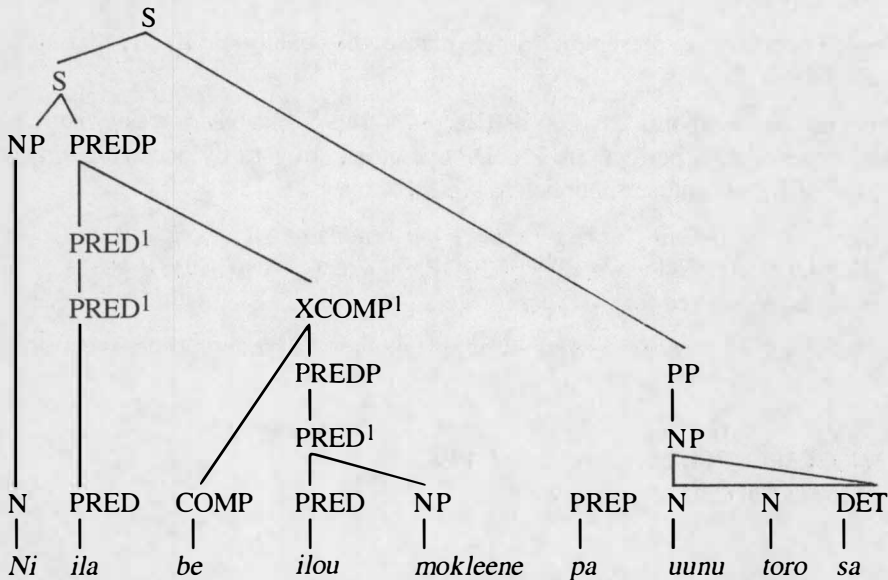
The only *sentential* PREDP constituents are: 1) Extraposed sentential Complements, and 2) purpose clauses. Since the extraposed Complements are discussed and illustrated in §4.3.1 and §4.3.3ff., no further examples will be given here.

Purpose clauses are introduced by the complementiser *be*, and are XCOMP¹ units. Their Adjunct status is evidenced by their ability to recursively 'stack up':

- (182) *Nio aŋ-la Lablab uriizi be aŋ-giimi kini*
 NOM.1SG 1SG-go Lablab two.days.ago NF 1SG-buy food
be aŋ-kam pizin wal uraata ka-n.
 NF 1SG-do/get REF.3PL group work PASS.GEN-GEN.3PL
 I went to Lae two days ago to buy food to give to the workers.

Purpose clauses, like the extraposed sentential Complements, occur at the outermost periphery of the predicate phrase, following the PRED² Specifiers for TIME and OUTER LOCATION and any PRED² adverbs. They are considered to be constituents of the predicate phrase rather than the sentence mainly because they *always* occur *preceding* prepositional phrases encoding REASONS. Consider the following example and its associated tree diagram:

- (183) *Ni i-la be i-lou mokleene*
 NOM.3SG 3SG-go NF 3SG-visit garden
pa u-unu toro sa.
 REF reason-GEN.3SG other NON-REF
 He went to visit the garden for some other reason.



In this example, it would be ungrammatical to have the purpose clause occur after the prepositional REASON phrase. Since, *ceteris paribus*, sentential constituents normally occur after prepositional ones in the PREDP, the purpose and reason constituents appear to be

functioning on significantly different structural levels. Purpose clauses are therefore considered to be PREDP Adjuncts, and reason prepositional phrases are considered to be Sentence Adjuncts.

The following immediate dominance rule is postulated for PRED².

PRED²/PREDP \Rightarrow H¹, (PP)*, (XCOMP¹), (ADV₄), (ADV₅)

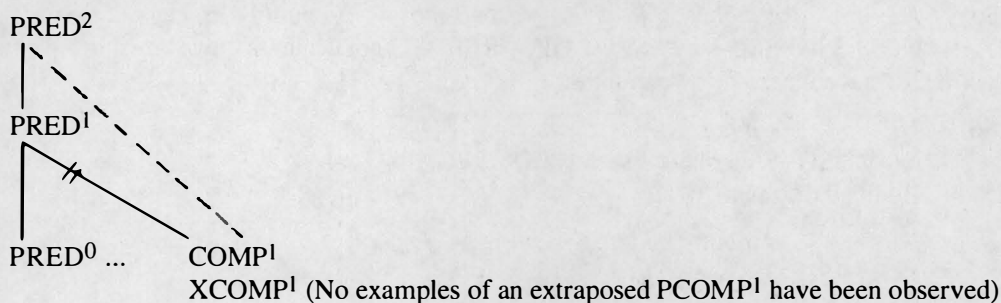
Prepositional phrases in the PRED² constituent will precede purpose clauses by the general ordering constraint that

NP < PP < Sentential constituents

A further ordering constraint is necessary for the adverbs:

PP < ADV₄ < ADV₅ < S.

As for the extraposed sentential Complements, we assume that underlyingly they are part of PRED¹ but become attached to PRED² by a process of extraposition:



4.4 SIMPLER PHRASE TYPES

This section describes various types of phrases which do not exhibit as much structural complexity as noun and verb phrases. The types to be discussed are: 1) prepositional phrases, 2) quantifier phrases, and 3) adverb phrases.

4.4.1 PREPOSITIONAL PHRASES

The following items function as the HEADS of prepositional phrases: 1) the Referent preposition *pa* ~ *p-*, 2) the Locative preposition *ki* ~ *k-*, 3) the accompaniment preposition *ramaki* 'with' and the accompaniment/manner preposition *raama* 'with', 4) the form *kembei(ta)* 'like, as', and 5) various prepositional/serial verbs.

NPs governed by *pa* ~ *p-* exhibit a wide variety of semantic roles, including: SOURCE, inanimate INNER LOCATION and GOAL, BENEFACTIVE, INSTRUMENTS, CAUSE, TIME, OUTER LOCATION, and DISTRIBUTIVE. These are illustrated in §3.2.2.3 and §3.2.6.1 of the morphology chapter, and additional examples can be found in the sections of this chapter detailing PRED¹ and PRED² constituents. In addition to governing noun phrases, *pa* may govern a sentential Complement, in which case it encodes a REASON as in (184) below. The form *kembei(ta)* 'like, as' likewise governs both nominal and sentential Complements:

- (184) *Aikur lele-ene ambai som,*
 Aikur insides-GEN.3SG be.good NEG
pa ti-pa-saana uru-unu tau.
 REF 3PL-CAUS-deteriorate reputation-GEN.3SG EMPH
 Aikur is upset because they have ruined his reputation.

NPs governed by *ramaki* encode accompaniment within the noun phrase whereas those governed by *raama* encode accompaniment and manner Adjuncts within the predicate phrase. For examples, see §3.2.6.4 and §4.2.5.

NPs governed by the Locative preposition *ki* encode: 1) animate or potent LOCATIONS, 2) animate or potent GOALS, and 3) body parts which perceive. For examples, see §3.2.2.4 and §3.2.6.2 of the morphology chapter.

Serialisations⁴⁶ with motion verbs frequently function as a substitute for, or in conjunction with, the prepositions *pa* and *ki* in the encoding of locative or temporal notions:

- (185) *Ni i-mbot ti-na pa/i-rao puulu ru.*
 NOM.3SG 3SG-stay SPEC-GIV REF/3SG-able month two
 He stayed there for two months.
- (186) *Ni i-mbot se kizin.*
 NOM.3SG 3SG-stay ascend LOC.3PL
 He lived off them.
- (187) *Ni i-mbot kizin.*
 NOM.3SG 3SG-stay LOC.3PL
 He stayed with them.
- (188) *Ti-ur koroŋ pa/i-la mokleene.*
 3PL-put thing REF/3SG-go garden
 They put something (a magical fetish that will cause trespassers to be afflicted) in the garden.
- (189) *Zin ti-kam uraata pa/i-su Lae.*
 NOM.3PL 3PL-do work REF/3SG-descend Lae
 They worked in Lae.
- (190) *Kam koroŋ pizin.*
 2SG+do thing REF.3PL
 Give the thing to them.
- (191) *Kam koroŋ ta-na i-la kizin.*
 2SG+do thing SPEC-GIV 3SG-go LOC.3PL
 Take the thing to them.

Note from example (186) that, if both a serial verb and a true preposition are present, then the serial verb always precedes the true preposition. It is rare to have examples like (188) and (189), in which a serial verb and a true preposition are freely substitutable with no apparent change in meaning. More typical are pairs of examples like (190) and (191), in which the use of a serial verb versus a true preposition is correlated with a difference in meaning.

⁴⁶ For further discussion of serialisation, see §5.5.1.

On the basis of the above discussion, the following prepositional phrasal formulae are postulated:

PP/P ¹	⇒	H ⁰ ,	NP	(for <i>ki</i> , <i>ramaki</i> , <i>raama</i>)
PP/P ¹	⇒	H ⁰ ,	{ NP S }	(for <i>pa</i> and <i>kembe(ita)</i>)
PP/P ¹	⇒	H ⁰ ,	{ (NP) (P ¹) }	(for the serial verbs)

The relative ordering of HEADS and their Complements for the above rules is handled by the general principle that X⁰ lexical HEADS precede their Complements.

Recalling the discussion of §3.2.7, if locative adverbs like *kor* 'above' and *ndapet* 'seaward part of a village' are analysed as *intransitive* prepositions (i.e. prepositions which take no Complements), then the following immediate dominance rule is also required:

PP/P¹ ⇒ H⁰

When the NP Complement co-occurring with a preposition is a pronoun, the pronoun occurs in the Accusative case and is phonologically fused with the preposition, yielding what has been termed the Referent and Locative series of pronouns (actually pro-PPs). These are reproduced below:

1SG	<i>pio</i>	<i>tio</i>
2SG	<i>pu</i>	<i>ku</i>
3SG (animate)	<i>pini</i>	<i>kini</i>
3SG (inanimate)	<i>pa</i> ⁴⁷	<i>ki</i>
1PL.INC	<i>piti</i>	<i>kiti</i>
1PL.EXC	<i>piam</i>	<i>tiam</i>
2PL	<i>piom</i>	<i>tiom</i>
3PL	<i>pizin</i>	<i>kizin</i>

Similarly, when these prepositions govern a noun complex headed by Accusative forms like the following:

<i>yam kolman</i>	we old people (lit. us (EXC) old.person)
<i>zin kolman</i>	old people (lit. plural old.person)

the Accusative forms are phonologically adjoined to *p-* or *k-*, yielding expressions like:

<i>piam kolman</i>	for/from us (EXC) old people
<i>kizin kolman</i>	to/with old people

No textual examples have been found of coordinated prepositional phrases, nor has it proved possible to elicit any. Therefore, coordination of prepositional phrases does not seem to be possible.

⁴⁷ The normal encoding of highly given, inanimate, non-Subject entities is simply to omit them.

4.4.2 QUANTIFIER PHRASES

Quantifier phrases are best analysed as being potentially composed of *quantifier complexes* which are then coordinated. Quantifier complexes consist of either: 1) a **non-numeral** quantifier like *boozo* 'many, much', *ri* 'a little', *pakan* 'some, a few', or 2) **one or two** optional quantity classifiers plus a numeral from one to five,⁴⁸ all of which are assumed to belong to the QUANT syntactic category. Quantity classifiers include:

<i>lama ~ laamu ~ lamo</i>	five
<i>tomoot ~ tomtoo ~ tomtu</i>	twenty
<i>munḡaana</i>	400, 1000. very many
<i>pius</i>	ten kina
<i>me</i>	group of four coconuts
<i>se</i>	pair of coconuts
<i>zaraana</i>	group of five small spherical objects (like betelnut)
<i>peseene</i>	bundle of 4-6 leaves
<i>zaraaba</i>	large bundle/100 kina

Examples of quantifier complexes would be:

<i>tomoot-ta</i>	one twenty-20
<i>pius laamur-ru</i>	two fives of ten kina -100 kina
<i>munḡaana ru</i>	two 400s/1000s -800/2000
<i>ni me lama-ta</i>	one group of five groups of four coconuts-20 coconuts

Quantifier complexes are generated by the following immediate dominance rule:

$$\text{QUANT}^0 \Rightarrow \text{H}^0 . (\text{QUANT}^0)$$

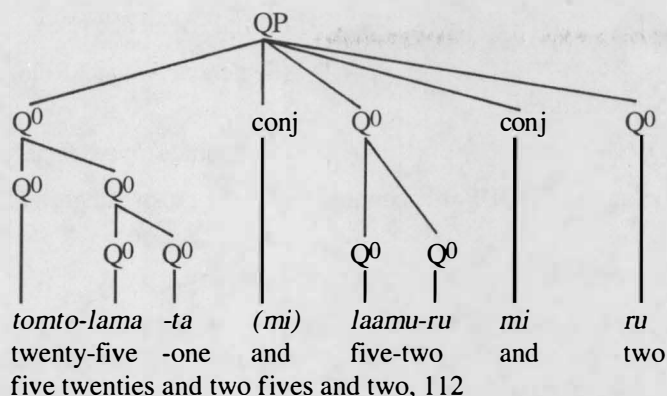
Rules for the linear ordering of elements in the quantifier complex involve the following two constraints.

1. Quantity classifiers encoding both quantity and the type of entity quantified precede expressions which encode only quantity.⁴⁹
2. Larger quantities precede smaller ones.

Quantifier complexes may be coordinated to yield more complex expressions of quantity like the following:

⁴⁸ The numerals are frequently phonologically bound to the quantity classifiers.

⁴⁹ In the noun phrase section of this chapter, it was noted that the relative ordering of property, quantifying, determining, and prepositional genitive modification is perhaps derivable from a more general functional principle that modifiers having a greater effect upon the *type* of the head noun occur closer to it. Here, a similar principle can be observed to be at work. Those quantity modifiers which specify the *type* of entity quantified occur first. Then, the numeral modifiers specifying larger quantities like five, twenty, and four hundred occur, followed by the numerals for one to five. As an extreme example, the real world referent of *four hundred dogs* would seem to be qualitatively different from *one dog* or *two dogs*. In particular, how someone would interact with four hundred dogs is radically different than how he would interact with one or two.



In such coordinations, the constraint that larger numbers occur before smaller ones is again applicable. It is common to use the form *kwoono* 'its mouth' as a substitute for the conjunction *mi* after quantifier complexes containing the larger quantifiers *tomtolamata*, *tomtolaamuru*, and *munjaana*. Thus, another version of the number 112 would be *tomtolamata kwoono laamuru mi ru*.

A final expansion possibility for quantity phrases is to add a Class 7 or 8 adverb like *kat* 'really, very', *men* 'only' or *mete* 'too', yielding expressions like *boozo kat* 'very many', *boozo mete* 'too much', *ru kat* 'exactly two', *ru men* 'only two'. Thus, there is a quantifier adverb introduction rule:

$$QP \Rightarrow Q^0, (\text{ADV}_{7,8})$$

4.4.3 ADVERB PHRASES

The only multilexemic adverb phrases involve degree modifiers being added to some manner adverbs, yielding expressions like *joobo kat* 'very incorrectly'. Here, as is generally the case, the lexical HEAD precedes any modifiers. Accordingly we need posit only the following immediate dominance rule:

$$\text{ADV}_P \Rightarrow \text{HEAD}^0, (\text{ADV}_{\text{DEGREE}})$$

4.5 STRUCTURE OF NON-CONJOINED SENTENCES

4.5.1 INTRODUCTION

Having examined all the major and minor phrase types, we can now turn our attention to the structure of simple, non-conjoined sentences.⁵⁰ As was noted earlier, Mangap-Mbula is an SVOX language. To be able to generate the full range of sentences observed, a number of immediate dominance rules appear to be necessary:

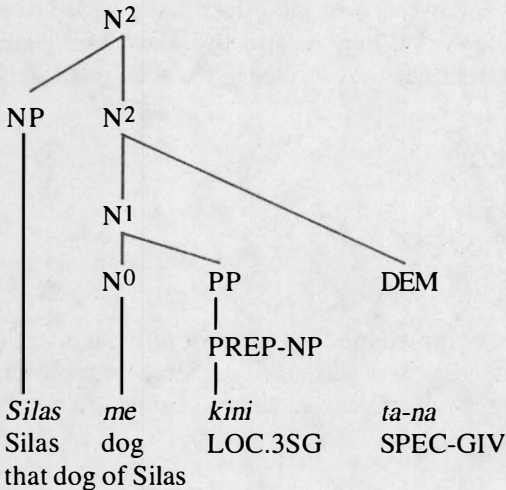
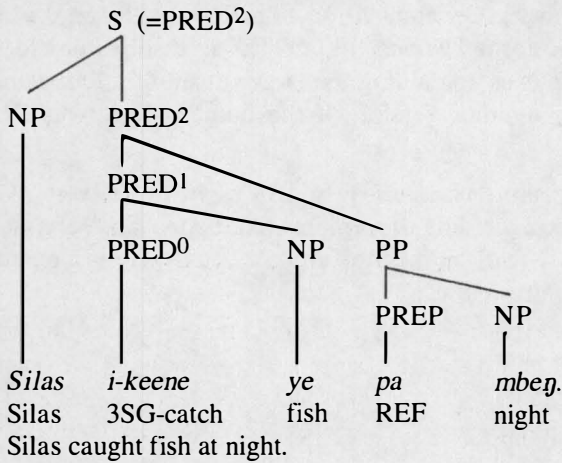
⁵⁰ The structure of complex and conjoined sentences is treated in Chapter 5.

- S ⇒ PREDP (=HEAD) , NP (Simple Sentence rule)
 S ⇒ H , (PP) (Sentential Adjunct Rule)
 [PFORM *pa, kember*]
 S ⇒ H , ((*na*) ADV₆) (Sentential Adverb Rule)

The ordering of the Subject before the PREDP is accounted for by the cross-categorical linear precedence rule that:

NP < HEAD [bar level 2] < PP

Note the similarity of the tree geometry of sentences to that of noun phrases containing thematised genitives. This is exactly what one would expect, given the hypothesis that languages tend towards cross-categorical harmony:



4.5.2 GRAMMATICAL RELATIONS

In Mangap-Mbula, Subjects and Objects can be structurally defined. A Subject is an NP occurring as a sister to a predicate phrase HEAD, while an Object is an NP occurring in the

PRED¹ constituent as a sister to a PRED⁰ lexical HEAD. The following characteristics of Subjects indicate their core syntactic status.

1. They are positioned immediately adjacent to the predicate.
2. (for non-pronominalised Subjects) They lack adpositional marking.
3. They are indexed on most⁵¹ verbs by Subject prefixes.
4. There are strong selectional restrictions between many Subject NPs and the predicates with which they co-occur, and the semantic roles of Subject NPs vary tremendously, being dependent upon the predicates and Objects with which they co-occur.
5. The reflexive-emphatic series⁵² of inalienable nouns are normally coreferential with the Subject NP.

The core status of Objects is likewise indicated by the following characteristics:

1. They too are positioned immediately adjacent to the predicate.
2. They never exhibit any adpositional marking.
3. There are strong selectional restrictions between the Object NP and the predicate, and the semantic roles of Object NPs vary tremendously, being dependent upon the predicates with which they co-occur.

Since there are no means like passivisation and dative shift to alter grammatical relations, with transitive predicates there is a very strong semantic correlation between Subjecthood and 1) sentience (=the ability to *know* that something is happening), and 2) causation.⁵³ If one participant in a situation exhibits both of these characteristics, that participant is invariably encoded as the Subject NP. If, however, there is no single participant in a situation which exhibits both of these characteristics, then it becomes more difficult to predict which entity will be encoded as Subject. Experiential constructions, in particular, exhibit great variability (Bugenhagen 1990).

With intransitive predicates, there is no correlation between Subjecthood, sentience, and causation, since the single core argument of such predicates is invariably encoded as Subject, regardless of its semantic role.

The Objects of transitive verbs are prototypically inanimate entities to which something 'happens', and which are viewed as having no control over the situation. This correlation is far from perfect, however, since Experiencers may also be encoded as Objects.

Although the correlation between syntactic role and semantic function is not completely predictable for predicates, the assignment of semantic roles to Subjects and Objects of individual predicates is lexically fixed. Thus, Mangap-Mbula can be characterised as a language having a 'semantic pivot'.⁵⁴

⁵¹ Recall that there is a subclass of verbs which do not exhibit agreement morphology. See §3.2.3.2ff. for further discussion.

⁵² See §3.2.1.2 for further details regarding this series.

⁵³ See Bugenhagen (1989a) for a more extensive discussion of this correlation.

⁵⁴ See Foley and Van Valin (1984:117-120) for further discussion of this term.

In lengthy texts the referents of Subject noun phrases are statistically usually known from the context, whereas Objects more typically constitute new information. The textual norm is that a Subject is coreferential with the Subject of the immediately preceding clause.⁵⁵

4.5.3 ADJUNCTS OF SENTENCES

The following sentential Adjunct rule is needed in order to generate the two types of sentential Adjuncts: Reasons and Similes.

S ⇒ HEAD, (PP)
[PFORM *pa*, *kembei(ta)*]

Reasons are governed by the Referent preposition *pa*, and similes are governed by the preposition *kembei(ta)* 'like':

- (192) *Zin ti-kam uraata som pa kete-n malmal tau.*
NOM.3PL 3PL-do work NEG REF liver-GEN.3PL angry EMP
They didn't work because they were angry.
- (193) *Zin ti-kam uraata som pa u-unu toro.*
NOM.3PL 3PL-do work NEG REF reason-GEN.3SG other
They didn't work for some other reason.
- (194) *Zin ti-kam uraata kembei(-ta) niam*
NOM.3PL 3PL-do work like-SPEC NOM.1PL.EXC
am-kam na som.
1PL.EXC-do GIV NEG
They don't work like we do.

Note from examples (192) and (193) that these sentential Adjuncts may be either nominal or sentential. If, on analogy with predicate complementation, *pa* and *kembei(ta)* are analysed as taking both nominal and sentential Complements, then the sentential reasons and similes can also be treated as categorially instancing prepositional phrases.

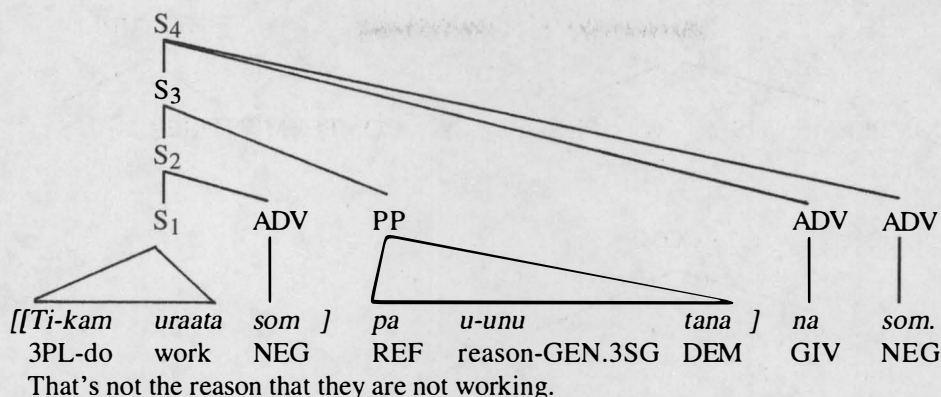
4.5.4 SENTENTIAL ADVERBS

The ad-S operators are mostly modal in nature, consisting of Class 6 adverbs like: *pepe* a prohibitive, ('I don't want you to do this'), *rimos* a cessative, ('I want you to quit doing this'), *som* 'a negative', *lak* 'I want you to do this now', *na*₁ (with rising intonation) 'Do you agree with this?', and *na*₂ (with normal intonation), which is used to delineate the boundaries of sentential Complements. As befits their sentential status, these operators occur at the extreme boundary of a sentence, outside all PREDP Specifiers and ad-PREDP forms. They are introduced by the rule:

S ⇒ S, ((*na*) ADV₆)

Note that these operators are introduced by a different rule from the one introducing sentence Adjuncts. This is necessary in order to account for recursive examples like the following:

⁵⁵ See §6.4.2.1 for details.



The first negative is introduced by the Sentence Adverb immediate-dominance rule yielding a new sentence S_2 . The reason Adjunct is then added to S_2 by the Sentence Adjunct rule, yielding S_3 . The form *na* plus another negative is then added to S_3 by another application of the Sentence Adverb rule, yielding S_4 .

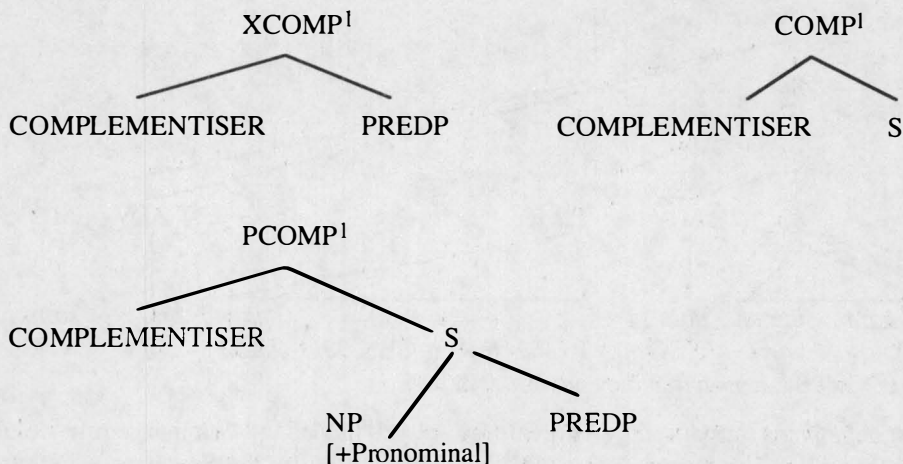
4.5.5 SENTENTIAL THEMES

Sentences have the option of having a number of different types of constituents occurring in a special, sentence initial 'thematic' position. Occurrence in this position is determined by discourse pragmatics. Thematised constituents are usually either contrastive with something else, or somehow serve to orient a sentence with respect to the surrounding discourse context. Following Halliday (1985:53-54) we can divide sentence-initial Themes up into: 1) textual ones (=conjunctions), 2) interpersonal ones (=interjections), and 3) ideational ones (=fronted NPs, sentence-initial temporal expressions, and conditionals). Where multiple Themes occur, the three different types are typically ordered as follows: textual < interpersonal < ideational. A more extended discussion of the various types of Themes can be found in §6.3. For the purposes of this chapter, it is sufficient to note that a variety of phrase types can occur sentence-initially for pragmatic purposes. A few representative examples are given below:

- (195) *Koozi, niam yut am-la*
 today NOM.1PL.EXC youth 1PL.EXC-go
am-kam uraata pa kopra.
 1PL.EXC-do work REF copra
 Today, we young men went and did copra work. (Thematised temporal adverb)
- (196) *To pat tana, ni i-ur le-la pelpeelee kini.*
 then stone DEM NOM.3SG 3SG-put enter-go basket LOC.3SG
 Then that stone, he put it in his basket. (Textual Theme/conjunction, plus ideational Theme/topicalised Object.)

4.6 THE STRUCTURE OF SENTENTIAL COMPLEMENTS

Sentential Complements have the following structures:



In these, the complementiser functions as the HEAD of the (X/P)COMP¹ unit.

The distinction between XCOMPs and PCOMPS versus COMPs has to do with whether or not the Subject of the embedded sentence is *controlled*; that is whether or not it is *obligatorily co-referential* with some argument of the matrix sentence. The Subjects of COMPs are free (197), whereas the Subjects of XCOMPs and PCOMPs are controlled:

- (197) *Nio aŋ-ute [(ta) Apei i-mar neeri na] som.*
 NOM.1SG 1SG-know SPEC Apei, 3SG-come yesterday GIV NEG
 I didn't know that Apei came yesterday.

Depending on the main clause predicate, XCOMP¹ Subjects are controlled by: 1) the matrix clause Object (198), 2) a prepositional phrase in the matrix clause (199), (200), or 3) the Subject of the matrix clause (201) (the rarest type of control).

- (198) *Nio aŋ-re i [∅ i-kem mburu ku].*
 NOM.1SG 1SG-see ACC.3SG 3SG-steal things LOC.2SG
 I saw him steal your things.

- (199) *Nio aŋ-so pini*
 NOM.1SG 1SG-say REF.3SG
[be ∅ i-kam mbulu ta-na pepe].
 NF 3SG-do behaviour SPEC-GIV PROH
 I told him to not behave like that.

- (200) *Nio aŋ-kilaal=u*
 NOM.1SG 1SG-recognise=ACC.2SG
[kembei nu tomtom sanan-ŋo-m].
 like NOM.2SG person bad-NMS-GEN.2SG
 I have recognised you for what you are: a bad person.

- (201) *Ni i-mbuk sua pio*
 NOM.3SG 3SG-tie talk REF.1SG
[be ∅ i-kam ŋge ta pio].
 NF 3SG-do/get pig SPEC REF.1SG
 He promised (lit. tied talk) to me that he would give a pig to me.

The distinction between XCOMPs and PCOMPs has to do with how the controlled Subject of the embedded clause is realised. In XCOMPs it is obligatorily omitted (198), (199), (201), whereas in PCOMPs it is realised by a co-referring Nominative pronoun (200). Since sentential Complementation is treated at some length in §5.3, nothing more will be said about it here.

4.7 THE SYNTAX OF BODY-IMAGE EXPRESSIONS

The number of inherently experiential verbs in Mangap-Mbula seems to be quite small compared to verbs encoding other types of notions. The ones identified thus far are:

<i>-moto</i>	fear
<i>-kankaana</i>	confused, crazy, stupid, drunk
<i>-re</i>	see (also 'look', 'consider')
<i>-lej</i>	hear (also 'listen' or 'obey')
<i>-ute</i>	know
<i>-kilaala</i>	recognise
<i>-yamaana</i>	feel
<i>-kanamaala</i>	to vaguely sense something
<i>-gadgaada</i>	not in control of oneself
<i>-murur</i>	shiver in fright or wonder
<i>-morsop</i>	be startled
<i>petel</i>	hungry
<i>miri</i>	thirsty
<i>menmeen</i>	happy
<i>-twer</i>	be worried
<i>-meete</i>	die, be unconscious

Given this paucity of inherently experiential *verbs*, there have to be other ways of talking about people's emotions and feelings. As in many other Papua New Guinea languages (McElhanon 1977), one of the major means of encoding experiences is via constructions involving various body parts. The predicates of such constructions consist of an inalienable body-part noun which may or may not be followed by a concrete verb. The noun in such constructions is never modified in any way. This type of construction is used to encode perception (202), most emotions (203) - (206), and physical states (207) - (209):

- (202) *Taljo-ŋ i-kam sua kizin.*
 ear-GEN.1SG 3SG-get talk LOC.3PL
 I overheard them talking.
- (203) *Kete-ene i-pakpak.*
 liver-GEN.3SG 3SG-sour
 He is very upset.
- (204) *Nangaj kete-n (i-)se pa narooŋo.*
 young.man liver-GEN.3PL 3SG-ascend REF dance
 The young men got excited by the dance.
- (205) *Kopo-m (i)-rru paso?*
 stomach-GEN.2SG 3SG-seek+RED why
 Why are you anxious?

- (206) *Lele-ŋ* (i)-saana pa tizi-ŋ
 insides-GEN.1SG 3SG-deteriorate REF y.brother-GEN.1SG
ta i-meete na.
 SPEC 3SG-die GIV
 I feel bad about my younger brother who died.
- (207) *Ni-ŋ* (i)-saana.
 body-GEN.1SG 3SG-go.bad
 I am exhausted.
- (208) *Nio aŋ-la mbasiri-ŋ.*
 NOM.1SG 1SG-go urine-GEN.1SG
 I went and urinated.
- (209) *Kete-ŋ* (i)-pas.
 liver-GEN.1SG 3SG-pull.out
 I am out of breath.

Note that the Subject prefixes are frequently omitted in such constructions. If present, they are invariably the third singular form.

When the reflexive-emphatic forms occur in a body-image expression, they are coreferential with the *genitive* of the body part:

- (210) *Moto-m i-ŋgal itu-m.*
 eye-GEN.2SG 3SG-pierce REFL-GEN.2SG
 Be wary (lit. watch yourself).

Body-image constructions exhibit two reciprocal constructions. If the predicate consists of a body part plus a transitive verb, then the reciprocal prefix *par-* is added to the verb (211). Otherwise, reciprocity is marked by *par* occurring as a free adverbial form following the verb (212):

- (211) *Mata-n par-ŋgal zin.*
 eye-GEN.3PL REC-pierce ACC.3PL
 They looked after each other.
- (212) *Kete-n malmal par pizin.*
 liver-GEN.3PL fight REC REF.3PL
 They were angry at each other.

The constituency of body-image expressions having the form:

NP Body Part-Genitive Suffix Verb X

is somewhat deceptive. While at first glance it might seem to be:

[NP Body Part-Genitive Suffix]_{NP-SUBJECT} [Verb X]_{PREDP}

in actual fact, it is:

[NP]_{NP-SUBJECT} [Body Part-Genitive Suffix Verb X]_{PREDP}

Consider the following examples:

- (213) (Ko) *zin* (ko) *lele-n* (**ko) *piti*.
 UC NOM.3PL UC insides-GEN.3PL UC REF.1PL.INC
 They will perhaps like/love us.
- (214) (Ko) *zin* (ko) *lele-n* (**ko) *be ti-la*.
 UC NOM.3PL UC insides-GEN.3PL UC NF 3PL-go
 They will perhaps want to go.
- (215) (Ko) *zin* (ko) *lele-n* (**ko) *i-saana*.
 UC NOM.3PL UC insides-GEN.3PL UC 3SG-deteriorate
 They might/will be upset.

Note that the modal adverb *ko* 'uncertain' can interrupt the genitive-head noun sequence, but cannot occur after it. In unambiguous examples *ko* always either: 1) precedes the Subject, or 2) immediately follows it before the predicate phrase. This would seem to indicate that in these constructions there is a major syntactic boundary between the ostensible 'genitive' and the head noun plus following material. It is instructive to compare example (215) above with a structurally unambiguous genitive construction like the following one, paying particular attention to the underlined material.

- (216) (Ko) *ruumu* (**ko) *ute-ene* (ko) *i-saana*.
 UC house UC head-GEN.3SG UC 3SG-deteriorate
 The roof of the house might/will be bad.

Note here that *ko* may not occur before the form inflected with the genitive suffixes but may occur after it. This contrasts with example (215), in which *ko* has exactly the opposite distribution. Example (215) appears, then, to have the following syntactic bracketing:

[*zin*]_{NP} [*lele-n i-saana*]_{PREDP}

Example (216) has the bracketing:

[*ruumu ute-ene*]_{NP} [*i-saana*]_{PREDP}

In Relational Grammar terms, these body-image constructions can be viewed as a kind of 'possessor ascension'. Bell (1983:191-195) describes such a process for the Philippine language Cebuano, and Perlmutter and Postal (1983:43-45,66-67) describe this process for Malagasy. In possessor ascension, a genitive NP becomes detached from a noun phrase and ascends to take over the syntactic function of its host NP in the predication. The left-over portion of the noun phrase becomes a *chômeur*. Having nowhere else to go, it becomes incorporated into the predicate. It is important to note, however, that in Mangap-Mbula there are no non-ascended versions of such constructions. Also, verbs in the [body part + verb] predicate fail to exhibit agreement with the ascended possessor, having either third singular agreement or no agreement at all.

Body-image expressions are not just used to encode experiential notions. Many times, more kinetic body parts like hands, feet, eyes, and the like are used as a kind of pronominal substitute in quite active sentences. The following examples illustrate this:

- (217) *Nomo-m* *su* *pa* *ŋge ta-na* *kek*.
 hand-GEN.2SG descend REF pig SPEC-GIV PERF
 You have already made a down payment on that pig.

- (218) *Mata-n i-la na, ti-re korog kokou-ŋa-na.*
 eye-GEN.3SG 3SG-go GIV 3PL-see thing white-NMS-GEN.3SG
 When they looked, they saw something white.

Emotional states which are induced in *other* people are typically encoded by a body part functioning as an Object:

- (219) *Ti-kuru kopo-ono.*
 3PL-thread stomach-GEN.3SG
 They stirred him up.
- (220) *Ni i-pas kete-ŋ ma tau!*
 NOM.3SG 3SG-pull.out liver and EMPH
 He made me extremely angry!

CHAPTER 5

NEXUS – CLAUSE COMBINATIONS

5.1 INTRODUCTION

Since natural human discourse is multipropositional (Givón 1979:66), all languages must have the capability of combining clauses/simple sentences to yield complex sentences. This chapter describes some of the various means for doing so in Mangap-Mbula. These include: 1) relative clauses, 2) sentential complementation, 3) other types of embedded sentences – purpose clauses, reasons, similes, protases of conditionals, and *indeene* temporal clauses 4) cosubordinate constructions, and 5) more-or-less coordinate combinations of sentences. With regard to the latter, it can be noted that while the *clause* (i.e. simple sentence) in Mangap-Mbula is a well-defined structural unit, the task of parsing sequences of clauses into more inclusive units is far less straightforward. There are two reasons for this.

1. There appears to be no *syntactic* distinction between sequences of clauses which constitute a single ‘sentence’ and those which constitute several ‘sentences’/a paragraph.
2. The division between subordinate and coordinate types of nexus appears to be unmotivated for a number of ‘adverbial’ clauses.

In Mangap-Mbula, complex ‘sentences’ are *phonological* and *cohesive* units rather than *syntactic* ones. Their contents are, therefore, determined by: 1) sameness of subject matter, participants, temporal reference, and the like, and 2) the rather prosaic matter of how much one can say in one breath. The boundaries of sentences are delineated by *phonological* characteristics like: distinctive terminal intonation contours, pauses, and usually a higher pitch in the onsets.

Since sentences are cohesive units, new sentences are typically begun when there is some sort of *discontinuity* with the preceding discourse like: 1) a change in Subject and/or Topic (All changes of Subject do not, however, require a new sentence.), 2) a large temporal gap, or 3) a significant new development in the action or thematic sequence. The initial clauses in sentences tend, therefore, to exhibit certain syntactic characteristics associated with discontinuity like: 1) overt Subject NPs, 2) thematised temporal adverbials, and 3) asyndetic connection to the preceding sentence. Within the sentence, there tends to be sameness of topic, Subject, and time, and a relatively continuous sequence of action.

The cohesive nature of Mangap-Mbula sentences echo Crystal’s (1979:159) comments regarding English:

English, however, does not seem to be readily analyzable in terms of sentences. Rather, the *clause* is the unit in terms of which the material is most conveniently organized...A model of Clause + connective + Clause makes for fewer assumptions about the organization of the data.

Similarly, Cumming (1984:366) states:

It has long been noted that various problems arise when one tries to actually identify sentence boundaries in spoken texts and to characterize the notion of sentence in a non-arbitrary way: these problems are especially acute in a language which, like Chinese, has very little overt marking of subordination.

Cumming goes on (p.373) to characterise sentences as:

...a level of discourse structure bigger than a clause and smaller than a paragraph. Like other levels of discourse organization, the relationship between clauses can be characterized as involving cohesion—that is, the parts of the sentence have properties which connect them to other parts of the sentence.

Given the *cohesive* rather than *structural* nature of sentence combinations in Mangap-Mbula, no distinction is made in the description between conjunctive forms which occur ‘sentence’ initially and those which occur ‘sentence’ internally. Instead, we shall simply speak of devices which join groupings of two or more clause-sized units.

The coordinate-subordinate distinction is similarly problematic for Mangap-Mbula. While the label ‘subordinate’ seems reasonable for clearly embedded modifying sentences like relative clauses, Complement clauses, protases of conditionals, and the like, it is less appropriate for cosubordinate predicate combinations (which are *mutually dependent*) and for a number of ‘adverbial’ clauses encoding notions like Time and Reason. This is because traditional *structural* tests for subordination like: 1) backwards control of pronoun reference, as in the following example:

While he waited, John read a magazine.

and 2) independence of semantic contribution from placement, as in:

Because it rained, I didn't come.

I didn't come because it rained.

When it started raining, I gave up.

I gave up when it started raining.

fail to distinguish ‘adverbial’ clauses from incontrovertibly coordinate sentence combinations. On the other hand, there would seem to be an argument for the *pragmatic* subordination of some junctives, particularly in temporal and causal combinations like:

X *tona* Y = ‘X, and after that Y’

X *tana* Y = ‘X, therefore Y’

Part of the meaning of such conjunctive forms is givenness, the presupposition ‘I think you know this’.

At any rate, a structural distinction between coordination and subordination for a number of ‘adverbial’ clauses in Mangap-Mbula is difficult to motivate. This is perhaps to be expected, since Haiman and Thompson question the validity of the notion of subordination in general, stating (1984:510-511):

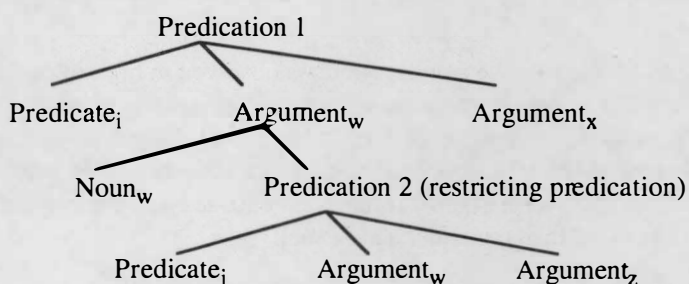
the traditional criteria for “subordination”, including dependence, reduction, backgrounding, and preposability, among others, seem at best *ex post facto* rationalizations of our own (Western educated) “intuitions”, which renders them completely circular. Moreover, they are often inconsistent or language specific. The reason for this, we think, is that “subordinate clause” does not seem to be a grammatical category at all...as for a subordination-coordination continuum (cf. Kuno (1973:209), it would still involve treating as unidimensional a

phenomenon which, as we will try to show, is essentially a multidimensional one.

Accordingly, most 'adverbial' sentence combinations are included with incontrovertible coordinate combinations in §5.5.2ff. as non-embedded, independent combinations of predications.

5.2 RELATIVE CLAUSES—PREDICATIONS WHICH ARE EMBEDDED AS MODIFIERS WITHIN AN ARGUMENT OF ANOTHER PREDICATION

One of the common means of combining predications is to modify an argument of one predicate by restricting it with another predication. Structurally, this can be represented in the following manner:



Note in particular that the restricting predication must contain an argument which is coreferential with the noun being modified. Regarding the functions of the noun that is modified and the restricting predication, Keenan (1985:142) states that the noun “determines a class of objects, which we shall call the domain of relativization”, while the predication “identifies a subset of the domain, those elements which satisfy the condition given by the restrictive clause”. In describing Mangap-Mbula relative clause structure the following terminology is used: 1) domain noun phrase (the noun phrase modified by a relative clause), 2) relative noun phrase (the noun phrase within the relative clause which is coreferential with the domain noun phrase), and 3) relative clause/restricting predication (these last two being used interchangeably).

Mangap-Mbula is a typologically consistent language with respect to the position of the relative clause and domain noun. Keenan (1985:144) states that “...in verb-medial languages of the SVO sort, postnominal RCs are the overwhelming norm and are to our knowledge always the dominant or most productive form of RC”. This is exactly what is found in Mangap-Mbula. In fact, the only type of relative clause observed in Mangap-Mbula is a postnominal one.

- (1) *Moori i-kam ngar pa*
 woman 3SG-do thinking REF

DOMAIN N	RELATIVE N
<i>mbulu</i>	(na)]RC
way	GIV

The woman thinks about what you two have done.

Example (1) illustrates several aspects of Mangap-Mbula relative clause structure. Firstly, note that the relative clause is positioned after the domain noun. Secondly, note that the

relative noun coreferential with the domain noun is deleted. This is always the case with: 1) inanimate relative noun phrases, and 2) relative noun phrases which are Subjects. Non-Subject animate relative noun phrases, on the other hand, are always indexed via the appropriate pronominal form:

- (2) *Niom ko-nmbot mi*
 NOM.2PL 2PL-stay+RED and
- DOMAIN N RELATIVE N
tomtom [*ta nge i-pee*b*=*i** (*na*)]_{RC}
 person SPEC pig 3SG-produce=ACC.3SG GIV
i-pun lutu-yom bizin ma ti-nmeete lup.
 3SG-hit children-2PL PL and 3PL-die+RED all
 While you were staying (here), the person whom the pig bore killed all of your children.

A third feature of Mangap-Mbula relative clauses which is observed in both of the above examples is that they are obligatorily introduced by a complementiser (here, *ta*) and optionally closed by the form *na*. Closure with *na* occurs when the relative clause itself is structurally complex or is embedded in a structurally complex sentence. The proximate adverb *i* terminates the relative clause instead of *na* if the event encoded in the relative clause is ongoing (3) or imminent (4) rather than punctiliar and factual:

- (3) *koron ta-boo*zo*-men* [*ta* \emptyset *ti-karara pa toono=*i**]
 thing SPEC-many-only SPEC 3PL-crawl REF ground=PROX
 everything that crawls on the earth
- (4) *tomtom* [*ta-be* \emptyset *i-mar =*i**]
 person SPEC-NF 3SG-come =PROX
 the person who is coming (or just about to come).

Example (4) also illustrates that when the relative clause encodes an event which has yet to happen, the complementiser *tabe* is used instead of *ta*. This is to be expected, given *be*'s function of indicating events which are not being asserted to have happened. Another example of *tabe* is given here:

- (5) *Tana le-n koron sa*
 therefore RECX-GEN.3PL thing NON.REF
ta-be i-pakaala zin som.
 SPEC-NF 3SG-cover ACC.3PL NEG
 Therefore they had nothing which could cover them.

A third relative clause complementiser is homophonous with the Locative preposition *ki* and is used when a relative clause encodes an *enduring characteristic* of the domain noun:

- (6) *Man sakul, ina man* [*ki* \emptyset *i-tortoro moori lele-n.*]
 bird sakul DEM bird LOC 3SG-turn+RED woman insides-GEN.3PL
 The *sakul*, it is a bird that affects women's feelings.

Another relative construction which seems to be semantically equivalent to relative clauses headed by *ki* is one which contains *ta* as the complementiser and is closed by the nominalising morpheme *- η a*:

- (7) *Ni i-repiili zin*
 NOM.3SG 3SG-despise ACC.3PL
 [*ta* \emptyset *ti-toto* *i* *ŋa-n.*]
 SPEC 3PL-follow+RED ACC.3SG NMS-GEN.3PL
 He despised his followers.

Constructions like the one in (7) are a way of expanding the possibilities for nominalisation. Since there is a very strong tendency in Mangap-Mbula for nominalisations not to have more than one overt argument, it is necessary to have a different strategy for nominalising predications with *multiple* overt arguments. The construction illustrated in (7), which is an amalgam of relativisation and nominalisation, is what is used in such instances.

A summary of the sorts of the formal and semantic distinctions between different relative clause constructions is given in Table 5.1.

TABLE 5.1: MANGAP-MBULA RELATIVE CLAUSE TYPES

	Predication Encodes A Particular Event Involving The Head Noun	Predication Encodes An Enduring Characteristic Of The Head Noun
REALIS Punctiliar On-going	<i>ta(u)</i> Predication (<i>na</i>) <i>ta(u)</i> Predication <i>i</i>	N <i>ki</i> Predication N <i>ta(u)</i> Predication - <i>ŋa</i>
IRREALIS Non-imminent Future or Negative Imminent	N <i>tabe</i> Predication (<i>na</i>) N <i>tabe</i> Predication <i>i</i>	

There are no restrictions as to the type of syntactic function a relative NP may bear within the relative clause. This is in accordance with Comrie's (1981:153) observation that:

...heavy restrictions on relativization tend to correspond with the existence of a wide range of voices, so that positions that are not relativizable directly can be made more accessible by using a different voice.

Since Mangap-Mbula has no voice alternations, it is only to be expected that relativisation would be free. Relativisation on Subjects (3) - (7) and Objects (1), (2) was illustrated above. Examples of relativisation on Oblique referents (8) - (11) and genitives (12) will now be given.

- (8) *Ti-re mbulu [ta Matai i-so pa \emptyset na.]*
 3PL-see behaviour SPEC Matai 3SG-say REF GIV
 They saw the event about which Matai had spoken.
 (Relativisation of Referent encoding 'about')

- (9) *Nio aŋ-ur-pe koron*
 NOM.1SG 1SG-put-right thing
[ta aŋ-so-mbe aŋ-pa-saana moori pa Ø i.]
 SPEC 1SG-say-NF 1SG-CAUS-bad woman REF PROX
 I prepare the thing with which I am intending to bewitch the woman.
 (Relativisation of Referent encoding Instrument)
- (10) *Ti-la pa lele [ta zin kolman*
 3PL-go REF place SPEC PL old.person
ti-nmbot pa Ø na.]
 3PL-stay+RED REF GIV
 They went to the village where the old men were staying.
 (Relativisation of Referent encoding Inanimate Location)
- (11) *Ni i-le kar i-ndeege aigule*
 NOM.3SG 3SG-enter village 3SG-find day
[ta nu mar pa Ø na.]
 SPEC NOM.2SG 2SG+come REF GIV
 He entered the village on the same day you came.
 (Relativisation of Referent encoding Time)
- (12) *Nio aŋ-so aŋ-pit mbol pa kolman*
 NOM.1SG 1S-say 1SG-recount story REF old.person
ta (ni) za-ana Eli bi.
 SPEC (NOM.3SG) name-GEN.3SG Eli old
 I want to tell a story about an old man whose name was old Eli.

Although Mangap-Mbula exhibits very free possibilities for relativisation, it should be noted that relativised noun phrases are *typically* either Subjects or Objects. In text counts, 47 per cent of the relative clauses exhibited Object Domain nouns, while 24 per cent exhibited Subject ones. Fifty-three per cent had Subject Relative Nouns, while 23 per cent had Object ones. Thus, the most textually frequent relative clause configuration is one in which the domain noun is an Object and the relative noun a Subject.

All of the above examples have been of so-called restrictive relative clauses, in which the relative clause contains presupposed information which helps to identify the referent of a domain noun phrase. Non-restrictive relative clauses, which relate an additional piece of information about a domain noun phrase whose referent is clear, have exactly the same syntactic structure as restrictive ones in Mangap-Mbula, except for being more set off from their domain nouns intonationally:

- (13) *Silas i-kam redio kini mi i-tooro ma*
 Silas 3SG-get radio LOC.3SG and 3SG-turn and
 Silas got his radio, and turned it
i-taŋtaŋ. Mi kolman Eli-bi, ni
 3SG-cry+RED And old.person Eli-old NOM.3SG
 on. And old man Eli, he

i-nmbot tomini. Tana i-leŋ-la
 3SG-stay+RED also therefore 3SG-hear-go
 was there too. Therefore, he listened

pa radio, ta i-zzo sua na.
 REF radio SPEC 3SG-say+RED talk GIV
 to the radio, which was talking.

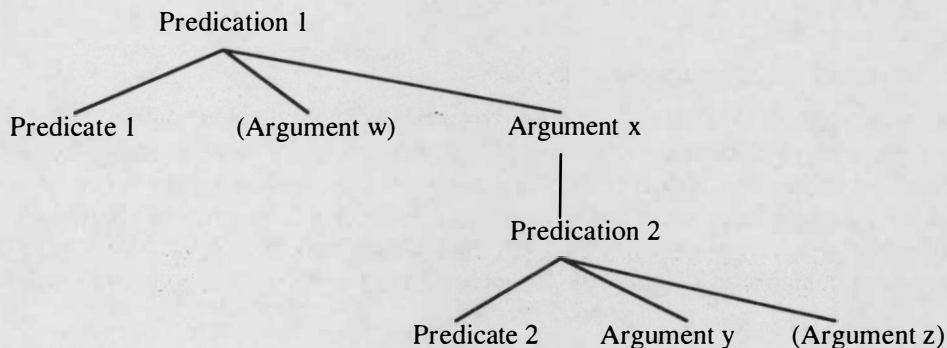
This is in accordance with Comrie's (1981:132) cross-linguistic generalisation that "Formal distinction between restrictive and non-restrictive relative clauses is found sporadically across languages, but probably most languages have either no formal distinction, or only an intonational distinction where the relative clause follows the head [i.e. domain RDB] noun".

Negation in a relative clause is independent of the polarity of the main clause (14) - (16), and even when a relative clause occurs in a main clause bearing interrogative modality, the relative clause retains its neutral illocutionary force (17):

- (14) *Ti-repiili zin tomtom ta ti-zuŋzuŋ som.*
 3PL-despise PL person SPEC 3PL-pray+RED NEG
 They despise people who don't pray.
- (15) *Ti-repiili zin tomtom ta ti-zuŋzuŋ na som.*
 3PL-despise PL person SPEC 3PL-pray+RED GIV NEG
 They don't despise people who pray.
- (16) *Ti-repiili zin tomtom ta ti-zuŋzuŋ som na som.*
 3PL-despise PL person SPEC 3PL-pray+RED NEG GIV NEG
 They don't despise people who don't pray.
- (17) *Tomtom ta i-mborro stua ti i-la padei?*
 person SPEC 3SG-look.after+RED store this 3SG-go how
 Where has the person gone who looks after this store?

5.3 COMPLEMENT CLAUSES—EMBEDDED PREDICATIONS WHICH FUNCTION AS AN ARGUMENT IN ANOTHER PREDICATION

A second type of complex sentence structure which involves clear structural embedding is sentential complementation. Here, a predication is embedded as an argument of another predicate. The structural analysis of complementation can be represented in the following way:



some argument of the main clause (i.e. a PCOMP¹).¹ Cross-cutting this formal division is a further one according to the type of complementiser which introduces the Complement clause. The complementisers occurring are:

NON-FACTUAL	<i>takembei</i>	'I do not say I know this happened, I say someone thinks like this.'
	<i>kembei</i>	'I do not say I know this happened, I say someone thinks like this.'
	<i>kokena</i>	negative purpose: 'I do not say I know this happened, I say I do not want this to happen.'
	<i>be ~ ∅</i>	'I do not say I know this happened (I say I want this to happen).'
FACTUAL	\emptyset	factuality: 'I say I know this'.
	<i>ta(u) ~ ∅</i>	presupposed factuality: 'I say I know this, I think you know this'.

The first four complementisers are used to encode *non-factual* states of affairs, those which are *not presupposed to have happened*. The last two encode *factual* states of affairs, those which are *known to have happened or not happened*. The distribution restrictions between complementisers and Complement types are listed below:

	XCOMP	PCOMP	COMP
<i>takembei</i>			+
<i>kembei</i>		+	+
<i>kokena</i>			+
<i>be</i>	+		+
\emptyset	+		+
<i>ta(u)</i>			+

XCOMPs and PCOMPs are more tightly integrated into their including clauses than COMPs because of the obligatory sharing of arguments between the matrix and Complement clauses. Although XCOMPs³ could be further subdivided according to whether their understood Subjects are obligatorily co-referential with: 1) the Subject of the main clause, 2) the Object of the main clause, or 3) an Oblique NP of the main clause, this aspect of their syntax appears to be semantically conditioned. For example, the modal predicates taking XCOMPs exhibit Subject control, while all manipulative and perception predicates exhibit non-Subject control by an animate NP – either the Object or an Oblique NP depending on the verb.

¹ For further discussion of the terms XCOMP, COMP, and PCOMP, see §4.6 of the syntax chapter.

² Recall that the general meaning of *be* is 'non-presupposition of factuality': 'I do not say I know this happened.' As a complementiser, however, its meaning is more precise. In its potential for encoding wanting, it contrasts with both *kokena* 'I don't want this to happen' and *(ta)kembei*, which lacks a wanting component.

³ The understood Subjects of PCOMPs are never coreferential with the Subject of the main clause.

Among the factual Complements, a further subdivision is made according to whether the Complement is always paratactically adjoined or whether it may be adjoined with the complementiser *ta*.

The various types of complementation and their formal distinctions are summarised in Table 5.2.

TABLE 5.2: TYPES OF COMPLEMENTATION IN MANGAP-MBULA

Non-Sentence-like Complementation		- <i>ŋa</i>
Sentence-like Complementation	Non-Factual	<i>be</i> ~ \emptyset <i>kembe</i> <i>takembe</i> <i>kokena</i>
	Factual	\emptyset <i>ta(u)</i> ~ \emptyset

5.3.2.1 NON-FACTUAL COMPLEMENTS

Sentential Complements encoding states of affairs which are not presupposed to have happened are introduced by the complementisers *be*, *takembe*, *kembe*, or *kokena*. There are a number of different semantic types of predicates which take such non-factual sentential Complements. Noonan (1985), in his cross-linguistic survey of complementation, mentions: 1) utterance predicates, 2) propositional attitude/epistemic modality predicates, 3) pretence predicates, 4) desiderative predicates, 5) deontic modality predicates, and 6) fearing predicates. To this list can be added two further semantic groupings for Mangap-Mbula: 7) manipulative predicates like 'prevent', 'urge', and 'hinder', and 8) non-completive predicates like 'start to do', 'try to do', and 'be in the process of happening'. Each of these semantic types will now be described and illustrated.

5.3.2.1.1 COMPLEMENTS OF UTTERANCE PREDICATES

Noonan (1985:110) characterises utterance predicates as those

...used in sentences describing a simple transfer of information initiated by an agentive subject. The complement represents the transferred information, and the CTP [complement-taking predicate RDB] describes the manner of transfer, the illocutionary force of the original statement, and can also give an evaluation of the speaker's (as opposed to the agent subject's) view of the veracity encoded in the complement.

Thus, utterance predicates are verbs like 'say', 'tell', 'report', or 'promise', which have as part of their semantic structures a component like 'X said something (to Y)'. In Mangap-Mbula, these types of predicates typically take a Complement introduced by either the form *be* or *takembe*, one or the other of these two being necessary for all such predicates except the verb *-so* 'to say' when it is followed by a direct quote:

- (22) *I-so pio be gaaga to i-mar.*
 3SG-say REF.1SG NF tomorrow then 3SG-come
 He told me that he would come tomorrow.
- (23) *I-so pio Ø/ta-kembei: 'Mar gaaga.'*
 3SG-say REF.1SG Ø/SPEC-like 2SG+come tomorrow
 He said to me Ø/like this, 'Come tomorrow.'⁴
- (24) *Ni i-mbuk sua be mata-ana pizin.*
 NOM.3SG 3SG-tie talk NF eye-GEN.3SG REF.3PL
 He promised that he would look after them.
- (25) *Ni i-mbuk sua ta-kembei:*
 NOM.3SG 3SG-tie talk SPEC-like
'Nio ko moto-η pizin'.
 NOM.1SG UC eye-GEN.1SG REF.3PL
 He promised like this, 'I will look after them'.

With regard to these examples, it should be noted that the paratactically adjoined Complements and those introduced by *takembei* are less incorporated intonationally than those introduced by *be*. Thus, typically there is falling intonation on *takembei* or the final element of the main clause and a slight pause, before continuing on to the Complement clause.

Lengthy utterance Complements are usually introduced by *takembei* and/or by a repetition of the verb *-so* 'to say', while shorter ones are introduced by *be* or, in the case of the verb *-so* 'to say', simply paratactically adjoined.

5.3.2.1.2 COMPLEMENTS OF PROPOSITIONAL ATTITUDE PREDICATES

The second type of non-factual Complement mentioned by Noonan is that associated with so-called 'propositional attitude' predicates. These are predicates which (p.113):

...express an attitude regarding the truth of the proposition expressed as their complement. The propositional attitude may be positive as in the verbs believe, think, suppose, assume, etc., or negative as in not believe, doubt, deny, etc. Animate subjects of such predicates are experiencers, as opposed to the agentive basic subjects of utterance predicates.

A key component of the meanings of such predicates is: 'Someone *thinks* this'. In Mangap-Mbula, the Complements of such predicates are introduced by the forms *takembei* 'like this' (26), *kembei* 'like' (27), or *be* (28):

⁴ A complete listing of possible direct quote formulas would be:

Ni iso:...
Ni iso(m)be...
Ni iso takembei:...
Ni iso takembei. Iso:...
Ni iso pio.
Ni iso pio takembei:
Ni iso pio. Iso:
Ni iso pio takembei. Iso:

- (26) *Nio aŋ-ur-la ta-kembe:*
 NOM.1SG 1SG-put-go(=believe) SPEC-like
Anutu, ni i-nmbot.
 God NOM.3SG 3SG-stay+RED
 I believe that God exists/is alive.
- (27) *Aŋ-ur-la kini kembei ni ko i-rao.*
 1SG-put-go LOC.3SG like NOM.3SG UC 3SG-able
 I believe that he will be able (to do it).⁵
- (28) *Nio aŋ-so(=m)be ni ko i-mar.*
 NOM.1SG 1SG-say=NF NOM.3SG UC 3SG-come
 I think he will come.

In example (28), note that the verb *-so* ‘say’, which is also used in utterance complements to encode ‘saying’, can be used to express ‘thinking’. This same form is also used to encode ‘wanting’ and in conditionals. Context is the primary clue that differentiates between its various senses, but the choice of complementiser also *restricts* its range of *possible* interpretations. For example, when the Complement following *-so* is introduced by *takembe*, then the ‘wanting’ and conditional interpretations are precluded.

5.3.2.1.3 COMPLEMENTS OF PRETENCE PREDICATES

Pretence predicates are characterised by Noonan (p.114) as predicates whose Complements encode a world that is not real and is, by general implication, false. Three examples of such predicates are: pretend, make believe, and trick (into thinking). The key semantic elements of such predicates are:

- Someone (=Y) does not think something Z.
 Someone else (=X) wants Y to think Z.
 X does something.
 Because of this, Y thinks Z.

Noonan states (p.116) that despite the fact that the state of affairs encoded is hypothetical and by implication false, the Complements of such predicates are generally encoded as indicative (i.e. factual) and not as subjunctive or irrealis (i.e. non-factual) Complements. In Mangap-Mbula pretended states of affairs are not encoded using a sentential Complement construction. Instead, a cosubordinate construction with the complementiser *kembe* (29) or an indirect quotation (30) is used:

- (29) *I-pa-kam zin*
 3SG-CAUS-do (=trick) ACC.3PL
ma kembei i-rao i-leŋ kalŋa-n som.
 and like 3SG-able 3SG-hear voice-GEN.3PL NEG
 He pretended that he was unable to understand them (lit. he pretended and it was like he couldn’t understand them).

⁵ Note that this is an instance of a PCOMP, rather than a COMP. The entity in the Locative phrase *must* be coreferenced by a Nominative pronoun in the Complement clause, otherwise the sentence is ill-formed.

- (30) *I-pa-kam zin ma i-so*
 3SG-CAUS-do (=trick) ACC.3PL and 3SG-say
ni i-rao be i-leŋ kalŋa-n som.
 NOM.3SG 3SG-able NF 3SG-hear voice-GEN.3PL NEG
 He tricked them, saying he wasn't able to understand them.

5.3.2.1.4 COMPLEMENTS OF DESIDERATIVE PREDICATES

Noonan (p.121) characterises desiderative predicates like want, wish, and hope as ones which have “experiencer subjects expressing a desire that the complement proposition be realized”. In Mangap-Mbula, the Complements of such predicates are *always* introduced by the complementiser *be* (31) - (33). This is to be expected, given *be*'s meaning of: ‘I do not say I know this happened. (I say I *want* it to happen)’.

- (31) *Aŋ-ur moto-ŋ pini be i-uulu yo.*
 1SG-put eye-GEN.1SG REF.3SG NF 3SG-help ACC.1SG
 I am hoping (lit. I put my eye on him) that he will help me.
- (32) *Nio lele-ŋ be aŋ-la aŋ-re kar ki Atai.*
 NOM.1SG insides-GEN.1SG NF 1SG-go 1SG-see village LOC Atai
 I would like to go see Atai's village.
- (33) *Aŋ-so(=m)be aŋ-giimi le-ŋ ka sa.*
 1SG-say=NF 1SG-buy RECX-GEN.1SG car NON.REF
 I want/intend to buy myself a car.

Note that it is possible to omit the *(m)be* in example (33) and just paratactically adjoin the Complement clause following the verb *-so* with no apparent change in meaning. None of the other desiderative predicates permit *be* to be omitted. In example (33), if *(m)be* is present, it is phonologically adjoined to the complementising predicate *-so* ‘say’.

5.3.2.1.5 COMPLEMENTS OF PREDICATES ENCODING ABILITATIVE MODALITY

As was noted earlier in §4.3.3.8, abilitative and obligative modal notions are expressed in Mangap-Mbula by the modal verb *-rao*, which takes Complements introduced by the form *be*:

- (34) *Nio aŋ-rao (be) aŋ-so sua*
 NOM.1SG 1SG-able (NF) 1SG-say talk
i-la iwal biibi mata-n na som.
 3SG-go crowd big.one eye-GEN.3PL GIV NEG
 I am not able to speak in front of a large crowd.

5.3.2.1.6 COMPLEMENTS OF PREDICATES OF FEARING

The next group of predicates taking non-factual Complements are what Noonan terms “predicates of fearing”. Noonan states (p.119) that:

Predicates of fearing such as be afraid, fear, worry, and be anxious have enough peculiarities cross-linguistically to merit dealing with them as a class.

The Complements of predicates of fearing are introduced by either the complementiser *kokena* ‘lest’ or the complementiser *be* and encode states of affairs which are: 1) contemplated, and (in the case of Complements introduced by *kokena*) 2) not desired.

- (35) *Aŋ-moto: kokena ti-po yo.*
 1SG-fear lest 3PL-tie/work.sorcery.on ACC.1SG
 I am afraid that they will work sorcery on me.
- (36) *Aŋ-moto be aŋ-sa-la ni.*
 1SG-fear NF 1SG-ascend-go coconut
 I was afraid to climb up coconut trees.

5.3.2.1.7 COMPLEMENTS OF MANIPULATIVE PREDICATES

Manipulative predicates express notions like ‘prevent from’, ‘stop from’, ‘forbid’, and ‘urge’, that encode a situation in which someone acts to: 1) prevent someone else from doing something, or 2) induce someone to do something. Their shared semantic structure is along the following lines:

X Verb₁ Y *be* Verb₂

X wanted/didn’t want Y to do something (=Verb₂).

Because of this, X did/said something (to Y).

(Because of this, Y did/didn’t do it.)

The following two examples illustrate the syntax of manipulative predicates:

- (37) *Ti-ruutu yo be aŋ-la som.*
 3PL-prevent ACC.1SG NF 1SG-go NEG
 They prevented me from going.
- (38) *Ti-maŋmaŋ yo be aŋ-kam pizin.*
 3PL-urge ACC.1SG NF 1SG-do/get REF.3PL
 They urged me to give it to them.

In both (37) and (38) a state of affairs has failed to eventuate. A semantically related example to (38) which encodes a state of affairs that *did* eventuate is:

- (39) *Ti-maŋmaŋ yo ma aŋ-kam pizin.*
 3PL-urge ACC.1SG and 1SG-do/get REF.3PL
 They kept on urging me until I gave it to them.

Note here that a cosubordinate construction with the conjunction *ma* is used instead of a complementation construction.

5.3.2.1.8 COMPLEMENTS OF NON-COMPLETIVE PREDICATES

A final group of predicates taking non-factual Complements are the ‘non-completive’ or ‘partially factive’ predicates. These express notions like ‘try to’ and ‘start to’, which encode just the beginning or intermediate phases of situations without their completion:

- (40) *I-toombo be i-kot mbun kini.*
 3SG-try NF 3SG-cover debt LOC.3SG
 He tried to repay his debt.
- (41) *Aŋ-maŋga be aŋ-po ruumu.*
 1SG-stand.up NF 1SG-tie/build house
 I started to build the house.
- (42) *Kini i-kaam be i-saana.*
 food 3SG-do+RED NF 3SG-go.bad
 The food is in the process of going bad.

5.3.2.2 FACTUAL COMPLEMENTS

Factual complementation in Mangap-Mbula is associated with two semantic types of predicates: 1) perception predicates like ‘see’, ‘hear’, and ‘notice’ and 2) predicates like ‘know’ and ‘realise’, which express knowledge or the acquisition of knowledge. With perception predicates, the Complement is always paratactically adjoined immediately following the verb plus Object NP as in:

- (43) *Aŋ-re [tomtom ru]NP*
 1SG-see person two
[Ø ti-siŋ ŋge ma ti-mar]XCOMP
 3PL-carry pig and 3PL-come
 I saw two people coming towards me carrying a pig.

Justification for the above syntactic structure of V – NP – XCOMP is given in §4.3.3.11.

Predicates expressing knowledge and the acquisition of knowledge are also usually just paratactically adjoined (44). However, when it is necessary to precisely specify scopes of negation (i.e. over the Complement, the main clause, or both), then the Complement is bracketed by the complementiser *ta* and the demonstrative *na* (45):

- (44) *Nio aŋ-ute [ni i-meete kek.]*
 NOM.1SG 1SG-know NOM.3SG 3SG-die PERF
 I know that he has died.
- (45) *Nio aŋ-ute [ta ni i-meete kek na] som.*
 NOM.1SG 1SG-know SPEC NOM.3SG 3SG-die PERF GIV NEG
 I didn’t know that he had died.

Perception predicates may have the termini of their Complements marked with the form *na*, but they are never introduced with *ta* in the same way that predicates encoding knowledge and the acquisition of knowledge are.

5.4 OTHER EMBEDDED CLAUSES

The remaining types of embedded clauses do not modify arguments in a predication and are not themselves Complements. Instead, they are more peripheral, functioning either as PREDP or sentential Adjuncts or as sentential Themes. These other types of embedded clauses are listed below:

1. purpose clauses (PREDP Adjuncts)
2. reason clauses (sentence Adjuncts)
3. simile clauses (sentence Adjuncts)
4. protases of conditionals (sentence Themes)
5. *indeenje* temporal clauses (sentence Themes)

All of these are very independent of the main clause with regard to participants, negation, tense, and the like, and are amodal, because they do not exhibit independent specification for interrogative or imperative moods.

5.4.1 PURPOSE CLAUSES – SENTENCES FUNCTIONING AS ADJUNCTS OF THE PREDICATE PHRASE

The only sentential PREDP Adjuncts are purpose clauses. These are always headed by the complementisers *bekena* or *be*, both of which transparently contain the non-factual form *be*. The first complementiser, which also contains the formatives *ke* ‘like, as’ and *na* ‘given information’, is used when particular stress is placed upon the *manner* of doing something.

X did Y *bekena* Z

X thought this:

I want this:

Z will happen.

If I do Y like this, Z will happen.

Be, on the other hand, is used as a general indicator of purpose. Its explication is simply:

X do Y *be* Z

X thought this:

I want this:

Z will happen.

If I do Y, Z will happen.

It is a bit difficult to find contrastive examples in which the two forms are distinguished, but consider the following pair:

(46) *Salum i-la Lae be/**be-ke-na i-ŋgiimi kini.*

Salum 3SG-go Lae NF/**NF-like-GIV 3SG-buy food

Salum went to Lae to buy food.

(47) *Salum i-kam woŋgo be/be-ke-na kado-ono i-su.*

Salum 3SG-get canoe NF/NF-like-GIV price-GEN.3SG 3SG-descend

Salum went by boat in order to save money.

Be seems to always be substitutable for *bekena*, but *bekena* is restricted from occurring in some contexts where *be* occurs. Thus, the two forms bear a generic-specific relationship to each other. The examples in which *bekena* is prohibited are those like (46), in which a very generic predicate is used. Such generic predicates cannot collocate with a conjunction which emphasises the *manner* in which an action was performed.

Be is combined with the form *so* ‘to say’ when the purpose contains an initial conditional element, as in the following example:

- (48) *Ur la=e kini pakan be-so peteele sa*
 2SG+put go=horizontal food some NF-say famine NON.REF
i-pet na, ko-m kini i-mbotmbot.
 3SG-appear GIV CON.RECX-GEN.2SG food 3SG-stay+RED
 Put aside some food so that if a famine occurs then you will have some
 food to eat.

5.4.2 SENTENCES FUNCTIONING AS ADJUNCTS OF SENTENCES

There are two types of notions which are expressed by sentential Adjuncts to sentences: reasons and similes. Categorially these Adjuncts are prepositional phrases.⁶ Their prepositional HEADS are subcategorised, however, as taking both NP and S Complements.

5.4.2.1 REASON ADJUNCTS

Some⁷ reasons are encoded as sentential Complements of the the preposition *pa*.

- (49) *Mar pepe,*
 2SG+come PROH
pa kar lele-n i-luumu zen.
 REF village insides-GEN.3PL 3SG-be.cool NEG.PERF
 Don't come, because the village hasn't calmed down yet (lit. the village's
 insides are not yet cool).

5.4.2.2 SIMILE ADJUNCTS

Similes are expressed by sentential Complements of the preposition *ke(mbe)i ta* 'in the same way as, like':

- (50) *Aŋ-kam kembei ta nu so na.*
 1SG-do like SPEC NOM.2SG 2SG+say GIV
 I did as you said.
- (51) *I-yaryaara kei ta kai ma lam.*
 3SG-shine+RED like SPEC torch and lamp
 It was shining like a torch or lamp (shines). (The verb in the Complement clause
 is often elided in this sort of construction.)

5.4.3 SENTENCES FUNCTIONING AS THEMES OF SENTENCES

The final two types of embedded sentences function as *Themes* of sentences, providing a temporal or imaginary setting/orientation for the main assertion. These exhibit the typical

⁶ See §4.4.1. for further discussion of these constructions.

⁷ Another means of expressing reason-result relationships is the more coordinate construction X {*ta / tana / tanata / tabe*} Y, where X is the reason and Y the result. For further details, see §5.5.2.6ff. of this chapter.

characteristics of Themes: 1) initial position, 2) being set off by rising intonation and pauses, and 3) (frequently) termination by the form *na*.

5.4.3.1 CONDITIONALS AND COUNTERFACTUALS

Hypothetical and counterfactual conditional protases are one type of sentential Theme (Haiman:1978b).⁸ These are encoded using the verb *-so* 'to say', and have the following structures:

TABLE 5.3: CONDITIONAL SENTENCE STRUCTURES

	PROTASIS	APODOSIS
HYPOTHETICAL CONDITIONALS	<i>-so(=(m)be)</i> + Predication	<i>(i)nako</i> + Predication
		<i>(to)na</i> + Predication
COUNTERFACTUAL CONDITIONALS	<i>-so(=(m)be)</i> + Predication	<i>so</i> + Predication
	<i>be</i> + Predication	

The form *so(=(m)be)* in the protasis may be inflected to agree with the Subject of the sentence in the protasis, or it may occur with no Subject agreement morphology. In the latter instance, it is no longer verbal; it is a modal adverb which can occur either before or after the Subject NP. Thus, variations like the following are observed in the protasis:

- (52) *So/**I-so ni so i-mar...*
 say/**3SG-say NOM.3SG say 3SG-come
 If he comes...
- (53) *Ni i-so/so [i-mar...]XCOMP*
 NOM.3SG 3SG-say/say 3SG-come
 If he comes...

The presence of the non-factual complementiser *=(m)be* freely fluctuates with its absence.

The protasis consists of a proposition encoding a contemplated, non-factual state of affairs. This non-factuality is indicated by the verb *-so* 'to say, think, suppose, want' or the modal adverb *so* 'if':

so(=mbe) X, ...
say-NF X
 'Supposing/If X, ...'
 or 'X has not happened.
 X could happen.
 If X happened, ...'

The apodosis, which encodes the state of affairs expected to follow *given* the condition specified in the protasis, is usually introduced by forms containing the given information

⁸ In his article, Haiman actually terms conditionals 'Topics'. His 'Topic' is largely equivalent to 'Theme' in this grammar.

marker *na* if the conditional is hypothetical, and by the non-factual form *be* if it is counterfactual.

Now consider the following three examples:

- (54) *Ni i-so(=m)be i-posop uraata,*
 NOM.3SG 3SG-say=NF 3SG-finish work
na/to(-na) aŋ-giim=i.
 GIV/then(-GIV) 1SG-buy=ACC.3SG
 When he finishes the work, then I'll pay him.
- (55) *So-mbe posop uraata, ina-ko aŋ-giim=u.*
 say-NF 2SG+finish work GIV-UC 1SG-buy=ACC.2SG
 If you finish the work, then I will pay you.
- (56) *Be/So(=m)be ti-posop uraata, so aŋ-giimi zin.*
 NF/say=NF 3PL-finish work say 1SG-buy ACC.3PL
 If they had finished the work, I would have paid them.

Note that a comma is placed *before* the connective forms in the apodosis. This signifies that there is usually a pause preceding the connective, and that there is rising intonation on the material immediately preceding this pause. For *to(na)*, this contrasts with the intonation pattern occurring in purely temporal constructions, where the break typically comes *after* the connective.

The above three examples can be ranked according to how *certain* the speaker is that the state of affairs encoded in the protasis will obtain. In (54), the speaker is very certain, while in (55), s/he is less so. The presence of the form *ko* in the apodosis expresses this greater uncertainty. In the counterfactual example (56) the speaker is completely certain that the states of affairs encoded in both the protasis and apodosis have not materialised and will not do so. Therefore, s/he does not use the form *na* in the apodosis, because this would indicate the state of affairs encoded by the protasis to be somehow actually or at least *potentially* given. Instead, since both the protasis and the apodosis are known to be non-factual, they are both encoded using the non-factual forms *so* and *be*.

Like other structurally embedded clauses, the protases of conditionals are essentially amodal, since they do not exhibit interrogative (57) or imperative modality (58):

- (57) *Nu so-be wi i, ko i-yok?*
 NOM.2SG say-NF 2SG+ask ACC.3SG UC 3SG-agree?
 If you ask him, will he agree?
- (58) *Ni i-so-be i-zooro, na ka-map pini.*
 NOM.3SG 3SG-say-NF 3SG-rebel GIV 2PL-end REF.3SG
 If he rebels, be done with him.

Two other forms which are used in conditional-like structures are *naso* and *kena*. *Naso* is used following commands and suggestions to indicate a beneficial consequence of performing the desired action (59). It therefore has the meaning:

X. Naso Y.

I say I think this:

If you do X, then something good (=Y) will happen.

Because of this, I say to you: 'Do it'.

- (59) *Mbeeze pa tomo-m ma no-m.*
2SG+serve REF father-GEN.2SG and mother-GEN.2SG

Na-so nu mbot molo ma ambai.

GIV-say NOM.2SG 2SG+stay long and well

Serve your father and mother. Then you will live long and well.

Kena is used by a speaker to respond to assertions made by another speaker:

- (60) (a) *So la kar ta-na,*
2SG+say 2SG+go village SPEC-GIV

na-ko ti-uul=u. som.

GIV-UC 3PL-help=ACC.2SG NEG

If you go to that village, they won't help you.

- (b) *Ke-na ko aŋ-la swoi?*
like-GIV UC 1SG-do where?

(other speaker) In that case where should I go?

A final type of conditional construction is used to encode necessary prerequisites for some other state of affairs. In such constructions, the protasis contains the form *bela*, and the protasis is introduced by the form *to(na)*:

- (61) *Be-la nu itu-m la*
NF-go NOM.2SG self-GEN.2SG 2SG+go

mi wi i, to-na i-yok.

and 2SG+ask ACC.3SG then-GIV 3SG-agree

You must personally go and ask him in order for him to agree.

or Only if you personally go and ask him will he agree.

or If you don't personally go and ask him, then he will not agree.

- (62) *Be-la 60 toea stamp i-se ro, to-na i-la Amerika.*
NF-go 60 toea stamp 3SG-ascend letter then-GIV 3SG-go America
The letter must have a 60 toea stamp on it if it is to go to America.

5.4.3.2 *Indeege* AND *be* TEMPORAL CLAUSES

Another type of sentential Theme are temporal clauses having the following form:

(I-ndeege) ((mazwaana)⁹ ta) ..X.. (na), Y.

SG-find space/time SPEC GIV

(At the time) when X happened, Y.

The formulaic representation is intended to conflate the following possible encodings:

⁹ Some speakers substitute the Tok Pisin form *taim* 'time, when' for *mazwaana* in this construction. The Mangap-Mbula form *gorgor* 'long period of time' is also used.

<i>Indeeje</i>	<i>mazwaana</i>	<i>ta</i>	...X...	(na),	Y
<i>Indeeje</i>		<i>ta</i>	...X...	(na),	Y
<i>Indeeje</i>			...X...	(na),	Y
	<i>Mazwaana</i>	<i>ta</i>	...X...	(na),	Y
			...X...	(na),	Y

Note that the basic source of the construction is a relativisation upon a temporal head noun. The various derivatives are obtained by abbreviating this source construction in some way. Some examples of the construction are given below:

- (63) *I-ndeeje ta zin iwal biibi ti-re*
 3SG-find SPEC PL crowd big 3PL-see
 When all the crowd saw
mburu kizin tubudu na, ti-murur pa
 things LOC.3PL European GIV 3PL-be.surprised REF
 the possessions of the Europeans, they were very surprised.
- (64) *I-ndeeje mazwaana ta Gial i-la i-mbot*
 3SG-find time SPEC Gial 3SG-go 3SG-stay
 When Gial went and stayed
pa stesin na, i-mbot molo.
 REF station GIV 3SG-stay long
 at the mission station, he stayed for a long time.

Indeeje also takes non-sentential Complements yielding temporal expressions like the following:

<i>indeeje tana</i>	at that time
<i>indeeje ndaama 1957</i>	in 1957
<i>indeeje puulu Mas</i>	in the month of March
<i>imar imar ma indeeje koozi</i>	it has continued until today

- (65) *Ti-kanan mok ma i-mar ma i-ndeeje kei*
 3PL-eat+RED taro and 3SG-come and 3SG-find like
 They used to eat taro until around
ndaama 1958, to mok i-kaam be i-mbiriizi.
 year 1958 then taro 3SG-do+RED NF 3SG-disappear
 the year 1958, and then the taro started to disappear.

One other type of Thematic temporal clause has the form:

Be X *na/to*, Y
 NF GIV/then Y
 When X, Y.

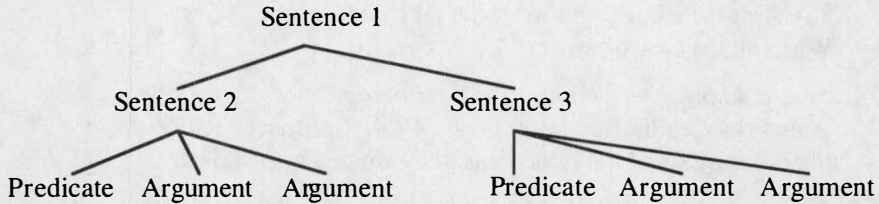
- (66) *Be ti-pet na, ti-so sua sa som.*
 NF 3PL-appear GIV 3PL-say talk NON.REF NEG
 When they arrived, they said nothing.

Note that *be* is used here, despite the fact that the temporal clause encodes a *factual* event. However, the factual event is *presupposed* rather than *asserted*. It is because of examples

like this that a general meaning of 'non-assertion of factuality' has been postulated for the various uses of *be*, rather than 'non-factuality'.

5.5 STRUCTURALLY NON-EMBEDDED PREDICATE COMBINATIONS

The remainder of this chapter is devoted to a discussion of the ways in which predications can combine at more or less the same structural level, without one of them being structurally embedded in the other. The structural relationship involved can be schematically represented in the following manner:



Such a representation is only approximately correct, however, because there are variations in exactly how 'separate' and how 'equal' the two sentences are. Even when one predication is not structurally embedded in another predication, it can still exhibit various sorts of *dependencies* with another predication. For example, there may be requirements for coreference of arguments, agreement in polarity or illocutionary force, or that a particular predication be contextually given in order for a particular conjunction to be appropriate. In the following presentation, comments will be made about some of the dependencies/cohesion required by different conjunctive devices. The description reflects, therefore, the view that complex sentences are basically *chains* of simple sentences/clauses which are modulated by various types of cohesive dependencies and exhibit varying semantic relationships to each other.

A further parameter to which reference is made is *the degree of independence* of the combined predications. In particular, are the combined predications completely independent, or are there requirements that they share arguments or specifications for modality, negation, or tense? The latter situation is that which is encoded by various cosubordinate constructions, a phenomenon to which we now turn.

5.5.1 COSUBORDINATION (SERIALISATION)

The term cosubordination is taken from Olson (1981) and is adopted by Foley and Van Valin (1984:242), who define it as follows:

This third type of nexus in which two non-embedded juncts join together in a dependence relationship we will label *cosubordination*.

Cosubordination is a type of nexus distinct from both: 1) coordination, in which there is neither embedding nor dependency, and 2) subordination, in which there is both embedding and dependency.

Foley and Van Valin (p.263) go on to postulate that the division of *nexus* types into coordination, subordination, and cosubordination is intersected by another division according to level of *junction*: 1) nuclear junctures, 2) core junctures, and 3) peripheral

junctures. This relates to their layered theory of the clause, which can be schematised in the following manner, where the operators applicable to a particular level are underlined:

nucleus = predicate + directionals + aspect

core = nucleus + core arguments + modality¹⁰

periphery = core + peripheral arguments + status,¹¹ tense, evidentiality, and illocutionary force.

When constituents are conjoined in a dependent relationship at a particular level of juncture, all the operators of that level and those exterior to that level must be shared. Thus, a dependent juncture at the nuclear level will involve two or more predicates sharing all operators. A dependent juncture at the core level will involve two predicates sharing some core arguments and all peripheral arguments and having the same core and peripheral operators. A dependent relationship at the peripheral level is indicated by obligatory sharing of some peripheral operators like tense, status, and illocutionary force.

Given three nexus types and three levels of juncture, there should theoretically be nine different ways to combine predications. However, as Foley and Van Valin (p.256) note, subordination does not appear to occur at the nuclear level.

In Mangap-Mbula, cosubordination is observed at all three structural levels: nuclear, core and peripheral.

1. nuclear-level cosubordination

Two types of nuclear-level cosubordination can be distinguished. The first is instanced by compound¹² verbs, in which the two cosubordinated predicates are phonologically combined into a single word:

- (67) *Nio aŋ-tar-paala ke.*
 NOM.1SG 1SG-cut-break tree/stick
 I split the wood.

A second type of nuclear cosubordination is instanced by verb plus motion verb sequences like the following:

- (68) *Nio aŋ-re la pizin.*
 NOM.1SG 1SG-see go REF.3PL
 I looked over at them.

- (69) *Boobo sa-la pizin.*
 2SG+call ascend-go REF.3PL
 Call up to them.

In these non-compounded nuclear level serialisations, the second verb is never inflected with the Subject prefixes, and nothing can intervene between the two verbs. In this respect, they

¹⁰ Foley and Van Valin (p.214) define the category 'modality' in the following manner: "modality characterises the speaker's estimate of the relationship of the actor of the event to its accomplishment, whether he has the obligation, the intention, or the ability to perform it".

¹¹ Status has to do with the actuality of an event, whether it has been realised or not. It ranges from real through necessary, probable and possible to unreal (Foley and Van Valin, p.213).

¹² For a more extended treatment of compounding, including how compounds differ from cosubordinate serialisations, see §3.4.1ff.

resemble compounds. They are distinguished from compounds because the second verb is independently stressed, and its adjunction does not trigger any phonological processes.

2. core-level cosubordination (=verb serialisation)

In core-level cosubordination, one minimal predication is immediately followed by another one with no intervening conjunctive form. However, an argument (the Object) can intervene between the two predicates. Also, the second predicate, if verbal, has the possibility of being inflected with the Subject prefixes. For example:

- (70) *I-zem mburu kini (i-)se woongo.*
 3SG-leave possessions LOC.3SG 3SG-ascend canoe
 He left his things on the canoe.

3. peripheral cosubordination

In peripheral cosubordination, consecutive predications are conjoined with the conjunction *ma* and all predicates must be inflected with the Subject prefixes if they are inflecting verbs:

- (71) *Zin ti-zibuuru pa yok ma ti-le-la.*
 NOM.3PL 3PL-catch.crayfish REF water and 3PL-enter-go
 They were catching crayfish and heading inland.

- (72) *Ni i-kamam uraata ma i-mbotmbot.*
 NOM.3SG 3SG-do+RED work and 3SG-stay+RED
 He continued to work. (Note: this does *not* mean 'He did the work and afterwards stayed around'. This is the ordinary means of encoding continuative aspect.)

- (73) *Ti-ŋgal ŋge ta ma i-meete pa mbeŋ.*
 3PL-pierce pig SPEC and 3SG-die REF night
 They killed a pig at night.

- (74) *Yok i-lol lele ma sik.*¹³
 water 3SG-cover area and completely.covered
 Water completely covered the area.

The mutual dependence of the juncts in cosubordinate constructions is demonstrated by the following four characteristics.

1. Barring hesitations or false starts, the combination is nearly always pronounced under a single intonational contour.
2. Most of these predicate combinations exhibit an obligatory sharing of at least one argument. One type of argument sharing involves a same-Subject sequence, as in the following two examples:

- (75) *I-kam pa-kam-ŋa-na ma i-luŋ pai.*
 3SG-do CAUS-do-NMS-GEN.3SG and 3SG-pretend journey
 He tricked him by pretending to go in another direction.

¹³ Recall that *sik* here is an uninflected aspectual verb. For further details regarding these verbs, see §3.2.3.2.4 and §3.2.4.3.4.

- (76) *Kaŋkaŋ*¹⁴ *ma aŋ-la kar.*
 directly and 1SG-go village
 I went straight to the village.

Another type of argument sharing involves a pivot/switch Subject construction in which an Object (77) - (79) or Oblique argument (80) of one predication is coreferential with the Subject of the following predication:

- (77) *I-pun-meete tomtom mbura-n.*
 3SG-hit-die person strength-GEN.3PL
 He took people's strength away.
- (78) *Kam buk i-mar.*
 2SG+do/get book 3SG-come
 Bring the book.
- (79) *Aŋ-boobo wae-ŋ bizin ma ti-mar.*
 1SG-call associate-GEN.1SG PL and 3PL-come
 I called my associates over.
- (80) *Aŋ-so pizin ma ti-mar.*
 1SG-say REF.3PL and 3PL-come
 I had them come.

Note that these pivot constructions seem to always involve some element of causation, in which the Subject of the first predication brings about the state of affairs expressed by the second.

Crowley (1987:48) distinguishes a third type of argument sharing, in which “the second verb marks the pronominal category which represents the conjunction of both the initial subject and object categories”. Mangap-Mbula exhibits this construction as well:

- (81) *Aŋ-kam Aibike ma am-la mokleene.*
 1SG-get Aibike and 1PL.EXC-go garden.
 I took Aibike with me to the garden.

An exception to this typical sharing of arguments in cosubordinate constructions is instanced by what Crowley (1987:49) terms “ambient serialisations”. He defines these in the following manner:

Ambient serialisation...is the term used to refer to a construction in which a verb is serialised to another verb but in which there is no specific referent associated with the subject of the serialised verb, and the verb simply describes a general predication.

In Mangap-Mbula, some of the predicates occurring most frequently in ambient cosubordination constructions would be those listed below.

¹⁴ Recall that *kaŋkaŋ* here is an uninflected manner verb. For further details regarding uninflected verbs, see §3.2.3.2ff.

(a) *-rao* 'able, adequate, sufficient', which encodes extent:

- (82) *Aikur i-mbot Lae i-rao ndaama tel.*
 Aikur 3SG-stay Lae 3SG-able year three
 Aikur stayed in Lae for three years.

(b) motion verbs which encode Outer Locations:

- (83) *Ti-ketoto zin raskol i-su Lae.*
 3PL-chase+RED PL criminal 3SG-descend Lae
 They are after the criminals in Lae.

(c) *-ndeeje* 'find, correct':

- (84) *Nu kilaala itu-m ma i-ndeeje.*
 NOM.2SG 2SG-recognize REFL-GEN.2SG and 3SG-find
 You have correctly identified yourself.

(d) the non-inflecting verb *som*, which encodes frustrated intention:

- (85) *Niam am-toombo ma som.*
 NOM.1PL.EXC 1PL.EXC-try and do.in.vain
 We (EXC) tried in vain.

(e) various temporal nouns, which are used in cosubordinate constructions to encode temporal extent 'until':

- (86) *Am-ru u-unu ma am-bot ma mbej.*
 1PL.EXC-seek reason-GEN.3SG and 1PL.EXC and night
 We continued to seek the reason for it until dark.

As is the case in Paamese (Crowley 1987:49), Mangap-Mbula inflecting verbs occurring in ambient serialisations invariably have third singular Subject indexing.

3. Another characteristic of cosubordinate constructions is that it is impossible to independently specify the illocutionary force of the juncts or negate them. Rather, the combination always has a single polarity and illocutionary force. Thus, when a cosubordinate combination of predications is negated, the meaning is somehow that the state of affairs encoded by the combination as a whole has failed to eventuate. For example:

- (87) *Keke i-pun ŋge ma i-meete som.*
 Keke 3SG-hit pig and 3SG-die NEG
 Keke didn't kill the pig.

This didn't happen:

Keke did something: hit the pig.
 Because of this, the pig died.

4. In cosubordinate constructions there is strict event iconicity. Thus cause always precedes result, and grammatical order corresponds with temporal order (except in the case of predication combinations expressing *simultaneous* aspects of a single event).

Bradshaw (1982:28) semantically characterises verb serialisation as sequences of verbs in which all of the verbs refer to sub-parts of a single complex event. Although it is difficult to objectively validate, this characterisation seems applicable to all types of cosubordination and can be schematically represented as follows:

TABLE 5.4: COSUBORDINATE VERSUS NON-COSUBORDINATE PREDICATE COMBINATIONS

	Cosubordinate	Non-Cosubordinate
Sequential	Predication 1 Predication 2	Predication 1 Predication 2
Simultaneous	Predication 1 Predication 2	Predication 1 Predication 2
	Time----->	Time----->

Table 5.4 is intended to convey the fact that whether two predications encode simultaneous or sequential events, is a different parameter from the *psychological distinctness* of the events they encode. By ‘distinctness’ is meant whether the speaker thinks of one or two things as ‘happening’. One can have sequential events which are not distinct and simultaneous events which are, and vice versa.

It is possible to omit *ma* between cosubordinate predications if they have the same Subject. Such omission is observed primarily in two contexts: 1) repetitions of verbs to indicate durative action ‘kept on doing X’ (88), and 2) combinations of a motion verb plus another predicate meaning ‘go do X’ (89).

(88) *I-kak* (*ma*) *i-kak* (*ma*) *i-kak*.
 3SG-squawk and 3SG-squawk and 3SG-squawk
 He squawked and squawked and squawked.

(89) *La* (*ma*) *kan* *pa lele ta-boo-zen*.
 2SG+go and 2SG+eat REF place SPEC-many-only
 Go (and) eat everywhere.

With regard to the productivity of the three structural levels of cosubordination, nuclear cosubordination is least productive, and sentential/peripheral cosubordination with *ma* is most productive. Core cosubordination, although *textually* frequent, is quite restricted in terms of both: 1) the number of different predicates occurring in the construction, and 2) the semantic relationships they encode. The predicates occurring most often are the two groups below:

1. Motion verbs like *-la* ‘to go’, *-mar* ‘to come’, *-se* ‘to ascend’, *-le* ‘enter’, and *-su* ‘to descend’, which are used in serialised ‘prepositional’ constructions to encode locative notions like IN, ON, AT, and INSIDE:

- (90) *Ti-nmbot le-la ruumu.*
 3PL-stay+RED enter-go house
 They are inside the house.

2. The verb *-rao* 'to be adequate, able, or obligated', which when serialised is used to encode EXTENT or DURATION:

- (91) *Ni i-kam uraata i-rao ndaama tel.*
 NOM.3SG 3SG-do work 3SG-able year three
 He worked for three years.

The verbs *-map* 'to end, be finished' and *-mbot* 'to stay, be, live' exhibit aspectual meanings when they occur in peripheral cosubordinate constructions. *Map* is used to indicate telic aspect or *completeness*, that it is impossible for more of the same action to happen:

- (92) *Tomtom ti-map ma ti-la su.*
 person 3PL-end and 3PL-go forest
 The people all went to the forest; no-one stayed behind.
- (93) *Kolman ti-kan kini ma i-map.*
 old.person 3PL-eat food and 3SG-end
 The old men ate up all the food. (There was nothing left over.)

The verb *-mbot* is used to encode continuative aspect, as in example (72) above.

5.5.2 NON-EMBEDDED, INDEPENDENT SENTENCE COMBINATIONS

In the remainder of this chapter, we describe combinations of more-or-less independent sentences. In such combinations, neither of the conjoined sentences is embedded within the other, and there is no *obligatory* sharing of arguments across juncts. Also, either of the juncts may be independently specified for polarity. So, with regard to such parameters, the juncts in these sentence combinations are independent of each other. With regard to other parameters, however, they are revealed as still exhibiting some elements of dependency. Referentially, for example, if the Subject of a conjoined sentence is omitted, then it is typically¹⁵ coreferential with the Subject of the preceding sentence. Also, these combinations mostly exhibit event iconicity, in which a sequence like A conjunction B implies that A precedes (and causes) B. Finally, regarding pragmatic dependency, many of these connective forms pair according to whether they explicitly indicate the first junct to be overtly presupposed or not. Thus, we find sets like the following:

<i>to</i>	following, then	<i>to-na</i>	after (that)
<i>mi</i>	and	<i>ma-na</i>	right after that
<i>tabe</i>	and so	<i>ta-na</i>	therefore, because of that

In these the presence of the formative *na* indicates overt presupposition of the preceding sentence: 'I say: You know this'.

The remaining discussion is organised according to the different semantic types of interpropositional relations which various conjunctive forms encode. More or less following

¹⁵ With third person Subjects, this is almost a categorial requirement, but with first and second person ones it is merely a very strong tendency.

Longacre (1985), these can be divided up into the following types: 1) coupling, 2) contrast, 3) comparison, 4) alternation/disjunction, 5) temporal, topical, and event succession and overlap, 6) causal, 7) equivalence/paraphrase, 8) frustration, and 9) conversational. These are discussed below.

5.5.2.1 COUPLING (NON-TEMPORAL 'AND')

The form *mi* conjoins sentences exhibiting a wide range of interpropositional relationships. If at least one of the juncts contains a reduplicated verb, an interpretation of temporal simultaneity is favoured:

- (94) *Tizi-ini i-taṭṭaṭ mi i-ru i.*
 y.sibling-GEN.3SG 3SG-cry+RED and 3SG-seek ACC.3SG
 His younger brother was crying as he searched for him.

If neither of the juncts contains a reduplicated verb, then both simultaneous (95) and successive (96) temporal interpretations are possible:

- (95) *Ni i-miili mi guraaba kini ila Koobo.*
 NOM.3SG 3SG-return and friend LOC.3SG 3SG-go Aramot
 He returned, and his friend went to Aramot Island.
- (96) *Ke-pet mat mi ka-kan kini tiom.*
 2PL-appear outside and 2PL-eat food LOC.2PL
 Come out here and eat your food.

Mi can also be used to express causal relationships:

- (97) *Aṅ-re mooto mi aṅ-murur.*
 1SG-see snake and 1SG-be.surprised
 When I saw the snake, I was surprised.

If one of the juncts is negated, the combination frequently has a contrastive interpretation:

- (98) *Ni i-kam kini pizin mi zin ti-rak som.*
 NOM.3SG 3SG-do food REF.3PL and NOM.3PL 3PL-dance NEG
 He prepared food for them, and/but they didn't dance.

If no contextual or formal factors act to further restrict the meaning of *mi*, then it has an interpretation of simple logical conjunction:

- (99) *Kemol, ni biibi, mi ṅgure-ene molo.*
 camel NOM.3SG big and neck-GEN.3SG long
 A camel is big, and its neck is long.

In such an example, there are no temporal, contrastive, or causal elements. It is true that the conjoined propositions are simultaneously true, but here time is really not in focus. Rather, we simply have two characteristics of camels being asserted.

The different interpretations which *mi* can have are not really different *meanings* of the form. Instead, they are *contextual implicatures*. The context independent meaning of *mi* is

simply that two *distinct*¹⁶ propositions are being uttered. Accordingly, we can specify the meaning of the sentential conjunction *mi* as being:

X_{SENTENCE} *mi* Y_{SENTENCE}

I said something (=X).

I want to say something else (=Y).

5.5.2.2 CONTRAST/ADVERSATIVES ('BUT')

Two forms are used to express contrastive relationships like 'but', 'however', and 'despite this'. These are the forms *mi* and *tamen*. In the previous section, it was noted that *mi* can be used to express a wide variety of interpropositional relationships. One of these is that of mild contrast, like the English conjunction *but*. An adversative interpretation for *mi* is most frequently observed when one of the two junctis is negative and the other positive (100), or when the two sentences encode propositions which are otherwise somehow opposed (101):

- (100) *Mbeŋ to zin iwal ti-rakrak,*
 night then PL group 3PL-dance+RED
mi Ŋgas na, i-rak kat som.
 and/but Ŋgas GIV 3SG-dance well NEG
 At night, everybody was dancing, but Ŋgas, he didn't dance well.

- (101) *Silas i-la, mi nio aŋ-bot.*
 Silas 3SG-go and/but NOM.1SG 1SG-stay
 Silas went and/but I stayed.

Mi also frequently occurs in marked Theme constructions in which contrasted constituents are fronted:

- (102) *Kini, nio aŋ-rao pa, mi buzur na som.*
 food NOM.1SG 1SG-adequate REF and/but savory.food GIV NEG
 (Starchy) food I have enough of, but not savory food.

The Mangap-Mbula form which has an obligatorily contrastive *sense*, however, and not just a contrastive *implicature* is *tamen*. This form appears to be composed of the formative *ta*, which encodes specificity, and the adverb *men* 'still, yet, only' and is used to encode strongly contrastive relationships:

X *tamen* Y

I say:

You know X.

I think that you think something because of this.

I think something different.

I think Y.

¹⁶ It seems necessary to refer to a notion of distinctness in order to semantically differentiate sentences conjoined with *mi* from cosubordinate predication combinations conjoined with *ma*.

- (103) *Pikin, aŋ-kam=i ma i-nmbot tio i.*
 child 1SG-get=ACC.3SG and 3SG-stay+RED LOC.1SG PROX
 The child, I have taken him to be with me.

Tamen so-be ka-kam le-ŋ tiigi
 however say-NF 2PL-do RECX-GEN.1SG basket

However, if you give me a basket

mi wolwol, to-na ka-kam=i.
 and armlet then-GIV 2PL-get=ACC.3SG
 and an armlet, then you will get him back.

5.5.2.3 COMPARISON

Since Mangap-Mbula has no *morphological* devices for encoding comparatives, *syntactic* means must be used. The strategy used is essentially that noted by Longacre (1985:242-243) for the non-Austronesian language Wojokeso:

Comparison in Papua New Guinea is not expressed within a single sentence, but by a pair of sentences within a paragraph. It is, furthermore, really not comparison but contrast. In Safeyoka (a dialect of Wojokeso), for example, we find pairs of sentences such as ‘The black man’s boats are small. The white man’s boats are huge.’ There is no direct way of saying ‘the black man’s boats are smaller than the white man’s boats’...

Comparison in Mangap-Mbula is similarly expressed by the conjunction of two simple attributive sentences using *mi*:

- (104) *Awa, ni kumbu-unu molo,*
 Awa NOM.3SG leg-GEN.3SG long

mi Aikeŋ, ni kumbu-unu katjana.
 and Aikeng NOM.3SG leg-GEN.3SG short

Awa is taller than Aikeng (lit. Awa, his legs are long and/but Aikeng, his legs are short).

Other variations on this theme would involve constructions like the following:¹⁷

Y is tall, and X is very tall.	(= X is taller than Y)
X is tall, and Y isn’t.	(= X is taller than Y)
X is tall, and Y returns from X.	(= X is taller than Y)
X is tall, and Y isn’t very tall.	(= X is taller than Y)
X is tall, he/she surpasses all Xs.	(= X is the tallest of all.)

¹⁷ For examples, see §3.2.1.6.1 of the morphology chapter.

5.5.2.4 ALTERNATION/DISJUNCTION ('OR')

Alternation is encoded by two forms: *som*¹⁸ and *o*.¹⁹ The distinction between the two has to do with whether or not the list of alternatives is an exhaustive one. *Som* is used when the list of alternatives is exhaustive; that is as far as the speaker is concerned, these are the only choices possible:

- (105) *Ni i-peebe moori, som tomooto?*
 NOM.3SG 3SG-bear female or male
 Did she give birth to a girl or a boy?

- (106) *Nu kan, som kan som?*
 NOM.2SG 2SG+eat or 2SG+eat NEG
 Did you eat it or didn't you?

O, on the other hand, is used when the disjunction is non-exhaustive; that is when the speaker lists some but not all of the possible alternatives (107). Frequently it is used when alternative phrasings for the same idea are used (i.e. 'in other words...') (108). This is to be expected since, given the many different ways there are of saying things, any listing of paraphrases is necessarily a partial one.

- (107) *Nio lele-ŋ be tomtom ki yaamba, o*
 NOM.1SG insides-GEN.1SG NF person LOC sorcery or
 I definitely don't want a worker of sorcery, or
tomtom sorok, o tomtom toono ka-na
 person w.o.basis or person ground PASS.GEN-GEN.3SG
 some worthless person, or someone interested in worldly things
 (=magic/sorcery),

ti-mar ti-mbot kar ti na som kat.
 3PL-come 3PL-stay village this GIV NEG very
 to come and stay in this village.

- (108) *Ti-pa-kaam, o ti-mbukmbuk sorok koron ta-na.*
 3PL-CAUS-do+RED or 3PL-tie+RED w.o.basis thing SPEC-GIV
 They are faking, (in other words) they are just tying that thing for nothing.

5.5.2.5 TEMPORAL, TOPIC, AND EVENT SUCCESSION

There are a number of connective forms whose primary function is to indicate the *relative proximity* of temporally related events; that is how closely the events encoded in one clause follow on after those of the preceding one. Four different degrees of proximity are distinguished: 1) simultaneity/temporal overlap, 2) close temporal succession, 3) distal temporal succession, and 4) very distal temporal succession. Intersecting these distinctions are two further ones having to do with: 1) whether or not the first junct is presupposed, and

¹⁸ The conjunction *som* 'or' is homophonous with the negative *som*.

¹⁹ Some speakers consider the form *o* to be a Tok Pisin borrowing. Other speakers, however, maintain that it is a genuine Mangap-Mbula form and distinguish the two forms in the manner indicated in the text. Many speakers use *o* and *som* interchangeably.

2) whether or not the event in the first junct is perfect in aspect. The temporal connective system is outlined below:

TABLE 5.5: TEMPORAL CONNECTIVE DEVICES

	First Predication is not Presupposed	First Predication is Presupposed but not Perfect Aspect	First Predication is Presupposed and Perfect Aspect
1. Simultaneity of both events	<i>mi</i>	<i>na</i>	<i>makij, na</i>
2. Close proximity of both events	<i>mi</i>	<i>mana</i>	<i>makij, mi</i>
3. Distal proximity of both events	<i>to</i>	<i>tona</i>	<i>makij, to(na)</i>
4. Very distal proximity of both events	parataxis plus distinct pause-intonational groups		

Note in Table 5.5 that *mi* may be used to encode either temporal simultaneity (109) or close temporal succession (110).

(109) *Zin moori ti-zirziiri lele, mi yenyeenge i-pet.*
 PL woman 3PL-sweep+RED place and earthquake 3SG-appear
 While the women were sweeping the place, there was an earthquake.

(110) *To i-zem pup-ŋa-na, mi ziru ti-keene.*
 then 3SG-leave cut-NMS-GEN.3SG and NOM.3DU 3PL-lie/sleep
 Then he quit the (hair) cutting, and the two of them went to sleep.

In example (109), note especially that a reduplicated verb form used in conjunction with *mi* is the means for encoding an ongoing event *during which* another event takes place.

In conjunction with the negative perfect adverbial *zen*, *mi* expresses 'before':

(111) *Ni i-posop pup-ŋa-na zen, mi man i-taj.*
 NOM.3SG 3SG-finish cut-NMS-GEN.3SG NEG.PERF and bird 3SG-cry
 Before he finished the cutting, the bird cried out (lit. he hadn't yet finished the cutting and the bird cried out).

Use of the perfect adverbs *kek* 'PERFECT' and *zen* 'NEGATIVE PERFECT' and relative clauses are the only formal means in the language for encoding events in an order other than strict temporal sequence.

A greater temporal gap between two events is encoded using the conjunction *to*:²⁰

- (112) *Nalau i-woolo Ambele ta i-peebe moori, Boksi,*
 Nalau 3SG-marry Ambele SPEC 3SG-bear woman Boksi
to Boksi i-woolo Ako.
 then Boksi 3SG-marry Ako
 Nalau married Ambele, who gave birth to a girl, Boksi, and (some time later)
 Boksi married Ako.

The notion of temporal proximity is a *relative* one. Therefore, it is impossible to formulate strictly chronological rules like ‘If the events are separated by less than two hours, then the conjunction *mi* is used’. The encoding of proximity is one way that a speaker’s perspective on a sequence of events is reflected in the language. In choosing between *mi* versus *to*, or either of these two versus cosubordination, the speaker is imposing his/her own viewpoint upon the event sequence.

Proximity should not be thought of as a purely temporal notion. For example, the conjunction *to* is used whenever there is *any sort* of medium level discontinuity in a discourse. The discontinuity may be: 1) temporal, as was illustrated in example (112) above, 2) topical (a switch in participants (113)), or 3) the beginning of a new event sequence (114).

- (113) *Aigiu ziru Apoi ti-tar-paala ke.*
 Aigiu NOM.3DU Apoi 3PL-cut-break wood
 Aigiu and Apoi split firewood.
Mi molo som na, Aigiu i-taara Apoi
 and long NEG GIV Aigiu 3SG-cut Apoi
 And it wasn’t long and Aigiu cut Apoi’s
nama-ana na-ana ma put.
 hand-GEN.3SG mother-GEN.3SG and completely.severed
 thumb off.

Beginning of Ana Topic Chain

- To Ana i-loondo ma i-pet opis*
 then Ana 3SG-run and 3SG-appear office
 Then Ana (Apoi’s mother) ran down to the office
be i-so pa Alisa.
 NF 3SG-say REF Alisa
 to tell Alisa (Apoi’s father).
 (114) *Am-kam kini tiam mi am-neene*
 1PL.EXC-get food LOC.1PL.EXC and 1PL.EXC-roast
 We got our food and roasted it

²⁰ This form is homophonous with the verb *-to* ‘follow’ and may be related to it; i.e. X *to* Y = ‘X happened. *Following* this, Y happened.’

mi am-noi to am-kan
 and 1PL.EXC-boil then 1PL.EXC-eat
 and boiled it, and then we ate it.

In (113), note that the start of the Ana topic chain is signalled by the conjunction *to*. There is no significant temporal gap here; Ana's response was instantaneous. So *to* is not expressing temporal discontinuity. There is, however, both topic and event discontinuity, and this is the reason *to* is used. In (114), the same topic is maintained across all clauses and there is no significant time gap involved between the completion of the food preparation and the eating. Here, then, *to* seems to be marking the transition from one well-defined sequence or script of food preparation to another one of eating.

The three types of discontinuities triggering the use of *to* can be more precisely specified as:

X_{SENTENCE} *to* Y_{SENTENCE}

Something (=X) happened.

I say:

Some time after this, Y happened.

(Temporal Discontinuity)

Something (=X) happened.

I say:

After this, someone different did something.

I want to talk about this person.

(Topical Discontinuity)

Something (=X) happened.

I say:

After this, something different (=Y) happened.

(Event Discontinuity)

In reported dialogues involving only two speakers, the combination of *To iso* in sequences like the following:

To i-so [QUOTE]
 then 3SG_α-say

To i-so [QUOTE]
 then 3SG_β-say

is all that is required in order to indicate a change of speaker. This seems to be still another instance of *to*'s general function of indicating lack of continuity in a discourse.

The most distal temporal relationship of all is expressed by paratactic juxtaposition of two sentences, with: 1) falling intonation occurring on the first junct, 2) a raising of pitch level at the beginning of the second junct, and 3) a pause occurring between the two. The second junct also frequently contains a thematised time adverbial which provides a new temporal setting for the discourse. For example:

(115) *To-na i-ko mi i-miili ma i-mar kar.*
 then-GIV 3SG-flee and 3SG-return and 3SG-come village
 After that he fled back to his village.

Ø *Aigule toro na, i-magga ma*
 day other GIV 3SG-get.up and
 The next day, he got up and went to

i-la ki kolman ta...
 3SG-go LOC old.person SPEC
 an old man...

In addition to indicating a significant temporal gap between the events encoded in the two juxtaposed sentences, such a construction frequently functions on a higher level to indicate major section boundaries in a discourse.

It was noted above that cross-cutting the *proximity* distinctions among devices encoding temporal relations is a further *pragmatic* distinction of overt presupposition of the first unit in the two unit sequence versus the lack thereof. This pragmatic distinction is signalled by the presence versus the absence of the given information formative *na* in the conjunctive form and/or the presupposed perfect sequence X *makij* 'after X had happened'. Conjunctive sequences containing *na* or *makij* explicitly presuppose the preceding material, while those without do not.

The form *mana* is postulated to come from *mi + na* rather than *ma + na*, with (irregular) vowel harmony converting the /i/ to /a/. This is because *mana* is used in contexts more similar to those in which *mi* occurs than those in which *ma* occurs. In particular, *mana* is not used in constructions which could be plausibly viewed as cosubordinate. Given the posited psychological unity of the conjoined events encoded by cosubordination, it is not possible to presuppose just one of them.

As illustrations of the use of these presupposing forms, see (116) (presupposed simultaneity) and (117) (presupposed close succession):

(116) ...*ti-pet kar. Ti-pet na, ni i-so sua som.*
 3PL-appear village 3PL-appear GIV NOM.3SG 3SG-say talk NEG
 ...they came to the village. When they came, he said nothing.

(117) *Ni i-mbot Lae ma i-rao puulu tel, ma-na i-miili.*
 NOM.3SG 3SG-stay Lae and 3SG-able moon three and-GIV 3SG-return
 After he stayed in Lae for three months, he returned.

The presupposed perfect aspectual distinction in successive predications is expressed by the addition of *makij* following the first junct. This form is used when the first event in a two event sequence: 1) is presupposed, 2) has a clearly defined endpoint, and 3) has reached this endpoint. For example:

(118) ...*mi am-se woongo.*
 ...and 1PL.EXC-ascend canoe
 ...and we got up on the canoe.

Niam ta-booze-men am-se makij
 NOM.1PL.EXC SPEC-many-only 1PL.EXC-ascend after.had
 After we had all got on,

to, woongo i-zem bris ma i-la.
 then canoe 3SG-leave wharf and 3SG-go
 then the canoe left the wharf and set out.

The forms *tona* and *mi* may be morphologically combined with the non-factual modal adverb *be* to yield the complex conjunctions *tonabe* and *mibe*, which indicate temporal succession and simultaneity between two events which are assumed to be non-factual. *Na*, however, does not exhibit this combinatory possibility:

- (119) *Ko ti-mbot ti-mbot ma kajar i-pit,*
 UC 3SG-stay 3SG-stay and galip 3SG-stop.bearing.nuts
 They will continue to stay there until the galip trees (=Tahitian Chestnut) finish bearing nuts,
to-na-be ti-ko mini pa su molo.
 then-GIV-NF 3PL-flee again REF forest long
 and then after that they will go away again to the deep forest.

This concludes the presentation of Mangap-Mbula temporal connectives. It should be recalled that all of these conjoin predications which: 1) are not structurally embedded, and 2) are relatively independent of each other. The first characteristic distinguishes them from relative clauses and sentential Complements, while the second one distinguishes them from cosubordinate combinations of predications.

To describe and delineate all of the temporally oriented connectives in Mangap-Mbula, then, reference must be made to at least the following five parameters:

1. structural relationships: embedded, independent, interdependent
2. type of temporal relationship: succession 'after this' or simultaneity 'at the same time'
3. overt presupposition of the first junct versus the lack thereof
4. psychological proximity of successive events
5. perfect versus non-perfect aspect of the event encoded in the first junct of the combination

Finally, with regard to the sentential positioning of the different temporal conjunctive devices, parataxis across a phonological pause is necessarily only a sentence-initial device. *Na* and the presupposed perfect form *makij* occur only sentence internally. The other devices occur both sentence internally and sentence initially. Phonologically, it is quite typical to have a pause following the conjunctive forms *to*, *tona*, *mana*, and *na*. With *mi*, on the other hand, the pause occurs both before and after the conjunction.

5.5.2.6 CAUSAL RELATIONSHIPS

In Mangap-Mbula there are a number of different multimorphemic conjunctions which basically indicate some sort of causal relationship between conjoined predications. The principle forms are: *ta*, *tana*, *tanata*, *tabe*, *pa*, and *paso*. These appear to be composed of the following morphological formatives:

1. *ta* '(the)specific (one)(that)'
2. *na* 'given information'
3. *be* 'non-factual adverb'
4. *pa* 'Referent preposition'
5. *so* 'what'

It has not been possible to rigorously differentiate the meanings of these causal conjunctions. Therefore, the remarks regarding the semantics of the different forms should be regarded as somewhat tentative.

The causal connectives can be divided into: 1) those conjoining reason-result sequences (These are based on *ta*), and 2) those conjoining result-reason or assertion-grounds sequences (These are based on *pa*.)

5.5.2.6.1 FORMS ENCODING REASON-RESULT SEQUENCES

The forms *tabe*, *ta*, *tana*, and *tanata* are all used to encode reason-result sequences and occur in structures like the following:

Reason for X	<i>tabe</i>	X (Result)
	<i>ta</i>	
	<i>tana</i>	
	<i>tanata</i>	

In terms of textual frequency, these are ranked as follows:

tana > *tanata* ~ *tabe* > *ta*

Note that all of these forms contain the morpheme *ta*, which is elsewhere in the language used to *point* to specific entities. The occurrence of such a form in reason-result connectives is 'reasonable', since in reason-result relationships one points to something and says 'Because of *that...*'. In the explications of causal conjunctive forms which are given later, the contextual givenness of reasons is expressed by the component 'I say you know this (=X).' Note also the homophony of the most frequent form *tana* and the demonstrative *tana*, which is used to encode: 1) entities spatially near or accessible to the hearer, and 2) textually given participants. This seems to reflect the metaphor that DISCOURSE IS SPACE.

5.5.2.6.1.1 *tana*, *ta*, AND *tanata*

The form *tana* is the most common reason-result conjunction and is used when the reason is presupposed and the result asserted. It occurs both sentence initially (120), (121) and sentence medially (122). Sentence initially, it can be glossed as 'therefore' or 'so', while sentence medially, it is glossed as 'because'.

- (120) *Mankwoono na, na-ana ma tama-ana*
 morning GIV mother-GEN.3SG and father-GEN.3SG
 In the morning, his mother and father

ti-la mogleene, mi ni i-mbot kar.
 3PL-go garden and NOM.3SG 3SG-stay village
 went to the garden and he stayed behind in the village.

Tana i-so pa kolman na-n
 therefore 3SG-say REF old.person mother-GEN.3PL
 Therefore he had one of the old women

ta ma i-neene kini mi ni i-kan.
 SPEC and 3SG-roast food and NOM.3SG 3SG-eat
 roast (him) some food and ate it.

- (121) *Nge, ni i-kam korog boozo-men. Tana*
 pig NOM.3SG 3SG-do thing many-only therefore
 The pig does many things. Therefore

iti i-rao ti-ziiri zin na som.
 NOM.1PL.INC 3SG-able 3PL-drive.away ACC.3PL GIV NEG
 we musn't drive them away.

- (122) *Ni i-so pio tana aḡ-kam*
 NOM.3SG 3SG-say REF.1SG because 1SG-do
yok mi aḡ-noi.
 water and 1SG-boil
 Because he told me to, I took the water and boiled it.

The primary sense of *tana* can be explicated as:

X *tana* Y

I say:

You know this (=X)
 Because of this, Y.

Tana also has a non-causal sense. It is frequently used to return to the backbone of a discourse after some sort of digression. The following sort of structure is observed:

1. ...X
2. Digression
3. *Tana* recapitulation of X
4. *mi* new event

An example of this use is now given.

- (123) *Molo som mi zin didiman,*
 long NEG and PL agricultural.officers
 Soon the agricultural officers,

wal ki korog paaza-ḡa-n, ti-wa
 group LOC thing plant-NMS-GEN.3PL 3PL-walk+RED
 the people who check up on planted things, walked

ma ti-pet kar Birik
 and 3PL-appear village Birik
 into Birik village

Purpose Digression

be ti-tiiri uraata kizin Birik.
 NF 3PL-examine work LOC.3PL Birik
 to examine the work of the Birik people.

Recapitulation

Tana wal ta-na ti-mar kar, mi
 so group SPEC-GIV 3PL-come village and
 So these people came to the village

tutul ki kar Birik, ni za-ana
 counsellor LOC village Birik NOM.3SG name-GEN.3SG
 and the counsellor of Birik, named

Awa, i-la ma i-pet kizin...
 Awa 3SG-go and 3SG-appear LOC.3PL
 Awa, went up to them...

All three of the forms *tana*, *ta*, and *tanata* share the component 'I say: Because of this, X'. The differences between them have to do with the information statuses of the reason and the result. While *tana* encodes *presupposed reasons* and *asserted results*, *ta* encodes *asserted reasons* and *presupposed results*. That is:

X ta Y

I say:

Because of this (=X), Y.

You know Y.

- (124) *Nu kam pat pizin som*
 NOM.2SG 2SG-do money REF.3PL NEG

ta ti-kam uraata som.
 because 3PL-do work NEG

The reason why they didn't work is that you didn't give them any money
 (lit. it is because you didn't give them any money that they didn't work).

- (125) *Nu la swoi ta mar=i.*
 NOM.2SG 2SG+go where that 2SG+come=PROX

Where are you coming from (lit. where did you go that you are coming)?

Example (124) is an appropriate reply to a question like Why didn't they do any work?, which presupposes the fact that some people did not work and seeks to gain an explanation for this fact. Example (125) is a greeting which is normally used when one meets someone on the trail. In such a situation, the fact that someone is coming is obviously presupposed. After all, you can see them. The use of *ta* to encode reason-result relationships is restricted to sentence-medial position and is probably best viewed as an instance of clefting.

The form *tanata* is used when *both* the reason and the result are contextually given. That is:

X *tanata* Y

I say:

You know X.

You know Y.

Because of this (=X), Y.

Consider the following letter fragment:

(126) *Abu, nio aŋ-so-be nu dop*
 grandmother NOM.1SG 1SG-say-NF NOM.2SG 2SG+dig.up
 Grandmother, I want you to dig me up

ko-ŋ keembe sa mi kam ma
 CON.RECX-GEN.1SG clam NON.REF and 2SG+do and
 some clams and bring them

mar. Pa nio moto-ŋ i-ŋgal uraata
 2SG+come for NOM.1SG eye-GEN.1SG 3SG-pierce work
 here. For I am contemplating a particular job (for which I need people's help and
 these people must be fed if they are to do the work).

ta. Mi kini nio aŋ-rao pa mi buzur
 SPEC and food NOM.1SG 1SG-able REF but savoury.food
 And I have enough vegetable food, but not enough savoury food.

na som. Tanata nio aŋ-so
 GIV NEG because.that NOM.1SG 1SG-say
 That's the reason that I want

nu uulu yo pa buzur.
 NOM.2SG 2SG+help ACC.1SG REF meat
 you to help me with the savoury food.

Pa nio itu-ŋ ta-men na,
 for NOM.1SG REFL-GEN.1SG SPEC-only GIV
 For by myself,

aŋ-rao pa uraata som.
 1SG-able REF work NEG
 I am unable to do the work.

This is an interesting fragment because it contains quite a lot of reasoning in just a few lines. Its overall structure is:

Request for clams

Pa Reason for request, a task which needs to be done, but there is a lack of meat.
 (Cultural implication: if you don't give meat to people, they will not help you
 with your work)

Tanata Request restated in the light of the reason

Pa Reason for having to ask others to help, the job is too big for one person to do

The important thing in this example is the use of *tanata*. Note that the sentence introduced by *tanata* is basically a recapitulation of the first sentence. As such, it, like the reason for the request, constitutes contextually given information.

A frequent use of *tanata* is in legends and other stories which provide an explanation for the way things are today. The story explains the origin and then, at the conclusion, one has an utterance like *Tanata X*, meaning 'And that's the reason why today X is the case'. As one illustration, consider the following example, which is the last sentence from a story explaining how taro came to disappear from the side of Umboi Island where the Mangap-Mbula people live:

- (127) *Tanata koozi niam am-rao*
 because.that today NOM.1PL.EXC 1PL.EXC-able

am-kan mok mini som.
 1PL.EXC-eat taro again NEG

And that's the reason why today we are not able to eat taro anymore.

The result in (127) is a present reality of life which everyone knows (and laments!). It is, therefore, contextually/culturally given.

5.5.2.6.1.2 THE FORM *tabe*

The distinction between *tana*, *ta*, and *tanata* on the one hand and *tabe* on the other is a difficult one to capture. *Tabe* is frequently used when the causal connection is more *indirect*; that is when the *ultimate* reason or cause is separated from the *ultimate* result in a causal chain by a number of intervening steps, as in the following example:

- (128) *U-unu ta iti kopo-ndo*
 source²¹-GEN.3SG SPEC NOM.1PL.INC stomach-GEN.1PL.INC

The reason that we have stomach

i-yoyou ma kopo-ndo suru-unu,
 3SG-fire+RED and stomach-GEN.1PL.INC liquid-GEN.3SG
 aches and diarrhoea

ina pa iti ta-la lom ma
 GIV REF NOM.1PL.INC 1PL.INC-go toilet and
 is that when we come from the toilet

ta-mar na, tu-ŋguuru nama-nda som,
 1PL.INC-come GIV 1PL.INC-wash hand-GEN.1PL.INC NEG
 we don't wash our hands before

mi ta-kam kini ma ta-kan.
 and 1PL.INC-get food and 1PL.INC-eat
 we eat.

Tabe iti ta-kam kini, mi
 so NOM.1PL.INC 1PL.INC-get food and
 And so, we take the food and

zems i-la kini, mi ta-kam ma ta-kan
 germs 3SG-go food and 1PL.INC-get and 1PL.INC-eat
 germs go into it and because we take it and eat it,

ta i-la ma i-kam
 SPEC 3SG-go and 3SG-do
 (the germs) go and cause

²¹ The form *u-* has the following range of meanings: 1) base (of a tree), 2) reason/cause, and 3) lineage. For a similar conflation of meanings one and two, see Tok Pisin *as*.

ma iti kopo-ndo i-yoyou.
 and NOM.1PL.INC stomach-GEN.1PL.INC 3SG-fire+RED
 us to have stomach aches.

In (128) there is a causal chain which has at least three intermediate steps in addition to the ultimate cause and the ultimate result: 1) not washing hands after one goes to the toilet, 2) germs remain on our hands, 3) these germs are transferred to food when we handle it, 4) when we eat the food, the germs are transferred to our bodies, and 5) in our bodies the germs cause us to be sick. Such involved reasoning chains are one typical context for *tabe*.

The involved reasoning chain does not, however, need to be made explicit. Consider the following example, which comes from a discussion about a proposed forestry project:

(129) *Zin Saina ti-yok kek be ti-kam uraata*
 PL China 3PL-agree PERF NF 3PL-do work
 The Chinese have agreed to work

piti. Tabe molo som to zaala ko i-pet.
 REF.1PL.INC so long NEG then road UC 3SG-appear
 for us. So it won't be long and then perhaps there will be a road.

Villagers know that there is much that must happen after the Chinese publicly agree to undertake a forestry project before a road around their island actually materialises. The Chinese must first come to the island and cut down the trees. As they work at cutting down the trees, they will gradually build a road as a by-product. The whole process will take years. So, it is not a very direct connection between the first step of agreeing to undertake the project and the final result of a road encircling the island.

In narratives, *responses* to a preceding event are frequently introduced with *tabe*.

(130) *Ti-re mbulu ta-na ma ndel,*
 3PL-see behaviour SPEC-GIV and different
 They saw that it (some event) was different,

tabe ti-murur pa.
 so 3PL-be.surprised REF
 and so they were surprised by it.

(131) *Ni i-rakrak kei ta nakanmut mi*
 NOM.3SG 3SG-dance+RED like SPEC spirit.dance and
 He was dancing a spirit dance as

ti-mar to ti-ndeeje kaqar biibi ta.
 3PL-come then 3PL-find galip big SPEC
 they came, and then they came upon a big galip tree.

To na-ana i-ŋgo i be i-la
 then mother-GEN.3SG 3SG-send ACC.3SG NF 3SG-go
 Then his mother (tried to) send him

i-muungu. Mi ni mbura-ana som mi
 3SG-precede but NOM.3SG strong-GEN.3SG NEG and
 ahead. But he didn't want to and

i-mbot mi i-kemer. Tabe kon
 3SG-stay and 3SG-come.behind so ghost
 stayed and followed behind. So the ghost
karau mi i-la i-koki i.
 quickly and 3SG-go 3SG-snatch ACC.3SG
 quickly went and snatched him.

In both (130) and (131) each result is a *response* to the preceding events. In (130) the surprise is a response to seeing an unusual sight. In (131), the child's refusal to obey its mother causes it to be in the dangerous situation of following along behind, singing spirit songs, in the vicinity of a dangerous ghost. In response to this inviting situation, the ghost goes and kidnaps it.

Tabe is also frequently preferred when the result is something which *did not happen*, even if the causal connection is fairly direct.

The 'one form - one meaning' hypothesis initially seems to be inconsistent with the uses of *tabe*. In particular, why should the *non-factual* form *be* occur in a reason-result conjunction? Its occurrence in the instances of *tabe* encoding *negative* results is reasonable, but its occurrence in the instances encoding indirect results and responses is more difficult to understand. If, however, the response sense of *tabe* is formulated in the following manner:

X *tabe* Y

I say:

You know this (=X).

Because of this, someone thought:

'I want I will do something (=Y).'

the presence of *be* is accounted for by the component 'someone thought: 'I want I will do something.''

This leaves only the indirect causal sense to be explained. The examples which exhibit this sense would all appear to be consistent with the following formulation:

X *tabe* Y

I say:

You know this (=X).

Because of this,

One could think something else (=Y) will
 happen.

It happened.

The first component, again, reflects the givenness of the reason (X). The indirectness of causation is reflected in the component 'Because of this, one *could think...*' The presence of *be* in a form encoding something 'thought' is, again, consistent with its non-factual use. A thought is not something which has 'happened'.

5.5.2.6.2 FORMS ENCODING RESULT-REASON SEQUENCES (*pa* AND *paso*)

The conjunctions *pa* 'for, because' and *paso* 'Why? Because...' always occur sentence initially. Elsewhere, the form *pa* functions as the Referent preposition, encoding a wide

variety of semantic roles within a predication (including reason adverbial Adjuncts), and *paso* (composed of *pa* and *so* ‘what’) functions as the question word ‘why?’. Both of these forms are used when: 1) the reason clause is not presupposed, and 2) the reason clause *follows* the result clause rather than preceding it (thereby contravening event iconicity).

It might actually be more accurate to term the relationship encoded by *pa* a *grounds* relationship, rather than a reason, since *pa* most often occurs in pragmatically ‘charged’ contexts (i.e. when giving orders, making requests, or contradicting what someone has just said), in which a speaker is somehow ‘impinging’ upon the hearer and needs to justify this impingement. These justifications are encoded using *pa*. For example:

- (132) Speaker A: *Ko to ta-na i-mar ma i-toombo ma*
 UC guy SPEC-GIV 3SG-come and 3SG-try and
 That guy will come and try in vain,
som, mi i-la le-ne.
 do.in.vain and 3SG-go RECX-GEN.3SG
 and then go away.

Speaker B: *Som. Pa nio aŋ-ute ni i-rao.*
 NEG for NOM.1SG 1SG-know NOM.3SG 3SG-able
 No, (I don’t accept what you said.) For I know he can do it.

In this example *pa* introduces the grounds for the second speaker’s contradiction of the first speaker.

The semantic explication of *pa* is along the following lines.

X. *Pa* Y.

I think something different than you:
 I think X
 I say this to you because of Y.

The form *paso*, on the other hand, seems to be most frequently used when no such impinging is operative. Instead, one simply, usually for reasons of *thematic continuity*, desires to state the reason after the result rather than before. Its meaning is simply ‘because’.

- (133) *Wal ti-so: ‘Tinga, tubudu ti-kam uraata*
 group 3PL-say DEM Europeans 3PL-do work
 People said, ‘That thing (an airplane), it is because the Europeans worked
pa ta i-ko=ga’.
 REF SPEC 3SG-flee=NON.VIS.PROX
 on it that it goes so fast way over there (up in the air)’.
Mi nio aŋ-urla som.
 but NOM.1SG 1SG-believe NEG
 But I didn’t believe them.

REASON 1

Paso, aŋ-re sa-la pa na, musaa-ri
 why 1SG-see ascend-go REF GIV small-little
 Why? Because when I looked up at it, it was very very small.

kat. Aŋ-so koroŋ musaa-ri kembei=a,
 very 1SG-say thing small-little like=NON.VIS.PROX
 I thought that something small like that thing over there,

na i-rao tomtom ti-mbot le-la som.
 GIV 3SG-able people 3PL-stay enter-go NEG
 people wouldn't be able to fit inside.

REASON 2

Paso, lele-ene biibi som.
 why insides-GEN.3SG big.one NEG
 Why? Because it was not big enough inside.

In (133), to have moved the first reason ahead of the result would have broken up the contrasting junct of 'People said...' and 'but I did not believe'. By placing the reason after the result, these contrasted junct are kept adjacent to each other.

One frequent source of result-reason ordering in narratives is when the narrator intrudes into a story to give a parenthetical explanation for some event.

(134) *Tamen posi i-pakam kuzi ma i-la mokleene,*
 however cat 3SG-trick rat and 3SG-go garden
 However the cat tricked the rat into going to the garden

mi ni i-miili ma i-la pa ruumu be
 and NOM.3SG 3SG-return and 3SG-go REF house NF
 while he himself returned to the house to

i-keene. Paso posi ta-na, ni
 3SG-sleep why cat SPEC-GIV NOM.3SG
 sleep. Why? Because that cat, he

mbura-ana som. Mi posi ta-na, ni
 strong-GEN.3SG NEG and cat SPEC-GIV NOM.3SG
 was weak. And that cat, he was

ŋgwol-ŋa-na.
 lazy-NMS-GEN.3SG
 lazy.

5.5.2.6.3 SUMMARY OF CAUSAL CONJUNCTIONS

This now concludes the discussion of conjunctive devices which encode reason-result relationships. By way of summary, the following table of the various devices and their distinctions is given.

variety of semantic roles within a predication (including reason adverbial Adjuncts), and *paso* (composed of *pa* and *so* ‘what’) functions as the question word ‘why?’. Both of these forms are used when: 1) the reason clause is not presupposed, and 2) the reason clause *follows* the result clause rather than preceding it (thereby contravening event iconicity).

It might actually be more accurate to term the relationship encoded by *pa* a *grounds* relationship, rather than a reason, since *pa* most often occurs in pragmatically ‘charged’ contexts (i.e. when giving orders, making requests, or contradicting what someone has just said), in which a speaker is somehow ‘impinging’ upon the hearer and needs to justify this impingement. These justifications are encoded using *pa*. For example:

- (132) Speaker A: *Ko to ta-na i-mar ma i-toombo ma*
 UC guy SPEC-GIV 3SG-come and 3SG-try and
 That guy will come and try in vain,
som, mi i-la le-ne.
 do.in.vain and 3SG-go RECX-GEN.3SG
 and then go away.

Speaker B: *Som. Pa nio aŋ-ute ni i-rao.*
 NEG for NOM.1SG 1SG-know NOM.3SG 3SG-able
 No, (I don’t accept what you said.) For I know he can do it.

In this example *pa* introduces the grounds for the second speaker’s contradiction of the first speaker.

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pa ta i-ko=ga’.
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 on it that it goes so fast way over there (up in the air)’.
- Mi nio aŋ-urła som.*
 but NOM.1SG 1SG-believe NEG
 But I didn’t believe them.
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 Why? Because when I looked up at it, it was very very small.

kat. Aḡ-so koroḡ musaa-ri kembei=a,
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 I thought that something small like that thing over there,

na i-rao tomtom ti-mbot le-la som.
 GIV 3SG-able people 3PL-stay enter-go NEG
 people wouldn't be able to fit inside.

REASON 2

Paso, lele-ene biibi som.
 why insides-GEN.3SG big.one NEG
 Why? Because it was not big enough inside.

In (133), to have moved the first reason ahead of the result would have broken up the contrasting junct of 'People said..' and 'but I did not believe'. By placing the reason after the result, these contrasted junct are kept adjacent to each other.

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 However the cat tricked the rat into going to the garden
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 and NOM.3SG 3SG-return and 3SG-go REF house NF
 while he himself returned to the house to
- i-keene. Paso posi ta-na, ni*
 3SG-sleep why cat SPEC-GIV NOM.3SG
 sleep. Why? Because that cat, he
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 strong-GEN.3SG NEG and cat SPEC-GIV NOM.3SG
 was weak. And that cat, he was
- ḡgwol-ḡa-na.*
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 lazy.

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This now concludes the discussion of conjunctive devices which encode reason-result relationships. By way of summary, the following table of the various devices and their distinctions is given.

TABLE 5.6: REASON-RESULT CONJUNCTIVE DEVICES

Presupposed Cause	<i>tabe</i>	Asserted Result
Presupposed Cause	<i>tana</i>	Asserted Result
Focused Cause	<i>ta</i>	Asserted Result
Presupposed Cause	<i>tanata</i>	Presupposed Result
Assertion	<i>paso</i>	Reason for Assertion
Impinging Speech Act	<i>pa</i>	Grounds/Justification for Impinging

5.5.2.7 EQUIVALENCE-PARAPHRASE RELATIONSHIPS

For purposes of emphasis or rhetorical effect, it is common to 'say the same thing twice'. This is realised in Mangap-Mbula by parataxis.

(135) *Mi i-so sua som. I-mane men.*
and/but 3SG-say talk NEG 3SG-be.quiet only
But he didn't say a thing. He was just quiet.

(136) *Ingi berek kek. Zoŋ mata-ana i-se kek.*
now dawn PERF sun eye-GEN.3SG 3SG-ascend PERF
It is dawn. The sun has risen.

The next example illustrates a paraphrase which contains an *amplification* of the content of the immediately preceding sentence:

(137) ...*mi am-re=i. A-mender su*
and 1PL.EXC-look=ACC.3SG 1PL.EXC-stand descend
...and we looked at him. We stood in
kar kete-ene mi am-re=i.
village liver-GEN.3SG and 1PL.EXC-look=ACC.3SG
the centre of the village and looked at him.

It is interesting to note that parataxis is used in two seemingly quite disparate contexts: 1) when the two conjoined propositions are very *closely* related (as in cosubordination and paraphrases), and 2) when two propositions are temporally *distantly* related.²² Paraphrases exhibit some similarities to cosubordinate constructions in that: 1) their Subjects are normally elided, and 2) both the initial predication and the paraphrase are bound to have the same temporal reference and illocutionary force.²³ Despite this tight cohesion between the two junct in paraphrased combinations, they lack phonological unity under a single intonation contour.

²² In such instances, however, there is usually an overt Subject NP and often a thematised temporal adverbial which resets the temporal setting of the discourse.

²³ This second characteristic obviously follows, however, from the definition of a paraphrase.

5.5.2.8 FRUSTRATION

By frustration, is meant the notion that something that was expected to happen did not in fact happen. That is:

Something happened.
 Because of this,
 one could think something else would happen.
 It didn't happen.

This notion is expressed by the cosubordinate addition of *ma som* 'and do in vain' following the sentence encoding the frustrated action:

- (138) *Niam* *am-ru=i* *ma som.*
 NOM.1PL.EXC 1PL.EXC-see=ACC.3SG and be.in.vain
 We looked for him in vain.

This construction is mirrored in the corresponding Tok Pisin utterance *Mipela i painim em, painim painim na nogat* 'We looked for him, looked, looked, and no.'

5.5.2.9 CONVERSATIONAL CONNECTIVES

Monologues and stories are one form of multi-propositional discourse, but there is another, more fundamental one: conversation. Although it is beyond the scope of this grammar to go into great detail regarding the structure of Mangap-Mbula conversation, we can at least briefly mention several forms which are very characteristic of normal conversation.

The first one is *koronj* 'thing/something'. It is used to 'hold the floor' while the speaker collects his or her thoughts. Thus, it is roughly equivalent to English *uh*. Since its meaning is '(some)thing', perhaps this floor-holding function is best glossed as 'I (still) have *something* to say'.

- (139) *Koronj*, *i-rao* *iti* *koronj*, *to-so* *koronj*
 thing 3SG-able NOM.1PL.INC thing 1PL.INC-say thing
 Uh, we shouldn't, uh, say something
- toono ka-na* *mbura-ana* *som na som.*
 ground PASS.GEN-GEN.3SG strength-GEN.3SG NEG GIV NEG
 magic (lit. the earthly) doesn't have any power.

Other important connectives in conversation are: *e* 'yes, I agree with what you just said', *ee* (with mid, level intonation) 'I don't agree with what you just said', and the demonstrative (*i*)*na*. This last form marks the information preceding it as being given or thematic. It has already been encountered extensively in this grammar, since it is a component of many demonstratives and conjunctions and possibly the Nominative pronouns as well. In conversation it is used at the beginnings of turns when one wants to indicate: 1) questioning of or surprise at what has just been said as in example (140); 2) reserved acceptance of what has just been said (141) and (142); or 3) complete rejection of what has just been said (143):

- (140) Speaker A: *Neeri Silas lutu-unu moori i-meete.*
yesterday Silas child-GEN.3SG female 3SG-die
Yesterday Silas' daughter died.
- Speaker B: *Na?*
GIV
Is that so?
- (141) Speaker A: *Nio lele-ŋ be tomtom tau ki*
NOM.1SG insides-GEN.1SG NF person EMPH LOC
yaamba ti-mar ti-re zin kar ti na som kat.
sorcery 3PL-come 3PL-see PL village this GIV NEG very
I definitely don't want *sorcerers* to practice magic on (lit. come and see (the people of) this village.
- Speaker B: *Ina ta-na. Mi i-rao koronj*
GIV SPEC-GIV But 3SG-able thing
toono ka-na i-uulu iti tomini.
ground PASS.GEN-GEN.3SG 3SG-help ACC.1PL.INC also
That's okay (for you to say that), but magic (lit. earthly things) can also help us.
- (142) Speaker A: *Merere, ni mbura-ana biibi.*
Lord NOM.3SG strength-GEN.3SG big
God, his strength is great.
Ni i-nmbot ta ni mata-ana
NOM.3SG 3SG-stay+RED that NOM.3SG eye-GEN.3SG
It is because he exists that he cares
piti ta to-nmbot=i.
REF.1PL.INC that 1PL.INC-stay+RED=PROX
for us and that is the reason that we are alive.
- Speaker B: *Ina ambai. So ur-la-ŋa-na*
GIV be.good say put-go-NMS-GEN.3SG
ku ta-ke-na, na toombo suŋ
LOC.2SG SPEC-like-GIV GIV 2SG+try 2SG+pray
That's good. If you have faith like that, then try and pray (for something)
ta buri. Ko i-pet?
SPEC right.now UC 3SG-appear
right now. Will it happen?
Ta buri ma aŋ-re? Som.
SPEC right.now and 1SG-see NEG
Will I be able to see anything happen right now? No.
- (143) Speaker A: *Anutu i-so=be: 'Mburu ta so*
God 3SG-say=NF possessions SPEC say
God says, 'The possessions that

kam su toono, ina nu ku be
 2SG+get descend earth GIV NOM.2SG LOC.2SG NF
 you get on earth, those are yours to

i-uulu u
 3SG-help ACC.2SG
 help you

pa mboti ku toono ka-na.
 REF life LOC.2SG earth PASS.GEN-GEN.3SG
 with your earthly existence.

Mi tamen ur-la-ŋa-na ku, so i-la
 and however put-go-NMS-GEN.3SG LOC.2SG say 3SG-go
 But if you have faith in

kini, na-ko nu la mbot
 LOC.3SG GIV-UC NOM.2SG 2SG+go 2SG+stay/live
 Him, then you will go and stay/live in

kar ambai-ŋa-na'.
 village be.good-NMS-GEN.3SG
 heaven (lit. the good village)'

Speaker B: *Na som. Nio gaaga ko aŋ-beede*
 GIV NEG NOM.1SG tomorrow UC 1SG-write

ro i-la pini mi aŋ-wi i
 letter 3SG-go REF.3SG and 1SG-ask ACC.3SG

be i-le.
 NF 3SG-enter

I don't accept that. (Here the conversation breaks down) Tomorrow I will write a letter to him (the sorcerer, whom the first speaker does not want to come to the village but whom the second one wants to come so that he can divine the reasons for peoples' illnesses) and ask him to come in (to the village from the off-shore island where he is staying).

CHAPTER 6

THEME, REFERENCE, FOCUS, AND EMPHASIS

6.1 INTRODUCTION

The preceding chapter described one aspect of the process of constructing connected discourse: the combining of simple sentences to form more complex ones. In this chapter, we examine a second aspect: the tracking of discourse participants. In particular, the following sorts of questions will be addressed.

1. How frequently and under what conditions does one encode participants by:
a) ellipsis, b) a pronoun, c) a noun, d) a noun plus the form *ta* 'specific', and e) a noun phrase plus one of several different demonstratives.
2. What is the significance of alternate constituent orderings within the sentence?
3. What are the devices for indicating focus and emphasis?

6.2 TOPIC, THEME, FOCUS, EMPHASIS, OR WHAT?

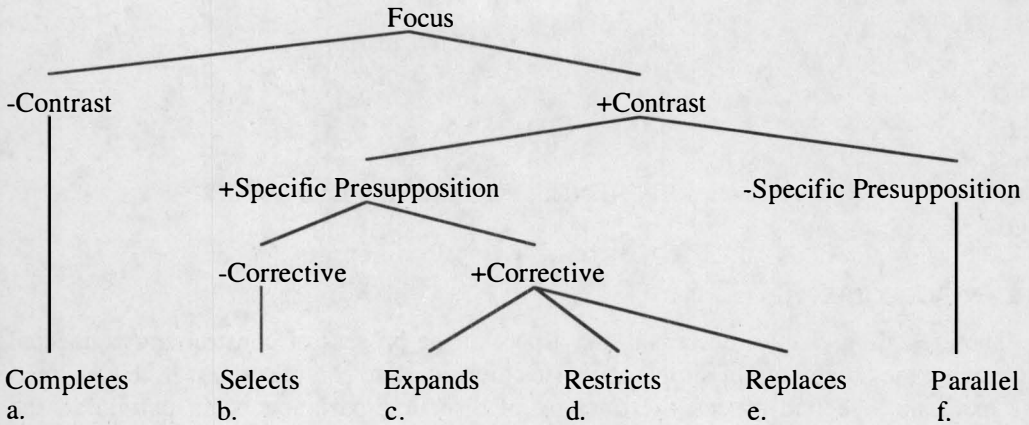
In describing and delineating the referential devices of a language, one faces grave terminological difficulties. Since key terms like 'Topic', 'Focus', 'Theme', and 'Emphasis' are often used almost interchangeably in the literature, one can be at a loss to know what term is most appropriate for labelling a particular phenomenon. An early and insightful discussion of this particular lexical field is given in Chafe (1976). Dik (1981:19), in outlining his model of "Functional Grammar", defines the pragmatic functions of Theme, Topic, and Focus in the following way:

Theme: The Theme specifies the universe of discourse with respect to which the subsequent predication is presented as relevant.

Topic: The Topic presents the entity 'about' which the predication predicates something in the given setting.

Focus: The Focus presents what is relatively the most important or salient information in the given setting.

Dik's work has inspired a number of offshoots and refinements within the same overall theoretical perspective. One of these is an article by Dik et al. (1981) which sought to delineate the notion of Focus more precisely by isolating the following sub-types:



Consider the following examples (by Bugenhagen):

- (a) What did John buy? He bought A NEWSPAPER.
- (b) Does John drink coffee or tea? He drinks COFFEE.
- (c) John bought a car yesterday. He did NOT JUST buy a car; he bought a car AND A BOAT. /John bought a BIG car.
- (d) John bought a car and a boat yesterday. No, he JUST bought A CAR.
- (e) Did you have a good nap? I was NOT SLEEPING. I was WORKING.
- (f) JOHN subscribes to TIME and PETER subscribes to NEWSWEEK.

Hannay (1985) suggests that Dik's original notion of Focus needs to be split up into at least two conceptually distinct notions, which he terms "assertive focus" and "emphatic focus". He states (p.210):

It appears that the Focus function can be applied on two levels. The first level relates to information which is 'new' for the addressee in the given setting...The second level relates to information which is 'important' or 'salient' in that it is emphasised in the given setting.

The two papers by Dik et al. and Hannay are united in their postulation of a distinction between: 1) Focus due to newness of information, and 2) Focus due to contrast/emphasis. The first paper postulates further distinctions which are terminologically useful but which are probably only rarely *grammatically* distinguished. In this grammar, a clear distinction is made between 'salience' which is due to a constituent constituting *new information* (i.e. Focus) and 'salience' which is due to a constituent being somehow *contrastive* or *surprising* (i.e. Emphasis). Dik et al.'s more specific nomenclature is also occasionally used for greater descriptive precision.

Turning now to the realm of Topic and Theme, de Vries (1985), drawing heavily upon Grimes (1975), develops the notions of "Strong Topic" and "Weak Topic". These are defined on the basis of two further concepts: 1) "strength of identification", and 2) "topical span". Strength of identification has to do with how specific the linguistic expression used to refer to an entity is. The strength of identification of a noun phrase is said to vary according to the following strength of identification scale:

Proper nouns > Noun phrases with relative clauses > Common nouns > Generic nouns > Pronouns > Ellipsis

Given this notion of strength of identification, de Vries defines (p.159) a topical span as:

...a series of identifications of the same topic, not necessarily in contiguous clauses, in which no identification is stronger than the one before it, unless the stronger expression is used as part of the stylistic strategies of variation and not as part of referring strategies.

He then goes on (p.159) to speak of strong and weak Topics, which are defined in the following manner:

Strongly identified Topics occurring initially in topical spans in the phase of establishing topicality, I will label strong topics. Weakly identified Topics occurring medially and finally in topical spans in the phase of maintaining topicality I will call weak topics.

De Vries' model of the process of tracking topical participants involves, therefore, an initial introduction of a Topic via linguistically explicit means followed by a subsequent mention via less explicit means until the Topic is 'reset' by another Strong Topic. The important insight of de Vries and, before him, Grimes (1975) is that it is inadequate to treat Topic as a single, undifferentiated notion (as per Dik (1981)). Instead, one must distinguish between different *types* of Topics. In particular, *new* Topics, which are in the process of becoming established or re-established, must be distinguished from *old* or established ones, since they often receive different linguistic encodings.

The Prague and Firthian schools of linguistics emphasise two sets of parallel but distinct notions:

Theme versus Rheme

Given versus New

Halliday (1985:38,39) defines Theme and Rheme in the following manner:

The Theme is the element which serves as the point of departure of the message; it is that with which the clause is concerned. The remainder of the message, the part in which the Theme is developed, is called in Prague terminology the Rheme...The Theme is the starting point for the message; it is what the clause is going to be about.

Halliday notes that in English and in many other languages the Theme is structurally *realised* by occurring sentence *initially* and allows Halliday (1985:53,54) for single sentences to have *multiple* Themes. Three different *types* of Themes are distinguished: 1) textual, 2) interpersonal, and 3) ideational.

Textual Themes are: 1) conjunctions, and 2) items like *yes*, *no*, *well*, *oh*, and *now*, which signal that a new conversational move is beginning; that is a response in dialogue or a shift to another aspect of the discourse subject matter if the same speaker is continuing. Interpersonal Themes are items like fronted modal elements, finite verbs, and vocatives. Ideational Themes are deemed by Halliday (1985:54) to correspond closely with what other schools of linguistics term 'Topics'.

...an ideational element is anything representing a process, a participant in a process...or a circumstance attendant on that process...The ideational element within the Theme, then, is some entity functioning as Subject, Complement, or circumstantial Adjunct; we shall refer to this as the TOPICAL THEME, since it corresponds fairly well to the element identified as 'topic' in topic-comment analysis.

The postulation of multiple Themes occurring in a single sentence is intended to account for utterances like the following:

But John, maybe by now the store will be closed.
 1. 2. 3. 4. 5. 6. Rheme

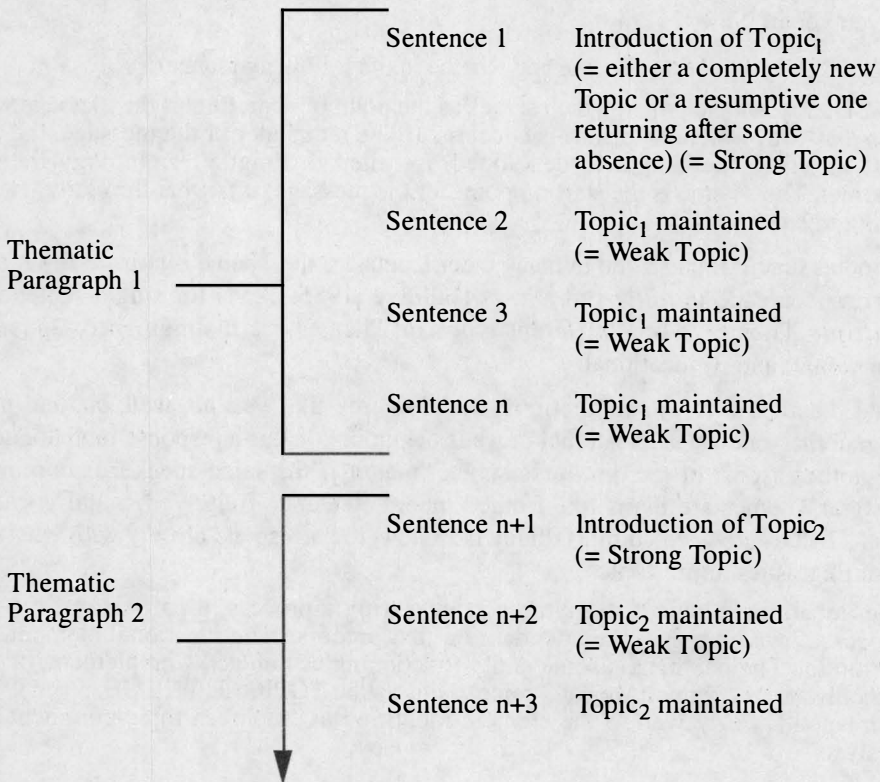
Here, there are six distinct thematic constituents before one arrives at the rhematic portion of the sentence.

The other terminological distinction, given versus new information, has to do with the speaker or writer’s assessment of his/her audience’s knowledge. Contextually given information is that which the speaker/writer believes the audience is able to easily recover from the linguistic and extralinguistic context, while new information is that which is not so easily recoverable. The Praguian and Firthian use of the term “new information” corresponds with de Vries’ (1985) term “assertive/information Focus”.

A third approach to reference is outlined in a series of papers by Givón (1983a,b). This approach considers topicality to be a *non-discrete*, somewhat statistical notion. Instead of asking whether or not something is a Topic, one asks ‘how much’ of a Topic it is. Givón (1983b:54) states:

In general, thematic paragraphs in discourse are organised so that one *nominal* tends to be the *recurring topic* or *leitmotif* of the paragraph...However, at different points within the thematic paragraph it has *different continuity values*.

Givón’s conception of a thematic paragraph within narrative discourse is quite similar to the topic span of Grimes and de Vries and can be represented schematically as:



Givón proposes a quantification of topicality according to the following three parameters.

- (a) Referential Distance (= amount of discontinuity/lack of givenness). This is defined as the number of simple sentences (clauses) back in the preceding discourse one must look before one finds the *last* previous reference to the entity. This value can range from a minimum of zero (a previous reference is to be found within the same clause) to an arbitrary maximum value of 20 for completely new referents.
- (b) Potential Interference. Are there semantically compatible referents in the previous one to five clauses which could be confused with the entity in question? (A value of one is given if the answer is no, while a value of two is given if the answer is yes.)
- (c) Persistence (= how *topical* a referent is in the immediately subsequent discourse). This is defined as the number of *consecutive* simple sentences following the sentence containing reference to the entity in question which contain explicit or implicit reference to that entity. (Here, there is no arbitrarily set maximum value.)

Given such measurements, a *thematic paragraph-initial* Topic will have both a high referential distance and a high persistence, while a *paragraph-medial* Topic will have a low referential distance and a moderate persistence, and a *paragraph-final* Topic will have both a low referential distance and a low persistence. Here, 'highness' and 'lowness' of average referential distance and persistence measurements is a *relative* notion. Thus, one asks how the mean values of these measurements for pronominal NPs compare with the values for elided NPs, full NPs, NPs containing demonstratives, and so on. The absolute values for such measurements are less meaningful, because there is considerable scope for numerical variations arising from a priori analytical decisions. This is particularly the case with cosubordinate constructions (Are they one clause or two?), relative clauses, and quotations.

Givón goes on to assume that there is a direct correlation between the complexity of linguistic devices used to refer to entities and the degree of discontinuity of those entities (as measured by their mean referential distances), giving the following *relative* topic continuity scale (1983a:17):

Most Continuous / Given

Lowest Mean Referential Distances



Zero anaphora / ellipsis
 Unstressed pronouns / grammatical agreement
 Stressed / independent pronouns
 Right-dislocated noun phrases
 Simple definite noun phrases
 Left-dislocated noun phrases
 Y-movement / contrastive topicalisation
 Cleft/focus constructions

Least Continuous / Given

Highest Mean Referential Distances

Givón (1983a) subsequently breaks this complex scale up into a number of smaller ones as described below.

1. The scale of phonological size (p.18)

More continuous/accessible topics



zero anaphora
 unstressed/bound pronouns ('agreement')
 stressed/independent pronouns
 full NPs

More discontinuous/inaccessible topics

2. The scale of stress (p.18)

- (a) unstressed pronouns > stressed pronouns
 (b) non-focus NPs > cleft/focus NPs
 (c) non-Y-moved NPs > Y-moved NPs
 (> = more continuous)

3. The word-order scale (p.19)

- (a) Right-dislocation > neutral word-order > Left-dislocation
 (b) VS > SV
 (c) VO > OV
 (d) COMMENT-TOPIC > TOPIC-COMMENT

In addition, Givón notes the following grammatical relation hierarchy (p.22):

Subject > Direct Object > Others

The similarity of Givón's various scales to de Vries' strength of identification scale is readily apparent. Givón's approach involves showing that the use of different linguistic means for referring to topical entities is consistently correlated with certain average numerical values for referential distance, potential interference, and persistence.

In this study of Mangap-Mbula reference, focus and emphasis, ideas have been drawn somewhat eclectically from each of the above approaches. In particular, the following assumptions are made.

- (a) There is a distinction between assertive/new information salience (i.e. *Focus*) and salience due to contrast, surprise, or some sort of strong feeling on the part of the Speaker associated with an entity (i.e. *Emphasis*). Both of these are to be further distinguished from the characteristic of being *recurrently referred to in a discourse* (i.e. *Topicality*).
- (b) The above three pragmatic *properties* are to be distinguished from a fourth matter, which is *structural* in nature: thematisation. Thematisation is defined here as the occurrence of constituents *sentence initially*. The reasons for such occurrence are manifold, and constitute a principle *raison d'être* of this chapter. Three principal reasons are: 1) an element is serving to link or orient a sentence to the preceding discourse context, 2) an element is being emphasised, or 3) an element has the status of a 'strong Topic'. In some of the examples which follow, *topical* Themes / thematised Topics are labelled as 'Topic', while non-topical Themes are labelled as Theme. Thus, 'Topic' serves as a shorthand label for 'Theme and Topic'. In Subject-initial languages, there is a natural tendency for Subjects and Topical Themes to be conflated, but in utterances like *My brother, he is an engineer* or *Beans, I can't stand*,

this natural conflation is sundered and the Theme-Topic is distinguished from the grammatical Subject. The Themes of such constructions will be referred to as *marked Themes*.

- (c) Topic, Focus, Theme, and Emphasis are logically independent (and thus there is the possibility of both their intersection and their divergence).
- (d) *Multiple Themes* are possible.
- (e) Reference is non-discrete / statistical in nature and there is the possibility of quantifying it according to Givón's parameters of referential distance and persistence.¹ One must be careful, however, to distinguish the *statistical characteristics* of linguistic encodings from their *meanings*. Statistical characteristics are not meanings; they only point towards or evidence meanings. For example, later we shall see that null Subjects have a mean referential distance of 1.33 and a mean persistence of 3.25. It would be absurd, however, to define the *meaning* of a null Subject as 'a means of encoding entities whose referents are on the average 1.33 clauses back and which are talked about for 3.25 clauses'. Human beings are not calculators! Instead, these statistical properties *point toward* the *meaning* of null Subjects:

Null Subject (=X)

I am talking about the same person/thing (=X).

I think you know who/what X is.

6.3 THEME / SENTENCE-INITIAL DEVICES

The vast majority of Mangap-Mbula Themes fall into the following nine classes:

- (a) Thematised temporal expressions as in examples (1) - (3) below:

- | | | | |
|-----|--|---------------------------------|--|
| | Theme | Topic-Subject | |
| (1) | <i>Koozi, zin yut</i> | <i>ti-kam uraata pa Karapo.</i> | |
| | today PL youth | 3PL-do work REF Karapo | |
| | Today the youth are going to work in Karapo. | | |
| | | | |
| | Theme | Topic-Subject | |
| (2) | <i>Mbeŋ na, zin</i> | <i>ti-la.</i> | |
| | night.time GIV | NOM.3PL 3PL-go | |
| | Once it was night, they went. | | |
| | | | |
| | Theme | Topic-Subject | |
| (3) | <i>I-ndeene ta-na na, zoŋ mata-ana</i> | <i>i-kam ru.</i> | |
| | 3SG-find SPEC-GIV | GIV sun eye-GEN.3SG 3SG-do two | |
| | At that time, it was two o'clock. | | |

¹ His parameter of potential interference is much more difficult to apply rigorously in practice than the other two, so it has been omitted from consideration in this study.

In these three examples, note that the Theme is set off from the rest of the sentence by high intonation, a pause, and in (2) and (3) the form *na*. Such features are characteristic of Mangap-Mbula Themes. Sentence-initial temporal expressions lack any sort of Emphasis or Focus. Instead, they simply provide a temporal setting for the ensuing discourse. When, however, they occur finally, it is for reasons of Focus (4) or Emphasis (5).

- | | | | | | |
|-----|---|-------------|-----------|---------------|------------------|
| | Topic-Subject | | | | Focus |
| (4) | <i>Ni</i> | <i>i-la</i> | <i>pa</i> | <i>Lablab</i> | <i>koozi.</i> |
| | NOM.3SG | 3SG-go | REF | Lablab | today |
| | He went to Lablab today. | | | | |
| | Topic-Subject | | | | Emphasis |
| (5) | <i>Ni</i> | <i>i-la</i> | <i>pa</i> | <i>Lablab</i> | <i>ta koozi.</i> |
| | NOM.3SG | 3SG-go | REF | Lablab | SPEC today |
| | It was <i>today</i> that he went to Lablab. | | | | |

Example (4) would be a felicitous answer to the question ‘When did he go to Lablab?’, while example (1) above would not. Example (5) would be used to assert that someone went to Lablab *today*, *not* at some other time. The placement of temporal elements appears to be the only aspect of word order governed solely by information status.

(b) Non-Topical ideational Theme:²

- | | |
|-----|--|
| | Theme |
| (6) | <i>Toŋmatiziŋ ru ta-na, ta za-ana</i> |
| | brother two SPEC-GIV SPEC name-GEN.3SG |
| | Regarding these two brothers, one’s name |
| | <i>posi, mi toro za-ana kuzi.</i> |
| | cat and other name-GEN.3SG rat |
| | was cat and the other’s name was rat. |

In this example the noun phrase *toŋmatiziŋ ru tana* specifies a universe of discourse with respect to which the following predications are valid. Prior to this utterance, only collective reference had been made in the discourse to the two brothers without specifying who they were. Afterwards, the cat and the rat are treated as distinct participants throughout the rest of the discourse. Such non-Topical, ideational Themes are especially frequent in parenthetical constructions like the one in the following example:

- | | |
|-----|---|
| (7) | <i>...mi ti-su-la pa yok ta.</i> |
| | and 3PL-descend-go REF river SPEC |
| | ...and they went down to a river. |
| | <i>(Yok ta-na, mooto ta, za-ana Kasare,</i> |
| | river SPEC-GIV snake SPEC name-3SG Kasare |
| | (Now concerning this river, a snake named Kasare, |

² Entities thus encoded are non-Topical Themes, because they are not arguments of the predication. Recall again Halliday’s (1985:54) characterisation of Topical Themes:

The ideational element within the Theme, then, is some entity functioning as Subject, Complement, or circumstantial Adjunct; we shall refer to this as the TOPICAL THEME...

ni i-mbot su kat zaala kwo-ono
 NOM.3SG 3SG-stay descend very road mouth-GEN.3SG
 he lived right at the entrance to the path

ta i-mbot yok ma i-la pa kar.)
 SPEC 3SG-stay river and 3SG-go REF village
 that went from the river to the village.)

Tana ziru ti-su-la pa yok,
 So NOM.3DU 3PL-descend-go REF river
 So, they went down to the river

mi ti-ŋguuru mburu kizin,...
 and 3PL-wash things LOC.3PL
 and washed their things,...

(c) The expression *uunu* 'its source, reason, basis'. This is a frequent Theme in expository discourses which give reasons for different states of affairs or opinions. Consider the following discourse segment:

(8) *Tamakan,³ u-unu padei?*
 ceremony reason-GEN.3SG how
 The *tamakan* ceremony, what are the reasons for it?

Tamakan u-unu ta-kei:
 ceremony reason-GEN.3SG SPEC-like
 The reasons for the *tamakan* ceremony are like this:

U-unu ta, moori ko i-la
 reason-GEN.3SG SPEC woman UC 3SG-go
 One reason is that the woman will go

ma i-peebe pikin boozo-men ma
 and 3SG-bear children many-only and
 and bear many children and

ti-kam tama-n muri-ini.
 3PL-do/get father-GEN.3PL place-GEN.3SG
 they will take their father's place.

U-unu toro, moori ko i-rao i-miili
 reason.GEN.3SG other woman UC 3SG-able 3SG-return
 Another reason is that the woman will not be able to return

ma i-mbeeze pa wal kini mini som.
 and 3SG-serve REF group LOC.3SG again NEG
 and serve her own family anymore.

³ *Tamakan* is a type of exchange ceremony associated with marriage but distinct from the brideprice, in which relatives of the bride bring various goods and sell them at inflated prices. Relatives of the groom are obligated to buy these goods; otherwise they are made to feel ashamed.

U-unu _____ *toro*, ...
 reason-GEN.3SG other
 Another reason is that ...

(d) Sentence connectives (another frequent type of textual Theme):

- Textual Theme Topic-Subject
 (9) *To*, *Bob ziru* *Silas ti-la mini*.
 then Bob NOM.3DU Silas 3PL-go again
 Then Bob and Silas went again.

(e) Another very frequent type of textual Theme in spontaneous oral narratives are Heads of Tail-Head linkages. Such linkages always occur across sentence boundaries and involve repeating the preceding clause (or a generic substitute of the form 'Doing like that,...') with rising intonation as a transition to the new sentence. For example:

- (10) *Ziru* *ti-le-la* *zaala na, Galiki*
 NOM.3DU 3PL-enter-go road GIV Galiki
 When the two of them got on the road, Galiki

mbule-ene *se* *pat ki mooto Kasare*,
 buttocks-GEN.3SG ascend stone LOC snake Kasare
 sat down on the snake Kasare's stone

TAIL 1

mi i-ziriŋ _____ *ngereeme kizin*.
 and 3SG-apportion crayfish LOC.3PL
 and apportioned out their crayfish.

HEAD 1

I-ziriŋ _____ *ngereeme makin*,
 3SG-apportion crayfish after
 After she had apportioned the crayfish,

TAIL 2

to-na *i-ur* _____ *ngereeme i-la* *ki moori toro*
 then-GIV 3SG-put crayfish 3SG-go LOC woman other
 then she gave the other woman the crayfish

be i-poi *mi ziru* *ti-miili* *ma ti-la pa*
 NF 3SG-carry and NOM.3DU 3PL-return and 3PL-go REF
 to carry as the two of them returned to

HEAD 2

kar. *I-ur* _____ *ngereeme i-la* *ki moori ta-na*,
 village 3SG-put crayfish 3SG-go LOC woman SPEC-GIV
 the village. She gave that woman the crayfish,

mi ni *i-magga, na som*.
 but NOM.3SG 3SG-get.up GIV NEG
 but when she (tried to) get up, she couldn't.

(f) Various sorts of conversational connectives like *e* 'yes, that's the case, I accept what you said'; *ee* 'wait a minute, I don't quite accept what you said'; *na?* 'Is that so?', and *som* 'no, that's not the case, I don't accept what you said':

- Theme
 (11) Ee, *la* *tan̄ga pepe*.
 hold.on 2SG+go DEM prohibitive
 Hold on, don't go over there.

- Theme
 (12) Som, *ina som*.
 NEG GIV NEG
 No, that's not the case.

(g) Vocatives:

- Theme Topic
 (13) Tumbu-yam _____ *moori*, koron̄ ti,
 grandrelative-GEN.1PL.EXC woman thing this
 Our grandmother, this thing

kizin tubudu. Iti kiti som.
 LOC.3PL European NOM.PL.INC LOC.1PL.INC NEG
 is something of the Europeans. It's not ours.

(h) Interjections:⁴

- Theme Topic-Subject
 (14) Hai, *inḡi nu so tomtom ta*
 Hey now NOM.2SG what? person SPEC
 Hey, who the hell are you that

mar kakak i-su
 2SG+come 2SG+cry.out+RED 3SG-descend
 you come and keep calling out here

lele tio ti?
 place LOC.1SG this
 in my area?

(i) Protases of conditionals:

- Theme
 (15) So-mbe yaŋ i-su _____ *som*,
 say-NF rain 3SG-descend NEG
 If it doesn't rain,

 Contingent Assertion
ina-ko nio aŋ-mar.
 GIV-UC NOM.1SG 1SG-come
 then I will come.

⁴ A listing of important interjections is to be found in §3.2.10 of the word classes and morphology chapter.

6.4 REFERENCE IN MANGAP-MBULA NARRATIVE DISCOURSE: A QUANTITATIVE STUDY

This section presents the results of a study of Mangap-Mbula reference according to the quantitative methodology outlined in Givón (1983a,b). The study is based on text counts from a corpus of seven randomly chosen narrative texts. The texts were by seven different speakers and together contained 1,569 clause-sized units. When certain categories were under-represented in the corpus, additional instances were sought from a larger corpus of 95 texts containing some 23,000 words.

6.4.1 METHODOLOGY

In the text counts the following types of information were recorded for all Subjects, Objects, Oblique noun phrases and Genitive noun phrases and entered into a computer database using Microsoft's *Works* program.

1. Type of linguistic expression used to refer to a participant – that is ellipsis,⁵ free pronoun, plain noun phrase, noun phrase containing the form *ta* 'one, a', noun phrase containing a demonstrative, thematised noun phrase and so on

2. The person and number of the participant and whether or not it was animate

3. Context of the participant

(a) Its grammatical role in the predication - that is Subject, Object, Oblique NP, or Genitive

(b) For each Subject, the following additional contextual questions were asked.

- Does this occur in a sentence-initial or a sentence-non-initial clause?
- Does this occur in: 1) a Head of a Tail-Head construction, 2) an XCOMP, 3) a COMP, 4) a sentence following the conclusion of a COMP, 5) a pivot construction like *X hit Y and Y died*, in which a non-Subject argument of one clause functions as the Subject of the immediately following one, 6) in a sentence immediately following a pivot construction, or 7) an 'ordinary' main clause?
- Does the Subject of the preceding clause have the same referent? If so, the Subject under consideration was indicated as being 'same referent'; otherwise, it was a 'different referent'.

4. Numerical topicality measurements

- Referential distance – the number of simple clauses back it was necessary to look before finding the *last previous reference* to the entity being counted. An arbitrary maximum for referential distance was set at twenty for completely new referents.
- Persistence – the number of *consecutive* following clauses, whether or not they were in the same sentence, which contained some reference to the entity in question. No arbitrary maximums for persistence values were set. Sentential Complements were not considered to interrupt an otherwise continuous chain of references, even if they contained no references to the participant being counted. On the other hand, if a sentential Complement contained reference to the participant, it added to the persistence value. Thus, sentential Complements could 'help' persistence scores but not 'hurt' them.

⁵ Note that elided Subjects are still referenced by Subject indexing morphology on most verbs.

Cosubordinate sentences conjoined with *ma* were counted as two clauses, but core cosubordinate constructions were not considered to instance another clause. Instead, they were treated like prepositional phrases.

All the above information was recorded for each argument of each predicate occurring in the controlled text corpus, and then statistical compilations were made for different categories. These compilations included:

- (a) the number of instances within the text corpus of each category
- (b) the average referential distance for each category
- (c) the average persistence
- (d) the percentage of animate referents
- (e) for Subject categories, the percentage of instances having the same referent as the Subject of the preceding clause

6.4.2 STATISTICAL RESULTS OF TOPIC CONTINUITY TEXT COUNTS

Results of the text counts are given in a number of tables throughout the rest of this chapter. In these tables, a dash indicates a category that was not represented in the corpus. An asterisk indicates a category that was underrepresented in the small corpus of seven texts, and was supplemented by counting instances from a larger corpus of texts (which included instances from the restricted corpus). Asterisked categories generally have two sets of numbers. The first number indicates the value for that category based on instances occurring in just the restricted corpus of texts, while the second number, which is in parentheses, indicates the value for instances drawn from the larger corpus of texts. This procedure was followed in order to: 1) more reliably indicate the typical continuity values of infrequent categories, and 2) provide an accurate indication of the typical frequencies of these categories.

In the tables, RD stands for 'referential distance', PER stands for 'persistence', SR stands for 'has the same referent as the Subject of the immediately preceding clause', and AN stands for 'animate'. Recall that referential distance is a measurement indicating how *new* a referent is. Thus, higher values indicate newer referents while lower values indicate *older / more contextually given* ones. Persistence, on the other hand, is a measurement of *local topicality*, of how much a referent is referred to the immediately following discourse context.

6.4.2.1 SUBJECT TOPIC CONTINUITY

6.4.2.1.1 LINGUISTIC MEANS OF REFERENCE AND SUBJECT TOPIC CONTINUITY

Table 6.1 presents the Topic continuity statistics for Subject encodings. Devices which were instanced very infrequently in the restricted corpus are omitted from this table. One such device is the null 'passive'. A null passive is the use of a transitive verb inflected with third person plural Subject agreement morphology, to encode that something was done to some Object by an Actor whose identity is not significant. An example of a null passive is given below:

- (16) *Am-taq pini to ti-twi i.*
 1PL.EXC-cry REF.3SG then 3PL-bury ACC.3SG
 We cried for him and then they buried him / he was buried.

In this and similar sentences, no reference is being made to a *particular* third person plural referent. For such Subjects, topic continuity statistics would be meaningless. In the restricted corpus, there were three instances of null passives, while in the larger corpus there were six.

TABLE 6.1: TOPIC CONTINUITY MEASUREMENTS FOR SUBJECTS

	In Sentence- Initial Clauses	In Non- Initial Clauses	Conflated
Device			
*Combinatory Pronoun + NP			
(first referent)			
AVERAGE RD	2.33	1.00	2.00 (1.43)
AVERAGE PER	5.33	4.00	5.00 (4.09)
%SR	33%	100%	50% (70%)
%AN	100%	100%	100% (100%)
(second referent)			
AVERAGE RD	5.33	7.00	5.75 (9.78)
AVERAGE PER	1.00	2.00	1.25 (1.78)
%SR	0%	0%	0% (0%)
%AN	100%	100%	100% (100%)
# OF INSTANCES	3	1	4 (23)
Null Subject ⁶			
AVERAGE RD	1.70	1.17	1.33
AVERAGE PER	3.26	3.24	3.25
%SR	71%	84%	80%
%AN	96%	92%	93%
# OF INSTANCES	311	715	1026
*Thematised NP (+ PRO) ⁷			
AVERAGE RD	5.94	14.00	6.63 (9.00)
AVERAGE PER	3.47	3.33	6.00 (5.23)
%SR	3%	0%	3%
%AN	90%	100%	91%
# OF INSTANCES	32	3	35 (51)
*Thematised NP DEM ⁸ (+ PRO)			
AVERAGE RD	3.00	-	3.00 (4.26)
AVERAGE PER	2.00	-	2.00 (2.80)
%SR	33%	-	33% (27%)
%AN	100%	-	100% (100%)
# OF INSTANCES	3	-	3 (15)

⁶ By 'null' Subject is meant a Subject with no overt encoding other than the Subject prefixes on the verb.

⁷ Thematised NP (+PRO) is a conflation of all instances of Subject noun phrases which are set off intonationally and optionally followed by a pronoun copy of the NP. Pronoun copies of thematised noun phrases are by far the norm, but are occasionally omitted with no apparent difference in meaning. The *defining characteristics* of thematised NPs, then, are: 1) initial occurrence, and 2) being set off by a pronounced intonational break. From here onwards PRO will frequently be used as an abbreviation for a free pronoun.

⁸ NP DEM is a noun phrase containing a modifying demonstrative.

Table 6.1 (continued)

	In Initial Clauses	In Non- Initial Clauses	Conflated
*Thematised NP RC⁹ (+PRO)			
AVERAGE RD	(17.62)	(20)	(17.89)
AVERAGE PER	(2.38)	(0)	(2.11)
%SR	(13%)	(0%)	(11%)
%AN	(88%)	(100%)	(78%)
# OF INSTANCES	(8)	(1)	(9)
*Thematised NP <i>ta</i>¹⁰ (+ PRO)			
AVERAGE RD	20.00	20.00	20.00 (20.00)
AVERAGE PER	6.25	4.67	5.55 (3.58)
%SR	0%	0%	0% (0%)
%AN	100%	100%	100% (74%)
# OF INSTANCES	4	3	7 (19)
Thematised free pronoun			
AVERAGE RD	6.50	1.00	5.40
AVERAGE PER	1.00	2.00	1.20
%SR	0%	0%	0%
%AN	100%	100%	100%
# OF INSTANCES	4	1	5
Plain NP			
AVERAGE RD	11.23	11.74	11.40
AVERAGE PER	1.59	1.51	1.56
%SR	12%	6%	10%
%AN	72%	60%	68%
# OF INSTANCES	162	84	246
*NP in cleft construction			
AVERAGE RD	4.25	16.67	11.70 (12.86)
AVERAGE PER	1.75	2.83	2.30 (2.21)
%SR	25%	0%	10%
%AN	100%	83%	89%
# OF INSTANCES	4	6	10 (14)
*NP DEM			
AVERAGE RD	9.20	5.67	7.88 (6.09)
AVERAGE PER	1.60	.33	1.13 (1.38)
%SR	0%	0%	0% (16%)
%AN	60%	33%	50% (40%)
# OF INSTANCES	5	3	8 (55)

⁹ NP RC is a noun phrase containing a modifying relative clause.

¹⁰ *Ta*, here, is the numeral 'one', which also functions as an indefinite article.

Table 6.1 (continued)

	In Initial Clauses	In Non- Initial Clauses	Conflated
<i>*NP ta</i>			
AVERAGE RD	20.00	-	20.00 (20.00)
AVERAGE PER	7.00	-	7.00 (3.11)
%SR	0%	-	0%
%AN	100%	-	89%
# OF INSTANCES	2	-	2 (9)
<i>*NP RC</i>			
AVERAGE RD	17.71	14.50	17.00 (17.46)
AVERAGE PER	2.00	1.50	1.89 (2.46)
%SR	0%	0%	0%
%AN	100%	100%	100%
# OF INSTANCES	7	2	9 (13)
<i>NP sa¹¹</i>			
AVERAGE RD	20.00	20.00	20.00
AVERAGE PER	2.33	1.00	2.00
%SR	0%	0%	0%
%AN	100%	100%	100%
# OF INSTANCES	3	1	4
Free pronoun			
AVERAGE RD	2.61	3.51	2.81
AVERAGE PER	3.68	3.49	3.64
%SR	39%	15%	34%
%AN	98%	100%	98%
# OF INSTANCES	147	41	188

Three other Subject encodings involving combinatory pronouns which happened not to occur at all in the restricted corpus are: 1) NP + combinatory pronoun + NP, 2) free pronoun + combinatory pronoun + NP, and 3) a combinatory pronoun by itself. Supplementary statistics for instances of these combinations occurring in the expanded corpus are given in Table 6.2.

¹¹ Recall that *sa* is a form used to indicate that a referent is non-referential or non-isolatable.

TABLE 6.2: SUPPLEMENTARY TOPIC CONTINUITY MEASUREMENTS FOR COMBINATORY PRONOUNS

	Conflated
*NP + combinatory pronoun + NP	
(first NP)	
AVERAGE RD	11.38
AVERAGE PER	7.00
%ANIMATE	100%
%SR	13%
(second NP)	
AVERAGE RD	12.25
AVERAGE PER	4.10
%ANIMATE	100%
%SR	13%
# OF INSTANCES	8
*Free pronoun + combinatory pronoun + NP	
(free pronoun)	
AVERAGE RD ¹²	9.72
AVERAGE PER	4.45
%ANIMATE	100%
%SR	27%
(NP)	
AVERAGE RD	16.72
AVERAGE PER	3.63
%ANIMATE	100%
%SR	0%
# OF INSTANCES	11
*Combinatory pronoun	
(both participants conflated) ¹³	
AVERAGE RD	1.17
AVERAGE PER	1.23
%ANIMATE	100%
%SR	23%
# OF INSTANCES	13

The statistics for the linguistic encodings involving combinatory pronouns agree in indicating the first conjunct to be: 1) more topical than the second one (because they have higher persistence values), and 2) similarly or more continuous with the preceding discourse (because they have lower referential distance values). Also, it will be noted that the referents of combinatory pronouns are always animate.

¹² The high referential distance figures for the pronominal element here are somewhat deceptive. All but one of these pronouns are first singular and are thus given from the *extralinguistic context*, even when there has been no reference made to the Speaker in the preceding *linguistic context*.

¹³ Since there is only the combinatory pronoun present, one does not know which of the combined participants is first and which is second. This is the reason that the figures are conflated.

Proceeding on to the non-combinatory encodings, their ranking according to frequency of occurrence is:

MOST FREQUENT



1. Null Subject (=1026)
2. Plain NP (246)
3. Free pronoun (=188)
4. Thematised NP (+ PRO) (=35)
5. Clefted NP (=10)
6. NP with demonstrative (=8)
7. { Thematised NP *ta* (+PRO) (=7)
NP with relative clause (=7)
8. Null Passive (=6)
9. Thematised free pronoun (=5)
10. { NP *sa* (=3)
Thematised NP with demonstrative (+ PRO) (=3)
11. NP *ta* (=2)
12. Thematised NP with relative clause (+PRO) (=0)

LEAST FREQUENT

Their ranking according to average referential difference is:

HIGHEST REFERENTIAL DISTANCE
(LEAST CONTEXTUALLY GIVEN)



1. { NP *ta* (=20.00)
NP *sa* (=20.00)
Thematised NP *ta* (+ PRO) (=20.00)
2. Thematised NP with relative clause (+PRO) (=17.89)
3. NP with a relative clause (=17.46)
4. clefted NP (=12.86)
5. Plain NP (=11.40)
6. Thematised NP (+ PRO) (=9.00)
7. NP with demonstrative (=7.88)
8. Thematised free pronoun (=5.40)
9. Thematised NP with demonstrative (+ PRO) (=4.26)
10. Free pronoun (=2.81)
11. Null Subject (=1.33)

LOWEST REFERENTIAL DISTANCE
(MOST GIVEN)

Their ranking according to the average persistence of their referents is:

MOST PERSISTENT / TOPICAL



1. Thematised NP (+ PRO) (=5.23)
2. Free pronoun (=3.64)
3. Thematised NP *ta* (+ PRO) (=3.58)
4. Null Subject (=3.25)
5. NP *ta* (=3.11)
6. Thematised NP with a demonstrative (=2.80)
7. NP with relative clause (=2.46)
8. Clefted NP (=2.21)
9. Thematised NP with relative clause (=2.11)
10. NP *sa* (=2.00)
11. Plain NP (=1.56)
12. NP with a demonstrative (=1.13)
13. Thematised free pronoun (=1.20)

LEAST PERSISTENT / TOPICAL

6.4.2.1.1.1 NULL/ELIDED SUBJECTS (TRACKING ESTABLISHED TOPICS)

From Table 6.1 we can see that 1026/1569 or 65 per cent of the simple sentences in the controlled corpus had null Subjects. Recall, however, that most Mangap-Mbula verbs are inflected to indicate the person, number, and inclusion versus exclusion of the hearer of the Subject. This verbal morphology is, therefore, the most frequent means of tracking the identity of Subjects. Most of these null Subjects occur in *non-initial* clauses, as in the second clause of example (17), but this is not a categorial requirement.

- (17) *To ni i-miili ma Ø i-mar kar.*
 then NOM.3SG 3SG-return and 3SG-come village
 Then he returned to the village.

With their very low average referential distance value of 1.33 and high persistence value of 3.25, null Subjects are seen to be the device for *maintaining reference* to an already established Topic. Therefore, the meaning of such encoding is:

Null Subject (=X)

I want to say something about the same person/thing (=X).
 I think you know who/what X is.

6.4.2.1.1.2 FREE PRONOUN SUBJECTS (LOCAL TOPIC SWITCHING)

188/1569 or 12 per cent of the clauses in the corpus contained free nominative pronouns in addition to the verbal Subject prefixes. Seventy-eight per cent of these free pronominal Subjects occurred in *sentence initial* clauses, as in example (17) above. The average referential distance value for free pronominal Subjects (=2.61) is significantly higher than that of null Subjects (=1.33), but the persistence value (=3.68) is of the same order of magnitude. Free pronouns are, therefore, pre-eminently a device for *re-establishing* a contextually highly given referent as Topic. The referents of free pronouns are typically to be found two or three clauses back in the linguistic context. Pronominalised participants are overwhelmingly (98%+) animate. Note that pronominalised Subjects occurring in *sentence-*

initial clauses are significantly more continuous (RD=2.61) than those occurring in non-initial ones (RD=3.51). This is because it is common to start new sentences with a free pronominal Subject, even when this Subject is identical to that of the immediately preceding sentence. Sentence-internally, however, the presence of a free pronominal Subject invariably signals a different referent from the Subject of the preceding clause.

The pragmatic meaning of free pronominalised Subjects is explicated below:

Free Pronominal Subject (=X)

I want to say something about (someone) (=X) now.
I think you know who X is.

6.4.2.1.1.3 PLAIN NOUN PHRASE SUBJECTS

Plain noun phrases (i.e. those not determined by: 1) the form *ta* 'one, a', 2) a demonstrative, or 3) a relative clause) occurred as Subjects in 246/1569 or 16 per cent of the clauses. Most of these (66%) were found in the first clauses of sentences as in:

- (18) *To posi i-loondo ma i-mar pa kar.*
then cat 3SG-run and 3SG-come REF village
Then the cat ran back to the village.

With their high average referential distance of 11.40 and low persistence of 1.56, plain Subject noun phrases are typically used to encode a *digression* to a relatively non-given participant who is not going to figure prominently in the ensuing discourse. The meaning of such encoding is:

Plain NP Subject (=X)

I want to say something about someone/something
different (=X) now.
I do not think you know who/what X is.

Together, the three encodings of: 1) null Subjects, 2) free pronominal Subjects, and 3) plain NP Subjects account for over 90 per cent of all Subjects in the restricted text corpus. They constitute, therefore, the core of participant tracking mechanisms.

6.4.2.1.1.4 SUBJECT NOUN PHRASES WITH DEMONSTRATIVES

Noun phrases containing demonstratives were much less frequent as Subjects, occurring in only 8/1569 or .5 per cent of the simple sentences in the restricted corpus. Of these, five were in sentence-initial clauses, as in:

- (19) *To-na kon moori ta-na i-so pini...*
then-GIV ghost woman SPEC-GIV 3SG-say REF.3SG
After that, that ghost woman said to her...

The average referential distance of noun phrases containing modifying demonstratives was 6.09 and their average persistence 1.38. They are, therefore, used to refer to slightly more given referents than plain noun phrases, but like plain noun phrases their referents typically do not persist as Topics of the immediately ensuing discourse. Thus, the meaning of such encoding is:

Subject NP with demonstrative (=X)

I want to say something about someone/something
different (=X) now.

I think you could know who/what X is.

A more detailed examination of demonstratives in Subject noun phrases can be found in §6.4.2.1.4.

6.4.2.1.1.5 THEMATISED SUBJECT NOUN PHRASES (RE-ESTABLISHMENT OF GIVEN PARTICIPANTS AS TOPICS)

More frequent (35/1569 or 2%) than the NP plus demonstrative combination was the use of thematised noun phrases. These thematised Subjects usually also co-occurred with a free pronoun copy. With an average referential distance of 9.00 and an extremely high average persistence of 5.23, this device is shown to have the function of *re-establishing an already given participant as Topic*. For example:

- (20) To *nge lutu-unu, ni i-so:*
then pig child-GEN.3SG NOM.3SG 3SG-say
Then the piglet, he said:
'Nio zo-ŋ-som-ŋo-ŋ?'
NOM.1SG name-GEN.1SG-NEG-NMS-GEN.1SG
'Am I a nobody (lit. a no-name)?'

When the participants to be re-established as Topics are contextually more given, then a thematised noun phrase containing a demonstrative is used. This is shown by this combination's lower average referential distance of 4.26.

The meaning of Thematised NPs is:

Thematised Subject NP (=X)

I want to say something about someone/something
different (=X) now.

After I say this, I will say more things about X.

I think you know who/what X is.

6.4.2.1.1.6 CONSTRUCTIONS FOR INTRODUCING NEW TOPICS

To introduce a completely new participant and establish them as a Topic of the ensuing discourse, noun phrases containing the determiner *ta* 'one, a' are used. Several different constructions occur. One of these consists of a thematised noun phrase containing the form *ta* 'one, a', which is then usually followed by a free pronoun copy, as in the following example:

- (21) *Kolman ta, ni i-pa ma i-la su.*
old.person SPEC NOM.3SG 3SG-walk and 3SG-go forest
An old man, he went for a walk in the forest.

In the text corpus this construction had an average referential distance of 20 (i.e. all the referents were new) and a high persistence value of 3.58. It is not necessary for the *ta* noun phrase to be thematised, as the following example illustrates:

- (22) *Mi tamuriŋ ta i-mbot kar.*
 and girl SPEC 3SG-stay village
 And there was a girl in the village.

The meaning of noun phrases containing *ta* is given below:

[N ...*ta*]NP

I want to say something about someone/something different now (=X).

After this, I will say other things about X.

I think that you do not know who/what X is.

Subject noun phrases containing relative clauses are also used to introduce completely new participants or reintroduce participants which have somehow decayed as Topics:

- (23) *To Yoan ta Mose lutu-unu=i, (ni)*
 then John SPEC Moses child-GEN.3SG=PROX NOM.3SG
 Then John, who is Moses's child/son, (he) got
i-kam ko-yam kini ma am-kan.
 3SG-do CON.RECX-GEN.1PL.EXC food and 1PL.EXC-eat
 us something to eat. (This is the first mention of John in the discourse.)

When relative clauses are used in introductions of completely new referents, the relative clause functions to add a bit more descriptive information about the referent rather than actually assisting in his/her identification.

6.4.2.1.1.7 CLEFT CONSTRUCTIONS (FOR EMPHASIS)

Cleft constructions are frequently *formally* identical to sentences with non-thematised NP *ta* Subjects, but are *functionally* quite different. Whereas the referents of Subject noun phrases containing *ta* are always completely *new* information, those of cleft constructions are invariably *somewhat given*. This can be seen from the lower average referential distance figure for cleft constructions of 12.86. Cleft constructions are typically used to place some sort of emphasis upon a participant. This emphasis may be either: 1) contrastive, or 2) signalling that an especially key participant is again coming on the scene. An example of a contrastive cleft is given in (24), while key participant clefts are given in (25) and (26):

- (24) *Nio itu-ŋ ta-men ta aŋ-kam uraata.*
 NOM.1SG REFL-GEN.1SG SPEC-only SPEC 1SG-do work
 I was the only one who worked.

Mi wal pakan na, som ma som kat.
 and group some GIV NEG and NEG very
 The others, they didn't do a single thing.

- (25) *To kuriti ta bok ma i-se.*
 then octopus SPEC bubbling and 3SG-ascend
 Then the OCTOPUS came bubbling up.

- (26) *Ato-ŋ moori ta puge i-kan=i.*
 o.sibling-GEN.1SG female SPEC crocodile 3SG-eat=ACC.3SG
 My OLDER SISTER has been bitten by a crocodile.

Example (25) comes from a long narrative about an eagle named Sirik who is killed by an octopus, but is then reincarnated as a kind of Sirik II. Sirik II wants revenge on the octopus. So he plots together with his other bird friends to make a massive attack on the octopus. When all is ready, he goes to a tall banyan tree and starts squawking in order to annoy the octopus. He squawks and squawks until finally, the octopus comes bubbling up. Example (25) encodes this return of this 'villain'. Thus, the octopus is not being introduced here for the first time, as would be the case with the NP *ta* construction. Instead, he is being *reintroduced*. Example (26) (actually an instance of Object clefting) was the first thing uttered by a girl when she breathlessly arrived back in the village and announced the tragedy of her sister being bitten.

6.4.2.1.1.8 THEMATISATION OF SUBJECT NOUN PHRASES FOR EMPHASIS

A second function of thematised Subject noun phrases is to encode contrastive or parallel emphasis, as in:

- (27) *Tana Andau i-mburus manioka,*
 so Andau 3SG-scrape manioc
 So, Andau scraped/shredded manioc,
mi Akep, ni i-twortwooro buza kini.
 and Akep NOM.3SG 3SG-file+RED knife LOC.3SG
 while Akep, he continued to file his knife.

Here, there is no temporal succession between the two clauses joined with *mi*. Rather, two simultaneous events are reported, whose participants and activities bear a *proportional* relationship to each other.

Andau	:	Akep
scraping manioc		filing a knife

6.4.2.1.1.9 SUMMARY OF SUBJECT ENCODINGS

If all instances of Subjects in the restricted text corpus are conflated, one finds that, overall, Subjects:

1. had an average referential distance of 3.67
2. had an average persistence of 2.97
3. were 89 per cent animate
4. had the same referent as the preceding sentence 58 per cent of the time

If one examines the non-conflated figures for initial versus non-initial Subjects, it will be observed that the initial Subjects typically had a slightly greater persistence than the non-initial ones.

6.4.2.1.2 THE ROLE OF PERSON AND NUMBER IN THE ENCODING OF SUBJECTS

Table 6.3 presents a breakdown of the frequency of *principal* Subject encodings according to person and number. Perusing this table, we observe that third person singular and plural Subjects are far less frequently encoded by free pronouns than most first and second person Subjects, and first person singular Subjects are far more frequently encoded by free pronouns than any other person-number combination. Given the correlation of pronominalisation with topicality, the frequent occurrence of first singular pronouns is perhaps an indication of the Ego-centric nature of language.

TABLE 6.3: FREQUENCY OF PRINCIPAL SUBJECT ENCODINGS ACCORDING TO PERSON AND NUMBER

	# Of Instances	NULL	PRO	NP	THEM. NP + PRO	THEM. PRO	COMB. PRO
1DU.EXC	5	80%	20%				
1DU.INC	13	69%	23%				8%
1PL.EXC	28	71%	29%				
1PL.INC	14	71%	7%			22%	
1SG	69	48%	51%			1%	
2DU	24	71%	25%				4%
2PL	21	67%	19%		14%		
2SG	97	54%	29%		16% ¹⁴	1%	
3DU	76	62%	32%	1%	1%		3%
3PL	234	78%	2%	13%	2%		2%
3SG	983	65%	8%	22%	1%		

More difficult to explain are: 1) the frequent thematisation of first person plural inclusive free pronominal Subjects, and 2) the frequent pronominalisation of third person dual Subjects. Given the reference to the hearer in first person inclusive forms, the former should, perhaps, be interpreted as a kind of vocative. It will be noted that for second person Subjects also, thematised noun phrases (=vocatives) were quite frequent. The frequent pronominalisation of third dual Subjects remains unexplained.

One further comment regarding the influence of person-number upon topicality is that there is a pronounced tendency for the non-third person Subjects to occur sentence initially. Whereas only 41 per cent of the third person Subjects are found sentence initially, 61 per cent of the non-third person Subjects occur there. Since sentence initial position is the site where Topic establishment usually takes place, this fact again supports the greater *natural topicality* of non-third person participants.

The person of the Subject appears to have relatively little influence upon topicality measurements. This can be seen from the following table:

¹⁴ For second person Subjects, the thematised NP here is a vocative.

TABLE 6.4: TOPIC CONTINUITY STATISTICS FOR SINGULAR¹⁵ SUBJECTS DISTINGUISHED ACCORDING TO PERSON

	NULL SUBJECTS	PRONOMINAL SUBJECTS
1SG		
RD	1.64	2.71
PER	3.00	4.06
2SG		
RD	1.44	2.61
PER	3.42	2.36
3SG		
RD	1.33	2.66
PER	3.25	4.19

6.4.2.1.3 THE INFLUENCE OF SENTENTIAL CONTEXT UPON THE TOPIC CONTINUITY OF SUBJECTS

Table 6.5 presents some statistics for the three principle referential devices illustrating the influence of the sentential context in which a Subject NP occurs upon its topicality measurements. Seven types of context were distinguished as below.

1. TH: occurs in the Head of a Tail-Head construction
2. OC: occurs in an ordinary clause, that is not one of the other, more specialised types
3. PV: occurs in the second half of a *cosubordinate pivot* construction like X hit Y and Y died, in which a non-Subject of one clause becomes the Subject of the immediately following one:

(28) *Ti-pun=i ma i-meete to ti-miili ma ti-mar.*
 3PL-hit=ACC.3SG and 3SG-die then 3PL-return and 3PL-come
 They killed him and then they came back.

4. PR: (=return from pivot) occurs in the first clause following a pivot construction. (e.g. the *to timiili* portion of example (28))
5. SC: occurs in the first clause of a sentential Complement
6. CR: (return from complement) occurs in the first clause following a sentential Complement. Since quotations are one type of sentential Complement, the Complements from which returns are made can be *multi*-sentential.
7. XC: occurs in an XCOMP

¹⁵ The table takes only singular Subjects into account because only these have enough instances for disaggregation according to person to be meaningful.

TABLE 6.5: THE EFFECTS OF SENTENTIAL CONTEXT UPON SUBJECT TOPICALITY

	Null Subjects				NP Subjects				Free Pronominal Subjects			
	RD	PER	%SS ¹⁶	#	RD	PER	%SS	#	RD	PER	%SS	#
TH	1.03	3.61	94%	84	2.17	3.67	67%	6	1.33	5.67	67%	6
OC	1.23	3.16	88%	775	12.70	1.42	6%	166	3.45	3.52	25%	102
PV	1.49	2.31	2%	49	7.33	3.00	0%	3				-
PR	2.53	2.00	0%	17	11.00	0	0%	2	5.50	4.50	0%	2
SC	3.33	4.15	30%	27	13.05	.89	8%	38	1.93	4.09	50%	46
CR	2.23	4.63	51%	43	4.60	2.71	26%	31	2.14	2.94	38%	32
XC	1.00	3.48	84%	31				-				-

From this table the following generalisations can be made:

1. Positioning within a Head clause of a Tail-Head construction correlated with:
 - 1) relatively decreased referential distance / increased continuity for null, free pronominal, and plain noun phrase Subjects (as would be expected), and
 - 2) increased persistence.
2. The Subjects of XCOMPS are always to be found in the immediately preceding (matrix) clause. (This, however, follows from the definition of XCOMPs given in §4.6.)
3. For null and NP Subjects, occurrence in the first clause of a sentential Complement correlated with maximal referential distance / lack of contextual givenness. For free pronouns, however, this environment correlated with increased givenness.
4. For free pronominal and NP Subjects, occurrence in the first clause following a sentential Complement correlated with increased givenness / reduced referential distance, while for null Subjects exactly the opposite correlation was observed.

6.4.2.1.4 THE ROLE OF DEMONSTRATIVES IN SUBJECT NOUN PHRASES OCCURRING IN NARRATIVE DISCOURSE

Table 6.6 presents disaggregated tabulations of the typical referential distances and persistences of plain and Subject noun phrases containing demonstratives.

¹⁶ In this table %SS stands for the percentage of instances having the same referent as the immediately preceding clause, and # stands for the number of instances.

TABLE 6.6: TOPIC CONTINUITY STATISTICS FOR SUBJECT NOUN PHRASES CONTAINING DEMONSTRATIVES

	Initial Clauses	Non-Initial Clauses	Conflated
Plain NP			
AVERAGE RD	11.23	11.74	11.40
AVERAGE PER	1.59	1.51	1.50
%SR	12%	6%	10%
%AN	72%	60%	68%
# OF INSTANCES	162	84	246
Thematised NP (+ PRO)			
AVERAGE RD	5.94	14.00	6.63 (9.00)
AVERAGE PER	3.47	3.33	6.00 (5.23)
%SR	3%	0%	3%
%AN	90%	100%	91%
# OF INSTANCES	32	3	35 (51)
NP <i>tina</i>			
AVERAGE RD	1.80	1.50	1.71
AVERAGE PER	1.00	0.50	0.86
%SR	20%	0%	14%
%AN	40%	0%	28%
# OF INSTANCES	5	2	7
Thematised NP <i>tina</i>			
AVERAGE RD	4.25	-	4.25
AVERAGE PER	2.25	-	2.25
%SR	50%	-	50%
%AN	100%	-	100%
# OF INSTANCES	4	-	4
NP <i>tana</i>			
AVERAGE RD	2.40	6.00	3.43
AVERAGE PER	2.20	0.33	1.67
%SR	40%	0%	29%
%AN	67%	33%	57%
# OF INSTANCES	15	6	21
Thematised NP <i>tana</i> (+PRO)			
AVERAGE RD	3.33	2.00	2.67
AVERAGE PER	2.00	1.00	1.50
%SR	33%	0%	17%
%AN	100%	100%	100%
# OF INSTANCES	3	3	6

Table 6.6 (continued)

	Initial Clauses	Non-Initial Clauses	Conflated
<i>NP ti</i>			
AVERAGE RD	9.00	5.33	7.62
AVERAGE PER	1.60	1.67	1.63
%SR	0%	0%	0%
%AN	20%	67%	38%
# OF INSTANCES	5	3	8
<i>Thematised NP ti</i>			
AVERAGE RD	11.00	-	11.00
AVERAGE PER	4.33	-	4.30
%SR	0%	-	0%
%AN	100%	-	100%
# OF INSTANCES	3	-	3
<i>NP taingi</i>			
AVERAGE RD	11.56	3.00	10.70
AVERAGE PER	2.78	0.00	2.50
%SR	11%	0%	10%
%AN	0%	0%	0%
# OF INSTANCES	9	1	10
<i>Thematised NP taingi</i>			
AVERAGE RD	11.00	-	11.00
AVERAGE PER	9.00	-	9.00
%SR	0%	-	0%
%AN	100%	-	100%
# OF INSTANCES	2	-	2
<i>NP tiga</i>			
AVERAGE RD	20	-	-
AVERAGE PER	1	-	-
%SR	0%	-	-
%AN	100%	-	-
# OF INSTANCES	1	-	-

From Table 6.6 it can be seen that the rankings according to referential distance and persistence are:

LEAST REFERENTIAL DISTANCE
(MOST CONTEXTUALLY GIVEN)



1. NP *tina*
2. Thematised NP *tana*
3. NP *tana*
4. Thematised NP *tina*
5. NP *ti*
6. Thematised NP
7. NP *taɪŋgi*
8. Thematised NP *ti*
9. Thematised NP *taɪŋgi*
10. Plain NP
11. NP *tiŋga* (only one example)

HIGHEST REFERENTIAL DISTANCE (LEAST
CONTEXTUALLY GIVEN)

LEAST PERSISTENT
(LEAST TOPICAL)



1. NP *tina*
2. NP *tiŋga* (only one example)
3. Plain NP
Thematised NP *tana*
4. NP *ti*
5. NP *tana*
6. Thematised NP *tina*
7. NP *taɪŋgi*
8. Thematised NP *ti*
9. Thematised NP
10. Thematised NP *taɪŋgi*

MOST PERSISTENT
(MOST TOPICAL)

The referential distance rankings are as expected, with noun phrases containing demonstratives being used to encode relatively more given referents than plain noun phrases. What is somewhat surprising is the persistence rankings. Among thematised noun phrases, those *lacking* a demonstrative had a much higher average persistence than most of those containing demonstratives. Only thematised noun phrases with *taɪŋgi* contravened this tendency. Generally, therefore, thematised noun phrases containing demonstratives are *not* a preferred device for encoding a switch to a new topic, this function being handled either by pronouns or thematised plain noun phrases. Instead, they tend to be used in descriptive or explanatory *digressions*, as in the following example:

(29) *Ziru me kini ti-wa ma ti-la,*
NOM.3DU dog LOC.3SG 3PL-walk+RED and 3PL-go
As he walked along with his dog,

mi me kini i-ndeeŋe ŋge ta.
and dog LOC.3SG 3SG-find pig SPEC
his dog found a pig.

To i-ketoto i ma i-la, mi nge i-ko
 then 3SG-chase+RED ACC.3SG and 3SG-go and pig 3SG-flee
 Then he was chasing after the pig, and the pig fled

ma i-su-la pa sumbu-unu ta i-la pa
 and 3SG-descend-go REF hole-GEN.3SG SPEC 3SG-go REF
 down into a hole that went to

kar. Mi nge tina, ni nge nonoono som.
 village and pig DEM NOM.3SG pig true NEG
 the village. (Now this pig, it was not a real pig.

Ina zin yaḡoyāḡo tau. To-na Buyo
 that.one PL river.spirit EMPH then-GIV Buyo
 It was the river spirits.) After that, Buyo

i-to zaala ma i-la...
 3SG-follow road and 3SG-go
 followed the road along...

Thus, the meaning of thematised noun phrases containing demonstratives is along the following lines:

X demonstrative, (pronoun copy of X)...

I want to say something about X.
 After I say this, I will not say more things about X.
 I think you know who/what X is.

By contrast, the meaning of the thematised plain noun phrase is:

Thematised Subject NP (=X)

I want to say something about someone/something
 different (=X) now.
 After I say this, I will say more things about X.
 I think you know who/what X is.

It will be noted that *ti*, *tingi*, and *taingi* have quite high average referential distances. This is because they are used both anaphorically and cataphorically, whereas *tina* and *tana* are only used anaphorically. The cataphoric instances of *ti*, *tingi*, and *taingi*, in which the referent to be talked about is completely new, are the source of their high values. These cataphoric uses are likewise the source of their high persistence values. An example of the cataphoric use of *taingi* is given below:

(30) *Pata-ḡa-na taingi ko i-ma i-mbot*
 heavy-NMS-GEN.3SG DEM UC 3SG-come 3SG-stay
 This trouble will come upon

ku: Kumbu-m som, nomo-m som.
 LOC.2SG leg-GEN.3SG NEG hand-GEN.3SG NEG
 you: You won't have any legs, you won't have any hands.

Another characteristic of noun phrases modified with demonstratives is that their referents tend to be less *animate* than those of plain noun phrases. Since pronominalisation is largely

restricted to *animate referents*, some other linguistic device must be available for encoding *somewhat given*¹⁷ *inanimate referents*. Modification with demonstratives is this other device.

Note also that noun phrases modified by *tana* had a greater average referential distance than those modified by *tina*.

The demonstratives *tana*, *tina*, *ti*, *taingi*, and *tingi* all have the characteristics of:

1. being noun phrase *modifiers*;
2. being able to have both *abstract, discourse internal* reference and *concrete, extra-textual* reference, as when *tana* and *tina* are used to refer to entities located in close physical proximity to the hearer but not to the speaker, or when *ti* is used to refer to entities physically near the speaker.

We now turn to some deictic forms which lack one or the other of the above two characteristics.

The first three of these are a set of deictic *pro-NPs* which function as noun phrase substitutes.

<i>ina</i>	that (one)/ those (ones) near the hearer
<i>ingi</i>	this (one)/ these (ones) near the speaker
<i>inga</i>	that (one)/ those (ones) over there away from both the hearer and the speaker

These forms may have either discourse external / real-world reference, or discourse-internal reference. The following have external / real-world reference:

- (31) *Ina so?* : *Ingi pat.*
 that.one what DEM stone
 What is that (thing) near you? : This is a stone.
- (32) *Ingi so?* : *Ina zaaba.*
 this.one say DEM war.club
 What is this (thing) near me? : That is a war club.
- (33) *Inga nio lutu-ŋ.*
 that.one.over.there NOM.1SG child-GEN.1SG
 That one over there (away from both you and me) is my child.

Discourse internally, *ina* is used as an anaphoric substitute, particularly in parenthetical comments:

- (34) (*Pa ina, ni meret ki kar.*)
 for that.one NOM.3SG leader LOC village
 (Now the one (about whom I have been talking) he was a leader of the village.)

In this and the previous example, notice that the *pro*-forms are being used as substitutes for noun phrases having *animate referents*.

Discourse internally, *ingi* is used cataphorically, frequently functioning to introduce lists:

¹⁷ *Highly given* inanimate referents are simply omitted.

- (35) *Iggi Mak lutu-unu bizin za-n:*
 this.one Mark child-GEN.3SG PL name-GEN.3PL
 These are the names of Mark's children:

David, Misek, mi Dik.
 David Misek and Dick
 David, Misek, and Dick.

The next set of deictic forms are noun phrase modifiers which appear to have only *extra-textual / real world* reference. They are:

tinga over there, not too far away from the speaker and hearer
tangga over there, geographically far away from the speaker and hearer
tanggaa way over there, geographically very far away from both the speaker and the hearer

During a public occasion of storytelling, use of the latter three would nearly always be accompanied by some sort of pointing gesture, using either the upper lip, head, or a hand.

This now concludes the discussion of Subject Topic continuity in Mangap-Mbula narratives. The next area to be addressed is that of Direct Object Topic continuity. However before going on, a few comments about the Topic continuity of Subjects in *non-narrative* discourse are in order. Expository discourses are characterised by less frequent use of null and pronominal Subjects. Instead, full noun phrases and the deictic substitutes occur more frequently. Procedural discourses, on the other hand, are much more like narratives, except that they are told in second person singular rather than third person. In procedural discourses the hypothetical 'doer' of the procedure is usually encoded by a second singular pronoun in the first sentence of the discourse and null Subjects throughout the remainder.

6.4.2.2 DIRECT OBJECT TOPIC CONTINUITY

Table 6.7 presents Topic continuity statistics for the Direct Objects which occurred in the restricted corpus. In this table, some of the rarer categories have again been supplemented by instances from the larger corpus. These categories are marked with an asterisk and the statistics for these additional instances are enclosed in parentheses.

TABLE 6.7: TOPIC CONTINUITY MEASUREMENTS FOR DIRECT OBJECTS

	REFERENTIAL DISTANCE	PERSISTENCE	%ANIMATE	#
DEVICE				
Null Objects	1.61	1.25	16%	85
Thematised Demonstratives	2.00	2.00	0%	2
*Thematised NP	7.50 (8.26)	1.67 (1.79)	17% (21%)	12 (19)
*Thematised NP RC	13.33 (17.14)	1.33 (1.00)	0% (29%)	3 (7)

Table 6.7 (continued)

	REFERENTIAL DISTANCE	PERSISTENCE	%ANIMATE	#
DEVICE				
*Thematised NP <i>ta</i>	20 (20)	2 1.50	1 1	1 2
*Thematised NP DEM	1.50 (2.38)	1.25 (1.44)	0% (0%)	2 (8)
Plain NP	14.09	.54	20%	253
NP in Cleft Construction	2.00	3.67	100%	3
*NP RC	17.33 (17.92)	1.22 (1.41)	33% (39%)	9 (37)
NP <i>sa</i>	17.89	1.00	22%	9
*NP <i>ta</i>	20.00 (20.00)	.50 (1.11)	0% (44%)	6 (18)
*NP <i>tainggi</i>	3 (2)	0 (0)	0% (0%)	1 (2)
*NP <i>tana</i>	7.38 (7.72)	2.13 (1.82)	0% (9%)	8 (11)
*NP <i>ti</i>	2.50 (4.00)	0 (0)	0% (0%)	2 (3)
*NP <i>tina</i>	- (4.00)	- (0)	- (0%)	- (2)
*NP DEM (all conflated)	6.09 (6.05)	1.55 (1.11)	0% (0%)	11 (18)
Pronoun	2.02	1.85	97%	110
*Reflexive-Emphatic Form <i>itu-</i>	0.00 (0.00)	3.00 (2.25)	67% (75%)	3 (4)

From Table 6.7, it can be seen that Object encodings are ranked according to frequency of occurrence as follows:

MOST FREQUENT



1. Plain NP (=253)
2. Pronoun (=110)
3. Null (=85)
4. NP with relative clause (=37)
5. Thematised NP (+PRO) (=12)
6. NP with demonstrative¹⁸
7. NP *sa* (=9)
8. NP *ta* (=6)
9. { Thematised NP with relative clause (=3)
- { NP in cleft construction (=3)
- { reflexive-emphatic *itu-* (=3)
10. { Thematised NP with demonstrative (=2)
- { Thematised demonstrative (=2)
11. Thematised NP *ta* (=1)



LEAST FREQUENT

Their rankings according to average referential distance are:

HIGHEST REFERENTIAL DISTANCE

(LEAST GIVEN)



1. { NP *ta* (=20.00)
- { Thematised NP *ta* (+PRO) (=20.00)
2. NP with relative clause (=17.92)
3. NP *sa* (=17.89)
4. Thematised NP with relative clause (=17.14)
5. Plain NP (=14.09)
6. Thematised NP (=8.26)
7. NP with demonstrative (=6.05)
8. Thematised NP with demonstrative (=2.38)
9. Pronoun (=2.02)
10. { NP in cleft construction (=2.00)
- { Thematised demonstrative (=2.00)
11. Null (=1.61)
12. reflexive-emphatic *itu-* (=0)



LOWEST REFERENTIAL DISTANCE

(LEAST GIVEN)

while their rankings according to persistence are:

¹⁸ In the rankings, all of the demonstratives are aggregated because of their rarity.

MOST PERSISTENT



1. NP in cleft construction (=3.67)
2. reflexive-emphatic *itu-* (=2.25)
3. { Thematised NP *ta* (=2.00)
Thematised demonstrative (=2.00)
4. Pronoun (=1.85)
5. Thematised NP (=1.79)
6. Thematised NP with demonstrative (=1.44)
7. NP with relative clause (=1.41)
8. Null (=1.25)
9. { NP *ta* (=1.11)
NP with demonstrative (=1.11)
10. { Thematised NP with relative clause (=1.00)
NP *sa* (=1.00)
11. Plain NP (=0.54)

LEAST PERSISTENT

From these rankings, we can make some of the same observations which were made for Subjects.

1. Use of demonstratives correlates with decreased referential distance and persistence.
2. The referents of null and pronominalised Objects are relatively continuous.
3. Noun phrases containing the form *ta* are used to introduce completely new referents.
4. Thematised Objects are used to encode more persisting (36) or contrastive (37) referents. (Note: thematised Objects always have a pronoun copy postverbally if animate.)

- (36) *To-na tomtom ta, ŋge i-peeb=i*
 then-GIV person SPEC pig 3SG-give.birth=3SG
 After that, a person, the pig gave birth to him

ma i-to zin ŋge ma i-su.
 and 3SG-follow PL pig and 3SG-descend
 and he followed down after the (other) pigs (who had been born first).

- (37) *Ro tiom ta i-mar mungu na, aŋ-kam Ø*
 leaf LOC.2PL SPEC 3SG-come before GIV 1SG-get
 Your letter which came before, I have received it.

kek. Mi aŋ-pekəl Ø som. Pa niam am-la
 PERF and 1SG-answer NEG REF NOM.1PL.EXC 1PL.EXC-go
 But I didn't reply to it, because we went

am-kam uraata ta Gelem. Mi ro tiom
 1PL.EXC-do work SPEC Gelem and leaf LOC.2PL
 and worked at Gelem. But your other letter

toro ta Silas i-kam ma i-mar, iŋgi
 other SPEC Silas 3SG-get and 3SG-come now
 which Silas brought, now

nio *aḡ-pekəl* \emptyset *i*
 NOM.1SG 1SG-answer PROX
 I am replying to it.

Example (36) comes from a story about the exploits of a plucky character named Nangimon who came into being when some young men had intercourse with a pig. Thus, this example introduces the central character of the whole narrative. His importance is indicated by the thematisation of the Object encoding him. Example (37), on the other hand, illustrates the use of thematisation to encode contrastive emphasis between the first letter which was not answered, and the second one which was. The example comes from the beginning of a reply to the second letter. After this example, no further mention is made of this second letter in the text, so the thematised NP is clearly not being established as a Topic-to-be. Instead, thematisation is being used here for purposes of emphasis rather than topic establishment.

Direct Object reflexive-emphatic noun phrases, which are encoded with the inalienable noun *itu-*, are textually infrequent. The few instances occurring in both the restricted and expanded corpuses agree, however, in: 1) always being coreferential with the Subject of the same clause and 2) having high persistence.

Finally, note the very low animacy (16%) of null Objects. *Pronominal* Objects, on the other hand, are 97 per cent animate. Thus, the two devices are almost in complementary distribution, with null Objects being used to encode highly given *inanimate* referents and pronominal Objects being used to encode highly given *animate* referents.

Overall, Direct Objects were 36 per cent animate, and had an average referential distance of 9.10 and an average persistence of 1.06.

6.4.2.3 THE TOPIC CONTINUITY OF OBLIQUE ARGUMENTS

The Topic continuity statistics for Oblique arguments –those encoding LOCATIONS, INSTRUMENTS, BENEFACTIVES, TIMES, and the like– are given in Table 6.8. Again, some of the rarer categories have been supplemented by instances from the larger corpus. It will be noted, however, that even in the larger corpus, only a handful of the rarer categories (like thematised Obliques, and Obliques containing demonstratives) could be found.

TABLE 6.8: TOPIC CONTINUITY STATISTICS FOR OBLIQUE ARGUMENTS

	REFERENTIAL DISTANCE	PERSISTENCE	%ANIMATE	# OF INSTANCES
*Null Obliques	1.00 (1.20)	0.00 (0.50)	0% (0%)	6 (20)
*Pronouns	.88 (1.34)	5.00 (3.78)	100% (96%)	16 (50)
Plain Noun Phrases	14.12	0.80	28%	118
*NP DEM	- (7.40)	- (1.20)	- (20%)	- (5)
*NP <i>ta</i>	20.00 (20.00)	.33 (0.86)	33% (14%)	3 (7)

Table 6.8 (continued)

*NP RC	- (17.85)	- (0.46)	- (23%)	- (13)
Thematised NP	2.50 (12.57)	1.50 (0.86)	0% (0%)	2 (7)
*Thematised NP DEM	2 (2.00)	3 (1.67)	100% (0%)	1 (3)

From this table, it can be seen that the Oblique encodings were ranked according to their frequency of occurrence as follows:

MOST FREQUENT



1. Plain NP (=118)
2. Pronoun (=16,50)
3. Null (=6,20)
4. NP with relative clause (=0,13)
5. NP *ta* (=3,7)
6. Thematised NP (=2,7)
7. NP with demonstrative (=0,5)
8. Thematised NP with demonstrative (=1,3)

LEAST FREQUENT

while their rankings according to referential distance and persistence were:

HIGHEST REFERENTIAL DISTANCE



1. NP *ta* (=20.00)
2. NP with relative clause (=17.85)
3. Plain NP (=14.12)
4. Thematised NP (=12.57)
5. NP with demonstrative (=7.40)
6. Thematised NP with demonstrative (=2.00)
7. Pronoun (=1.34)
8. Null (=1.20)

LOWEST REFERENTIAL DISTANCE

MOST PERSISTENT



1. Pronoun (=3.78)
2. Thematised NP with demonstrative (=1.67)
3. NP with demonstrative (=1.20)
4. Thematised NP (=0.86)
5. NP *ta* (=0.86)
6. Plain NP (=0.80)
7. Null (=0.50)
8. NP with relative clause (=0.46)

LEAST PERSISTENT

6.4.2.4 THE TOPIC CONTINUITY OF SUBJECTS, OBJECTS, AND OBLIQUE NOUN PHRASES COMPARED

The two graphs below summarise the mean referential distances and persistences for the principal linguistic encodings of Subjects, Objects, and Oblique noun phrases.

From these graphs it will be observed that corresponding linguistic devices have similar referential distance rankings across Subject, Object, and Oblique noun phrases. For equivalent devices, Subjects typically had: 1) lower or equal referential distances (thus being relatively more given), and 2) far greater persistence in discourse. Such graphs illustrate well the greater givenness and topicality of Subjects. Pronominal and thematised NP Subjects were exceptional, however, in having *slightly higher* average referential distances. For the pronouns, this is due to the fact that it is impossible for a Subject pronoun to have a preceding referent in the same clause, whereas for the postverbal arguments this is a possibility (in which case, they were assigned a referential distance value of zero).

Oblique instances of a linguistic device are typically less persistent than the corresponding Subject and Object instances. Oblique pronouns, however, constitute a significant exception to this generalisation, since they had a higher average persistence than both Subject and Object pronouns. The elevated figures for the pronouns are the result of sequences of speech act plus response to speech act like the following, in which the Addressee / Responder is encoded as an Oblique NP:

X said to him/her.
He/She did something.

Another significant difference between Oblique encodings and those of Subjects and Objects is that null Obliques have extremely low persistence, whereas for Subjects and Objects null encodings are of more moderate persistence. It will also be noted that the persistence of thematised Oblique noun phrases is significantly lower than that of both thematised Subjects and Objects. This is due to the fact that thematisation of Obliques is nearly always for contrastive emphasis, as in the following example:

- (38) *Pa kini, nio aṅ-rao pa ∅*
for starchy.food NOM.ISG ISG-adequate REF
For starchy food I have enough of,
mi buzur na som.
and savoury.food GIV NEG
but not savoury food.

A final observation is that the average animacy of non-pronominal non-Subjects was *far lower* than that of non-pronominal Subjects.

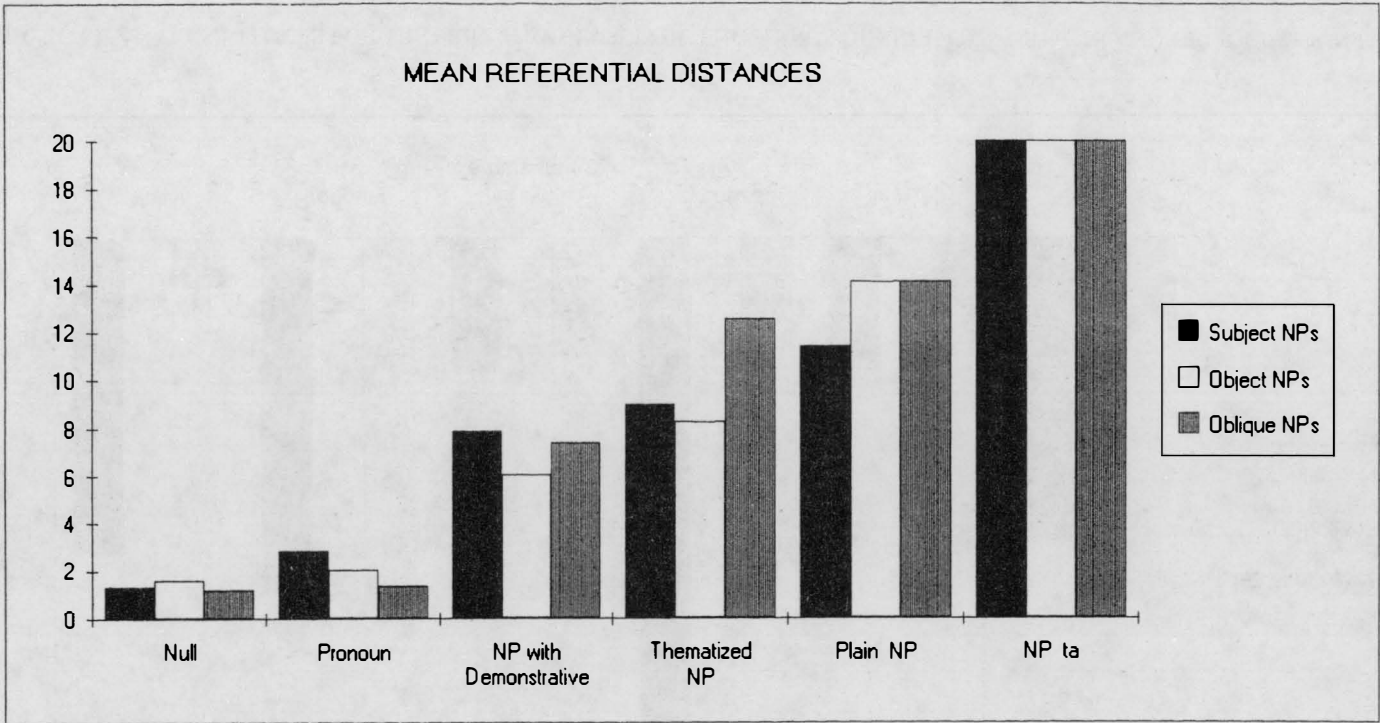


CHART 6.1: MEAN REFERENTIAL DISTANCES FOR THE PRINCIPAL LINGUISTIC ENCODINGS OF SUBJECTS, OBJECTS AND OBLIQUE NOUN PHRASES

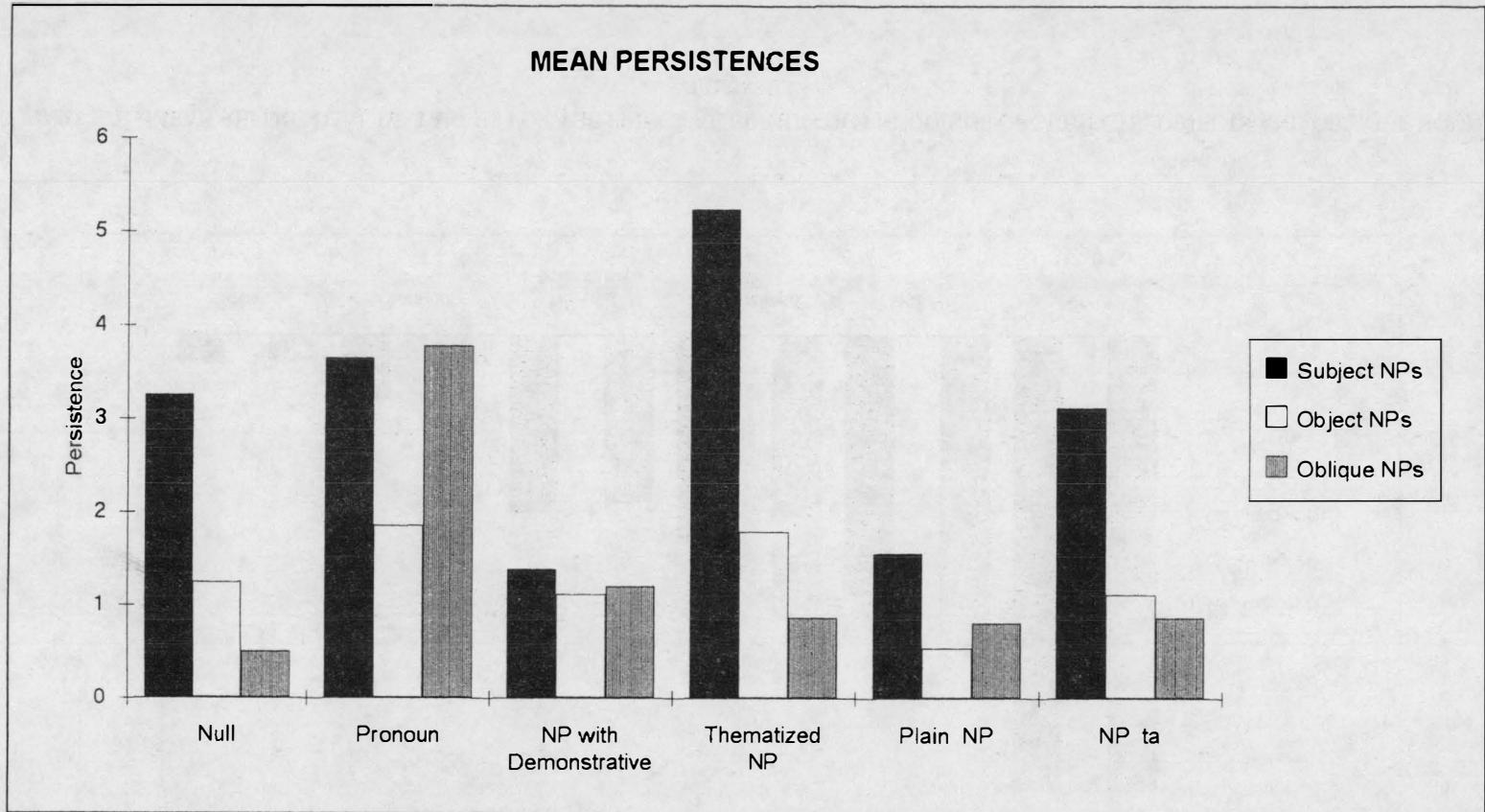


CHART 6.2: MEAN PERSISTENCES FOR THE PRINCIPAL LINGUISTIC ENCODINGS OF SUBJECTS, OBJECTS AND OBLIQUE NOUN PHRASES

6.4.2.5 THE TOPIC CONTINUITY OF GENITIVES

Table 6.9 presents summary statistics for the principal genitive encodings in the restricted corpus. Note that some underrepresented categories have again been supplemented by instances from the larger corpus. Where this has been done, the categories are marked with an asterisk and the values based on these additional instances are given in parentheses. Some values have been disaggregated according to third versus non-third person because of some significant differences between them.

TABLE 6.9: CONTINUITY STATISTICS FOR PRINCIPAL GENITIVE ENCODINGS

	REFERENTIAL DISTANCE	PERSISTENCE	%ANIMATE	# OF INSTANCES
Genitive Suffix on Inalienable Noun (Non-third Persons)	1.10	2.67	100%	56
Genitive Suffix on Inalienable Noun (Third Persons)	1.45	2.37	89%	138
Genitive Suffix on Inalienable Noun (All Persons)	1.35	2.21	93%	194
*Free Pronoun plus Genitive Suffix (Non-third Persons)	1.00 (6.58)	.20 (1.36)	100% (100%)	5 (17)
*Free Pronoun plus Genitive Suffix (Third Persons)	1.57 (2.21)	1.43 (3.52)	100% (100%)	7 (19)
*Free Pronoun plus Genitive Suffix (All Persons)	1.33 (4.27)	.92 (2.50)	100% (100%)	12 (36)
NP with Demonstrative plus Genitive Suffix	5.60	.20	20%	5
Plain NP plus Genitive Suffix	11.88	.73	47%	55

Table 6.9 (continued)

	REFERENTIAL DISTANCE	PERSISTENCE	%ANIMATE	# OF INSTANCES
* <i>Ki</i> + Pronoun ¹⁹ (Non-third Persons)	2.11 (1.86)	1.11 (2.03)	100% (100%)	9 (35)
* <i>Ki</i> + Pronoun (Third Persons)	1.00 (1.10)	(2.78) (2.03)	100% (100%)	32 (58)
* <i>Ki</i> + Pronoun (All Persons)	1.24 (1.39)	2.41 (2.03)	100% (100%)	41 (93)
*NP + <i>Ki</i> + Pronoun ²⁰ (Non-third Persons)	2 (12.11)	0 (2.11)	100% (100%)	1 (9)
*NP + <i>Ki</i> + Pronoun (Third Persons)	4.00 (8.56)	3.33 (2.07)	100% (100%)	3 (27)
*NP + <i>Ki</i> + Pronoun (All Persons)	3.38 (9.44)	2.50 (2.08)	100% (100%)	4 (36)
* <i>Ki</i> + NP	12.60 (12.98)	2.70 (.78)	100% (69%)	10 (68)

We can make the following generalisations about genitive encodings.

1. In the restricted corpus, 69 per cent of the direct/inalienable genitives were encoded by *just* the Genitive suffixes. Such encoding is, therefore, the most frequent.
2. When direct genitives were encoded by either: 1) just a Genitive suffix, or 2) a free pronoun plus a Genitive suffix, then they were typically far more persisting (i.e. topical) than when encoded by some sort of full NP plus a suffix.
3. Direct genitives which were also encoded by a free pronoun were somewhat less given than those encoded by just a suffix.
4. Thematised prepositional/alienable genitives were both more given and more persisting than non-thematised ones containing a plain NP. They were also significantly *less given* than the prepositional genitives which were encoded by just a Locative pronoun. Thus, they are a device for encoding less given, prepositional genitives which are still topical.
5. With the exception of inalienable genitives encoded by just a genitive suffix, third person genitives tended to be textually more given than non-third person ones with the same type of encoding.

Functionally, the use of free pronouns in addition to a genitive suffix in inalienable genitives corresponds somewhat to the use of thematised alienable genitives. Both encodings are used when the genitive is somewhat given, but not sufficiently so for a minimal encoding to be appropriate. It is true that thematised alienable genitives are statistically *less given* than inalienable ones which are also encoded by free pronouns, but both of them still constitute an

¹⁹ These are the Locative series of pronouns: *tio*, *ku*, *kini*, *kiti*, *tiam*, *tiom*, and *kizin*.

²⁰ These are termed thematised direct/inalienable genitives in §4.2.3.1.1 of the syntax chapter.

intermediate encoding between 1) Genitive suffix/Locative pronoun, and 2) full NP plus Genitive suffix/Locative pronoun. They also share another function: emphasis. Consider the following two examples:

- (39) *Nio mbule-ŋ se sia,*
 NOM.1SG buttocks-GEN.1SG ascend chair
 I sat on a chair,
ni mbule-ene se bokis.
 NOM.3SG buttocks-GEN.3SG ascend box.
 he sat on a box.
- (40) *Wai, ina ŋge kini kizin. Nu ku ti.*
 hey that.one pig food LOC.3PL NOM.2SG LOC.2SG DEM
 Hey that's the *pigs'* food. *Yours* is here.

In example (39), we have thematisation encoding parallel emphasis: –I : chair :: he : box– and in (40) the thematisation emphasises the contrast between the two genitives ‘pigs’ and ‘you’.

For the restricted text corpus, we find that, overall, genitives had an average referential distance of 3.66, an average persistence of 1.92, and were 86 per cent animate. They were, therefore, similar to Subjects, which had an average referential distance of 3.67, a persistence of 2.93, and were 89 per cent animate.

6.5 FOCUS

Recall that a distinction has been made in this chapter between the notions of Focus and Emphasis. Focus has to do with the information structuring of a clause. The focused portion of an utterance is that which contains the newest or least familiar information. In Mangap-Mbula, as is the case in most languages, a clause tends to be structured with the old/given/familiar information occurring initially and the focused/new/unfamiliar information occurring non-initially. Subjects typically have low referential distances/high givenness, while Direct and Oblique Objects tend to have much higher referential distances/low givenness. Thus, the typical distribution of information in the clause is:

Subject	Verb	Direct Object	Oblique Arguments
Given	Focused	Focused	Focused

with the given information tending to occur initially and the focused/new information towards the end of the clause. This explains why temporal adverbs occur terminally when they are focused (for example, when they occur in questions about time or in the answers to such questions:

- (41) *Ni i-la ŋiizi?*
 NOM.3SG 3SG-go when
 When did he go?
 ***ŋiizi ni i-la?*
 when NOM.3SG 3SG-go
 When did he go?

X *ta* VERB ...(X=Location or Time)

Something happened.

I say it happened at X, not some other place/time.

(One wouldn't have thought this about X)

These explications are intended to convey the fact that the clefted constituent usually bears some sort of emphasis. Most typically, this is: 1) exclusive emphasis (i.e. the proposition is uttered about the clefted entity and *not* about anyone or anything else), or 2) emphasis due to surprise (i.e. it is unexpected that the proposition should be uttered about the clefted entity).

Two more examples of cleft constructions are given below:

- (44) *Man mboŋ Sirik piizi?*
 bird hunter Sirik how.many
 How many eagles named Sirik are there anyway?

Clefted Object

Man mboŋ Sirik ta aŋ-pun=i ma i-meete.
 bird hunter Sirik SPEC 1SG-hit=ACC.3SG and 3SG-die
 It was an eagle named Sirik that I killed.

Clefted Reason

- (45) *Aŋ-leŋ nu pun tizi-ŋ*
 1SG-hear NOM.2SG 2SG+hit y.sibling-GEN.1SG

Presupposed Result

ta aŋ-mar na.
 SPEC 1SG-come GIV

The reason why I have come is that I heard you killed my younger brother.

Example (44) also comes from the story about the eagle Sirik. In the story, Sirik is killed, comes to life again, and then goes to confront his killer. The utterance in (44) is made by Sirik's killer when he is first confronted by the risen Sirik, whom he had presumed to be dead.

The following example illustrates a clefted equative construction:

- (46) *Nio tizi-ŋ ta nu.*
 NOM.1SG y.sibling SPEC NOM.2SG
 You are *my brother*. (Said by someone when his brother had done something bad to him.)

When Locations or Times are emphasised, another type of cleft structure is available, in which the Time or Location is still set off from the rest of the sentence by the form *ta* but is *not fronted*:

- (47) *Nu ko la ta gaaga=i.*
 NOM.2SG UC 2SG+go SPEC tomorrow=PROX
 You are going TOMORROW,
Malama som.
 day.after.tomorrow NEG
 not the day after.

6.6.2 REFLEXIVE-EMPHATIC PRONOUNS AND MIDDLE VERBS

The series of pronominal forms based on the stem *itu-* 'self' are another device used for encoding emphasis. In texts, they always have animate referents and are restricted to: 1) Subjects, 2) arguments coreferential with the Subject, or 3) arguments coreferential with animate alienable genitives which modify an inanimate Subject head noun:

- (48) *Koroŋ kini i-la ki itu-nu.*
 thing LOC.3SG 3SG-go LOC REFL-GEN.3SG
 What belongs to him should go to him.

Most (=80%) occurrences of the reflexive-emphatic forms are found in the Subject position. The emphasis encoded by them may be that of: 1) surprise ('One wouldn't have thought X would do this / that this would happen to X' (49)), 2) exclusion ('(X did this / This happened to X, not someone or something else' (50)), or 3) (for Subjects only) sole responsibility ('X did this *because X wanted to*, not because of anything else' (51)).

- (49) *Ni i-pa-saana itu-nu.*
 NOM.3SG 3SG-CAUS-deteriorate REFL-GEN.3SG
 He hurt *himself*. (Can you believe it??)
- (50) *Niam itu-yam men am-kam uraata.*
 NOM.1PL.EXC REFL-GEN.1PL.EXC only 1PL.EXC-do work
 We are the only ones who worked.
- (51) *Nio itu-ŋ lele-ŋ ma aŋ-kam.*
 NOM.3SG REFL-GEN.3SG insides-GEN.1SG and 1SG-do
 I did it because *I* wanted to.

Example (49) illustrates another function of this series: For third person referents, the use of emphatic-reflexive forms versus the ordinary Accusative pronouns provides a means for distinguishing between situations in which a third person participant acts upon him/herself and situations in which he/she acts upon some other third person participant. Thus, in (49), if the Direct Object had been encoded with the third person singular Accusative pronoun *i*, then the utterance's interpretation would have been that the person hurt *someone else*, not him/herself. Note, however, that the use of reflexive-emphatic pronouns is *not* categorically required for all Objects that are coreferential with the Subject. There are a number of 'middle' verbs like the following:

<i>-lu</i>	propel, jump
<i>-kel</i>	change clothes
<i>menmeen</i>	be happy
<i>kaipa</i>	selfishly rejoice over one's own good fortune
<i>-lul</i>	restrain oneself from fighting back

which require their Objects to be coreferential with the Subject and whose Objects are *always* encoded with Accusative pronouns rather than the reflexive-emphatic forms. The following example illustrates the normal way of expressing that someone jumped into the river:

- (52) *Ni* _____ *i-lu* *i* *su-la* *yok.*
 NOM.3SG 3SG-propel ACC.3SG descend-go water
 He jumped into the water.²¹

Note here that the ordinary Accusative pronoun *i* is used and not *itunu*, despite the fact that the Object is clearly coreferential with the Subject. Thus, the distinction between the *itu-* forms and the ordinary Accusative pronouns is not simply a matter of coreference with the Subject versus the lack thereof. Rather, use of *itu-* indicates coreference with the Subject *plus* some sort of emphasis. In (49), it is surprising that someone deliberately hurts him/herself; it is not something people usually do. In (52) on the other hand, when you jump, it is yourself whom you normally propel. Because of this, the ordinary Accusative pronoun is used, despite the Object's being coreferential with the Subject.

6.6.3 EMPHASIS ENCODED VIA THEMATISATION

A final means of encoding emphasis upon noun phrases is thematisation. The following two examples illustrate the use of thematisation to indicate restrictive (53) and parallel (54) emphasis.

- (53) *Kini taboozomen, am-kan* \emptyset *kek.*
 food all 1PL.EXC-eat PERF

Mi kini ta-na, am-toombo \emptyset *pa sa zen.*
 but food SPEC-GIV 1PL.EXC-try REF NON.REF NEG.PERF
 We have eaten/tried every kind of food but that one.

- (54) *Ute-ene na, i-punpun.*
 head-GEN.3SG GIV 3SG-swollen

Mi mata-ana na, i-putput kei ta tomtom.
 and eye-GEN.3SG GIV 3SG-bulge like SPEC person
 Its head, it was swollen. And its eyes, they were bulging like a person's. (from a story describing an apparition that was a cross between a snake and a person)

²¹ The same form *-lu* is used to encode the hurling of a spear.

APPENDIX 1

SURFACE PHONEMIC CONTRASTS

Listed below are lexical items illustrating the surface phonemic contrasts in the language:

CONSONANT CONTRASTS:

Bilabial Contrasts:

/p/ /b/ /mb/ /m/ and /w/ All contrast word initially. Word medially, only */P/*, */mb/*, and */m/* contrast. Word finally, only */P/* and */m/* contrast.

Initially:

Phonemic	Systematic Phonemic	Meaning
<i>/paala/</i>	<i>/pala/</i>	2SG+break something
<i>/baada/</i>	<i>/baTa/</i>	2SG+carry something
<i>/mbaala/</i>	<i>/mbala/</i>	2SG+hunt
<i>/maala/</i>	<i>/mala/</i>	men's bark loincloth
<i>/waaza/</i>	<i>/waSa/</i>	2SG+fish
<i>/pal/</i>	<i>/pal/</i>	2SG+slice
<i>/balbal/</i>	<i>/bal#bal/</i>	type of tree
<i>/mbalmbal'</i>	<i>/mbal#mbal/</i>	pigeon
<i>/malmal/</i>	<i>/mal#mal/</i>	angry
<i>/wal/</i>	<i>/wal/</i>	group of people
<i>/peeze/</i>	<i>/peSe/</i>	canoe paddle
<i>/beeze/</i>	<i>/beSe/</i>	garden house
<i>/mbeeze/</i>	<i>/mbeSe/</i>	2SG+serve
<i>/meeze/</i>	<i>/meSe/</i>	type of plant, red and yellow in colour and edible
<i>/weeze/</i>	<i>/weSe/</i>	2SG+squeal
<i>/pit/</i>	<i>/piT'/</i>	2SG+tell stories
<i>/bi/</i>	<i>/bi/</i>	old one, added to the names of people in order to express respect
<i>/mbit/</i>	<i>/mbiT'/</i>	2SG+tie up an animal
<i>/mi/</i>	<i>/mi/</i>	and
<i>/wi/</i>	<i>/wi/</i>	2SG+ask
<i>/pok/</i>	<i>/poK'/</i>	bursting forth
<i>/buk/</i>	<i>/buK'/</i>	bubbling over
<i>/mbuk/</i>	<i>/mbuK'/</i>	2SG+tie
<i>/muk/</i>	<i>/muK'/</i>	dirt

Medially:

/kopo-ŋ/	/kPo-ŋ/	stomach-GEN.1SG
/babal/	/bPal/	2SG+trip someone
/timbil/	/tmbil/	2SG+roll around
/komok/	/kmoK/	clean-shaven
/kaiwen/	/kai-wen/	type of lizard
/kawala/	/kwala/	clothing
/pepe/	/pe#pe/	prohibitive
/dobo/	/dPo/	cleared area for new garden
/kombo/	/kmbol/	type of fish
/tamanda/	/tma-ndV/	father-GEN.1PL.INC
/kiwi/	/k-wi/	your (SG)

Finally:

/top/	/toP/	2SG+fall down
/tum/	/tum/	2SG+grow and become fat
/lup/	/luP/	2SG+meet
/lom/	/lom/	toilet
/sup/	/suP/	type of fish
/som/	/som/	not, or, do.in.vain

Alveolar Contrasts:

/t/ /d/ /nd/ /n/ /s/ /z/ /l/ and /r/ All contrast word initially. Word medially, only /T/, /nd/, /n/, /s/, /z/, /l/, and /r/ contrast. Word finally, only /T/, /n/, /S/, /l/, and /r/ contrast.

Initially:

Phonemic	Systematic Phonemic	Meaning
/tete/	/te#te/	walking stick
/didi/	/di#di/	wall
/ndundu/	/ndu#ndu/	be crossing
/naana/	/na-VnV/	mother-GEN.3SG
/seeze/	/seSe/	2SG+afflict
/zeeze/	/zeSe/	cone, plug
/leeze/	/leSe/	louse egg
/raaza/	/raSa/	2SG+tear
/tuugu/	/tuKu/	2SG+tie together
/duubu/	/duPu/	ocean waves
/ndeege/	/ndeKe/	small brown fruit tree
/naala/	/nala/	grave, hole
/soolo/	/solo/	flooring
/zaala/	/zala/	path, road
/leele/	/lele/	be contradictory
/reere/	/rere/	to flow

Medially:

/putu/	/pTu/	2SG+feed
/bude/	/buTe/	writing
/kunduunu/	/kndu-VnV/	head of a river
/kunuunu/	/knu-VnV/	shadow/picture/soul-GEN.3SG
/kuuzu/	/kuSu/	2SG+dive down to get something
/kusim/	/kusi-m/	spouse-GEN.2SG
/kuzim/	/kuzi-m/	odour-GEN.2SG
/kulim/	/kuli-m/	skin-GEN.2SG
/kerem/	/kre-m/	front-GEN.2SG
/mutu/	/mTu/	island
/yorodij/	/ioroTij/	type of shell decoration
/mender/	/mnder/	2SG+stand
/mbasa/	/mba-sa/	boundary
/mozo/	/mzo/	deep sea
/molo/	/mlo/	long
/miri/	/mri/	be thirsty

Finally:

/pit/	/piT'/	2SG+tell a story
/pis/	/piS/	blind
/pin/	/pin/	banana
/pel/	/pel/	cracking noise
/par/	/par/	stingray
/kat/	/kaT'/	very
/kas/	/kaS/	2SG+cut down
/kan/	/kan/	2SG+eat
/kel/	/kel/	2SG+replace
/kar/	/kar/	village

Velar Contrasts:

/k/ /g/ /ŋg/ and /ŋ/

All contrast word initially. Word medially only /K/, /ŋg/, and /ŋ/ contrast. Finally, only /K'/ and /ŋ/ contrast.

Initial Contrasts:

Phonemic	Systematic Phonemic	Meaning
/kot/	/koT'/	2SG+repay/smash
/kaaga/	/kaKa/	2SG+open
/got/	/goT'/	type of black palm tree
/ŋgat/	/ŋgaT'/	barrier
/gaaga/	/gaKa/	tomorrow
/ŋgar/	/ŋgar/	thinking
/ŋguuru/	/ŋguru/	2SG+wash
/ŋor/	/ŋor/	deep sleep

/kiibi/	/kiPi/	cockroach
/giibi/	/giPi/	2SG+throw
/ŋgeeze/	/ŋgeSe/	2SG+be clean/smooth
/ŋiizi/	/ŋiSi/	when?

Medial Contrasts:

/lokon/	/lKon/	fly (insect)
/puge/	/puKe/	crocodile
/puke/	/pu-ke/	Malaysian Apple (=Tok Pisin <i>lau/au</i>)
/kaŋar/	/kŋar/	Tahitian Chestnut
/saŋga/	/sŋga/	a type of dance
/kuku/	/ku#ku/	type of armlet
/guugu/	/guKu/	sago pounding hammer
/kuuŋgu/	/kuŋgu/	brown grasshopper
/patoŋo/	/pa-toŋo/	guide

Final Contrasts:

/pakpak/	/paK'#paK'/	sour
/paŋ/	/paŋ/	four
/suk/	/suK'/	shove
/suŋ/	/suŋ/	pray, ask for

VOWEL CONTRASTS:

Length:

There is a potential surfacelength contrast only in penultimate syllables. Such syllables, must, however, be followed by a single, morpheme-final open syllable containing a vowel identical to the vowel in the penultimate syllable. Examples of surface length contrasts are:

Phonemic	Systematic Phonemic	Meaning
/molo/	/mlo/	long
/moolo/	/molo/	ants
/moto/	/mTo/	2SG+be afraid
/mooto/	/moTo/	snake
/koro/	/kro/	shark
/koooro/	/koro/	a type of tree
/tiŋgi/	/tiŋgi/	this, here
/tiŋgi/	/tiŋgi/	swampy place
/muŋgu/	/mŋgu/	before
/muuŋgu/	/muŋgu/	symbol of mourning, 2SG+precede
/mete/	/mTe/	very, disease
/meete/	/meTe/	2SG+die

/ipata/
/ipaata/

/ipTa/
/i-paTa/

be heavy
3SG+counts, reads

Quality:

Phonemic

Systematic Phonemic

Meaning

/ki/

/ki/

locative preposition

/ke/

/ke/

tree, stick, wood

/ka/

/ka/

passive genitive

/ko/

/ko/

uncertain modality, 2SG+flee/move.quickly

/ku/

/k-u/

to/at you (SG), your (SG)

/ti/

/ti/

this one, here

/te/

/te/

pole for punting canoes, faeces

/ta/

/ta/

one, a, that

/to/

/to/

2SG-follow, then

/tu/

/tu/

2SG+settle in

/ri/

/ri/

little, 2SG+pour water on

/re/

/re/

2SG+see, south-east winds

/ra/

/ra/

victim, 'poor old so-and-so'

/ro/

/ro/

leaf

/ru/

/ru/

2SG+seek, two

APPENDIX 2

HISTORICAL SOURCES OF MANGAP-MBULA PHONOLOGY

CONSONANTS

Although it is not the purpose of this grammar to present an in-depth historical reconstruction of the development of Mangap-Mbula phonology, some discussion along these lines is in order, because it sheds light on several of the phonological rules postulated in the phonological chapter.

Ross (1988) in his survey of Western Oceanic languages postulates the following Proto Oceanic consonant paradigm:¹

	velarised bilabial	bilabial	alveolar	palatal	velar	post-velar
stop	<i>bw</i>	<i>p b</i>	<i>t d</i>	<i>c j</i>	<i>k g</i>	<i>q=</i>
trill			<i>r dr</i>			
sibilant	<i>s</i>					
nasal	<i>mw</i>	<i>m</i>	<i>n</i>	<i>ñ</i>	<i>ŋ</i>	
liquid			<i>l</i>			<i>R</i>
glide	<i>w</i>			<i>y</i>		

In the same volume, Ross lists the following Proto Oceanic - Mangap-Mbula sound correspondences:

POc	Proto Vitiaz	Mangap-Mbula
<i>p</i>	fortis <i>p-</i>	<i>p</i>
<i>p</i>	lenis <i>p-</i>	not applicable
<i>p</i>	lenis <i>-p-</i>	∅
<i>p</i>	lenis <i>-p</i>	∅, <i>-u</i>
<i>b</i>	<i>b</i>	<i>b</i>
<i>w</i>	<i>w</i>	<i>w</i>
<i>m</i>	<i>m</i>	<i>m</i>
<i>t</i>	<i>t</i>	<i>t</i>
<i>d, dr</i>	<i>d</i>	<i>d, -n</i>
<i>r, R</i>	<i>r</i>	<i>r</i>

¹ The correspondences between Ross's new symbols and conventional Proto Oceanic phonemic symbols are as follows: 1) *bw* = *ɣp*, 2) *b* = *mp*, 3) *d* = *nt*, 4) *g* = *ŋk*, 5) *j* = *nj*, 6) *r* = *d*, 7) *dr* = *nd*, 8) *c* = *j*, and 9) *mw* = *ɣm*. Note particularly that he has reinterpreted **d* and **nd* as trills, and the prenasalised stops as voiced stops, stating (p.46):

It is also clear that by the break-up of POC, voicing had replaced prenasalisation as the distinctive feature of the 'nasal-grade' stops conventionally written as **ɣp*, **mp*, **nt*, and **ŋk*, as I have found no daughter-language which provides counter-evidence.

<i>l</i>		<i>l</i>	<i>l</i>
<i>s</i>	fortis	<i>s</i>	<i>s</i>
<i>s, c</i>	lenis	- <i>s</i> -	- <i>z</i> -
<i>s, c</i>	lenis	- <i>s</i>	- <i>s</i>
<i>j</i>		<i>j</i>	<i>z, s/_i</i>
<i>n, ñ</i>		<i>n</i>	<i>n</i>
<i>y</i>		<i>y</i>	<i>y</i> -, <i>-i</i> -
<i>k</i>	fortis	<i>k</i>	<i>k</i> -, <i>-k</i> -
<i>k</i>	lenis	<i>k</i> -	not applicable
<i>k</i>	lenis	- <i>k</i> -	- \emptyset -
<i>k</i>	lenis	- <i>k</i>	no examples
<i>q</i>		<i>q</i>	<i>k</i> -, <i>-g</i> -, <i>-k</i>
<i>g</i>		<i>g</i>	<i>g</i>
<i>ŋ</i>		<i>ŋ</i>	<i>ŋ</i> -, <i>-n</i> -, <i>-ŋ</i>
		<i>pw</i>	<i>p</i>
<i>bw</i>		<i>bw</i>	no examples
<i>mw</i>		<i>mw</i>	<i>m</i> with rounding of the following vowel

My data suggest several modifications to this list of correspondences. Even if one starts from the abstract underlying forms which serve as the input to the higher level morphophonemic rules described in this chapter, a number of other historical changes must be postulated in order to derive these abstract underlying forms from Ross's protoforms.

A major problem in doing historical reconstruction of Mangap-Mbula is the fact that a large portion of the lexicon is not obviously Oceanic in origin; thus it is difficult to find reliable etyma. The analysis presented below relies mainly on etyma given in Ross (1988).

Beginning with the voiceless obstruents, the first observation to make is that the morphological voicing of initial /p/ and /s/ in the context of verbal reduplications² would seem to be evidence of the "fossilised morphophonemic alternation between fortis- and lenis-grade reflexes of POC initial *p- ...and POC initial *s- ..., whereby the noun has a fortis-grade initial consonant, whilst the corresponding verb has the lenis-grade initial consonant" (Ross 1988:173). This is significant since this alternation is one of the six innovations which Ross uses to separate the Ngero family languages from Vitiav linkage languages. Since Mangap-Mbula exhibits this process but lacks some of the other Ngero innovations, it calls into question the usefulness of this particular innovation for distinguishing between the two groups of languages. Alternatively, the lenition of /p/ and /s/ may have been an independent development. However, since exactly the same two segments are affected, a hypothesis of independent development seems somewhat improbable. The fact that in Mangap-Mbula this process occurs only in reduplications probably accounts for Ross's failure to notice it. At any rate, one must hypothesise that in pre-Mangap-Mbula the phonemes *p- and *s- underwent lenition to /w/ and /z/ intervocally. Recalling the discussion of reduplications in the phonology chapter, such a lenition would have introduced an alternation in verbal paradigms like the following:

² This is described as a synchronic morphological alternation in §2.4.1.1.3.

	-pese	-pese-pese
	to paddle	to be paddling
1 SG	*aŋ-peze	*aŋ-peze-weze
2 SG	*∅-peze	*∅-peze-weze
3 SG	*i-weze	*i-weze-weze
1 PL.INC	*t-peze	*t-peze-weze
1 PL.EXC	*am-peze	*am-peze-weze
2 PL	*k-peze	*k-peze-weze
3 PL	*ti-weze	*ti-weze-weze

Subsequently then, there must have been analogical leveling of the paradigms to yield the currently invariant forms -peSe [-pe:ze] and -weSweSe [weswe:ze].

Ross lists an unconditioned development of $*p \Rightarrow \emptyset / V_V$ in Mangap-Mbula. The segment $*p$ is preserved as /w/, however, between /a/ in forms like /iwara/ [iwa:ra] 'north-west wind' (< *apaRat), and when it ends up adjacent to consonants as in /twiri/ [twi:ri] 'conch shell' (< *tapuRi) and /kwara/ [kwa:ra] 'carry' (< *qapara). Thus, it seems that there must have originally been a change $*p \Rightarrow w / V_V$, which was later followed by the loss of the /w/ or its conversion to /u/ when it ended up word finally. The derivation of a form like /teu/ 'sugar cane' must, therefore, have proceeded in several stages: 1) $*tepu^3 > tewu > tew > teu$.

My data support the retention of POC $*k$ and $*t$ initially, the loss of $*k$ intervocalically,⁴ and the retention of $*t$ intervocalically. Examples of this are /kan/ 'eat' (< *kani), /tma-/ 'father' (< *tama), /-mTo/ 'be afraid' (< *matakut), and /kuriTi/ 'octopus' (< *kuRita). Where $*p$ has not undergone lenition initially, it is retained as /p/; for example /pulu/ [pu:lu] 'moon' (< *pulan) and /par/ 'stingray' (< *paRi(q)). As was the case in many Oceanic languages, all *originally final* consonants were lost in Mangap-Mbula.

The protophoneme $*q$ merged with $*k$, exhibiting exactly the same correspondences: $k / \# _ \emptyset / V_V$, and $\emptyset / _ \#$. Examples of this are: /kTe-/ [kete-] 'liver' (< *qate), /-rie/ 'elephant grass' (< *Reqī), and /tmbu-/ [tumbu-] 'grandrelative' (< *tubuq).

The palatal $*c$ was lost word finally, and became /z/ intervocalically, merging with $*s$ in this environment. Examples are: /woro/ [wo:ro] 'rope' (< *waRoc), /tzi-/ [tizi-] 'younger sibling' (< *taci), and /ŋiSi/ [ŋi:zi] 'when?' (< *ŋica).

The protophoneme $*s$ was maintained initially, except when it occurred in leniting contexts; for example /sru-/ [suru-] 'juice, fluid' (< *suRuq), and /-se/ 'go up' and /-ze#ze/ 'be going up' (< *sake). Intervocalically, it became /z/ merging with $*c$, as in /kze-/ 'chin, jaw' (< *qase), /-peSe/ [pe:ze] 'to paddle' (< *pose). In the form /pse-/ [pese-] 'navel' (< *piso), however, $*s$ has unaccountably failed to lenite to /z/.

In cases where an originally intervocalic voiceless obstruent ends up in a *derived* final position, the following developments occur: $*p \Rightarrow /u/$, $*t \Rightarrow /T/$, $*s \Rightarrow /s/$, $*c \Rightarrow /s/$,

³ Note that POC /o/ often corresponds with Mangap-Mbula /e/. Thus, one finds forms like /teu/ 'sugar cane', /mbeŋ/ 'night' and /leŋ/ 'hear' instead of $**/təu/$, $**/mboŋ/$ and $**/ləŋ/$.

⁴ Initial $*k$ is lost in the pronominal forms /iom/ '2PL' (< *kami(u)), /iam/ '1PL.EXC' (< *ka[m]i), /iti/ '1PL.INC' (< *kita), and /u/ '2SG' (< *ko[e]).

*k ⇒ /K/, and *q ⇒ /K'/. Examples of these are: /teu/ 'sugar cane' (< *topu), /paT/ 'stone' (< *patu), and /pTiK/ 'star' (< *pituqun).

The revised voiceless obstruent developments are, therefore, as follows:

	*p	*t	*s	*c	*k	*q
Initial Fortis	p	t	s	n/e	k	k
Initial Lenis	w	t	z	n/e	k	k
Originally Final	∅	∅	∅	∅	∅	∅
Derived Final	u	T' ⁵	S ⁶	S	K'	K'
Intervocalic		T	S ⁷ , s, z	S, z	∅	∅
a __ a	w					
Intervocalic, but not a __ a	∅					

(n/e = no examples)

Given the general intervocalic loss of *p and *k, a problem arises because of the synchronic presence of intervocalic /p/s and /k/s in forms like /-pePe/ [-pe:βe] 'to give birth to' and /-reKe/ [-re:ge] 'to destroy'. Such forms would seem to have been borrowed into the language after the rule leniting /p/ and /k/ had ceased to be operative. Bugenhagen (1994a) seeks to demonstrate that Mangap-Mbula has borrowed many forms from the surrounding Ngero languages, which do not exhibit the loss of intervocalic /p/ and /k/. Interestingly though, these borrowed intervocalic /P/s and /K/s (along with /S/ and /T/) exhibit synchronic processes of lenition: the rule of Morpheme-Internal Intervocalic Lenitions. Intervocalic occurrences of /P/ are even further lenited by being allophonically spirantised to [β]. Thus, lenition is a kind of leit-motif of Mangap-Mbula phonology, having applied at least twice.

Proceeding to the voiced stops, it needs to again be re-emphasised that in Mangap-Mbula, the fundamental stop opposition is between oral and pre-nasalised stops, and *not* between voiceless versus voiced ones. Recall, however, that there is a current *tendency* for initial voiced stops to agree in sonorance with following consonants. This is described in §2.2.1.4. Because of this tendency towards sonorance harmony and the voicing of oral stops which are underlyingly intervocalic, there is *almost* a situation of phonemic overlap, whereby [b] ~ [β] is an allophone of /mb/ initially and an allophone of /P/ intervocalically.

It would seem that, historically, there must have been some later process of sonorant harmony, but that it has ceased to be productive, and that currently the prenasalised allophones of the voiced stops are encroaching upon the oral allophones. Alternatively, the non-congruent forms could all have been borrowed subsequent to the time when sonorance harmony ceased to be productive. At any rate, it does not seem to be the case that one is compelled to establish an original trinary voiceless, voiced oral, and voiced prenasalised stop

⁵ Recall that /P',T',K'/ are archiphonemes representing the neutralisation of voiceless, voiced oral, and voiced prenasalised manners of articulation. The symbols /P,T,K,S/, on the other hand, represent the neutralisation of just voiceless and voiced oral manners of articulation. Synchronic treatment of these neutralisations can be found in §2.2.1.1 ff.

⁶ The contrast between /s/ and /z/ here is neutralised finally, with only /S/ (=s) occurring.

⁷ The contrast between /s/ and /z/ is neutralised in underlyingly intervocalic positions, with only [z] occurring. It is only in the environment C__V... that /s/ and /z/ contrast morpheme medially.

contrast. Rather, the current contrasts seem to be due to subsequent developments plus some borrowing.

Against Ross's (1988:46) claim that voicing replaced prenasalisation as the distinctive feature in Proto Oceanic, I would submit that at least in Mangap-Mbula there has been a continued maintenance of nasality as a distinctive feature of the 'voiced' stops. Synchronically, it is the nasal component which is carried over into reduplications, yielding forms like /lon-londo/ 'be running', /yam-yamba/ 'be scolding', /zen-zenge/ 'be laughing'. This association of the voiced stops and nasality is not, however, merely synchronic. When Ross's proto voiced stops ended up word finally in Mangap-Mbula, they surfaced as nasals. Compare forms like /-ŋ/ 'GEN.ISG' (< **gu*), /-kam/ 'get, take, hold' (< **kabit*), /-tum/ 'grow, swell' (< **tubuq*), and /pin/ 'banana' (< **pudi*).

Examples of voiced stop reflexes are /mbeŋ/ 'night' (< **boŋi*), /tmbu-/ [tumbu-] 'grand-relative' (< **tubu*), /ŋge/ 'pig' (< Proto Southwest New Britain **gaya*), and /woŋgo/ [wo:ŋgo] 'canoe' (< **waga*).

With regard to the voiced palatal stop **j*, in the Central Dialect of Mangap-Mbula the form developed into [z] both initially and intervocally, yielding forms like: /zala/ [za:la] 'road, path' (< **jalan*), /leSe/ [le:ze] 'nit' (< **leja(n)*) and /mza-/ [maza-] 'flesh, meat' (< **mijak*). In the Gauru, Kabi, and Sakar dialects, however, one finds [nʒ] ~ [ndʒ] intervocally following an epenthetically inserted vowel rather than [z], and S [z] intervocally between underlyingly present vowels. This [nʒ] ~ [ndʒ] segment contrasts with both [s] and [z] when it occurs in the underlying environment C__V, as can be seen from the following set of forms: /mⁿza-/ [maⁿza-] 'flesh', /tzi-/ [tizi-] 'younger sibling of the same sex' (< **taci*), and /pse-/ [pese-] 'navel' (< **pišo*).

The regular reflexes of the Proto Oceanic voiced stops in Mangap-Mbula, then, are as follows:

	* <i>b</i>	* <i>d</i>	* <i>j</i>	* <i>g</i>
Initially	<i>mb</i>	<i>n/e</i>	<i>z</i>	<i>ŋg</i>
C_V	<i>mb</i>	<i>n/e</i>	<i>z ~ nʒ ~ ndʒ</i>	<i>ŋg</i>
CV_V	<i>mb</i>	<i>n/e</i>	<i>S</i>	<i>ŋg</i>
Originally medial but subsequently developed into a word-final consonant	<i>m</i>	<i>n</i>	<i>n/e</i> ⁸	<i>ŋ</i>

Although clearly cognate forms are lacking for initial **d* and **g*, the synchronic distribution patterns of initial /*d*/ versus /*nd*/ and /*g*/ versus /*ŋg*/ suggest that they would have behaved exactly like **b*.

Along with the voiced stops can be mentioned Ross's /*dr*/ voiced alveolar trill phoneme. In Mangap-Mbula, the reflex of /*dr*/ is /*nd*/ both word initially before sonorants and intervocally. No cognate forms in which **dr* occurs before a [-sonorant] consonant have been observed. Thus, in terms of its reflexes, **dr* behaves as if it were the alveolar counterpart to **b*, and **g*. Ross notes (p.31) that "throughout much of Oceania it

⁸ Although there are no clear examples, one would expect S [s].

[=**dr* (RDB)] has merged with POC **nt* as [d]". Examples of the reflexes of **dr* are: /*ndama*/ [nda:ma] 'year' (< **dramaR*), /*ndmo-*/ [ndomo-] 'forehead' (< **dramwa*), and /*kndere*/ [kende:re] 'cuscus' (< **kadroRa*).

My data support Ross's postulation of regular development of POC /*mw*, *m*, *n*, *n̄*, *ŋ*, *l*, *R*, *r*, *w*/ into /*m* with rounding of the following vowel, *m*, *n*, *n̄*, *ŋ*, *l*, *r*, *r*, *w*/. No examples of his **ŋ* > *n* / V __ V sound change have been observed. Intervocalic **ŋ* is consistently maintained as /*ŋ*/, as in /*mba-sŋa-*/ [mba-saŋa-] 'boundary, crotch' (< **sŋa*) and /-*leŋ*/ 'hear' (< **loŋon-i*). No examples have been found of cognate forms containing POC /*bw*/ or initial /*y*/, but proto **y* is lost intervocalically after conditioning some vowel changes. Illustrations of this are: /*ke*/ 'tree, stick, wood' (< **kay(u)*) and /*ŋge*/ 'pig' (< **gaya*).

By way of a summary, the revised consonant correspondences are listed below.

POc	Mangap-Mbula Systematic Phonemic Level	
<i>p</i>	<i>p</i> / #__ (fortis) <i>w</i> / #__ (lenis) <i>w</i> / V__V, with subsequent development to Ø, when the two vowels were not /a/, and subsequent development to /u/ if the following vowel was lost causing /w/ to end up word-final Ø / __#	
<i>t</i>	<i>t</i> / #__ T / V__V Ø / __#	
<i>c</i>	<i>z</i> / C __V, S / V __V Ø / __#	
<i>k,q</i>	<i>k</i> / #__ Ø / V__V / __#	
<i>s</i>	<i>s</i> / #__ (fortis) <i>z,s</i> / C__V S / V __V <i>z</i> / #__ (lenis) Ø / __#	
<i>j</i>	<i>z</i> / #__ <i>z~ⁿz~ⁿdž</i> / C__V S / V__V with subsequent devoicing to [s] if the following vowel was lost and it ended up word-final	
<i>b</i>	<i>mb</i> with subsequent development to / <i>m</i> / when the following vowel was lost	
<i>d,dr</i>	<i>nd</i> with subsequent development to / <i>n</i> / when the following vowel was lost	
<i>g</i>	<i>ŋg</i> with subsequent development to / <i>ŋ</i> / when the following vowel was lost	

<i>r, R</i>	<i>r</i> / #__ / V__V Ø / __#
<i>l</i>	<i>l</i>
<i>mw</i>	<i>m</i> plus rounding of the following vowel
<i>m</i>	<i>m</i>
<i>n, ñ</i>	<i>n</i> / #__ V__V Ø / __#
<i>ŋ</i>	<i>ŋ</i>
<i>w</i>	<i>w</i>
<i>y</i>	Ø / V__V

Note in particular the mergers of **r* and **R*, and **k* and **q*, which are, no doubt, the source of the extremely high frequencies of /*r*/ and /*k*/ as phonemes in the present-day language.

VOWELS

The Proto Oceanic vowel system has undergone extensive processes of harmonisation in Mangap-Mbula, with the net result being that in most directly inherited morphemes all vocoids are of the same quality. The principle changes were:

1. Antepenultimate Vowel Loss

*V ⇒ Ø in antepenultimate syllables.^{9,10}

* <i>waRisa</i>	⇒	<i>wariSa</i>	(by consonant rules)
	⇒	<i>wriSa</i>	
	⇒	<i>wriSe</i>	(by Rule 4b)
	⇒	<i>wriSi</i>	(by Rule 5)
	=	[uri:zi]	'yesterday'
* <i>malawa</i>	⇒	<i>mlawa</i>	
	⇒	<i>mlo_wo</i>	(by Rule 4c)
	⇒	<i>mlo__o</i>	(by consonant rules)
	⇒	<i>mlo</i>	(by Rule 6)
	=	[molo]	'long'
* <i>pitolo</i>	⇒	<i>ptolo</i>	
	⇒	<i>ptele</i>	(by Rule 2)
	=	[pete:le]	'famine'

⁹ This rule is the source of the consonant clusters which must be broken up by the rule of Morpheme-Internal Epenthesis.

¹⁰ This change is crucially ordered *after* the change of /*p*/ to /*w*/ intervocally, but *before* the loss of /*k*/ intervocally and the assimilation of /*a*/ to following glides. This ordering is attested by forms like *-twiiri* [-twi:ri] 'conch shell' (< **tapuRi*) and *mbku-* 'joint, protuberance' (< **buku*). If the ordering were to be altered, the unattested forms ***-tpiri* and ***mbu-* would result.

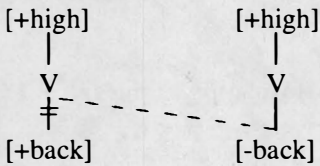
2. O-Fronting (left-right iterative application)

*o ⇒ e / in initial syllables and following [-back] vowels
o / following back vowels

*kadroRa	⇒	kadora	(by consonant rules)
	⇒	kndora	(by Rule 1)
	⇒	kndera	
	⇒	kndere	(by Rule 4b)
	=	[kende:re]	'cuscus' ¹¹
*pose	⇒	peSe	
	=	[pe:ze]	'paddle'
*poñu	⇒	ponu	(by consonant rules)
	⇒	penu	
	⇒	pen	(by Rule 4d) 'turtle'
*toto NC	⇒	tete	'stick'
*moro NC	⇒	mere	
	⇒	mermere	'cordyline'
	=	[merme:re]	
*tanoq	⇒	tano	(by consonant rules)
	⇒	tono	(O-Fronting does not apply)
	=	[to:no]	'land, earth, ground'

3. U-Assimilation to I

U assimilates to a following /i/.



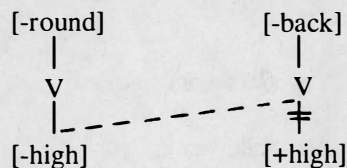
*qupi	⇒	kuwi	(by consonant rules)
	⇒	kiwi	
	⇒	kiw	(by Rule 4d)
	⇒	kiu	'yam'
*tapuRi	⇒	tawuri	(by consonant rules)
	⇒	twuri	(by Rule 1)
	⇒	twiri	
	=	[twi:ri]	'conch shell'
*pudi	⇒	pundi	(by consonant rules)
	⇒	pindi	
	⇒	pin	(by Rule 4d)
	⇒	pin	'banana'

¹¹ The fact that this form is *kndere* shows that Antepenultimate Vowel Loss must have happened prior to O-Fronting. If the initial /a/ had not been lost, its presence would have prevented O-Fronting from applying and the form ***kndoro* would have resulted.

<i>*niuR</i>	⇒ <i>niu</i>	(by consonant rules)
	⇒ <i>ni</i>	(/i/ does not assimilate to /u/)
	⇒ <i>ni</i>	(by Rule 4d)
	= [ni]	'coconut'
<i>*pitiqun</i>	⇒ <i>pitiku</i>	(by consonant rules)
	⇒ <i>ptiku</i>	(by Rule 1)
	⇒ <i>ptik</i>	(by Rule 4d)
	= [pitik]	'star' ¹²

4a.¹³ I-Lowering

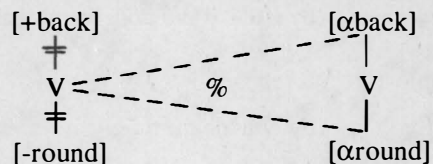
/I/ was lowered following [-high], [-round] vowels



<i>*Raqi</i>	⇒ <i>ra__i</i>	(by consonant rules)
	⇒ <i>rae</i>	
	⇒ <i>ree</i>	(by Rule 4b)
	⇒ <i>re</i>	(by Rule 6) 'south-east wind'
<i>*kori</i>	⇒ <i>keri</i>	(by Rule 2)
	⇒ <i>kere</i>	
	= [ke:re]	'scrape'
<i>*Rapi</i>	⇒ <i>rawi</i>	(by consonant rules)
	⇒ <i>rowi</i>	(by Rule 4c)
	⇒ <i>row</i>	(by Rule 4d)
	⇒ <i>rou</i>	'afternoon' ¹⁴

4b. A-Harmony

/A/ assimilates in rounding and backing to contiguous vowels.



¹² These last two examples are added in order to show that the rule assimilates only /u/ to /i/ and does not assimilate /i/ to a following /u/.

¹³ The original ordering of Rules 4a, 4b, and 4d appears to have been as given. There are, however, a number of forms in which Rules 4a and 4b have failed to apply. These are perhaps borrowed forms that have come into the language after changes 4a and 4b ceased to operate but while change 4d was still active. See Bugenhagen (1994) for further discussion.

¹⁴ This form is adduced in order to show that the rule was not triggered by all [-high] vowels. It was also necessary that the conditioning vowel be [-round]. Also note that the form *kere* provides evidence that this rule is crucially ordered after O-Fronting. If it had applied before O-Fronting, the final /i/ would not have been lowered, and the form ***ker* would result.

<i>*mate</i>	⇒	<i>mete</i>	'die'
	=	[me:te]	
<i>*kauR</i>	⇒	<i>kau</i>	(by consonant rules)
	⇒	<i>kou</i>	
	⇒	<i>ko</i>	(by Rule 4d) 'bamboo'
<i>*nañi NC</i>	⇒	<i>nani</i>	(by consonant rules)
	⇒	<i>nane</i>	(by Rule 4a)
	⇒	<i>nene</i>	
	=	[ne:ne]	'burn,roast'
<i>*tanoq</i>	⇒	<i>tono</i>	'land'
<i>*mona</i>	⇒	<i>mena</i>	(by Rule 2)
	⇒	<i>mene</i>	'sago' ¹⁵
	=	[me:ne]	
<i>*ñamuk</i>	⇒	<i>namu</i>	(by consonant rules)
	⇒	<i>nomu</i>	
	⇒	<i>nom</i>	(by Rule 4d)
	⇒	<i>nomnom</i>	'mosquito'

4c. A-Assimilation To Glides¹⁶

/A/ becomes /o/ contiguous to labialised consonants and /w/,¹⁷ and becomes /e/ when followed by /y/:

<i>a</i>	⇒	<i>o</i>	%	C	
				[+round]	
		<i>e</i>		— y	
<i>*waga</i>	⇒	<i>wonga</i>			
	⇒	<i>wongo</i>			(by Rule 4b)
	=	[wo:ŋgo]			'canoe' ¹⁸
<i>*wai</i>	⇒	<i>wae</i>			(by Rule 4a)
	⇒	<i>wee</i>			(by Rule 4b)
	⇒	<i>we</i>			'mango'
<i>*dramwa</i>	⇒	<i>ndmwa-</i>			(by Rule 1 and consonant rules)
	⇒	<i>ndmo-</i>			
	=	[ndomo-]			'forehead'
<i>*yapi</i>	⇒	<i>yawi</i>			(by consonant rules)
	⇒	<i>yowi</i>			
	⇒	<i>yow</i>			(by Rule 4d)

¹⁵ Note that O-Fronting must be ordered before A-Harmony in order for this derivation to obtain.

¹⁶ Note that this rule must apply before the consonant rule deleting /w/ and /y/ intervocally.

¹⁷ Examples of /a/ being rounded by both preceding and following /w/s and by preceding labialised consonants have been observed, but not any examples of /a/s which: 1) are followed by a labialised consonant and 2) are not lost by Rule 1. Thus, it is only an assumption that /a/ was also rounded by following labialised consonants.

¹⁸ This derivation and the following one illustrate an ordering paradox. To produce a form like *wongo* 'canoe', it seems necessary to have /a/ first assimilate to the glide /w/ in order to be able to condition the change of the final /a/ to /o/. With *we* 'mango', however, the application of A-Harmony bleeds the A-Assimilation to Glides rule. Accordingly, it does not seem possible to establish a relative ordering of the two changes.

	⇒	<i>you</i>	(by consonant rules) 'fire'
<i>*kayu</i>	⇒	<i>keyu</i>	
	⇒	<i>keu</i>	(by consonant rules)
	⇒	<i>ke</i>	(by Rule 4d) 'tree'
<i>*laya</i>	⇒	<i>leya</i>	
	⇒	<i>le_a</i>	(by consonant rules)
	⇒	<i>lee</i>	(by Rule 4b)
	⇒	<i>le</i>	(by Rule 6) 'sail'
<i>*maya</i>	⇒	<i>mya</i>	(by Rule 1)
	=	[mia-]	'tongue' ¹⁹

4d. Final Vowel Loss

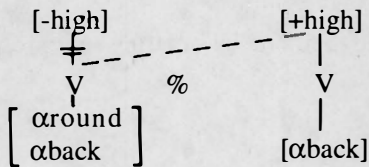
High vowels are lost word finally.

**i, u* ⇒ Ø / __ #²⁰

<i>*Rapi</i>	⇒	<i>rawi</i>	(by consonant rules)
	⇒	<i>rowi</i>	(by Rule 4c)
	⇒	<i>row</i>	
	⇒	<i>rou</i>	'afternoon'
<i>*kori</i>	⇒	<i>keri</i>	(by Rule 2)
	⇒	<i>kere</i>	'scrape' (by Rule 4a) ²¹
<i>*kayu</i>	⇒	<i>keyu</i>	(by Rule 4c)
	⇒	<i>ke u</i>	(by consonant rules)
	⇒	<i>ke</i>	'tree, stick' ²²
<i>*bani</i>	⇒	<i>mban</i>	'bait' (4a fails to apply)
<i>*baluc</i>	⇒	<i>mbalu</i>	(by consonant rules)
	⇒	<i>mbal</i>	
	⇒	<i>mbalmbal</i>	'pigeon' (4b fails to apply)
<i>*manu(k)</i>	⇒	<i>manu</i>	(by consonant rules)
	⇒	<i>man</i>	'bird' (4b fails to apply)

5. Mid-Vowel Raising

An /e/ adjacent to /i/ became /i/, while an /o/ adjacent to an /u/ became /u/.



¹⁹ This example is adduced in order to show that a preceding /y/ had no effect upon /a/.

²⁰ Note that this rule cannot apply to inalienable noun stems. Their genitive endings prevent a stem final /i/ or /u/ from ever occurring word finally. Cf. *knu-* 'shadow, soul' (<POc **qanu*).

²¹ This derivation shows that Final Vowel Loss must have happened after I-Lowering. Otherwise, the final /i/ of **kori* would have been lost, yielding the form ***ker*.

²² This derivation demonstrates that Final Vowel Loss is crucially ordered after A-Assimilation to Glides.

<i>*tuna</i>	⇒	<i>tuno</i>	(by Rule 4b)
	⇒	<i>tunu</i>	
	=	[tu:nu]	'eel'
<i>*pican</i>	⇒	<i>piSa</i>	(by consonant rules)
	⇒	<i>piSe</i>	(by Rule 4b)
	⇒	<i>piSi</i>	
	=	[pi:zi]	'how many'
<i>*kuron</i>	⇒	<i>kuro</i>	(by consonant rules)
	⇒	<i>kuru</i>	
	=	[ku:ru]	'pot'

6. Geminate Vowel Reduction²³

<i>*Vα</i>	⇒	<i>Vα</i>	
<i>*sake</i>	⇒	<i>sa e</i>	(by consonant rules)
	⇒	<i>se e</i>	(by Rule 4b)
	⇒	<i>se</i>	'ascend'
<i>*Raqi</i>	⇒	<i>ra__i</i>	(by consonant rules)
	⇒	<i>rae</i>	(by Rule 4a)
	⇒	<i>ree</i>	(by Rule 4b)
	⇒	<i>re</i>	'south-east wind'
<i>*wai</i>	⇒	<i>wæe</i>	(by Rule 4a)
	⇒	<i>wee</i>	(by Rule 4b)
	⇒	<i>we</i>	'mango'
<i>*taqo</i>	⇒	<i>ta__o</i>	(by consonant rules)
	⇒	<i>too</i>	(by 4b)
	⇒	<i>to</i>	'bake'
<i>*taqi</i>	⇒	<i>ta__i</i>	(by consonant rules)
	⇒	<i>tae</i>	(by Rule 4a)
	⇒	<i>tee</i>	(by Rule 4b)
	⇒	<i>te</i>	'faeces'
<i>*rua</i>	⇒	<i>ruo</i>	(by Rule 4b)
	⇒	<i>ruu</i>	(by Rule 7)
	⇒	<i>ru</i>	'two'

A summary listing of these vowel harmony rules, and their crucial orderings with respect to each other and with the consonant rules is now given:

Most consonant rules, including **p*, ⇒ /w// V __ V

1. Antepenultimate Vowel Loss

**K* ⇒ Ø / V __ V

2. O-Fronting

3. U Assimilation to I

4a. I-Lowering

4b. A-Harmony

²³ The rule deleting glides intervocalically must have applied after Rule 4c and before this rule.

4c. A-Assimilation To Following Glides

4d. Final Vowel Loss

/w/ ⇒ Ø / V __ V if either vowel was not /a/
 ⇒ u / __ #

/y/ ⇒ Ø / V __ V

/b, d, g, dr/ ⇒ /m, n, ŋ, n/e / /__ #(developed)
 ⇒ /mb, nd, ŋg, nd / / V __ V

5. Mid-Vowel Raising

6. Geminate Vowel Reduction

The sources for the current contrasts in vowel length are postulated, then, to be: 1) an original rule lengthening the first vowel of homorganic vowel sequences occurring in penultimate and ultimate syllables, 2) vowel loss in initial syllables, which was then rectified by the rule of Morpheme-Internal Epenthesis subsequent to the morphologisation of the compensatory lengthening rule, and 3) the presence of word final material which blocked the compensatory lengthening rule but was subsequently lost.

APPENDIX 3

HOW TO SAY THINGS

It would be a tragedy to read through all the listings of word classes, rules and trees of a grammar and still not have any idea how to express some of the everyday things which make up a large part of people's normal conversation. This appendix, with its short set of *notionally organised* examples, is given as prophylaxis against such a tragedy. Topics will be treated in the following order:

1. Existential and Presentative Constructions
2. Location
3. The Weather, Time of Day, etc.
4. Movement
5. Ownership and Other Types of Relationships
6. Emotion
7. Conveyance
8. Affectedness, Different Types of Causation
9. Speech / Quotations
10. Want, Try, Believe, Promise, Persuade, Know, See, and Think (Some representative verbs which take sentential Complements)

1. EXISTENTIAL AND PRESENTATIVE CONSTRUCTIONS

To assert that something exists, the verb *-mbot* 'stay, live, be at' is used:

- (1) *Nio aŋ-ur-la kembei Anutu, ni i-nmbot.*
NOM.1SG 1SG-put-go like God NOM.3SG 3SG-stay+RED
I believe that God exists.

To introduce a new participant into a discourse, presentative constructions containing the verbs *-re* 'see' and *-ndeeŋe* 'find, come upon' like the following are used:

- (2) *Ti-pa ma ti-la mi ti-re tomtom ta,*
3PL-walk and 3PL-go and 3PL-see person SPEC
As they walked along, they saw a man
- (*ta ni i-nmbot sa-la*
SPEC NOM.3SG 3SG-stay+RED ascend-go
(who was) up
- ke ta ute-ene.*
tree SPEC head-GEN.3SG
in the top of a tree.

- (3) *Ti-la na ti-ndeeje ηge ta kizin yajoyajo.*
 3PL-go GIV 3PL-find pig SPEC LOC.3PL water.spirit
 When they went, they found/came upon a pig belonging to the water spirits.

In the beginnings of narratives, existential constructions like the following occur:

- (4) *Lwoono ta, toηmatiziη ru ta ti-mbot kar ta.*
 time SPEC brother two SPEC 3PL-stay village SPEC
 Once upon a time, there were two brothers who lived in the same village.

In this example, note that noun phrase *toηmatiziη ru* modified by the relative clause *ta timbot kar ta* constitutes the predicate of the existential construction '(There were) two brothers who lived in the same village'.

2. LOCATION

To assert that an entity is located somewhere, the verb *-mbot* 'stay, live, be at' and a Referent prepositional phrase are used. More precise specification of location is accomplished by using various motion verb serialisations:

- (5) *Ni i-mbot pa ruumu toro.*
 NOM.3SG 3SG-stay REF house other
 He is at another house.
- (6) *Mburu i-mbot sa-la woηgo.*
 things 3SG-stay ascend-go canoe
 The things are on the canoe.

Inalienable nouns with a locative component are another important means of specifying location more precisely:

<i>lele-</i>	insides, inside of
<i>ute-</i>	head, on top of
<i>zilηa-</i>	edge, beside
<i>kundu-</i>	end of
<i>u-</i>	base, at the foot of, next to
<i>ndeme-</i>	back, behind
<i>kere-</i>	face, in front of
<i>kwo-</i>	mouth, at the entrance to

These occur in constructions like the following:

- (7) *Ni i-mbot ruumu ute-ene/lele-ene.*
 NOM.3SG 3SG-stay house head-GEN.3SG/insides-GEN.3SG
 He/she/it is on top of/inside the house.
- (8) *Ti-lup zin la ke u-unu.*
 3PL-meet ACC.3PL go tree base-GEN.3SG
 They met at the base of the tree.
- (9) *Ruumu tio i-mbot zaala kwo-ono.*
 house LOC.1SG 3SG-stay road mouth-GEN.3SG
 My house is at the entrance to the road.

- (10) *I-mbot kere-m/ndeme-m u-unu.*
 3SG-stay face-GEN.2SG/back-GEN.2SG base-GEN.3SG
 It is in front of/behind you.

When Locations are animate or potent, they are encoded with the Locative preposition *ki*.

- (11) *Zin ti-mbot ki Aibike.*
 NOM.3PL 3PL-stay LOC Aibike
 They are with Aibike.

When the location bears contrastive emphasis, that it was *there* and not somewhere else, a clefted construction with the form *ta* is used:

- (12) *I-ndeege ta-na, nio aḡ-bot ta kar Yaboro.*
 3SG-find SPEC-GIV NOM.1SG 1SG-stay SPEC village Yaboro
 At that time, I lived in Yaboro Village. (*not* somewhere else).

3. THE WEATHER, TIME OF DAY ETC.

The most common construction used when talking about the weather involves the Subject NP *lele* 'place' and an intransitive weather predicate like: *-kimit* 'be lightning', *-marmar* 'be dawning', *-bayou* 'be hot', *-lomo* 'be cold' *-kuruḡ* 'be thundering', *ambai* 'be good (=the weather is nice)', and *-saana* 'deteriorate, be bad (=the weather is bad)'.

- (13) *Lele i-bayou. / Lele i-kimit.*
 place 3SG-hot place 3SG-lightning
 It is hot. / It is lightning.

When talking about the sea, the two extreme possibilities are: *taun* 'calm weather' and *miiri ma duubu* 'storm' (lit. wind and waves). Sentential examples of the onset and ending of a storm are given in (14) and (15) below:

- (14) *Ti-kwai ma ti-la mi lele i-saana.*
 3PL-voyage and 3PL-go and place 3SG-go.bad
 As they voyaged along the weather became bad.
Miiri i-pol ma mbura-ana,
 wind 3SG-collapsed and strength-GEN.3SG
 The wind started blowing strongly
mi i-pei duubu ma i-se.
 and 3SG-stir.up waves and 3SG-ascend
 and stirred up the waves.
- (15) *To miiri i-map, mi taun biibi i-su.*
 then wind 3SG-end and calm big 3SG-descend
 Then the wind ended and it became very calm.

The noun *yaḡ* 'rain' is used in constructions like the following:

- (16) *Yaḡ (i-su).*
 rain 3SG-descend
 It rained.

(17) *Yaŋ i-map.*
rain 3SG-end
It finished raining.

(18) *Yaŋ i-mar=i.*
rain 3SG-come=PROX
It is about to rain.

The noun *zoŋ* 'sun' participates in weather sentences like the following:

(19) *Zoŋ biibi. / Zoŋ mata-ana men.*
sun big / sun eye-GEN.3SG only
It is very sunny. / The sun is very hot.

(20) *Zoŋ i-yaara mini.*
sun 3SG-shine again
The sun shone again.

Mangap-Mbula has no grammatical indication of tense. Instead, several other strategies are utilised to encode temporal notions. Various temporal nouns like *mbeŋ* 'night', *aigule* 'daytime', and *mankwoono* 'morning' may function by themselves as predicates in existential sentences like the following:

(21) *Mbeŋ na ti-miili.*
night GIV 3PL-return
When it was night, they returned.

(22) *Karau! Pa iŋgi mbeŋ=i.*
quickly for now night=PROX
Do it quickly! For it is getting to be night.

These same temporal nouns function as greetings in the following frame:

_____ *ambaiŋana*

To indicate the portion of the day when an event occurs, without deictically indicating that it is a particular day or night, Referent phrases containing temporal nouns are used:

(23) *Zin ti-kam uraata pa mbeŋ.*
NOM.3PL 3PL-do+RED work REF night
They are working nights.

To indicate temporal duration, Referent phrases with temporal nouns or serialisations with the verb *-rao* 'able, adequate' are used.

(24) *Nio aŋ-kam uraata pa/i-rao ndaama ru.*
NOM.1SG 1SG-do work REF/3SG-able year two
I worked for two years.

Deictic temporal notions are encoded by temporal adverbs like the following:

<i>huri</i>	now
<i>koozi</i>	today
<i>mbeŋi</i>	last night
<i>gaaga</i>	tomorrow
<i>malama</i>	two days from now

<i>neeri</i>	yesterday
<i>uriizi</i>	two days ago
<i>uriiza</i>	three days ago

These temporal adverbs may either occur at the end of the predicate phrase or sentence initially as Themes.

- (25) (*Neeri*) *niam* *am-siŋ*
 yesterday NOM.1PL.EXC 1PL.EXC-carry.on.stick
ŋge ki Naŋas (neeri).
 pig LOC Nangas yesterday
 (Yesterday,) we carried Nangas' pig (YESTERDAY).

When the temporal adverb occurs sentence finally it bears new information focus. To place contrastive emphasis upon the time, that an event happened *then* and not at some other time, a cleft construction with the form *ta* is used:

- (26) *Nio ko aŋ-swe tiro-ŋ ta buri*
 NOM.1SG UC 1SG-reveal bone-GEN.1SG SPEC now
na som. Mi kaimer.
 GIV NEG and later
 I am not going to reveal my power (lit. bones) *now*. But *later* (then I will do it.)

4. MOTION

There are a number of different motion verbs in Mangap-Mbula, most of which are deictically oriented either: 1) toward the Speaker, 2) toward the Hearer and not toward the Speaker, or 3) away from both Speaker and Hearer. These are listed below:

To Speaker	To Hearer	To Neither	Direction
-su	-suma	-sula	downwards
-se	-sama	-sala	upwards
-le	-lema	-lela	inwards, landward
-pet	-pet	-pera	outwards, seaward
-mar	-ma	-la	horizontally
-yoto	-yoto	-yoto	out from
-ko	-ko	-ko	quickly leave from
-zem	-zem	-zem	leave from

In addition to their deictic orientation, most motion verbs have an inherent orientation either *to* or *away from* some locus. For example, a verb like *-la* 'go' is obligatorily oriented *towards* a locus. Thus, it is impossible to say in a single clause 'He went from location X.' Rather, one must say something like 'He stayed at location X and went'.

- (27) *Nu mbot/la swoi ta mar=i?*
 NOM.2SG 2SG+stay/go where SPEC 2SG+come=PROX
 Where are you coming from?
 (Lit. Where did you stay/go that you are coming?)
 (This also functions as a typical greeting.)

Other verbs like *-ko* ‘quickly leave from, flee’ are obligatorily oriented *away* from a locus. Thus, it is impossible to express in a single clause that one has fled *to* some location. Rather, one must say, ‘I fled *and went* to location X’.

- (28) *Nio aŋ-ko ma aŋ-mar kar.*
 NOM.1SG 1SG-flee and 1SG-come village
 I fled here to the village.

The loci of motion verbs are generally encoded by prepositional phrases. For animate and/or potent GOALS or SITES, the preposition *ki* is used, while for inanimate non-potent GOALS or SITES, the preposition *pa* is used. *Pa* is, however, frequently omitted. For SOURCES, the preposition *pa* is used, regardless of animacy or potency:

- (29) *Nio aŋ-la (ki Silas) ((pa) kar).*
 NOM.1SG 1SG-go LOC Silas REF village
 I went (to Silas) (to the village).
- (30) *Nio aŋ-ko (pa Silas) (pa kar).*
 NOM.1SG 1SG-flee REF Silas REF village
 I fled (from Silas) (from the village).

5. OWNERSHIP AND OTHER TYPES OF RELATIONSHIPS

Constructions encoding relationships between two entities can be divided into two broad subgroups: constructions encoding presupposed relationships, and constructions encoding non-presupposed relationships.

5.1 PRESUPPOSED RELATIONSHIPS

The constructions encoding presupposed relationships are *noun phrase-internal* ones. These are divided into two major syntactic types: 1) direct/inalienable genitives, and 2) prepositional/alienable genitives.

Direct genitives are used to express *inherently* relational notions like: 1) kinship, 2) part-whole, and 3) spatial geometry. An entity X exhibiting an inherent relationship to another entity Y is one about which one would say, ‘If one thinks of something like X, one thinks of some other thing like Y’.

- (31) *Apei tama-ana i-meete kek.*
 Apei father-GEN.3SG 3SG-die PERF
 Apei’s father is dead.
- (32) *ye ute-ene*
 fish head-GEN.3SG
 the head of the fish¹
- (33) *ruumu lele-ene*
 house insides-GEN.3SG
 (the) inside (of) the house

¹ Clan leaders are also called *ye uteene*.

More 'incidental' or *non-inherent* relationships are encoded by *alienable* prepositional genitives. The prepositional genitive construction generally encodes controlled, enduring relationships. By 'control' is meant that the genitive entity can do what it wants to the Head noun or has somehow produced the Head noun.

- (34) *Ruumu kini i-saana kek.*
 house LOC.3SG 3SG-deteriorate PERF
 His house has deteriorated.
- (35) *Ngar ku ambai som.*
 thinking LOC.2SG be.good NEG
 Your thinking is not good.

Non-controlled, non-inherent relationships are expressed by a noun complex construction whose HEAD is the inalienable noun *ka-*:

- (36) *ruumu ka kitiimbi*
 house PASS.GEN+GEN.3SG post
 the posts of the house
- (37) *ko-ŋ ndaama*
 PASS.GEN-GEN.1SG year
 my years/age

5.2 NON-PRESUPPOSED RELATIONSHIPS (DATIVE CONSTRUCTIONS)

Non-presupposed relationships all have to do with ownership. These can be divided into those in which ownership/control of an entity is in the process of being transferred, and those in which ownership is being asserted, denied, or questioned.

5.2.1 TRANSFER OF OWNERSHIP

Transfer of ownership is expressed by noun complexes whose HEADs are the inalienable nouns *le-* or *ka-*:

- (38) *Tana ti-po le-ŋ ruumu.*
 therefore 3PL-tie/build RECX-GEN.1SG house
 Therefore they built me a house.
- (39) *Nu kam ka-n kini.*
 NOM.2SG 2SG+do/get CON.RECX-GEN.3PL food
 You give them something to eat.

Note that the form *ka-* is used when the item being transferred is intended for consumption, and *le-* is used otherwise.

5.2.2 CONSTRUCTIONS IN WHICH OWNERSHIP IS BEING ASSERTED, DENIED, OR QUESTIONED

These constructions can be divided into those in which the possessed item is definite and those in which the possessed item is indefinite. For *definite* items, locative constructions like the following are used:

- (40) *Koroŋ ta-na i-mbot ki asiŋ?*
 thing SPEC-GIV 3SG-stay LOC who(SG)
 Who has that thing? (Lit. That thing is with whom?)
- (41) *Nakabasi i-mbot ki Silas.*
 axe 3SG-stay LOC Silas
 Silas has the axe.
- (42) *Iŋgi nio (koroŋ) tio.*
 this.one NOM.1SG thing LOC.1SG
 This is (*my* thing)/*mine*.

To assert, question, or deny possession of some *indefinite* entity, constructions are used in which the recipient-experiencer forms *le-* and *ka-* function predicatively:

- (43) *Nu ko-m kini (sa) i-mbot?*
 NOM.3SG CON.RECX-GEN.2SG food NON.REF 3SG-stay
 Do you have any food?
- (44) *Nio le-ŋ pat (sa) som.*
 NOM.1SG RECX-GEN.1SG stone/money NON.REF NEG
 I don't have any money.
- (45) *Ni le koroŋ boozo (i-mbot).*
 NOM.3SG RECX+GEN.3SG thing much 3SG-stay
 He has many things.

6. EMOTION

There are four major types of constructions which are used for expressing various emotional states: 1) experiential verbs, 2) body-image expressions in which a body part functions as Subject or Object in a clause, 3) 'do' constructions, whose Subjects are experiential nouns, and 4) predicates into which the Recipient-Experiencer noun *le-* or the Passive genitive noun *ka-* have become incorporated.

Experiential verbs are of three types: 1) those which take an Experiencer Subject, 2) those whose Objects are Experiencers, and 3) 'middle experiential verbs' whose Subjects and Objects must be coreferential. The first grouping is further sub-divided into: 1) those which are completely intransitive (46), 2) those which have the Stimulus of the experience encoded as a Direct Object (47), and 3) those which have the Stimulus of the experience encoded as an Oblique argument (48):

- (46) *Ni i-meete kek.*
 NOM.3SG 3SG-die PERF
 He is dead.

- (47) *Nio aŋ-moto i.*
 NOM.1SG 1SG-fear ACC.3SG
 I fear him.
- (48) *Nio aŋ-kankaana pini.*
 NOM.1SG 1SG-confused REF.3SG
 I am confused about him.

The simple intransitive experiential verbs are mainly physical experiences like: *-yoyou* 'pain', *-ŋguŋ* 'cough', *-martu* 'sneeze', *-lulu* 'vomit', and *-meete* 'die', while the ones taking Direct Object Stimuli of Experiences are mainly perception and cognition verbs like *-re* 'see, look', *-leŋ* 'hear, listen', *-kanamaala* 'sense', *-kilaala* 'recognise', and *-ute* 'know', plus the verb *-moto* 'to fear'. The verbs taking Oblique Experiential Stimuli appear to be semantically more heterogeneous.

The verbs whose Experiencers are encoded as Objects encode perceived properties. Examples of these are: *-namut* 'be sweet (to)', *-tuntun* 'cause to itch', and *-yes* 'cause a burning sensation (to)'. For example:

- (49) *Kini ti i-namut yo.*
 food this 3SG-be.sweet.to ACC.1SG
 I find this food to be sweet.

The middle verbs whose Experiencers are encoded as both Subject and Object all lack Subject agreement morphology and express either: 1) unpleasant physical states like: *petel* 'hungry', *miri* 'thirsty', and *uze* 'be sweaty', or 2) pleasant emotional states like: *kaipa* 'selfishly rejoicing', and *menmeen* 'be happy':

- (50) *Nio miri yo pa zoŋ biibi.*
 NOM.1SG thirsty ACC.1SG REF sun big
 I am thirsty because of the intense sun.

Body-image expressions are the most productive means of encoding various emotions:

- (51) *Kete-m pitpit pa sua kizin pepe.*
 liver-GEN.2SG jump+RED REF talk LOC.3PL PROH
 Don't get excited by their talk (lit. don't let your liver be jumping because of their talk).
- (52) *Buri nio ·lele-ŋ ambai.*
 now NOM.1SG insides-GEN.1SG be.good
 Now I am happy/contented/pleased.
- (53) *Nio moto-ŋ kaŋkaana pa ma aŋ-kam.*
 NOM.1SG eye-GEN.1SG confused REF and 1SG-do.
 I did it unintentionally.
- (54) *Am-kan kini ma kopo-yam i-saana.*
 1PL.EXC-eat food and stomach-1PL.EXC.GEN 3SG-go.bad
 We ate until we were satiated.

Constructions involving the verb *-kam* 'do, get' in combination with experiential nouns mainly encode unpleasant and uncontrollable experiences like: *motoŋana* 'terror', *tata* 'busyness', *mete* 'disease', *ŋoŋo* 'cough', *dadaru* 'doubt', *yoyouŋana* 'pain', *siŋ* 'blood,

bleeding', *kuumbu* 'tiredness one experiences after visitors have left', *patanjana* 'trouble', and *malajana* 'tiredness'. For example:

- (55) *Mete biibi i-kam yo.*
 illness big 3SG-do/get ACC.1SG
 I am very sick.

Note that the experiential noun is encoded as Subject, while the Experiencer is encoded as Object.

The verb plus incorporated *le-* construction typically encodes an activity which is not directed by the Subject toward any particular goal and which is often pleasurable. The verb plus incorporated *ka-* construction typically encodes an event which is an unpleasant experience for the Subject:

- (56) *Zin ti-we le-n ta yok.*
 NOM.3PL 3PL-bathe RECX-GEN.3PL SPEC water
 They are cooling off in the river.

- (57) *Semborom itu-m pa sua ti pepe.*
 2SG+involve REFI-GEN.2SG REF talk this PROH
 Don't get involved with this talk.

Ko se ko-m.
 UC 2SG+ascend PASS.GEN-GEN.2SG
 You might get yourself into trouble.

7. CONVEYANCE

Mangap-Mbula has a number of different verbs which express the basic notion of transporting something from one place to somewhere else. These are differentiated according to the *means* of conveyance. A reasonably exhaustive listing is given below:

<i>-baada</i>	carry on one's back
<i>-kwaara</i>	carry on one's shoulder
<i>-kuundu</i>	carry on top of the head
<i>-mbaraara</i>	carry in one's arms
<i>-poi</i>	carry in a string bag hanging from one's forehead
<i>-mbis</i>	carry a person on one's back
<i>-pekes</i>	carry a large amount of cargo
<i>-uuzu</i>	carry in some vehicle
<i>-pie</i>	carry in one's hands
<i>-wiliŋ</i>	carry under one's arm
<i>-siŋ</i>	carry on a stick
<i>-ŋa ~ ŋu</i>	carry in one's mouth
<i>-se</i>	carry (water)
<i>-sur</i>	carry/wash away (done by a river or the ocean)
<i>-kam</i>	do, get
<i>-ur</i>	put

In sentences encoding the conveyance of some entity, the location to which the entity is being transported is usually encoded by motion verbs in cosubordinate constructions:

- (58) *Ziru ti-sij nge ma ti-la pa Birik.*
 NOM.3DU 3PL-carry.on.stick pig and 3PL-go REF Birik
 The two of them carried the pig on a stick to Birik.
- (59) *Ti-ur mburu (i-)se wooŋgo.*
 3PL-put things (3SG-)ascend canoe
 They put the things up on the canoe.
- (60) *Kam koron i-mar.*
 2SG+do/get thing 3SG-come
 Bring the thing here.
- (61) *Kam pat ti i-la kizin.*
 2SG-do/get stone/money this 3SG-go LOC.3PL
 Take this money to them.

8. AFFECTEDNESS, TYPES OF CAUSATION

To express intentional actions on the part of an animate being which immediately result in something happening to some other entity, simple transitive clauses are used, in which the Subject encodes the Actor and the Object the Undergoer.

- (62) *Lutu-ŋ moori i-kot kajar.*
 child-GEN.1SG female 3SG-break.w.stone Tahitian.Chestnuts
 My daughter broke Tahitian Chestnuts.
- (63) *Zin ti-kan kini ma i-map.*
 NOM.3PL 3PL-eat food and 3SG-eat
 They ate up all the food.

The much-discussed notion KILL is expressed phrasally in Mangap-Mbula. A cosubordinate construction with the verbs *-pun* 'hit' and *-meete* 'die' is used:

- (64) *Tana ti-pun=i ma i-meete.*
 therefore 3PL-hit=ACC.3SG and 3SG-die
 Therefore they killed him.

Where the result of the intentional action is not quite as immediate, or where the result is not due *solely* to the Subject-Actor's intention, a cosubordinate construction with the verb *-kam* is used.

- (65) *Zin kolman ta ti-kam ma i-saana.*
 NOM.3PL old.person SPEC 3PL-do/get and 3SG-deteriorate
 The old people were the cause of its going bad.
- (66) *Ni i-kam yo ma aŋ-mar skul tinggi.*
 NOM.3SG 3SG-do/get ACC.1SG and 1SG-come school DEM
 He brought me to this school.

In both of these examples, the Subject of the *-kam* clause does something intentional which *leads* to the result (possibly after an extended period of time) expressed by the second clause. In the first example, the deterioration may or may not have been intended. For example, if some old men were trying to fix a machine, and by mistake made it worse, this is the way the event would be reported. In the second example, the volition of the individual

going to school is also relevant. If he had been unwilling to go to school, and the first individual had physically dragged him there, this sentence would not appropriate. Contrast this example with the following one, in which there is clearly no element of volition on the part of the second entity. Note that complete control by the Subject in such examples is indicated by the omission of *ma*:

- (67) *Nangaŋ ti-kam buk i-la kini.*
 young.man 3PL-do/get book 3SG-go LOC-3SG
 The young men took the book to him.

Explicitly accidental causation which results in an immediate change of state is expressed by some predicates which are derived using a combination of both the causative prefix *pa-* ~ *p-* and the detransitivising prefix *ma-* ~ *m-*. For example:

- (68) *Tamuriŋ i-pa-mi-liŋ yok.*
 young.girl 3SG-CAUS-DETR-spill water
 The young girl accidentally spilled the water.

For a more detailed examination of causative encodings in Mangap-Mbula, see Bugenhagen (1989a).

9. SPEECH / QUOTATIONS

Direct quotations are encoded using the verb *-so* 'say' and have the following overall structure:

-so (*pa* Addressee) (*takembei*) (*-so*(=*be*)) QUOTE

- (69) *Aŋ-so pini ta-kembei. Aŋ-so (=be):*
 1SG-say REF.3SG SPEC-like 1SG-say =NF
 1 2 3 4
 I said to him like this. I said,
 'Nu kam mbulu ta-na pepe'.
 NOM.2SG 2SG+do behaviour SPEC-GIV PROH
 'Don't do that'.

In this example, elements one to four are all omissible. Thus, one could also simply say *Aŋso: 'Nu kam mbulu tana pepe'*. Phonologically, there is typically falling intonation and a short pause following (*pini*)(*takembei*) and an even longer pause after the second occurrence of *-so*, should one be present.

Indirect quotes have the following form:

-so (*pa* Addressee) (*be*) INDIRECT QUOTE

- (70) *Ni i-so pa kuzi be i-la mokleene.*
 NOM.3SG 3SG-say REF rat NF 3SG-go garden
 He told the rat to go to the garden.
- (71) *Zin ti-so=mbe ti-kam uraata ki Yut.*
 NOM.3PL 3PL-say=NF 3PL-do work LOC Youth
 They say they are doing youth work.

10. WANT, TRY, BELIEVE, PROMISE, PERSUADE, KNOW, SEE, THINK (SOME REPRESENTATIVE PREDICATES TAKING SENTENTIAL COMPLEMENTS)

Discussions of the encodings of the notions WANT/LIKE, TRY, BELIEVE, PROMISE, PERSUADE, KNOW, SEE, and THINK have often figured prominently in contemporary linguistic literature. Given below are the Mangap-Mbula equivalents of these notions:

WANT/LIKE

- (72) *Nio aŋ-so(=mbe) aŋ-la aŋ-re Atai kar kini.*
 NOM.1SG 1SG-say=NF 1SG-go 1SG-see Atai village LOC.3SG
 I want/intend to go see Atai's home.
- (73) *Nio lele-ŋ be aŋ-la aŋ-re Atai kar . kini.*
 NOM.1SG insides-GEN.1SG NF 1SG-go 1SG-see Atai village LOC.3SG
 I would like to go see Atai's home.
- (74) *Nio lele-ŋ pini.*
 NOM.1SG insides-GEN.1SG REF.3SG
 I like him.
- (75) *Ni lele-ene / mbura-ana pa kini som.*
 NOM.1SG insides-GEN.1SG / strength-GEN.1SG REF food NEG
 He didn't want any food.

Note that simple intention to do something is encoded using the verb *-so* 'say' plus the non-factual complementiser (*m*)*be*. A body-image construction with *lele-* 'insides' is used to encode the notion of 'like to do X', where X can be either an event or some thing. The noun *mbura-* 'strength, power' is used only to *deny* that some *thing* is wanted.

TRY

- (76) *Nio aŋ-toombo be aŋ-kam uraata.*
 NOM.1SG 1SG-try NF 1SG-do work
 I tried to do the work.

BELIEVE

- (77) *Nio aŋ-urla (kini) (ta-)kembei ni ko i-rao.*
 NOM.1SG 1SG-believe LOC.3SG SPEC-like NOM.3SG UC 3SG-able
 I believe (in him) that he will be able (to do it).

PROMISE

- (78) *Nio aŋ-mbuk sua pini be aŋ-la gaaga.*
 NOM.1SG 1SG-tie talk REF.3SG NF 1SG-go tomorrow
 I promised him to go tomorrow.

PERSUADE

There is no lexical item in Mangap-Mbula which corresponds directly to the English lexical item *persuade*. The form *-maŋmaŋ* is perhaps the closest, meaning 'to repeatedly urge someone to do something'. Whether the action being urged is interpreted as being successful or not depends upon whether it is encoded as a cosubordinate construction with the conjunction *ma*, or as an XCOMP¹ with the non-factual complementiser *be*:

- (79) *Nio aŋ-maŋmaŋ=i be i-la.*
 NOM.1SG 1SG-urge=ACC.3SG NF 3SG-go
 I urged him to go (but he hasn't gone yet).
- (80) *Nio aŋ-maŋmaŋ=i ma i-la.*
 NOM.1SG 1SG-urge=ACC.3SG and 3SG-go
 I urged him to go (and he went)./ I got him to go.
 KNOW
- (81) *Niam am-ute i kek.*
 NOM.1PL.EXC 1PL.EXC-KNOW ACC.3SG PERF
 We already know (about) him.
- (82) *Iti tu-ute: wok, ni*
 NOM.1PL.INC 1PL.INC-know wallaby NOM.3SG
 We know that the wallaby, it
buzur ambai-ŋa-na.
 wild.animal be.good-NMS-GEN.3SG
 is a tasty wild animal.

Note in (82) that the Subject of the Complement clause encoding the known proposition is in the *nominative* morphological case *ni* rather than the accusative *i*. This means that the structure here is one of a verb followed by a full sentential Complement; that is, [[V] [NP...]_S]PREDP rather than [[V] [NP] [...]_{XCOMP}]PREDP, as is the case with the verb *-re* 'see' (illustrated below).

As an interesting aside, the verb *-ute* is used of people, events, facts, and knowledge of how to do something, but is not used of 'magic'. One 'hears' rather than 'knows' magic. This reflects the cultural practice that magicians pass on their knowledge only on their death beds, *telling* the magicians-to-be the spells. Once the new magicians have 'heard' the spells, the old magician can die in peace.

SEE

- (83) *Nio aŋ-re u mar neeri.*
 NOM.1SG 1SG-see ACC.2SG 2SG+come yesterday
 I saw you come yesterday.

Here, note that, unlike *-ute* 'know', the Subject of the Complement clause following *-re* is encoded with the *accusative* pronoun *u*. Thus, the structure here involves an XCOMP rather than an ordinary COMP; that is, [[V] [NP] [...]_{XCOMP}]PREDP.

THINK

The notion THINK is frequently expressed by the verb *-so* 'say' and very much resembles a quotation. A minimal encoding has the form *-so* [(=be) THOUGHT]_{COMP}. More expanded encodings involve prefacing the sequence *-kamŋgar* 'do thinking':

- (84) *Ni i-re na lele-ene ambai som.*
 NOM.3SG 3SG-see GIV insides-GEN.3SG be.good NEG
 When he saw it, he felt bad.
Pa i-so=mbe: 'Tizi-ŋ i-kan ŋge
 for 3SG-say=NF y.brother 3SG-eat pig

mi nio som?

and NOM.1SG NEG

For he thought: 'Is my younger brother going to eat pork and I not get any?'

- (85) *Ni i-kam ŋgar. I-so:*
 NOM.3SG 3SG-do thinking 3SG-say

He thought:

'Wae, moori ŋgar kini i-pet kek!'

hey female thinking LOC.3SG 3SG-appear PERF

'Hey, the woman already understands!'

THOUGHTS can also have indirect person deixis, in which case they are encoded with the non-factual complementiser *be*:

- (86) *Niam am-kam ŋgar be am-po*
 NOM.1PL.EXC 1PL.EXC-do thinking NF 1PL.EXC-tie/build
 We are thinking of building

le-yam ruumu popo-ŋa-na.

RECX-1PL.EXC house new-NMS-GEN.3SG

ourselves a new house.

APPENDIX 4

THREE TEXTS

In the following transcriptions, an orthographic (largely phonemic) representation, a morphophonemic representation, a morpheme-by-morpheme gloss, and a free translation are given for each numbered unit of text.

HOUSE BUILDING by Misesk Mark of Yangla Village

- (1) *Gorgor ta sobe po ruumu na, nu*
gorgor ta so=be po rumu na nu
 time SPEC say=NF 2SG+tie/build house GIV NOM.2SG
sap kitiimbi mungu, mi yo ruumu tiroono.
saP' kTimbi mngu mi io rumu tiro-VnV
 2SG+hew post first and 2SG+collect house bone-GEN.3SG
 When you want to build a house, you first hew the posts and collect the framing
 (lit. bones) of the house.
- (2) *Itum tamen kam, beso rao som to,*
itu-m ta-men kam be-so rao som to
 REFL-GEN.2SG SPEC-only 2SG+do/get NF-say 2SG+able NEG then
so pizin wal biibi be tiuulu u,
so p=zin wal biPi be ti-wulu u
 2SG+say REF.PL group big NF 3PL-help ACC.2SG
mi kam kini ma tikan.
mi kam kni ma ti-kan
 and 2SG+do/get food and 3PL-eat
 If you yourself are not able to do it, then tell a big group of people to help you,
 and give them food to eat.
- (3) *Tikam uraata pu makij, mi pamender*
ti-kam uraTa pu makij mi pa-mnder
 3PL-do/get work REF.2SG after.that and 2SG+CAUS-stand
ma isala imender.
ma i-se-la i-mnder
 and 3SG-ascend-go 3SG-stand
 After they have done the work for you, you start up standing up (the house).
- (4) *Kitiimbi isula, mi wiimbi ise, mi lulɔɔ*
kTimbi i-su-la mi wimbi i-se mi lulɔɔ
 post 3SG-descend-go and bearer 3SG-ascend and joist

ila imar.
i-la i-mar
 3SG-go 3SG-come

The posts go down (into the ground), and the bearers go up (on top of the posts), and the joists go back and forth (across the bearers).

- (5) *Pun ma imbol makij, mi pamender gungun.*
pun ma i-mbol makij mi pa-mnder gungun
 2SG+hit and 3SG-be.strong after.that and 2SG+CAUS-stand studs
 After you have it all nailed firmly together, you stand up the studs.

- (6) *Gungun isala makij, mi uraata kor kana*
gungun i-se-la makij mi wuraTa kor ka-nV
 studs 3SG-ascend-go after.that and work high PASS.GEN-GEN.3SG

isala makij, mi yo koto.
i-se-la makij mi io koTo
 3SG-ascend-go after.that and 2SG+collect sago.palm.leaves

After the studs are up, and the work on top (i.e. the framing of the roof) is done, you collect sago palm leaves (for making thatching).

- (7) *Ut koto be moori tipai,*
wuT' koTo be moori ti-pai
 2SG+cut.off sago.palm.leaves NF woman 3PL-remove

mi tomooto tiŋgal be isala ruumu.
mi tmoTo ti-ŋgal be i-se-la rumu
 and man 3PL-pierce NF 3SG-ascend-go house

You cut off the sago palm leaves, so that the women can remove (the mid-ribs of the sago leaves, which makes them easier to fold) and the men can sew (the leaves onto a piece of bamboo) so that it can go up on top of the house.

- (8) *Iwe koto pa.*
i-we koTo pa
 3SG-become sago.palm.leaf REF

It will become the sago palm leaf (thatching) for it (the house).

- (9) *Itum tamen kam be rao som to,*
itu-m ta-men kam be rao som to
 REFL-GEN.2SG SPEC-only 2SG+do/get NF 2SG+able NEG then

ŋgo zin wal biibi be tiulu pa koto
ŋgo zin wal biPi be ti-wulu pa koTo
 2SG+send PL group big NF 3PL-help REF sago.palm.leaf

ŋgalŋana tomini.
ŋgal-ŋa-nV tomni
 pierce-NMS-GEN.3SG also

If you are not able to do it by yourself, then get a big group of people to also help with the sewing of the sago leaf thatching.

- (10) *Ma tingal makiŋ, mi timbit.*
ma ti-ŋgal makiŋ mi ti-mbiT'
 and 3PL-pierce after.that and 3PL-tie
 And after they have sewn it (onto pieces of bamboo), they tie it.
- (11) *Timbit makiŋ, mi isala uteene*
ti-mbiT' makiŋ mi i-se-la wute-VnV
 3PL-tie.up after.that and 3SG-ascend-go head-GEN.3SG
ka ŋgele.
ka ŋgle
 PASS.GEN+GEN.3SG peak
 After they have tied it, it goes all the way up to the peak of the roof.
- (12) *Isala ma imap tona, kam uraata pa palaŋ.*
i-se-la ma i-maP' to-na kam wuraTa pa plaŋ
 3SG-ascend-go and 3SG-end then-GIV 2SG+do/get work REF planks
 Once it has all gone up, then you work on (getting) the planks (for the walls).
- (13) *Wal biibi tisap palaŋ pu mini mi pun sala,*
wal biPi ti-saP' plaŋ pu mni mi pun se-la
 group big 3PL-hew planks REF.2SG again and 2SG+hit ascend-go
mi itum kam soolo.
mi itu-m kam solo
 and REFL-GEN.2SG 2SG+do/get flooring
 The big group of people again (helps you and) hews planks for you and you nail them up, and (then) you, by yourself, get the flooring.
- (14) *Soolo na, uraata ŋonoono som.*
solo na wuraTa ŋno-VnV som
 flooring GIV work true-GEN.3SG NEG
 The flooring, it is not real (i.e. difficult) work.
- (15) *Kam mbu, tarpaala makiŋ, mi kam*
kam mbu tar-pala makiŋ mi kam
 2SG+do/get areca.palm 2SG+cut-break after.that and 2SG+do/get
keteene ila lene, mi kam
kTe-VnV i-la le-nV mi kam
 centre-GEN.3SG 3SG-go RECX-GEN.3SG and 2SG+do/get
kuliini be iwe soolo.
kuli-VnV be i-we solo
 skin-GEN.3SG NF 3SG-become flooring
 You get the areca palm, and after you split it, you get rid of the centre, and take the bark to become the flooring.
- (16) *Soolo tina ise ruumu makiŋ, mi ruumu*
solo ti-na i-se rumu makiŋ mi rumu
 flooring this-GIV 3SG-ascend house after.that and house

poŋana *imap.*
po-ŋa-nV *i-maP'*
 build-NMS-GEN.3SG 3SG-end

After the flooring is on the house, the house building is done.

SAKULS AND LOVE-MAGIC by Naleng Gideon of Yangla Village

- (1) *Iŋgi be teleŋ* *mbol ki man sakul.*
iŋgi be t-leŋ *mbol ki man sakul*
 now NF 1PL.INC-hear story LOC bird *sakul*
 Now we are going to hear a story about *sakuls* (a type of bird).
- (2) *Man sakul tina, iti tuute ni*
man sakul ti-na iti t-wuTe ni
 bird *sakul* this-GIV NOM.1PL.INC 1PL.INC-know NOM.3SG
man ki itortooro zin moori lelen.
man ki i-toro+RED zin moori lele-n
 bird LOC 3SG-turn+RED PL woman insides-GEN.3PL
 The *sakul*, we know that it is the bird that changes women's feelings.
- (3) *Kembei nio.*
kmbei nio
 like NOM.1SG
 Take me, for instance.
- (4) *Sobe nio aŋkam-kinkin moori sa,*
so=be nio aŋ-kam-kinkin moori sa
 say=NF NOM.1SG 1SG-do/get-striving woman NON.REF
aŋkamkinkini ma som, tonabe
aŋ-kam-kinkin=i ma som to-na=be
 1SG-do/get-striving=ACC.3SG and do.in.vain then-GIV=NF
aŋurpe yaamba.
aŋ-wur-pe yamba
 1SG-put-right magic
 If I try to get some woman, I try her and am unsuccessful, then I will do some magic.
- (5) *Sokorei sa ta aŋkam ma aŋsobe*
skorei sa ta aŋ-kam ma aŋ-so=be
 what NON.REF SPEC 1SG-do/get and 1SG-say=NF
aŋpasaana moori pa i.
aŋ-p-sana moori pa i
 1SG-CAUS-deteriorate woman REF PROX
 (The magic is) whatever kind of thing I am going to get in order to do something bad to the woman.

- (6) *Ina aṅurpe makij, mi aṅpaata moori*
ina aṅ-wur-pe makij mi aṅ-paTa moori
 that.one 1SG-put-right after.that and 1SG-call woman
zaana makij na,
za-VnV makij na
 name-GEN.3SG after.that GIV
 That, after I fix it up, and after I call the woman's name,
- (7) *aṅur lela kokou, mi aṅdou you, mi aṅpabayou*
aṅ-wur le-la kKou mi aṅ-ndou iou mi aṅ-p-baiou
 1SG-put enter-go white.ashes and 1SG-heap fire and 1SG-CAUS-be.hot
korou tina.
krou ti-na
 thing this-GIV
 I put it into the white ashes (of a fire) and get the fire going, and heat up the thing.
- (8) *Tona ina, man ta sakul tina, ko itunu*
to-na ina man ta sakul ti-na ko itu-nV
 then-GIV that.one bird SPEC sakul this-GIV UC REFL-GEN.3SG
ila ma ila lombuleene ki moori
i-la ma i-la lom-mbu-lene ki moori
 3SG-go and 3SG-go toilet-areca.palm-place LOC woman
sa tana.
sa ta-na
 NON.REF SPEC-GIV
 After that, the sakul will itself go behind the house of that woman.
- (9) *Tonabe isala kun sa som*
to-na=be i-se-la kun sa som
 then-GIV=NF 3SG-ascend-go breadfruit NON.REF or
kaṅar sa, mi imbot, mi itaṅtaṅ mi
kṅar sa mi i-mboT' mi i-taṅ+RED mi
 Tahitian.Chestnut NON.REF and 3SG-stay and 3SG-cry+RED and
iwatwaata moori sa tina zaana.
i-paTa+RED moori sa ti-na za-VnV
 3SG-call+RED woman NON.REF this-GIV name-GEN.3SG
 After that, it will go up in some breadfruit or Tahitian Chestnut tree and stay there, and keep calling out the woman's name.
- (10) *Mi ka korou, ina ila*
mi ka krou ina i-la
 and PASS.GEN+GEN.3SG thing that.one 3SG-go

leleene kek.
lle-VnV keK'
 insides-GEN.3SG PERF

And the magic (lit. effect of the thing), it quickly goes into her insides.

- (11) *Itop la moori leleene kek.*
i-toP' la moori lle-VnV keK'
 3SG-fall go woman insides-GEN.3SG PERF
 (By then) it has fallen into the woman's insides.

- (12) *Inako moori imbot imbot ma som, mi ikam*
ina-ko moori i-mboT' i-mboT' ma som mi i-kam
 GIV-UC woman 3SG-stay 3SG-stay and NEG and 3SG-do/get

ngar pa mbulu tau nu kam na.
ngar pa mblu tau nu kam na
 thinking REF behaviour SPEC NOM.2SG 2SG-do/get GIV

Then the woman will stay for awhile, until she starts thinking, because of what you have done.

- (13) *Tona imanga na, iyo mburu kini ma*
to-na i-mnga na i-io mbru kni ma
 then-GIV 3SG-get.up GIV 3SG-collect things LOC.3SG and

imar ruumu ku,
i-mar rumu ku
 3SG-come house LOC.2SG

After that, she will get up, collect her things, and come to your house,

- (14) *mi iru u ma ima lele swoi*
mi i-ru u ma i-ma lele swoi
 and 3SG-seek ACC.2SG and 3SG-come.to.you place where

ta nu la ma ke ma mbotbot
ta nu la ma ke ma mboT'+RED
 SPEC NOM.2SG 2SG-go and 2SG-hide and 2SG+stay+RED

mi urpewe koron pini na.
mi wur-pe+RED kron pni na
 and 2SG+put-right+RED thing REF.3SG GIV

and she will seek you and come to you in whatever place you have gone and hid and are working magic on her.

- (15) *Iru u ma ima*
i-ru u ma i-ma
 3SG-seek ACC.2SG and 3SG-come.to.you

indeeju, ina imap.
i-ndeje=u ina i-maP'
 3SG-find/happen=ACC.2SG then 3SG-end

She seeks you and comes and finds you, and then it is over.

- (16) *Ina sua sa som.*
ina sua sa som
 then talk NON.REF NEG
 Then there is no more talk.
- (17) *Ma niomru kakam ma uruyom ise mat na,*
ma niomru k-kam ma wru iom i-se maT' na
 and NOM.2DU 2PL-do/get and news-GEN.2PL 3SG-ascend outside GIV
ina niomru kowoolo ma imap.
ina niomru k-wolo ma i-maP'
 then NOM.2DU 2PL-marry and 3SG-end
 And when the two of you do it and the news about you becomes known,
 then the two of you are married.
- (18) *Mbol tio katɲaari ta ti.*
mbol kio kaT'-ɲa-nV-ri ta ti
 story LOC.1SG short-GEN.3SG-little SPEC this
 This is my little short story.

AN ENCOUNTER WITH A SNAKE IN THE GARDEN by Beverly Moka

- (1) *Lwoono ta na, nio ma abu mi*
lwo-VnV ta na nio ma aPu mi
 middle-GEN.3SG SPEC GIV NOM.1SG and g.relative and
Matias amla mokleene tiama.
Matias am-la moK'-lene kiam=a
 Matias 1PL.EXC-go taro-place LOC.1PL.EXC=NON.VIS.PROX
 One time, I and my grandmother and Matias went to our garden.
- (2) *Indeeje amla ampet mokleene na, abu*
i-ndeje am-la am-peT' moK'-lene na aPu
 3SG-find/happen 1PL.EXC-go 1PL.EXC-appear taro-place GIV g.relative
ila ilaama serembat, mi Matias, ni ila
i-la i-lama srembaT' mi Matias ni i-la
 3SG-go 3SG-dig.up sweet.potato and Matias NOM.3SG 3SG-go
ideebe lele kunduunu.
i-dePe lle kndu-VnV
 3SG-clear place end-GEN.3SG
 When we got to the garden, then my grandmother went to dig up sweet potatoes,
 and Matias, he went to clear one end of the area.
- (3) *Mi nio na, aɲla aɲlaama*
mi nio na aɲ-la aɲ-lama
 and NOM.1SG GIV 1SG-go 1SG-dig.up

koyam *serembat.*
ka-iam *srembaT'*
 CON.RECX-1PL.EXC.GEN sweet.potato

And as for me, I went to dig us up some sweet potatoes to eat.

- (4) *Aḡlamlaama* *ma aḡla,* *mi kosa* *ila*
aḡ-lama+RED *ma aḡ-la* *mi kroḡ-sa* *i-la*
 1SG-dig.up+RED and 1SG-go and something-NON.REF 3SG-go

leleḡ *ma aḡzem* *suruunu* *ri*
lle-ḡ *ma aḡ-zem* *sru-VnV* *ri*
 insides-GEN.1SG and 1SG-leave piece-GEN.3SG little

imbot, *mi aḡsombe* *aḡmaḡa.*
i-mboT' *mi aḡ-so=mbe* *aḡ-mḡga*
 3SG-stay and 1SG-say=NF 1SG-get.up

As I was going along digging them up, something went into me, and I left one part (of the garden), and was intending to get up.

- (5) *Beso* *motoḡ* *ilela* *ke sumbuunu* *na,*
be-so *mTa-ḡ* *i-le-la* *ke smbu-VnV* *na*
 NF-say eye-GEN.1SG 3SG-enter-go tree hole-GEN.3SG GIV

aḡre *mooto siḡaanabi imbot* *lela.*
aḡ-re *moTo siḡana-bi i-mboT'* *le-la*
 1SG-see snake huge-old 3SG-stay enter-go

When I looked into a hole in a tree, I saw a huge old snake was inside.

- (6) *Tona* *aḡzem* *serembat* *laamaḡana* *imbot,*
to-na *aḡ-zem* *srembaT'* *lama-ḡa-nV* *i-mboT'*
 then-GIV 1SG-leave sweet.potato dig.up-NMS-GEN.3SG 3SG-stay

mi aḡko *ma aḡla.*
mi aḡ-ko *ma aḡ-la*
 and 1SG-flee and 1SG-go

After that, I quit digging up sweet potatoes, and ran away.

- (7) *Mana* *aḡboobo Matias* *ma imar* *be ipuni*
mi-na *aḡ-boPo Matias* *ma i-mar* *be i-pun=i*
 and-GIV 1SG-call Matias and 3SG-come NF 3SG-hit=ACC.3SG

ma imeete.
ma i-meTe
 and 3SG-die

Right after that, I called Matias to come over and kill it.

- (8) *Imar* *ma mataana* *ilela* *na, ire* *i.*
i-mar *ma mTa-VnV* *i-le-la* *na i-re* *i*
 3SG-come and eye-GEN.3SG 3SG-enter-go GIV 3SG-see ACC.3SG
 When he came and looked inside, he saw it.

- (9) *Tona ikam su pa ke pakaana ta, to*
to-na i-kam su pa ke pKa-VnV ta to
 then-GIV 3SG-do/get descend REF wood part-GEN.3SG SPEC then
iyatapaara lela pa mooto be ipet.
i-yTPara le-la pa moTo be i-peT'
 3SG-poke enter-go REF snake NF 3SG-appear
 Then he picked up a piece of wood and poked in at the snake to get it to come out.
- (10) *Ni ikam lela pini, mi mooto mburaana*
ni i-kam le-la pni mi moTo mbura-VnV
 NOM.3SG 3SG-do/get enter-go REF.3SG and snake strength-GEN.3SG
be ipet som.
be i-peT' som
 NF 3SG-appear NEG
 He poked in at it, but the snake did not want to come out.
- (11) *Pa mooto takena, ni ipeebe tomini.*
pa moTo ta-kmbei-na ni i-pePe tomni
 because snake SPEC-like-GIV NOM.3SG 3SG-produce also
 Because the snake, it had also given birth.
- (12) *Niamru amkam amkam ma mooto*
niamru am-kam am-kam ma moTo
 NOM.1DU.EXC 1PL.EXC-do/get 1PL.EXC-do/get and snake
ipet tona, ampuni.
i-peT' to-na am-pun=i
 3SG-appear then-GIV 1PL.EXC-hit=ACC.3SG
 The two of us kept at it until the snake came out, and then we hit it.
- (13) *Tamen mooto imeete som.*
ta-men moTo i-meTe som
 SPEC-only snake 3SG-die NEG
 But the snake didn't die.
- (14) *Tona amkami ma iko.*
to-na am-kam=i ma i-ko
 then-GIV 1PL.EXC-do/get=ACC.3SG and 3SG-flee
 Then we made it to go away.
- (15) *Mooto ti, magor kat.*
moTo ti maKor kaT'
 snake this huge very
 This snake, it was huge.
- (16) *Mi ndomoono iyaara ma keita kosa.*
mi ndmo-VnV i-iaara ma kmbei-ta kroŋ-sa
 and forehead-GEN.3SG 3SG-shine and like-SPEC thing-NON.REF
 And the top of its head gleamed like something (unusual).

- (17) *Mi uteene na, ipuṅpuṅ.*
mi wuTe-VnV na i-puṅpuṅ
 and head-GEN.3SG GIV 3SG-thick
 Its head was thick.
- (18) *Mi mataana na, iputput keita tomtom.*
mi mTa-VnV na i-puT'puT' kmbei-ta tomtom
 and eye-GEN.3SG GIV 3SG-bulge like-SPEC person
 And its eyes were like human eyes.
- (19) *Mi nio, takena, aṅmoto i.*
mi nio ta-kmbei-na aṅ-mTo i
 and NOM.1SG SPEC-like-GIV 1SG-fear ACC.3SG
 And I, therefore, was afraid of it.

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