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The Ngkolmpu Language

with special reference to distributed exponence

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This thesis represents an original piece of work, and does not contain, in part or in full, the published work of any other individual, except where acknowledged.

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Abstract

The Ngkolmpu language of southern New Guinea is notable for the remarkable extent to which grammatical values are distributed across multiple morphosyntactic systems in the language. This is most apparent in the extremely complex inflectional morphology of verbs, where the exponence of morphosyntactic feature values is distributed over a number of inflectional sites, such that determining the exact value of any given feature requires unification at multiple structural locations. Moreover, this phenomenon is not restricted to the inflectional morphology, and permeates the morphology, syntax and semantics of the language.

This thesis provides the first comprehensive description of the phonology, morphology and nominal and clausal syntax of Ngkolmpu. There is a particularly strong focus on the complex verbal inflectional morphology. In addition to the core description, it contains an exploration of the phenomenon of distributed exponence and related structures in the syntax and semantics. The goal is to chart the extent of this apparently non-optimal approach to exponence and provide a discussion of the consequences of such a structure informed by current thinking in morphological theory.

Chapters 2-7 comprise the descriptive part of the thesis, the primary goal of which is to give explicit empirical coverage of the main structural features of the language. As such, it is written from a framework-free approach in which all categories, classes and constructions are explicitly defined on a language particular basis. Chapter 2 sets out the phonemic inventory, their phonetic realisations and the phonotactics. Chapter 3 is a description of the nominal morphology, including word structure and a list of cases, their forms and functions. Chapter 4 is an account of the nominal syntax; it establishes the various classes of nominals and sets out the phrase level constituency. Chapter 5 lists the various valency-related constructions of the language. It establishes

a set of valence alternation classes and describes the syntax and semantics of valence alternation processes. Chapter 6 is a description of the inflectional and derivational sites of verbs, focusing on the complex paradigmatic structure of these sites. Chapter 7 describes the system of stem alternation and establishes verbal number, aspect and nominal number as distinct but interacting categories.

The last two chapters change gear and aim at situating the workings of Ngkolmpu distributed exponence typologically, informed by advances in realisational approaches to morphology. Chapter 8 defines the concept of distributed exponence and charts the extent that features may be distributed in the systems of verbal inflection. It extends this discussion to draw parallels in structure across morphological domains of agreement, in the system of grammatical relations and the semantic interactions between verbal number and nominal number. Chapter 9 provides an explicit description of the inflectional sites of verbs in the light of distributed exponence. The description is presented in natural language but is firmly within the realisational tradition, drawing heavily from Paradigm Function Morphology. Its goal is to explore the consequences of distributed exponence on realisational approaches to morphological theory and uniquely proposes a level of morphological autonomy localised to each particular inflectional site.

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List of Abbreviations

1	first person		**FOC**	focus
2	second person		**FUT**	future
3	third person			
			GEN	genitive
A	actor			
ABL	ablative		**HOD**	hodiernal past
ABS	absolutive		**HOR**	hortative
ACC	accusative			
ADJ	adjective		**IGN**	ignorative
ADV	adverbial		**IMM**	immediative
ALL	allative		**IMP**	imperative
APPL	applicative		**IMPF**	imperfective
ASSOC	associative		**INAN**	inanimate
ATR	attributive		**IND**	indicative
			INF	infinitive
CAUS	causative		**INS**	instrumental
COM	comitative		**INT**	interrogative
COP	copula		**IRR**	irrealis
DAT	dative		**JUS**	jussive
DEM	demonstrative			
DEO	deontic		**LOC**	locative
DIA	diathetic			
DIST	distal		**M**	masculine
DU	dual		**MID**	middle
DUR	durative			
			N	neuter
ERG	ergative		**NEG**	negative
EX	extended stem		**NOM**	nominative
			NPL	non plural
F	feminine		**NSG**	non singular
FEM	female			
			PFV	perfective

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PL	plural		**REL**	relative
PMS	permissive		**RMT**	remote past
POSS	possessive		**RS**	restricted stem
POT	potential mood			
PRO	pronoun		**SG**	singular
PROH	prohibitive			
PROX	proximal		**TMP**	temporal
PRS	present		**TOP**	topic
PST	past		**TOW**	towards
PURP	purposive			
			U	undergoer
R/R	reflexive/reciprocal		**VOC**	vocative
RCT	recent past		**VOT**	voice onset time

Chapter 1

Introduction

The Ngkolmpu language is characterised by the remarkable extent to which grammatical values are distributed across the systems and sub-systems of the language. This is most apparent in the extremely complex inflectional system of its verbs, in which morphosyntactic feature values can only be determined after unification of multiple structural positions. This distribution of feature values at the level of the word we can call *distributed exponence*. However, this tendency toward distributed information is not restricted to the inflectional morphology but extends throughout the grammar including across inflectional domains and at the levels of syntax and semantics.

The goals of this thesis are both descriptive and theoretical. The language has not been previously described and so the primary goal of the thesis is to provide a description of the core aspects of the grammar, including phonology, morphology and syntax up to the clause level. This description is intended to stand alone but also serves as the foundation for the second goal of the thesis: to provide an exploration of the extent and consequences of distributed feature values in the grammar. This second goal comprises two distinct aspects, one exploring the extent to which features may be distributed, the second providing an explicit account of how such a distributed system would be modelled in contemporary morphological theory.

The approach taken for the first section is purely descriptive with a focus on explicit empirical coverage. As such it is presented in a framework work-free approach (Haspelmath, 2009) in which all grammatical constructions and categories are listed

and are established on language internal grounds. The second part of this thesis, whilst not presented in any formal theory, involves a discussion of the nature of structural correlations and as such is fundamentally theoretical in nature. I argue that the data is most compatible with a realisational conception of morphology and many of the assumptions in these theories are assumed in this work. However, no previous understanding of the various implementations of these theories will be assumed and all theoretical constructs are introduced in the body of the thesis.

The phenomenon of distributed exponence is an extreme example of morphological complexity, yet it is not unique to Ngkolmpu. What is unique about Ngkolmpu, along with other Yam family languages, is the extent to which distributed exponence plays in the organisation of the language. Thus, one of the contributions of this aspect of the thesis is the explicit charting of this rather extreme case in the design space of language. The thesis places these phenomena within their theoretical and typological contexts so that the language and the description proves relevant to our understanding of the nature of human language and language diversity. It is my hope that discussing what are theoretical concerns from a wide theoretical perspective, and one that is not wedded to any particular formalism, will help make the data and the discussion relevant for a wider audience. An overview of these approaches with specific reference to elements used in the grammar are discussed in Section 1.3 of this chapter.

1.1   The language and its speakers

The Ngkolmpu people live in the extreme south east of the Indonesian province of Papua in the border area between Indonesia and Papua New Guinea in southern New Guinea. Ngkolmpu refers both to the name of the people and by extension the name of the language they speak, i.e. the Ngkolmpu Language. There are two varieties of Ngkolmpu, Ngkontar and Baedi, which correspond to the two villages Yanggandur and Onggaya. The majority of speakers live in these two villages and the entire population live within Wasur National Park, a national park in the area east of Merauke. The variety described in this thesis is Ngkontar Ngkolmpu which is spoken by around 150 adults in the village of Yanggandur. All data was collected from speakers living in Yanggandur.

The other variety, Baedi, is reportedly only spoken by a handful of elderly speakers who no longer use it as a language of communication.

The full name of the language is *Ngkontar Ngkolmpu Kiki*, the word *kiki* meaning 'speak', 'talk', 'word' or 'language'. Ngkontar refers to the Ngkolmpu people living in Yanggandur and the variety of the language they speak. The language is also known by a number of other names. As this is a traditionally multilingual environment with a large number of closely related languages spoken over a relatively small area, people commonly need to make reference to the different languages of the area. In these instances, a shibboleth term is used consisting of the word meaning 'this type' optionally along with the word for 'speak' or 'language' in that language. Such terms are primarily used when one is comparing the languages, in which case Ngkontar Ngkolmpu is known as Ngkntra Kiki, [ŋkə̆ˈⁿtra]. These terms are discussed in more detail in the following section.

Much previously published work has referred to the language as 'Kanum'. This was the term used in Boelaars (1950) and in the works published by Mark Donohue, discussed in Section 1.4. The variety described in these two sources is the same as that described in this thesis, although naturally due to the time the fieldwork was conducted there are many differences between the three sources. Donohue also uses the name Ngkolmpu in his work along side the name Kanum, although in the orthography adopted in those papers Ngkolmpu is written as Ngkâlmpw. More details on the orthography used in this thesis can be found in Section 2.6. Outside of these sources, the term 'Kanum' is used to refer to all the Tonda subgroup family speakers living within Indonesia. This term is used self-identifyingly in the form [kə̆ˈnumɛ]. This same term, in the form of [ˈkanum], is the word typically given when non-Kanum people ask for the name of the people or the languages spoken in the villages in the region. The term has also been used by ethnographers, namely Nevermann (1939) and van Baal (1966), to refer to the people living in this area. Boelaars (1950) suggests the term comes from Marind referring to people living east of the Maro river although he provides no evidence to support the claim.
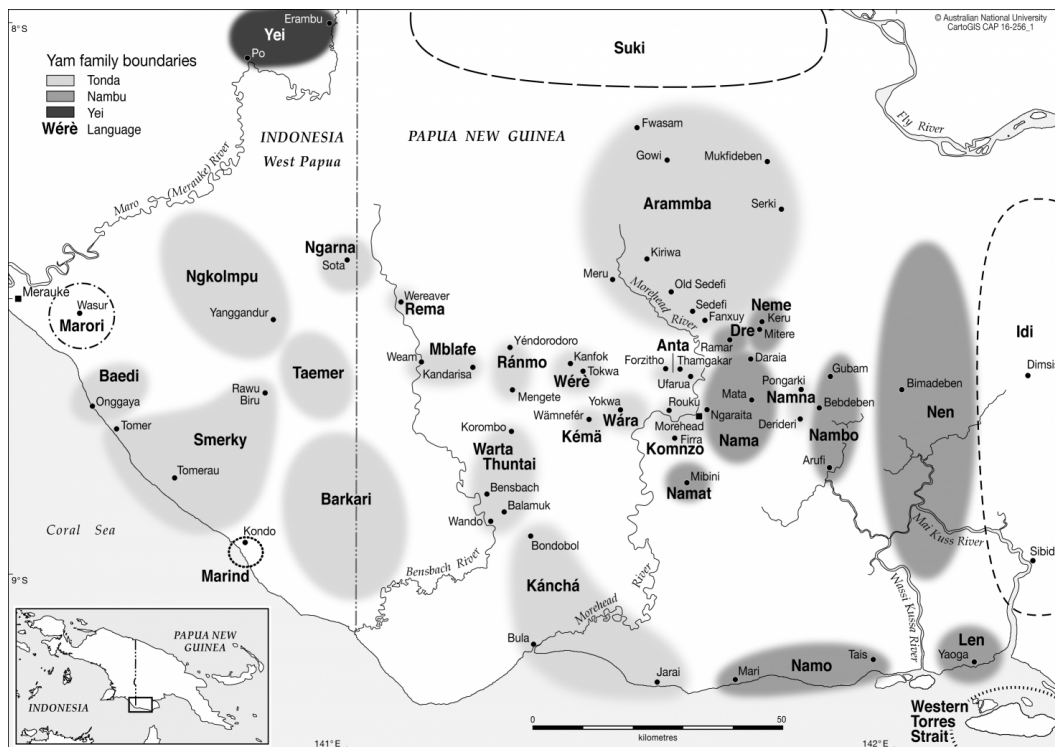
Figure 1.1: Map of the Yam family languages

1.1.1 Genetic and areal affiliation

Ngkolmpu belongs to the Tonda subgroup of the Yam family of languages. The Yam family was previously known as Morehead-Maro (Ross, 2005) based on two prominent rivers in the region. Following current usage in Evans (2012) and Evans et al. (2017), the more concise name of Yam is used here. The term itself is derived from the cognate forms of the 3rd person forms in the 'be' paradigm; in Ngkolmpu this is yə but in many of the languages of the family this is *yəm* or *yam*. In addition, Evans et al. (2017) note the widespread use of the word *yam* for 'custom, tradition, law' and the central role of yams as a dietary staple in this region. The most detailed discussion of the historical relationships of the family can be found in these Evans et al. (2017). The family comprise around 15-20 languages spoken across the southern New Guinea area. Ngkolmpu is the westernmost variety, traditionally spoken as far west as the Maro river, and the language family stretches eastward to the Mae Kussa river in Papua New Guinea. A map of the language family is presented in Figure 1.1.

Under our current understanding of the family there are three subgroups of the Yam
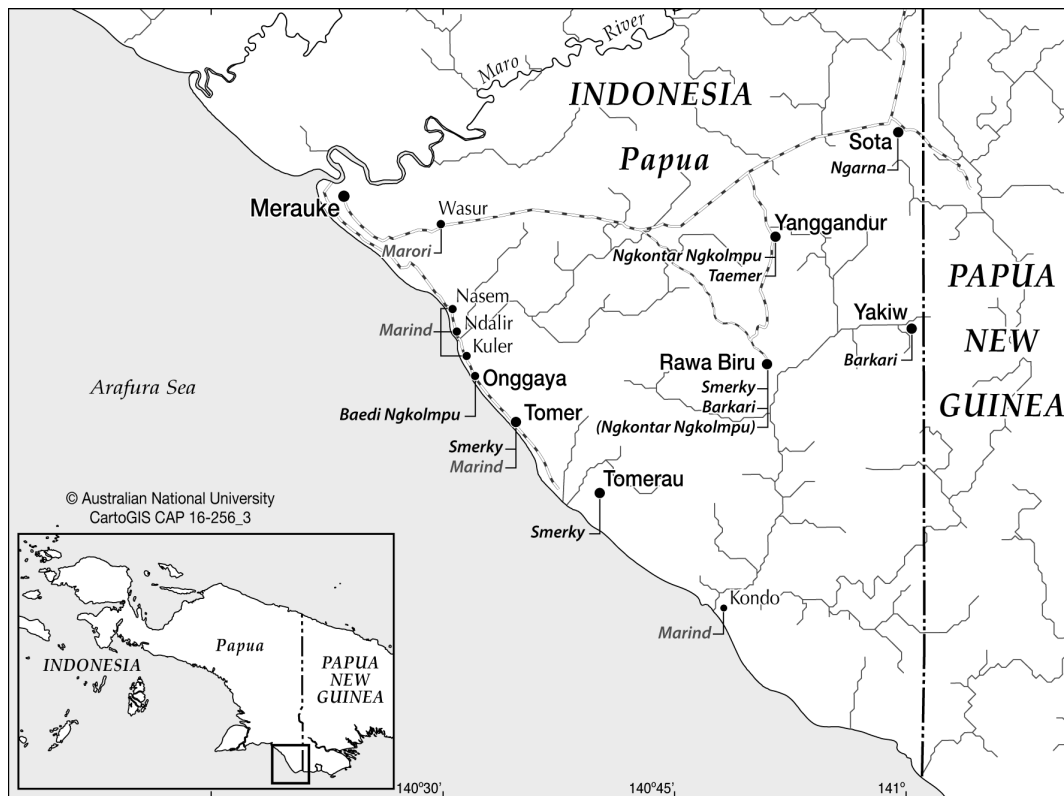
Figure 1.2: Map of villages and languages spoken in the Wasur region

languages: Tonda, Nambu and Yei, each comprising a number of distinct languages. The subgroup Tonda, of which Ngkolmpu is a part, is the largest and most diverse of the three groups and crosses both sides of the border.

As stated, Ngkolmpu is often referred to as Kanum, however there are actually three distinct languages which are known generally as Kanum. These are Ngkolmpu, Ngarna and Smerky; further, Ngkolmpu and Smerky each contain a number of dialects or sub-varieties. A map of the Wasur National Park region with the villages indicated and the languages spoken in those villages is presented in Figure 1.2.

Ngkolmpu consists of two varieties, Ngkontar and Baedi. As stated, Baedi is no longer a spoken language and people report that it is only remembered by a handful of older people. In my time in the field I never visited Onggaya, however I met a number of people, mostly men in their 50s, who identified as Baedi people and who lived in Onggaya. All of these people stated they could not speak nor understand the language. It was also clear from observation that they could not speak or understand Ngkontar

Ngkolmpu either.

Smerky consists of three varieties known as Smerky, Taemer and Barkari. It seems confusing that the dialect Smerky shares the name of the broader language Smerky. To clarify, all three of these languages are generally known as Smerky by the Kanum communities, yet the specific variety of Smerky, as spoken in Rawa Biru, Tomer and Tomerau, is not known by any other name. The varieties of Taemer and Barkari, whilst also known as Smerky, have specific names, i.e. Taemer and Barkari. Döhler (2016) reports the term *smärki* being used by the eastern Tonda speakers to refer to other Tonda speakers living to the west, so the term is in common use for a number of distinct referents. The three varieties essentially form a dialect chain. The Taemer people, of which there are about 120 people, live in Yanggandur alongside the Ngkolmpu people. The Barkari people live between Rawa Biru and a new settlement along the border known as Yakiw[1], indicated on the map in Figure 1.2. The Barkari people originally inhabited villages along the border, however due to the Indonesian government's increased presence along the border many of these people were forced to live either in Rawa Biru or in the village of Weam in Papua New Guinea. During the early 2000s when the borders were relaxed and local people could cross more freely many Barkari people living in Weam returned to Indonesia and started the village of Yakiw. These languages are by far the most vital of the Kanum languages, with children in Rawa Biru and Yakiw learning these languages as their first language. Wayan Arka (personal communication) reports that the status of local languages in the coastal towns of Tomer and Tomerau are much less vital.

Ngarna is spoken by around 80 people in the town of Sota. Traditionally, this was a smaller village as found in the area, however it has since became a border post and the site of a transmigration village. There are currently around 3000 people, predominately ethnic Javanese, living at Sota. These are people arriving as the result of a government-sponsored transmigration scheme.

A table of the Kanum languages, their varieties, the locations and speaker populations is presented in Table 1.1. This table also includes the alternate (shibboleth) name for the language used locally to refer to different varieties. As stated, this is based on

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[1]This village has been designated RT3 by the local government and is often referred to by that name.

Language	Variety	Shibboleth Name	Village	Est. No. Speakers
Ngkolmpu	Ngkontar	Ngkntra Kiki	Yanggandur	150
	Baedi	Ngkanter Kiki	Onggaya	~10
Smerky	Smerky	Nggernca Tunai	Rawa Biru	150
			Tomerau	unknown
			Tomer	unknown
	Taemr	Nggontia Kiki	Yanggandur	100
	Barkari	unknown	Rawa Biru/Yakiw	unknown ~50
Ngarna	Ngarna	Ngarna Kiki	Sota	80

Table 1.1: The Kanum languages

the word for 'this type' and the word for 'speak', 'word' or 'language'. The Ngarna variety is only known by its shibboleth form, although it is also referred to as Sota Kanum, after the village name. I did not collect data regarding the Barkari shibboleth name. The speaker estimates are based on conversations with village administrators, for the villages of Yanggandur and Rawa Biru. The numbers marked with a tilde (~) are estimates based on reports from speakers. I have not visited nor have accurate reports to assess the language situation in Tomer and Tomerau.

1.1.2 The Kanum world

Traditionally the Ngkolmpu people, along with the other Kanum groups, lived in hamlets and small villages populated by people from a single clan. I use the word *clan* as this is typically referred to with the Indonesian word *marga*. Today people live in larger villages which were established during the Dutch colonial period when the border was created. However, during the Dutch period people still largely maintained traditional patterns of habitation. Later during the Indonesian period, the current settlement patterns were enforced and people were made to give up their traditional settlement patterns and move into the villages we have today.

The older village sites still exist in the form of clan gardens and are referred to in Indonesian as *kampung lama*, 'old villages', or by their traditional name when speaking Ngkolmpu. These sites are still considered property of the clans who originally lived in

Figure 1.3: Ntmtr: *kampung lama* of the Ntikbwan clan

them and the clans still maintain their gardens on these sites. Life in these garden sites today is much closer to traditional practice and a picture of *Ntmtr* where the *Ntikbwan* clan maintain their garden sites can seen in Figure 1.3. People report that during 1980s, travel to these sites was highly regulated and people would need to get permission from the local police officer in order to stay overnight in their traditional garden sites. Since these can be up to ten kilometres away from the village it often became impossible for people to maintain traditional agrarian practices. To this day the level of subsistence agriculture is greatly reduced compared to related groups within PNG. Although agriculture is reduced, many people are still subsistence agriculturalists to some extent. The primary crops are various types of yam, cassava for both leaves and roots, taro, sweet potato and bananas. A yam garden can be seen in Figure 1.4. As has been described by Döhler (2016) or Ayres (1983), yams play a very prominent role in the culture and whilst people in the Ngkolmpu community take a lot of pride in their gardens the level of competitiveness is far lower than seen to the east. Figure 1.5 is a picture of yams and bananas being counted for distribution after a feast.

In addition to traditional farming practices, there is also a government program which provides inexpensive rice to the community. This is known as *beras miskin*, 'poor

Figure 1.4: A typical yam garden

rice', colloquially called *raskin*. For most families, their diet is heavily subsidised by this rice. Whilst this is beneficial for many people, it also creates a slight dependence on the rice since they grow less other food as a direct result of receiving the rice. This is further complicated by the fact that the garden sites of most families are at the sites of their original villages, which may be up ten kilometres away from the village.

Hunting plays a fairly minimal role in people's diet. The influx of transmigrants and others to the area means that the amount of viable game is very low. Within five kilometres of the village animal sightings are rare and people must travel quite far to obtain meat. Fish makes up a very large part of the protein in most people's diets, especially during the dry season when the waterways are low and fishing with a net is easy. Many of the native fish have been displaced by introduced fish and the predominate fish species eaten are known in Indonesian as *ikan mujair*, *ikan lele* and *ikan betok/betik*. These are the mozambique tilapia, the clarias catfish and the climbing gourami respectively. The first two of these have spread at least as far eastward as the Mai Kussa River in PNG, displacing local fish and are known as *mujaya* and *lele* in Nen, the eastern-most Yam language.

The landscape is similar to that of northern Australia, consisting of mostly light

Figure 1.5: Yams and bananas being counted after a feast

Figure 1.6: Light melaleuca forest in the dry season

melaleuca forests, punctuated by patches of rainforest and savannah. The entire southern New Guinea region is an area characterised by topography with only very minor differences in elevation. However, these minor differences are pronounced through the monsoonal seasons, in which areas of light forest (Figure 1.6) become seasonal swamps (Figure 1.7) during the wet season. The long dry season lasts from June to December with an intense wet season January to May.

The village of Yanggandur consists predominantly of three-room wooden houses built by the Indonesian government (Figure 1.8). These houses contain a family of husband and wife and their children. Most have home-built extensions on the rear to contain a kitchen area. The village is relatively well equipped, with a large church although no permanent pastor, a town hall and both primary and middle schools, known as SD and SMP in the Indonesian system. Children typically live with relatives in Sota to attend high school, if they attend. Access to water is from wells situated around the village. In the dry seasons these will frequently dry out and people will be forced to walk to the nearest rivers and creeks to collect water. During my second trip in early 2014 a diesel generator large enough to provide electricity to the entire village was connected. It had been installed years before but never connected to the houses. This

Figure 1.7: Light melaleuca forest in the wet season

is connected to every house in the village and, when there is fuel, it runs from dusk to midnight and is enough electricity for people to run lights and entertainment devices like televisions. Fuel is rarely available and typically only when donated by a benefactor, such from a politician or from the local road construction program. Other times, if the village receives money through the various state programs, the community has been known to use that to buy fuel. However, for much of the time the generator is simply not run. There is no mobile phone coverage in the village. A sealed asphalt road that runs all the way to the village was completed in 2016.

Yanggandur is predominantly inhabited by two distinct groups of people, the Ngkolmpu and Taemer. There are about 200 Ngkolmpu people and around 120 Taemer people in the village, including children. The total population of the village is around 350 as this also includes a number of other groups. These other groups include two Smerky households and some people, both men and women who have married into the community. There are also around three families, of Javanese descent, who have established small shops in the village, plus a number of more temporary residents, such as school teachers who primarily live in Merauke but have residences available in the village. In addition, there is a permanent station of a unit of 24 Indonesian soldiers (TNI). These

Figure 1.8: Typical house in Yanggandur

units are rotated every six to twelve months and the soldiers may potentially be from any part of Indonesia. Their primary concern is to patrol and monitor the border but they also act as an impromptu police force in the village.

Unlike other parts of Indonesia, there is no cash cropping of any sort in the village. There is, however, a small village industry based around the distilling of cajeput oil, *minyak kayu putih* in Indonesian, an oil derived from a type of melaleuca tree, which is similar to what is known in Australia as tea-tree oil. The program was initiated by the World Wide Fund for Nature (WWF) who built a number of public stills around the village during the 1990s. Typically, men will gather leaves from the forest and then sell the leaves to others in the village. These will usually be people either with some external cash source such as running a shop or having a position in the village level government. Once sufficient leaves have been purchased they are distilled into oil. The final oil is then sold to the WWF who distribute the oil for sale around Merauke and more widely in Indonesia.

The Ngkolmpu still practice exogamous sister exchange essentially as described in Döhler (2016). Customarily, Ngkolmpu women marry Smerky men and vice-versa. This process involves two men, one from Yanggandur and the other from Rawa Biru,

who directly exchange sisters. When a man does not have a sister, he may substitute another close female relative. Failing that, he must instead pay a large amount of yams to the family of the woman and then offer one of his resulting daughters to pay back his debt to the system. Whilst exogamous sister exchange is still practised, there are a number of other marriages which happen outside this system.

1.1.3   Demography and vitality

Ngkolmpu is spoken by around 150 adults in the village of Yanggandur. As stated, the Baedi variety is spoken by just a few older people. In Yanggandur all Ngkolmpu adults over the age of 40 are able to speak the language and use the language as a day-to-day means of communication alongside Indonesian. Adults in their late 20s to 30s vary in their abilities, with some clearly fluent whilst others only ever speak Indonesian. However, it is clear that many of these younger speakers do make use of the full range of inflectional morphology. Speakers younger than this do not speak the language and children in the village are not learning the language. In the village, since it is a mixed community, people are more likely to use Indonesian rather than Ngkolmpu, particularly if there are non-speakers around. However in the gardens, which are tended by family and clan-based groups, the traditional language is the primary language used and this appears to have served a vital part in maintaining the language.

In addition to this there is a large community of Ngkontar Ngkolmpu speakers living in the village of Rawa Biru just 17 kilometres from Yanggandur as mentioned in Figure 1.2. Traditionally, women from Yanggandur marry the Smerky men from Rawa Biru. They then live with the man in his village and as such there is a large community of women speakers living in Rawa Biru who use Ngkolmpu frequently as a means of communication. In addition, since many Smerky men who were born in Rawa Biru had Ngkolmpu mothers, who would have spoken Ngkolmpu along with Smerky around the children, most men are also able to speak some Ngkolmpu. This naturally varies from person to person, however a large number of speakers, from my observations, would be considered fluent in the language.

1.2　Data and fieldwork

All data in this thesis is taken from original fieldwork totalling over nine months through the period from 2012 to 2015 as part of the ARC funded project 'Languages of Southern New Guinea' (CIs Nicholas Evans, I Wayan Arka and Jeff Siegel). An initial trip of six weeks was conducted in 2012, followed by a longer trip of six months between August 2013 to February 2014 and another short trip of two months at the end of 2014. All the data used in the thesis is taken from speakers living in the village of Yanggandur.

The data involves a combination of spontaneous and prompted texts as well as targeted elicitation sessions. Elicitation sessions were primarily in relation to the verbal paradigms but also to cover certain gaps in the syntactic constructions. The texts involve a mix of genres and styles, including narratives, procedurals, traditional stories, explanations, voice overs and conversations. These were recorded at a bitrate of 1411kbps using a Zoom H4n; most recordings were also made using either Rode HS1-B or AKG C520 headset microphones. A single conversation text was also recorded in HD video. The texts were transcribed with a team of speakers in the field into field notebooks. These transcriptions were then confirmed with a different speaker and entered into Elan and time-aligned with the audio recordings. These texts were then entered into a ToolBox database where they were glossed to the level of the morpheme in Australia.

The text corpus consists of 3 hours and 42 minutes, all of which is transcribed and time aligned. The majority of examples in the thesis are taken from this corpus. In addition, over 40 hours of elicitation recordings have been collected although not transcribed beyond the fieldnotes and paradigms made at the time. Observation and field notes not recorded also comprise much of the work. The recordings will be made available on the PARADISEC database (http://www.paradisec.org.au). I have endeavoured to take as many examples as possible from naturalistic texts which occur in the text with references to the recordings. References to recordings follow the naming convention in 1.1, this contains the year followed by the ISO code for Ngkolmpu, KCD, the initials of the speakers being recorded and a general descriptor given in plain language. This is followed by the a number which corresponds to the segment number in the Elan file.

Three texts from this corpus are presented in Appendix A and the soundfiles and Elan files are provided on the associated compact disc.

(1.1)   YYYYMMDD-ISO-SPEAKER-Descriptor Segment

In addition to the text corpus, a large number of verbal paradigms have also been collected. Paradigms in Ngkolmpu are extremely large with agreement for up to two arguments and 16 distinct tense, aspect and mood values as well as direction, diathesis and (plur)actionality, totalling to 5,292 maximum cells. In addition, since it is arguable as to whether these some of these values are inflectional or derivational it is difficult to determine the exact number of verbs collected. However, these potentially derivationally related verbs may be classified together under a single LEMMA. Lexemes of a single lemma share a single infinitive, if they have one, and the same underlying semantics. They alternate for lexical categories of diathesis and direction. Thus each lemma may contain up to six distinct lexemes, each of which then participates in the full inflectional system including displaying up to three inflectional stems. On this definition, paradigms have been collected for 184 distinct lemmas which entails over 500 verbs.

New verbs were largely identified and collected through texts. Each time a new verb was encountered it was entered into the spreadsheet of verb forms. Then, during elicitation sessions the full paradigm for each verb and each related verb would be elicited across a number of days with my two male speakers.

All of the data in this thesis comes from four speakers who I will discuss in turn. I worked every day with Bapak Karel Dimar (KD), a man in his early 50s and Bapak Yonas Gelambu (YG), who was 49 years of age in 2014. Pak Karel is a Smerky man whose father died when he was a child. As a result, he moved to Yanggandur when his mother returned to live with her family after her husband's death. Pak Karel has then lived in Yanggandur for his entire life and has an Ngkolmpu wife. Although he is a Smerky man, he is a fluent speaker of Ngkolmpu and is a respected member of the community. I worked with Pak Yonas almost as frequently as Pak Karel. Pak Yonas is a Ngkolmpu man who has lived in Yanggandur his entire life and is close friends with Pak Karel. I also worked with Mama Magdelena Ndiken (ML) who hosted me during my stay in the village, either in her house or with her daughter. She is in her late 40s

and in a position of influence in the village as the eldest child of the previous customary village head (kepala adat). She has remained in Yanggandur as she is married to a non-Kanum man, who is the village administrator (Sekretaris Desa). Finally, I worked with Mama Leonarda Ndiken (LN), a women in her mid-40s. She is the younger sister of Mama Magdelena and the wife of Pak Karel. Due to the fact that women are extremely busy with household duties, the majority of my work was conducted with the men. In addition, I worked occasionally with a number of other men from the ages of late teens to their 70s.

1.3 Theoretical perspectives

The descriptive element of the thesis is not couched in any particular theoretical perspective. I take the position that arguing for a particular viewpoint on cross-linguistic categories is not the role of a descriptive grammar. It is the role of typology and linguistic theory to establish these on empirical grounds. As such, the grammar portion of this thesis is written from what Haspelmath (2009) calls 'a framework free approach'. Arguments for this approach can be found in Evans and Dench (2006) and in the writings of Dixon going back to Dixon (1977). That is not to say there is no preconceived concepts but rather all categories used by this grammar are established on distributional grounds and all attempts have been made to explicitly define all categories used in the grammar. It is my hope that this will lead to a greater usability and relevance of the grammar for typologists and theoreticians alike.

Each chapter explicitly establishes all categories used in that chapter. Categories are defined by their participation in particular constructions. Each chapter categorises and exemplifies the constructions which define those categories. Both categories and constructions are established on language-specific grounds, then related to the extent possible to their cross-linguistic analogues.

Semantic interpretation is generally assumed to be constructional, that is, meaning must be derived from the interaction between the semantic properties of both lexical items and the constructions in which they appear. Semantics of both categories and constructions are discussed throughout the grammar. Where particularly relevant,

dedicated discussion is given to the semantic categories resulting from these interactions.

As already noted, Ngkolmpu displays strong tendencies to distribute morphological exponents across both multiple morphological sites and across the syntax. As such, it is usually impossible to establish any sub-word unit that might be labelled 'morpheme'. This has obvious theoretical and practical consequences. We shall discuss the theoretical consequences later in this section, however the most relevant issue pertains to the problem of providing explicit glosses. Following practice in other Yam languages (Evans, 2015a; Döhler, 2016), glosses for verbs are given as fully specified at the level of the word. Smaller units of analysis will only be invoked where needed, predominantly in Chapter 6. An example of this gloss is given in (1.2).

(1.2)   *Markusu ngko nmaeito beibentei*

Markus-w   ngko   nmaei=to   b\ruontn/y
Markus-SG.ERG 1SG.ABS   before=ADV   SG>1SG.HOD.PFV\tell

'Markus already told me.'

The first line is the orthographic representation. The second line is the morphologically segmented transcription. For segmentable words, this follows the practice in the Leipzig glossing rules. For verbs, the stem is separated from the other morphological material by a combination of slashes. The gloss line aligns segmental words and for verbs lists the features for the fully unified inflectional features. Arguments are separated by the symbol '>' which is used to indicate that the argument to the left is acting on the argument to the right. The full gloss for the example in (1.2) would be 'A singular argument acting on first person singular in the hodiernal past tense and in the perfective aspect'. The stem indicates the verb means 'to tell'.

The discussion in the second section of the thesis assumes a number of concepts from realisational approaches to morphology (Stump, 2001). As such, I assume there is no necessary isomorphism between morphological expression and morphosyntactic and semantic features, that is, that morphological structure is not nessasarily concatenative (Anderson, 1992) and that purely morphological categories may exist (Aronoff, 1994). I make the assumption that feature values are passed from the syntax-semantics

through to the morphosyntactic interface to be realised by the morphology at the morphophonological interface. The level of morphology may display its own level of organisation independent of other modules of grammar.

The approach taken in this thesis places this work squarely in the morphological tradition of Matthews (1974), Anderson (1992), Corbett and Fraser (1993), Brown and Hippisley (2012) and Stump (2001, 2016). However, the discussion in this book will largely use disciplined prose as a metalanguage rather than any symbolic formalism. It does not assume any familiarity with any particular formalism or framework and should be readable by anyone interested in the descriptive element of the grammar. All mechanisms used to capture morphological generalisations are established in the body of the work.

I make extensive use of morphosyntactic and semantic features which are used to precisely represent the variables required by the morphology. These are formalised as feature value pairs of the form: FEATURE:value. Thus, the present tense is formalised as TENSE:present. The grammar also makes use of morphomic features which are purely morphological features which have no correlates in either the syntax or the semantics (Aronoff, 1994) (Corbett, 2012, p. 50).

1.4 Relation to previous work

There had been little work on Ngkolmpu prior to this project. The most significant of prior research was conducted by Mark Donohue, including two published papers, a book chapter and a number of unpublished talks. Whilst this does not seem a great deal for an entire language, most other languages in the family had no previous linguistic description of any kind. In addition to Donohue's work, there are some earlier field notes collected by the Dutch missionary linguist Petrus Drabbe. These notes were published in Boelaars (1950) in the form of a 16 page sketch. From an ethnographic perspective, the only work specifically on any of the Kanum peoples is Nevermann (1939), which provides an interesting glimpse into pre/early-colonial life.

In this section, I outline Donohue's work on Ngkolmpu both to convey the previous state of description and to point readers to areas that my own work has not replicated

or where it differs from his. In the instances where Donohue's work and my own cover similar ground, a discussion of the differences between analyses will be presented in the body of the thesis. Section 2.3 contains a discussion of the differences between our phonological analyses and Section 4.3.3 is a discussion of the differences between Donohue (2011) and my own analysis of nominal syntax in Ngkolmpu. In this section, I focus on published materials, leaving unpublished work aside. By means of overview, Donohue conducted fieldwork in the Wasur region in 1996 for a period of two months. During that time, he collected an impressive amount of data including numerous verbal paradigms. Speakers in the village report that Donohue primarily worked with the father of Mama Magdalena Ndiken, see above, who is now deceased. It is worth noting the difference in the time between Donohue's fieldwork and my own; my findings do not always align with Donohue's and they potentially represent various changes in progress. These could be the result of a language loss situation or to do with the fact that I have worked with a younger generation of speakers.

Donohue (2008a) is a description and discussion of the unusual senary, i.e. base-6, numeral system used in Ngkolmpu. In that paper, Donohue describes Ngkolmpu as displaying three series of numerals. A simple system containing the numbers 1 to 6, a moderate system allowing for an extension up to 12 and a complex system with numerals up to 6^5 (7776). These three sets are reproduced in Table 1.2. These are reproduced in Donohue's orthography; see Section 2.6 for the differences between Donohue's and my own.

Senary number systems are common across all Yam languages and are typically used during yam counting ceremonies. However, my observations suggest that this is becoming quite rare for both Ngkolmpu and Smerky speakers, who primarily use Indonesian numerals in this context alongside traditional languages. In these instances, speakers typically count out the first batch of 36 in Ngkolmpu or Smerky and then begin the count in earnest using Indonesian. It is clear that people are considerably less familiar with the numeral systems and most people only know the first six numbers, i.e. the simple system in Donohue's terms. However, my findings somewhat contrast with Donohue's description and are presented in Table 1.3. The numerals that speakers have confirmed with me correspond with Donohue's simple set for the numbers

Value		Simple	Moderate	Complex
1		naempr	aempy	aempy
2		yempoka	ynaoaempy	ynaoaempy
3		ywow	ylla	ylla
4		eser	eser	eser
5		swabra	tampwy	tamp
6	6^1	swy	traowao	ptae
7			psymery aempy	aempy ptae
8			psymery ynaoaempy	ynaoaempy ptae
9			psymery ylla	ylla ptae
10			psymery eser	eser ptae
11			psymery tampwy	tamp ptae
12			psymery traowao	tarwmpao
18				ntamnao
24				wramaekr
36	6^2			ptae
216	6^3			tarwmpao
1296	6^4			ntamnao
7776	6^5			wramaekr

Table 1.2: Numeral systems as presented in Donohue (2008)

Value		Numeral
1		naempr
2		yempoka
3		yuow
4		eser
5		tampui
6	6^1	traowo
36	6^2	ptae
216	6^3	tarumpao
1296	6^4	ntamnao
7776	6^5	ulamaeke

Table 1.3: Numeral system

1-4, whilst the numbers 5 and 6 correspond to the moderate set. Larger numbers are still remembered by some older members of the community with some key differences from Donohue (2008a). Even when these older speakers recite the larger numbers they still follow other speakers numbers for 1 to 6. The larger numbers mostly correspond to Donohue's complex set although without the use of *ntamnao* for 18 and *wramaekr* for 24.

Donohue (2011) describes the nominal syntax of Ngkolmpu noun phrases. In that paper, he describes a system of discontinuous case marked noun phrases which are the result of a scrambling procedure. This is another feature which appears not to correspond with contemporary usage of the language. The differences are quite extreme and the only discontinuous elements of nominal constructions that I observed related to the separation of the nominal phrases and their determiners regardless of whether they are case marked or not. Nominal syntax is discussed in Chapter 4 and the differences between Donohue (2011) and my own work are covered in Section 4.3.3.

Finally, (Donohue, 2015) is a discussion of the morphological complexity of the inflectional prefixes of verbs. This discussion, in many ways, mirrors the discussion presented in Chapter 9. In his chapter, Donohue argues for a conception of morphological complexity that corresponds to a notion of opacity, i.e. a language is more complex if its morphology is not isomorphic with the features that it realises. The prefixes of the

verbal system are then analysed as undergoing a series of morphological takeovers, or referrals, to account for the complex syncretism that exists in the paradigm. I largely agree with Donohue's analysis except to note that the data presented in his chapter is largely incomplete. Donohue only describes a system with five tenses and does not describe the system as containing any aspect, mood or pluractionality. This actually creates more complexity in Donohue's analysis since various elements he describes as complex are inflecting features that he is unaware of in that chapter.

1.5 Outline of thesis

This thesis is divided into two distinct sections which will naturally appeal to different readers. However, the typological and theoretical discussions of the second section are presented in such a way to be general interest to all linguists.

The first section contains a description of the language's phonology, morphology and nominal and clausal syntax. Complex clause structure is not a particularly prominent feature of the language generally however some aspects are discussed Chapters 3 and 8.

Chapter 2 contains the description of the phonology. It sets out the phonemic inventory of the language and lists their distribution and phonetic realisations. It establishes a set of phonotactic constraints and describes the system of epenthesis and morphophonological process. It also contains a discussion of the orthography.

Chapter 3 is a description of the nominal morphology of the language. It largely focuses both on noun formation, which is rather scarce, and the elaborate inflectional case system including two grammatical cases and ten semantic cases. This chapter also lists the forms of the various pronoun and demonstrative elements.

Chapter 4 establishes the word class of nominals and its subclasses. It also lists all nominal constructions. Nominal constructions display a number of interesting features including discontinuity in response to various information structure contexts.

Chapter 5 sets out the various valency-related constructions in the language. These are the most prominent element of clause-level syntax in the language and many verbs

have corresponding alternates between a number of constructions. The chapter also organises the set of lemmas into classes based on the distribution of lexemes over valency constructions. In addition, it describes the syntax and semantics of valence alternations.

Chapter 6 describes the morphological structure of verbs, both lexical and inflectional, although it leaves stems until Chapter 7. Verbs are classified into classes based on their inflection locus, as either prefixing or ambifixing. Each of these classes is broken down into a number of inflectional sites based on the distribution of inflectional material and each of these sites is listed in turn.

Chapter 7 describes the distribution of verb stems. Verbs may have up to three stems which alternate according to a complex interaction of aspect and verbal number. This chapter sets out each of these categories and demonstrates the categorical independence of aspect, verbal number and nominal number. It also examines the status of these features as either lexical or inflectional.

The second section is an exploration of the phenomena of distributed exponence and its related structures in other levels of the grammar.

Chapter 8 provides an explicit description of the distributed exponence of the locality and extent that inflectional, syntactic and semantic features are distributed across systems in Ngkolmpu. The chapter also frames this discussion within the existing literature on morphological complexity.

Chapter 9 is an explicit description of the inflectional morphology of verbs, with distributed exponence in mind. Most significantly, this description is completed in line with the theoretical tradition of realisational morphology. Its goal is to explore the impact this phenomena has on current thinking about the structure of morphology and it argues for a level of morphological autonomy at each point of inflection, i.e. the subparadigm.

Part I

Grammar

Chapter 2

Phonology

This chapter sets out the phonemic inventory of consonants (2.1) and vowels (2.2) and describes their distribution and phonetic realisation. It establishes a set of phonotactic constraints (2.4) which are organised around a phonetic syllable structure. This structure is essential for describing the extensive process of epenthesis (2.4.1). The chapter also sets out the morphophonemic processes which interact with the phonotactics (2.5). The chapter concludes with a discussion of the orthography (2.6).

There are a number of particularly salient features of the phonetics and phonology of Ngkolmpu worth mentioning here. The first is the presence of prenasalised voiceless stops which are a prominent feature of the consonant system. These are a relative typological rarity occurring in 3% of the 3776 languages listed in the Word Phonotactics Database (Donohue, Hetherington, McElvenny, & Dawson, n.d.), with that number reduced to 0.6% for languages which have prenasalised voiceless stops but not prenasalised voiced stops. These numbers appear especially small when compared to voiced prenasalised stops which are described for 17.7% of languages. Another highly salient feature is the extent to which vowels are not specified at the level of the phonology but rather inserted through a process of epenthesis. This is a common feature of Yam languages (Evans & Miller, 2016; Döhler, 2016) and has also been described for other Papuan languages, most notably Kalam (Blevins & Pawley, 2010). The final feature which gives the sound system its particular characteristic is the extensive presence of underspecified phonemes which only occur in the affixes of the language.

These underspecified phonemes which may be realised as either high vowels or glides depending on the phonotactic context.

2.1   Consonants

Table 2.1 sets out the consonants for Ngkolmpu. The orthographic representations of each phoneme have been included in angled brackets next to the phonemic representation. The orthography, which partially accommodates to Indonesian orthography, is a mixture of phonemic and phonetic, as such the phoneme /ns/ has multiple orthographic symbols corresponding to its allophonic variants.

All but one consonant are located at three possible places of articulation, bilabial, alveolar and velar. The single exception is the palatal glide /j/. The table of consonants is organised with the series of consonants: bilabial, coronal and velar. The labiovelar approximant /w/ has been included in both the bilabial and velar positions in the chart as it is a single co-articulated phoneme.

Phonotactically there is a core distinction between obstruents and non-obstruents. Obstruents may only occur in syllable-initial position. They never occur in second position in clusters and may only occur in codas word-finally. Non-obstruents are unrestricted in their distribution and may occur in all syllable positions as long as they satisfy the other phonotactic constraints.

The primary distinction in the stop series is not voicing but rather nasalisation with a voiceless stop series and a prenasalised series at all three places of articulation. There are also basic nasal stops at the bilabial and alveolar positions. There is a single voiced stop in the bilabial position. There is a voiced velar stop but this is only found in loan words. There are two voiceless alveolar fricatives, one of which is prenasalised. The prenasalised fricative has two different orthographic representations based on allophonic realisation.

The non-obstruent consonants include a trill /r/ which is sometimes realised as a tap [ɾ] and a lateral /l/. There are also two glides, the labiovelar approximant /w/ and the palatal /j/.

	Bilabial		Coronal		Velar	
Voiceless stop	p	\<p\>	t	\<t\>	k	\<k\>
Prenasalised stop	^{m}p	\<mp\>	^{n}t	\<nt\>	^{ŋ}k	\<ngk\>
Nasal	m	\<m\>	n	\<n\>		
Voiced stop	b	\<b\>			(g)	\<g\>
Fricative			s	\<s\>		
Prenasalised fricative			^{n}s	\<ns\>,\<nc\>		
Trill			r	\<r\>		
Lateral			l	\<l\>		
Glides	w	\<w\>	j	\<y\>	(w)	

Table 2.1: Phonemic inventory of consonants

There is also a phonetic glottal stop inserted before vowel initial words. This element is not considered phonemic as it is not found elsewhere in the system and its distribution is entirely predictable.

2.1.1   Obstruents

2.1.1.1   Stops

There are three voiceless stops, /p/ /t/ and /k/, which correspond to three places of articulation, bilabial, alveolar and velar. These occur in syllable-initial position both word-initially and word-medially. They also occur in coda position word-finally. Typically, these consonants have a long VOT with a fairly obvious aspiration (Table 2.2). When following continuant consonants across syllable boundaries the VOT is reduced and they are realised as tenuis voiceless stops without this aspiration. When occurring word-finally there a typically an exaggerated release, represented here with a capital H.[1] In all allophones these elements are phonetically voiceless and the distinction between allophones is a matter of degree of aspiration. The alveolar /t/ is sometimes articulated as a dental [t̪]; this is phonologically unconditioned and certain speakers will typically prefer one or the other but never a single one exclusively.

---

[1]I am using a non-standard representation here as there is no existing mechanism in the IPA for representing degree of aspiration.

/p/ →
$\begin{cases} [p] & / \quad C\_ & \textit{kolpi} & [\text{ˈkɔlpi}] & \text{'type of fish'} \\\\ [p^H] & / \quad \_\# & \textit{ntop} & [^ntɔːp^H] & \text{'big'} \\\\ [p^h] & / \quad \textit{elsewhere} & \textit{pr} & [p^hə̆r] & \text{'tree'} \\\\ & & \textit{tepi} & [\text{ˈtɛp}^hi] & \text{'just'} \end{cases}$

/t/ →
$\begin{cases} [t] & / \quad C\_ & \textit{mpltangku} & [^mp^hə̆ltaᵑk^hu] & \text{'fly (noun)'} \\\\ [t^H] & / \quad \_\# & \textit{kmput} & [kə̆ˈ^mput^H] & \text{'prize yam'} \\\\ [t^h] & / \quad \textit{elsewhere} & \textit{teya} & [\text{ˈt}^h\text{ɛya}] & \text{'banana'} \\\\ & & \textit{kota} & [\text{ˈk}^h\text{ɔt}^h\text{a}] & \text{'grass'} \end{cases}$

/k/ →
$\begin{cases} [k] & / \quad C\_ & \textit{mlko} & [mə̆lkɔ] & \text{yam for seed} \\\\ [k^H] & / \quad \_\# & \textit{imerk} & [^jimɛrk^H] & \text{'he follows him'} \\\\ [k^h] & / \quad \textit{elsewhere} & \textit{kkae} & [k^hə̆ˈk^hæ] & \text{'melaluca'} \end{cases}$

Phonetically, voiceless stops exhibit a complete occlusion of the vocal tract which characterises the stop. Once released there is a period of time before the onset of voicing for the following vowel (ᴠᴏᴛ). Spectrographs of each of the voiceless stops in intervocalic position are provided in Figures 2.1-2.3 in which the voiceless quality is clearly visible. The average length of the voice onset time of each of the voiceless stops across the phonotactic environments is summarised in Table 2.2. For the word-initial and intervocalic positions this is an average over 20 tokens; following a consonant this is an average over three tokens since this is a much more restricted environment. This is for

0.786741757   1.49179287
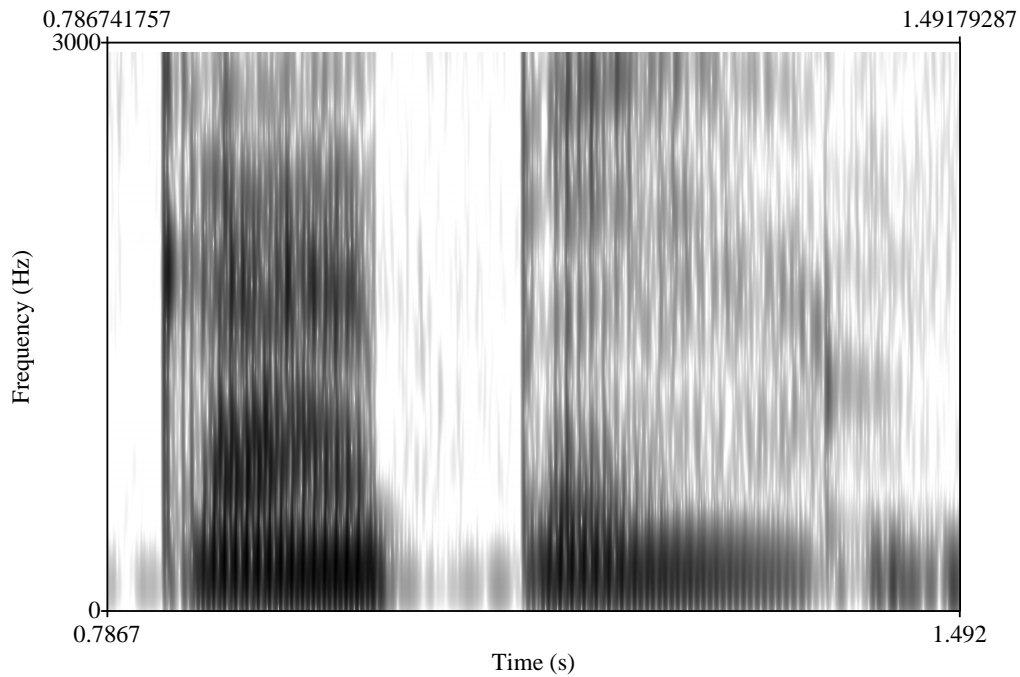
Figure 2.1: Spectrogram of *kaepe* 'cockatoo' spoken by KD

a single speaker (ML). This is measured to four decimal places of second. We can see the length of the VOT is dependent on the place of articulation with anterior consonants displaying shorter VOT as is typical cross-linguistically (Maddieson, 1999). In addition, we can see that stops following another consonant have a reduced VOT and are best described as tenuis voiceless stops.

	#_	V_V	C_V
/p/	0.0287	0.0318	0.0181
/t/	0.0305	0.0379	0.0212
/k/	0.0450	0.0414	0.0234

Table 2.2: Average voice onset time (s) of voiceless stops for a single speaker (ML)

There is a single voiced stop /b/. This occurs in syllable-initial position both word-initially and word-medially. It occurs in coda position word-finally. Phonetically, it is distinguished from the voiceless stop /p/ by being voiced throughout the articulation as clear in the spectrogram in Figure 2.4. It has no allophonic variation. There are numerous minimals pairs between /b/ and /p/ which can be found in Table 2.4. It is

0.279121119
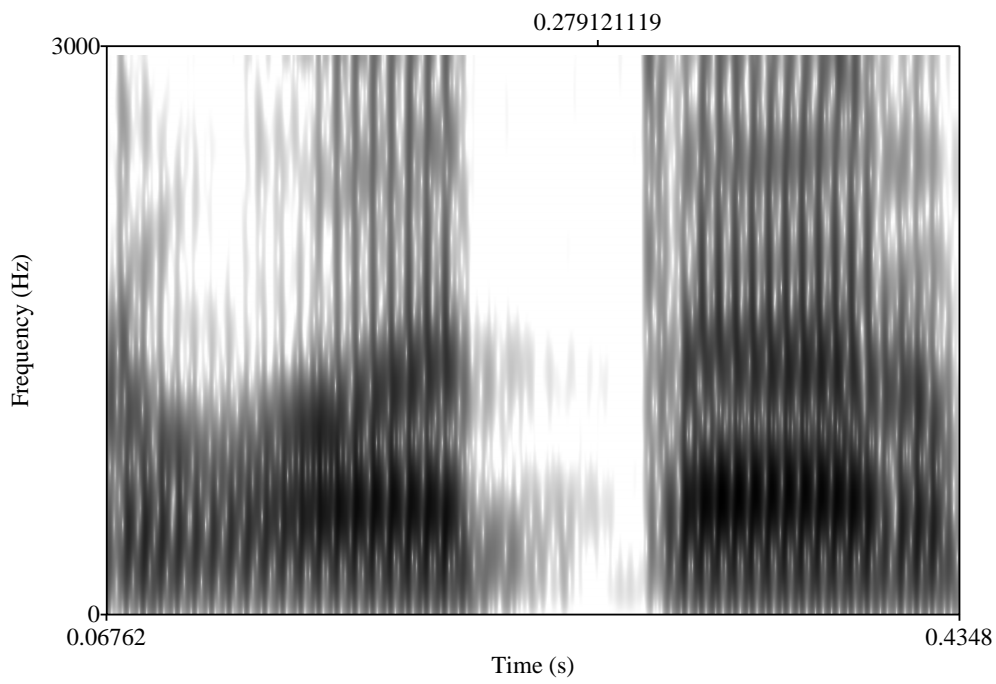
Figure 2.2: Spectrogram of *waotaor* 'year' spoken by YG

0.0402378831   0.453555615
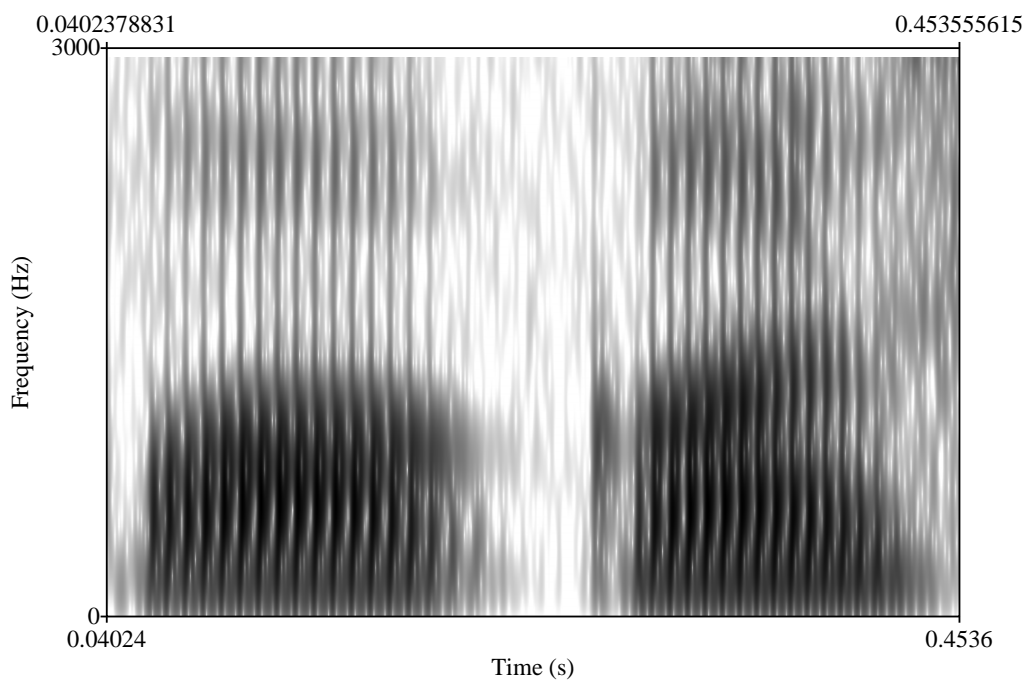
Figure 2.3: Spectrogram of *pokos* 'excellent' spoken by KD
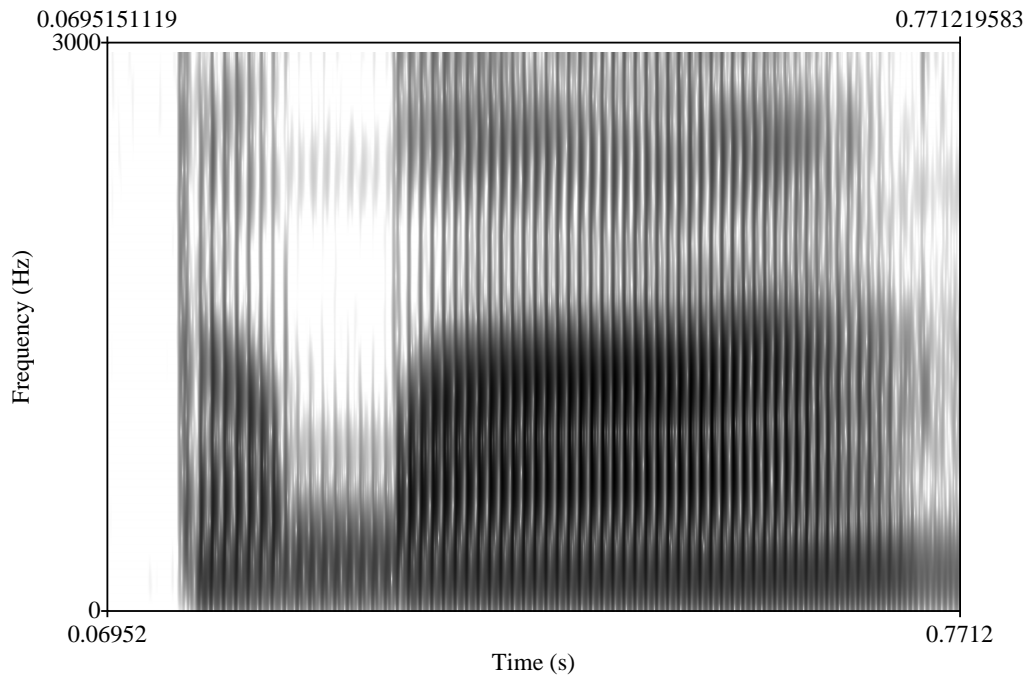
Figure 2.4: Spectrogram of *toba* 'many' spoken by YG

the only native voiced stop.

$$/b/ \rightarrow \begin{cases} [b] & \begin{array}{lll} \textit{br} & \text{[bɜ̆r]} & \text{'canoe'} \\ \textit{kober} & \text{[kɔbɛr]} & \text{'fat'} \\ \textit{sb} & \text{[sɜ̆b]} & \text{'not yet'} \end{array} \end{cases}$$

There is a marginal voiced velar consonant /g/. This is only found in a few loan words although some of these are very commonly used. These include /tgu/ *tegu* 'leg' from Marori, /ngu/ *negu* 'cloth' from Marind and /garam/ *garam* 'salt' from Indonesian. However, speakers are clearly aware of the distinction between the /g/ and the /k/ and any attempt to use /k/ in these words is corrected. This voiced element has clearly entered the system as the voiced member of a pair through the gap in the system. This contrast gives further support to the argument that the standard stop series is underlyingly voiceless rather than unspecified for voice. Phonetically this is characterised identically to the voiceless velar stop except with continued voicing for the duration of the articulation.

2.1.1.2   Prenasalised stops

There are three prenasalised voiceless stops, /ᵐp/ /ⁿt/ and /ᵑk/, which correspond
to three places of articulation, bilabial, alveolar and velar. These display the same dis-
tribution as the standard voiceless stops. They occur in syllable-initial position both
word-initially and word-medially. They also occur in coda position word-finally. As
with the voiceless stops, phonetically these consonants have a long VOT and are aspi-
rated by default. When following continuant consonants the VOT is reduced and they
are tenuis. Word-finally they are more heavily aspirated.

$$
/\text{ᵐp}/ \rightarrow \begin{cases} [\text{ᵐp}] & / \;\; C \_ & \textit{Ngkolmpu} & [\text{ˈᵑkʰɔlᵐpu}] & \text{‘Ngkolmpu’} \\\\ [\text{ᵐpH}] & / \;\; \_ \# & \textit{kongkomp} & [\text{ˈkɔᵑkɔᵐpH}] & \text{‘time’} \\\\ [\text{ᵐpʰ}] & / \;\; \textit{elsewhere} & \textit{mpowr} & [\text{ᵐpʰowǎr}] & \text{‘cassowary’} \\ & & \textit{sempo} & [\text{ˈsɛᵐpʰɔ}] & \text{‘again’} \end{cases}
$$

$$
/\text{ⁿt}/ \rightarrow \begin{cases} [\text{ⁿt}] & / \;\; C \_ & \textit{orntoi} & [\text{ɔrⁿtoʲ}] & \text{‘to peel’} \\\\ [\text{ⁿtH}] & / \;\; \_ \# & \textit{pant} & [\text{paⁿtH}] & \text{‘platform’} \\\\ [\text{ⁿtʰ}] & / \;\; \textit{elsewhere} & \textit{ntop} & [\text{ⁿtʰɔp}] & \text{‘big’} \\ & & \textit{sento} & [\text{ˈsɛⁿtʰɔ}] & \text{‘bird’} \end{cases}
$$

$$/{}^{ŋ}k/ \rightarrow \begin{cases} [{}^{ŋ}k] & / \quad C\_ & \textit{olngkolai} & [ɔl{}^{ŋ}kɔla^{j}] & \text{'to stab'} \\\\ [{}^{ŋ}k^{H}] & / \quad \_\# & \textit{mpngk} & [{}^{m}p^{h}ə̃{}^{ŋ}k^{H}] & \text{'cold'} \\\\ [{}^{ŋ}k^{h}] & / \quad \textit{elsewhere} & \textit{ngko} & [{}^{ŋ}k^{h}ɔː] & \text{'1SG.ABS'} \\\\ & & \textit{kongko} & [\'kɔ{}^{ŋ}k^{h}ɔ] & \text{'sun'} \end{cases}$$

Rather unusually, these prenasalised stops are voiceless for the oral portion of the articulation. Phonetically, these involve a period in which there is a full oral occlusion at the place of articulation with the soft palate lowered and the velum open for a period of nasal voicing. Before the stop is released the voicing ceases and the velum rises, stopping the nasalisation. The consonant is then released and there is a period of time before the voicing begins for the following vowel, the VOT. Spectrograms have again been provided for these stops in intervocalic position in Figures 2.5-2.7. The voiceless quality is clearly visible in the spectrograms. The duration of voiceless appears shorter than the previous examples, however this is a result of the longer words used as tokens in these examples. To confirm this, the VOT for prenasalised consonants displays an almost identical duration to the standard voiceless stop. The average VOTs for all phonotactic positions for prenasalised stops are presented in Table 2.3. These are the average of 20 tokens for word-initial and intervocalic positions and just three of post-consonant position as these are more restricted examples. These are clearly phonetically voiceless for the stop period which is a typological rarity to do the complexity of the articulation. Note however that the voiceless period is only for the stop part of the phoneme and not for the nasalisation.

It is important to note here that when these sounds are word-medial and follow a consonant, i.e. following a closed syllable, there is a phonetic tendency to lenite the stop, which can drastically reduce the VOT. These clusters are rather infrequent in the language with only a few tokens of each, however as we can see in Table 2.3 for the examples that are available there is a shortening of VOT by around 30% compared to word-initial position. In the cases of the bilabial stops this reduces the VOT to around
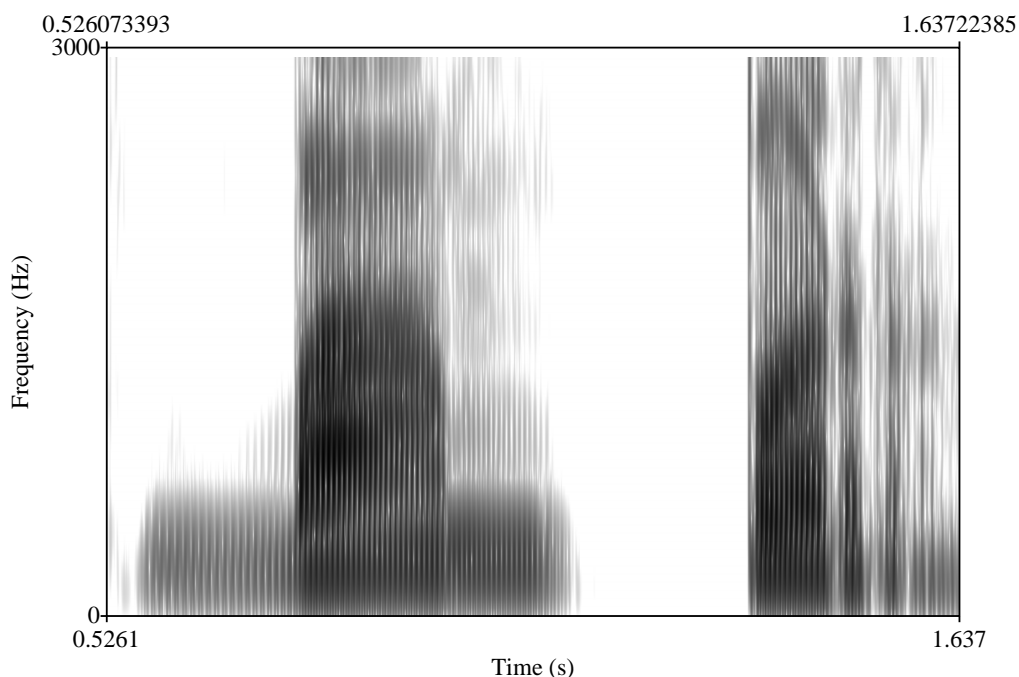
Figure 2.5: Spectrogram of *baempr* 'snake' spoken by KD

15ms. This is extremely short and difficult to hear, but is still greater than zero and therefore characterised as voiceless.

	#_	V_V	C_V
/^{m}p/	0.0224	0.0293	0.0159
/^{n}t/	0.0246	0.0268	0.0173
/^{ŋ}k/	0.0367	0.0347	0.0259

Table 2.3: Average VOT in seconds of prenasalised stops for a single speaker (ML)

Prenasalised elements are single phonemes rather than sequences of phonological nasal + obstruent[2]. We can see this with evidence from the phonotactics, phonetics and the general organisation of the phonemic inventory. The first simple evidence comes from the fact that there is no independent phoneme /ŋ/ yet /^{ŋ}k/ is one of the most frequent sounds in the language. This is only suggestive, however, as there could be a place of articulation assimilation on nasal + obstruent sequences. The second piece of evidence comes from duration. The prenasalised segments are longer than a stan-

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[2]A prenasalised alveolar fricative is discussed in Section 2.1.1.5 which is analysed the same as these element.

0.380391331   1.04937003
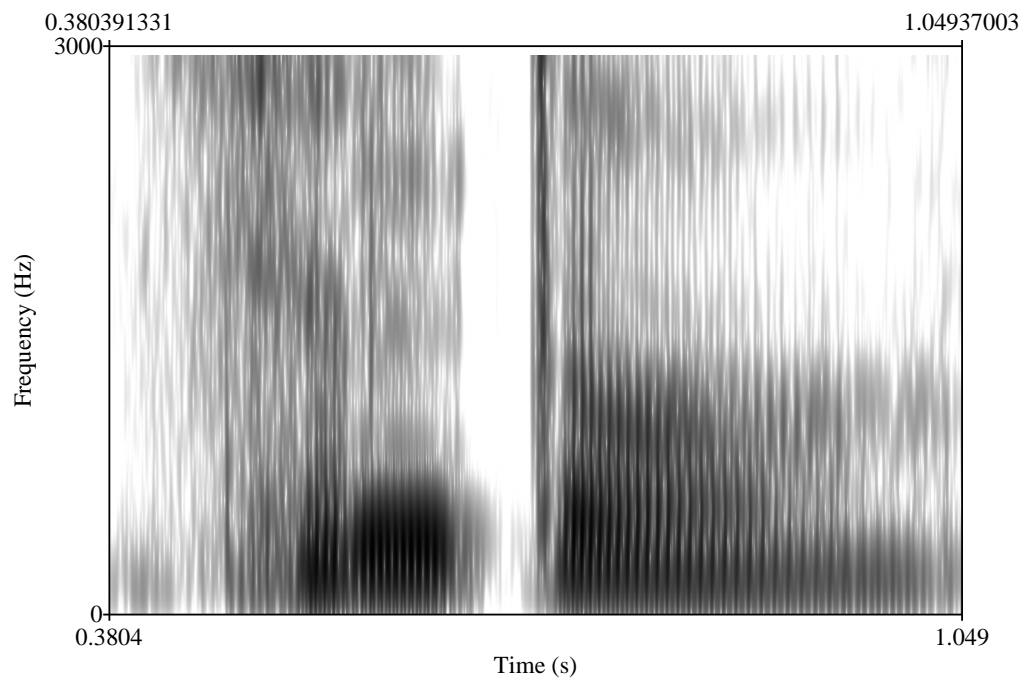
Figure 2.6: Spectrogram of *sento* 'bird' spoken by YG

0.042173191   0.529287721
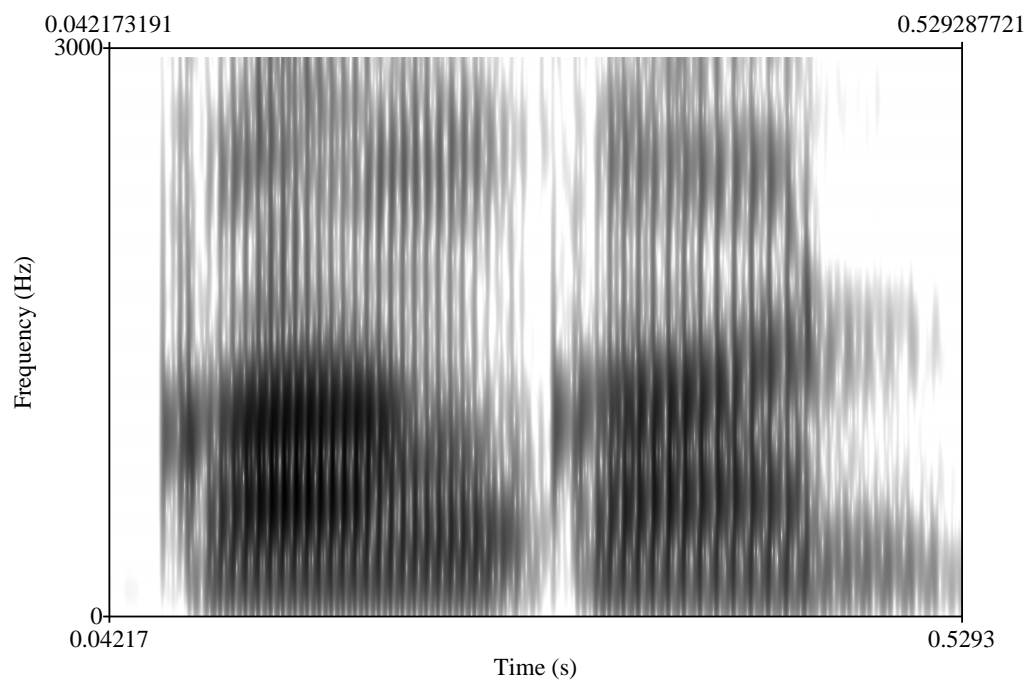
Figure 2.7: Spectrogram of *kongkod* 'sago beater' spoken by YG

dard stop voiceless stops, at around 97ms for a prenasalised stop and 89ms for a voiceless stop over 20 tokens of a single speaker (ML). Yet this is considerably shorter than the combination of a nasal + a stop which is around 167ms. This is fairly typical of these elements cross-linguistically (Ladefoged & Maddieson, 1996, 120). Finally, the strongest evidence comes from the phonotactics, which treats these elements as a single unit. Phonotactics are discussed in Section 2.4 and in that section I demonstrate that all clusters must involve elements which are at least two steps apart on a sonority hierarchy. The sequence of nasal + stop does not meet such a criteria and is thus an illicit cluster. However, as we have seen, these frequently occur in the form of prenasalised stops. If these elements were a sequence of nasal + stop then it should trigger the insertion of an epenthetic vowel and this is what happens when such a cluster occurs, typically as a result of inflection. In example (2.1) we see that the sequence of nasal + stop sequence at the same place of articulation occurs phonemically as the result of inflection. However, in the phonetic realisation these are always separated by an epenthetic vowel. Compare this to the prenasalised elements in (2.2) which are not epenthesised in almost identical contexts.

(2.1)   a. /n-tinpitr/ → [**nə̆.'t**i.nə̆.pi.tə̆r] SG>2SG.PRS.DUR.cover

b. /ᵑkrɛmun-t/ → [ᵑkrɛ.mu.**nə̆t**] ngkremun-PURP (a ceremonial food)

(2.2)   a. /ⁿtɔp/ → [ⁿtɔpʰ] 'big'

b. /paⁿt/ → [paⁿtʰ] 'platform'

2.1.1.3   Nasals

There are two nasal stops, the bilabial /m/ and the alveolar /n/. There is no corresponding velar nasal. These display no allomorphy. They occur in syllable-initial position word-initially and word-medially. They also occur in codas word-finally.

/m/ → { [m]   *mr*   ['mə̆r]   'neck'

knume   ['kə̆numɛ]   'kanum'

prnm   ['pʰə̆rnə̆m]   'with a stick'

$$/\mathrm{n}/ \rightarrow \begin{cases} \quad & \begin{array}{lll} \textit{nel} & [\text{'n}\varepsilon\text{l}] & \text{`earth'} \\ [\mathrm{n}] & \textit{ngkremun} & [\text{'}^{\eta}\text{kr}\varepsilon\text{mun}] & \text{`sago w. meat'} \\ & \textit{kamplen} & [\text{'k}^{\text{h}}\text{a}^{\text{m}}\text{pl}\varepsilon\text{n}] & \text{`bag'} \end{array} \end{cases}$$

Phonetically, these consist of a full oral closure at the place of articulation with an open velum allowing air to pass into the nasal cavity. The duration of the entire articulation is voiced and as such there is no onset time.

2.1.1.4 Alveolar fricative

The voiceless alveolar fricative /s/ occurs in initial syllable position word-initially and word-medially. It also occur in codas word-finally. The /s/ displays no allophony.

$$/\mathrm{s}/ \rightarrow \begin{cases} \quad & \begin{array}{lll} \textit{sumpl} & [\text{'su:}^{\text{m}}\text{p}^{\text{h}}\text{\v{ə}l}] & \text{`yam'} \\ [\mathrm{s}] & \textit{eser} & [\text{'}\varepsilon\text{s}\varepsilon\text{r}] & \text{`four'} \\ & \textit{bos} & [\text{b}\text{ɔ}\text{s}] & \text{`pandanus type'} \end{array} \end{cases}$$

Phonetically the /s/ is slightly more fricated than /s/ in English. This is not a true affricate in that there is a point of complete occlusion, however the tongue is raised slightly closer to the alveolar ridge than a typical fricative, which creates a higher level of frication.

2.1.1.5 Prenasalised alveolar fricative

There is also a prenasalised alveolar fricative /ⁿs/. It occurs in syllable initial position word-initially and word-medially. This phoneme occurs in codas word-finally. It has the allophone [ⁿt͡ʃ] when occurring before the front vowels /i/ and /ɛ/ and before consonants in complex onset clusters.

$$/^\text{n}\text{s}/ \rightarrow \begin{cases} [^\text{n}\widehat{\text{t}\int}] \quad / \quad \_ \text{[+front]} \\[2em] [^\text{n}\widehat{\text{t}\int}] \quad / \quad \_ \text{C} \\[2em] [^\text{n}\text{s}] \quad / \quad \textit{elsewhere} \end{cases}$$

mpunce	[ˈᵐpʰuⁿt͡ʃɛ]	'wife'
ncuen	[ⁿt͡ʃʷən]	'1NSG.DAT'
oncrekai	[ɔⁿt͡ʃrɛkʰaʲ]	'to wake'
nson	[ⁿson]	'1SG.DAT'
konsapor	[ˈkɔⁿsapʰɔr]	'day'
yons	[yɔⁿs]	'meat'

Phonetically there are two elements worth noting. Firstly, that as with the standard alveolar fricative /s/ this prenasalised alveolar fricative is also slightly affricated compared to English. The level to which this occurs appears to vary between speakers. This higher energy frication can easily be explained due to the nature of prenasalisation. In this consonant there is a period of oral closure in which the velum is lowered for the nasalisation. After this short period of nasalisation, the oral closure is released and the the fricative is articulated. This release naturally has some fortition effect on the quality of the fricative. However it should be noted that whilst the fricative form is more fortis than in English it is still considerably less affricated than its allophone [ⁿt͡ʃ].

This phoneme and its allophone are phonetically voiceless. As with the prenasalised stops there is a period of voiced nasalisation which is followed by a clear period of voicelessness before the release until the voicing commences again for the vowel. The average VOT across 20 tokens for speaker KD for [ⁿs] was 0.0292 of a second and for [ⁿt͡ʃ] was 0.0289 of a second. These figures are comparable to the other voiceless consonants.

2.1.2 Non-obstruents

2.1.2.1 Trill

There is an alveolar trill /r/ which is often realised as an alveolar tap [ɾ] depending on speech rate. It occurs in onset position word-initially and word-medially. It occurs in codas word-internally and word-finally. When occurring in second position in onset clusters it is always tapped as [ɾ].

$$/r/ \rightarrow \begin{cases} [ɾ] & / \ \ \text{C\_} & prok & [\text{ˈpɾɔk}^\text{h}] & \text{'hunger'} \\ \\ [r]{\sim}[ɾ] & / \ \ elsewhere & rekum & [\text{ˈrɛk}^\text{h}\text{um}]{\sim}[\text{ˈɾɛk}^\text{h}\text{um}] & \text{'fish.type'} \\ & & kure & [\text{ˈk}^\text{h}\text{urɛ}]{\sim}[\text{ˈk}^\text{h}\text{uɾɛ}] & \text{'flute'} \\ & & trmpo & [\text{ˈtɤ̆r}^\text{m}\text{p}^\text{h}\text{ɔ}]{\sim}[\text{ˈtɤ̆ɾ}^\text{m}\text{p}^\text{h}\text{ɔ}] & \text{'mouth'} \\ & & pr & [\text{p}^\text{h}\text{ɤ̆r}]{\sim}[\text{p}^\text{h}\text{ɤ̆ɾ}] & \text{'tree'} \end{cases}$$

2.1.2.2 Lateral

The lateral approximant /l/ may occur in all positions within the word. It occurs in onsets in both C_1 and C_2 positions both word-initially and word-medially. It also occurs in codas word-medially and word-finally. It does not display any allophonic variation.

$$/l/ \rightarrow \begin{cases} & liko & [\text{ˈliːk}^\text{h}\text{ɔ}] & \text{'river'} \\ & kelimu & [\text{ˈkɛlimu}] & \text{'forest'} \\ [l] & plen & [\text{ˈplɛn}] & \text{'basket'} \\ & kamplen & [\text{k}^\text{h}\text{aˈ}^\text{m}\text{plɛn}] & \text{'bag'} \\ & Ngkolmpu & [\text{ˈ}^\text{ŋ}\text{k}^\text{h}\text{ɔl}^\text{m}\text{pu}] & \text{'Ngkolmpu'} \\ & nel & [\text{nɛl}] & \text{'earth'} \end{cases}$$

Phonetically the /l/ is pronounced with the tip of tongue slightly further back in the mouth than the English /l/. However it is never pronounced so far back that it is a

retroflex.

2.1.2.3   Glides

The two glides /w/ and /j/ occur in onsets in both C_1 and C_2 positions both word-initially and word-medially. They also occur in codas word-medially and word-finally. In coda position they are realised as an off-glide. In C_2 position when following a continuant and preceding an inserted epenthetic schwa they are typically realised as slightly more syllabic, represented here as a on-glide, with the inserted schwa clearly audible. Whilst these are not true diphthongs they are acoustically very similar.

$$/w/ \rightarrow \begin{cases} [^w\_] & / & [\text{+continuant}]\_\text{ə} \mid_\sigma & \textit{ncuen} & [^n\widehat{\text{tʃ}}]^w\text{ə̆n}] & \text{1NSG.ERG} \\\\ [\_^w] & / & \text{V}\_\mid_\sigma & \textit{owkoi} & [\text{ˈɔ}^w\text{kɔ}^j] & \text{'to see'} \\\\ [\text{w}] & / & \textit{elsewhere} & \textit{wola} & [\text{ˈwɔla}] & \text{'sea'} \\ & & & \textit{kwr} & [\text{kwə̆r}] & \text{'pig'} \end{cases}$$

$$/j/ \rightarrow \begin{cases} [^j\_] & / & [\text{+continuant}]\_\text{ə}\mid_\sigma & \textit{sient} & [\text{s}^j\text{ə}^n\text{t}] & \text{3.HOD.PFV.COP} \\\\ [\_^j] & / & \text{V}\_\mid_\sigma & \textit{taei} & [\text{tæ}^j] & \text{'patience'} \\\\ [\text{j}] & / & \textit{elsewhere} & \textit{yons} & [\text{yɔ}^n\text{s}] & \text{'meat'} \\ & & & \textit{mpiae} & [^m\text{pyæː}] & \text{'thing'} \end{cases}$$

2.1.3   Minimal Pairs

Table 2.4 shows the minimals pairs for consonants at similar places of articulation.

Phonemes	Word	Phonemic	Phonetic	Translations
/p/ - /ᵐp/	*powr*	/pɔwr/	[ˈpʰɔwə̆r]	'wash (n)'
	mpowr	/ᵐpʰɔwr/	[ˈᵐpɔwə̆r]	'cassowary'
/p/ - /b/	*pr*	/pr/	[pʰə̆r]	'tree/wood'
	br	/br/	[bə̆r]	'canoe'
/p/ - /m/	*po*	/pɔ/	[pʰɔː]	'coconut'
	mo	/mɔ/	[mɔː]	'wallaby'
/ᵐp/ - /m/	*mper*	/ᵐpɛr/	[ᵐpʰɛr]	'husband'
	mer	/mɛr/	[mɛr]	'neck'
/b/ - /m/	*bi*	/bi/	[biː]	'buttocks'
	mi	/mi/	[miː]	'night'
/t/ - /ⁿt/ - /s/	*ni*	/ni/	[ni]	1NSG.ABS
	nti	/ⁿti/	[ⁿtʰiː]	'sick'
	si	/si/	[siː]	'eye'
/k/ - /ᵑk/	*kolmpu*	/kɔlᵐpu/	[ˈkɔlᵐpu]	'jaw'
	Ngkolmpu	/ᵑkɔlᵐpu/	[ˈᵑkɔlᵐpu]	'Ngkolmpu'
/s/ - /ⁿs/	*iso*	/isɔ/	[isɔ]	'(He) minces (it)'
	inso	/iⁿsɔ/	[iⁿsɔ]	'mucus'
/r/ - /l/	*br*	/br/	[bə̆r]	'canoe'
	bl	/bl/	[bə̆l]	'seed'
/w/ - /j/	*yere*	/wɛrɛ/	[ˈwɛrɛ]	'bright'
	were	/yɛrɛ/	[ˈyɛrɛ]	'older man (respectful)'

Table 2.4: Minimal pairs of consonants

2.2   Vowels

The vowel space of Ngkolmpu is summarised in Table 2.5. Vowels are divided into four height distinctions with a distinction between front, central and back. The lateral dimensions could be described as feature space involving binary values of two features front and back. The back vowels are all rounded. The mid-central vowel schwa ə is included in the charts as it is very prevalent in the language, however it is important to note that it is non-phonemic.

Front		Back
i \<i\>		u \<u\>
	(ə)	
ε \<e\>		ɔ \<o\>
æ	ɒ	
\<ae\>	\<ao\>	
	a \<a\>	

Table 2.5: Phonemic inventory of vowels

There are no diphthongs in Ngkolmpu at the level of the phonology. Any diphthong that occurs phonetically is the result of an off-glide or on-glide realisation of an approximant occurring in either the onset of coda as appropriate. These are typically written as a sequence of two vowels in the orthography however phonotactically they are non-syllabic, as discussed below.

2.2.1   Phonetic realisation of vowels

There is, of course, a certain amount of phonetic variation in the realisation of vowels. The high vowels /i/ and /u/ are sometimes realised as their near counterparts [ɪ] and [ʊ] respectively. The mid front and back vowels, /ε/ and /ɔ/ show some variation in height, occasionally being realised as [e] and [o] respectively. Vowels are typically lengthened in open monosyllabic words without codas although this is only a tendency. Figures 2.9 and 2.8 represent the mapping of the first and second formants of the vowels for a male and female speaker respectively for approximately 120 tokens across all
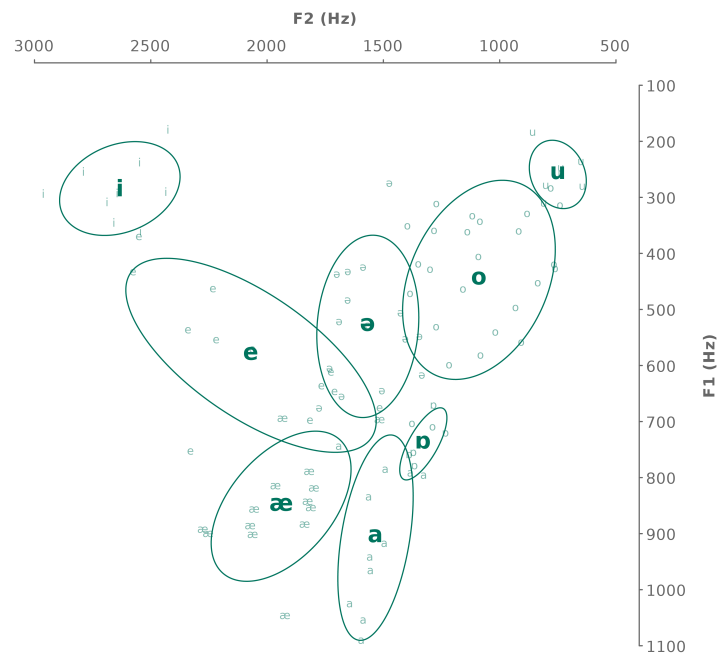
Figure 2.8: F1 vs. F2 plot for a single female speaker, ML

vowels.

2.2.2 Phonemic status of central vowel

The most frequent phonetic vowel in Ngkolmpu is a short central vowel, schwa [ə̆]. The occurrence of this vowel is entirely predictable, however, and therefore non-phonemic. The schwa is inserted to create syllable nuclei in otherwise illicit clusters according to a series of phonotactic constraints discussed in Section 2.4. In this section I simply argue for the non-phonemic status of schwa. The rules of insertion are handled in the section of phonotactics.

Epenthetic vowels such as these have been described for a number of Papuan languages, most famously in Kalam (Pawley, 1966) (Blevins & Pawley, 2010). However, similar systems have been described across the Yam family languages, in particular Komnzo (Döhler, 2016) and Nen (Evans & Miller, 2016). Under the typology presented in Hall (2006) the Ngkolmpu vowels would be considered 'epenthetic' rather than intrusive.
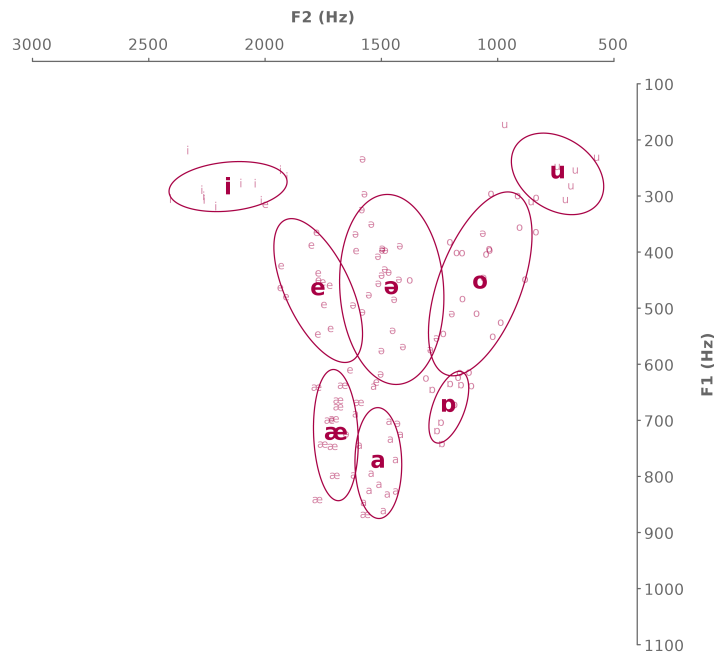
Figure 2.9: F1 vs. F2 plot for a single male speaker, KD

We can say that schwa is not phonemic since its occurrence is entirely predictable. Distributionally, schwa only ever occurs between illicit clusters and never occurs word-finally. It is the only vowel with this distribution. The strongest evidence for these vowels being epenthetic comes from resyllabification of stems in the presence of inflectional morphology. For example the stem for the verb *onekutrai* 'to kick', /nɛkutr/, ends with the illicit cluster *[tr]σ. Typically when this ends the word, such as in the present tense singular actor form, the illicit cluster is broken up with an epenthetic vowel (2.3). However, when this cluster is followed by a vowel, such as the present tense plural actor marker /-i/[3], the /r/ is reanalysed as part of an onset cluster (2.4). In this case we can see that the vowel cannot be present underlyingly; rather, it is inserted where appropriate after morphological material has been added.

(2.3)   /i-nɛkutr/ → [ʔi.ˈnɛ.ku.**tɚr**] 'He kicks him'

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[3]Note that this is actually the segment /J/ which is underspecified as to whether it is a vowel or a glide. However, it is always realised as a vowel in this position before the application of epenthesis so for simplicity's sake I have treated this as a vowel in this section. For a full account of this element see Section 2.3.

Phonemes	Word	Phonemic	Phonetic	Translation
/i/ - /ɛ/ - /æ/	*mi*	/mi/	[miː]	'night'
	me	/mɛ/	[mɛː]	'sweet'
	mæ	/mæ/	[mæː]	'breath (n)'
/a/ - /æ/	*kaikai*	/kaikai/	[kaʲkaʲ]	'feast (n)'
	kaeikaei	/kæikæi/	[kæʲkæʲ]	'skin'
/ɒ/ - /ɔ/	*pao*	/pɒ/	[pɒː]	'invitation'
	po	/pɔ/	[pɔː]	'coconut'
/a/ - /ɔ/	*pawr*	/pawr/	[pawr̆]	'young'
	powr	/pɔwr/	[pɔwr̆]	'bathe (n)'
/ɔ/ - /u/	*iso*	/isɔ/	[isɔ]	'(He) minces (it)'
	isu	/isu/	[isu]	'(He) folds (it)'

Table 2.6: Minimals pairs of vowels

(2.4)   /i-nɛkutr-i/ → [ʔi.ˈnɛ.ku.**tri**] 'They kick him'

2.2.3   Minimal Pairs

Table 2.6 sets out minimal pairs for closely articulated vowels. No minimal pair can be found for the pair /a/ and /ɒ/, however there are minimal pairs for the pair /a/ and /ɔ/ and the pair /ɔ/ and /ɒ/.

2.3   Underspecified Phonemes

In addition to the glides and high vowels, there are two underspecified segments that have no phonemic distinction between glides and high vowels. These elements are underspecified for their role in the syllable structure until they are placed within a phonotactic context. These are especially common in affixal material, however there is also evidence that they occur within stems as well. Those which occur adjacent to a

vowel are realised as a glide and are associated with either the onset or coda position according to the phonotactic rules in the following section. Those which do not occur adjacent to vowels are realised as vowels and assigned to the syllable nucleus position.

I will refer to these as underspecified phonemes, with the labels /J/ and /W/ as appropriate. These are assumed to be specified for position and lip-roundedness but lack any specification for syllabic features. The specification of syllabic features is applied before the other phonotactic process described above. These elements are extremely common in the inflectional morphology of Ngkolmpu and as such this process is one of the most salient features of the phonology of the language.

As stated, the underspecified phonemes when in the immediate presence of a vowel are realised as a glide and assigned to either the onset or coda position as appropriate. In the suffix position this is commonly word-final and thus the glide is assigned to the coda and realised as an off-glide as it is the typical phonetic realisation of glides in the C_3 position. When suffixed following a consonant the underspecified phoneme is realised as a vowel and therefore assigned to the nucleus position. If followed by a further vowel we would assume that the segment would be realised as a glide as an onset, however there are no circumstances where this occurs in the suffixing morphology.

(2.5)   a. /sɛⁿtɔ-W/ → [sɛ.ⁿtɔʷ] 'bird.ERG'

b. /ɔ-mku-J/ → [ʔɔm.kuʲ] 'fold.INF'

c. /krar-W/ → [kra.ru] 'dog.ERG'

d. /ɔ-merk-J/ → [ʔɔ.mɛr.ki] 'follow.MID.SG.HOD.DUR'

We see a similar pattern in prefixes. If the affixed underspecified phoneme is prefixed directly before a vowel it will be realised as non-syllabic and associated with the onset whereas before a consonant it will be realised as syllabic and associated with the nucleus position. This is commonly seen with the gamma series prefixes discussed in Section 6.7.1.2.

(2.6)   a. /sW-merk/ → [su.mɛrkʰ] SG>3.RCT.DUR.follow

b. /sW-æjbɛnt/ → [swæ^j.bɛ^{n}t] SG>3.RCT.DUR.tell

c. /Y-merk/ → [ʔi.mɛrk^h] SG>3.PRS.DUR.follow

d. /Y-æjbɛnt/ → [jæ^j.bɛ^{n}t] SG>3.PRS.DUR.tell

Underspecified phonemes never trigger epenthesis and so the association of these phones with either the vowel nucleus or the onset/coda is ordered before the epenthetic step in the algorithm.

There is clear evidence of distinct high vowels and glides in some environments, visible in the morphological boundaries within stems. As we have seen in the previous section, vowel + vowel sequences are not possible in Ngkolmpu. As a consequence, stems which end in high vowels and are then followed by a fully specified vowel, such as /ɛ/ from the recent past imperfective marker /ɛn/, are broken up by the inserted glide [j]. We would expect then any fully specified high vowels to trigger this insertion whilst glides would instead be analysed as syllabic and incorporated into the onset. This is best exemplified in the minimal pair /ɔlusi/ 'to arrange' and /ɔlusy/ 'to blow'. In (2.7b) we see that the sequence of /i/ followed by /ɛ/ is broken up by the inserted glide, which demonstrates that this is underlyingly a vowel, whereas in (2.7d) the glide is associated with the onset, proving that it must be underlyingly syllabic.

(2.7)   a. /ɔ-lusi/ → [ɔ.ˈlu.si] 'arrange.MID.PRS.DUR'

b. /ɔ-lusi-ɛn/ → [ɔ.ˈlu.si.jɛn] 'arrange.MID.SG.RCT.IMPF'

c. /ɔ-lusj/ → [ɔ.ˈlu.sə̆^{j}] 'blow.MID.PRS.DUR'

d. /ɔ-lusy-ɛn/ → [ɔ.ˈlu.s^{j}ɛn] 'blow.MID.SG.RCT.IMPF'

An alternative analysis was proposed by Mark Donohue in a unpublished seminar paper in 2009 (Donohue, 2009).[4] In that presentation, Donohue, in a sophisticated analysis, presented the argument that all high vowels in the language were underlyingly non-syllabic, i.e. a system with no phonological high vowels, only consonantal glides. However, the presence of the minimal pair presented in (2.7) unequivocally demonstrates the presence of both high vowels and glides at least in some positions in the language.

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[4]I mention it here since the analysis he presented is implicit in the orthography used in other papers on the language.

2.4   Phonotactics

The phonotactics of Ngkolmpu is organised around a phonetic syllable structure. The unrestricted maximal syllable structure for Ngkolmpu is $[CCVC]_\sigma$, extended to $[CCVCC]_\sigma$ in word-final syllables. The minimal syllable structure is $[CV]_\sigma$. We can schematise this as in (2.8).

(2.8) $[C_1(C_2)V(C_3)(C_4)]_\sigma$

C_1 is phonetically obligatory and may be any consonant phoneme in the language; these have already been exemplified for each phoneme in the individual sections above. If C_1 is not phonemically present at the start of the word a glottal stop is inserted.

C_2 may be any of the non-obstruent consonants, that is, /r/ /l/ /w/ or /j/. C_2 may only occur if C_1 is sufficiently less sonorous than C_2. For example, the liquid consonants, /r/ and /l/, may only occur in C_2 position if C_1 is a stop, whereas the glides /w/ and /j/ may occur in C_2 if C_1 is any obstruent. Thus, this suggests the sonority hierarchy in (2.9)[5] in which the internal member of any cluster, in this case C_2, must be at least two steps higher along this hierarchy than the extenal member, i.e. C_1. This use of a sonority scale is essentially in line with works such as Selkirk (1984), Clements (1990) or Blevins (1996), which propose similar hierarchies, or sonority sequencing principles, as a constraint on possible syllable structures. The more unusual two step gradation of sonority distance within clusters, presented here for Ngkolmpu, is what has been called Minimal Sonority Distance (Zec, 2012) and is similar to the analysis presented by Selkirk (1984) for Spanish.

(2.9)   VOWELS » GLIDES » LIQUIDS » OBSTRUENT CONTINUANTS » STOPS

A vowel must occur in the V position as the syllable nucleus; this may be any vowel in the language. Word-initially it often appears that there is no onset and that the syllable consists of only a vowel at the start of a word. In these cases a consonant is inserted to rectify the syllable structure. Typically this is a glottal stop [ʔ], however high front

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[5]In this hierarchy fricatives and nasals are treated as a single group: obstruent continuants.

vowels in this position may occur with a short on-glide /j/ occurring in free variation with the glottal stop. Thus phonetically, these words in fact start with a consonant + vowel sequence.

C_3 may be any non-obstruent, i.e. /r/ /l/ /w/ /j/. In non word-final position this is the maximal coda position. In word-final position it is possible to have a C_4 position. If there is a C_4 then it may be filled by any consonant. If that is the case, then C_3 must obey the same sonority restrictions as per clusters in onsets. That is, if C_4 is present than a consonant may only occur in C_3 position if and only if it is at least two steps higher on the sonority hierarchy in 2.9.

As stated, C_4 is restricted to word-final position only. It may be any consonant in the language. If it is a stop there is a phonetic tendency to have an exaggerated release in this position, typically resulting in a heavy aspiration as already discussed. Since C_4 is restricted to word final position, complex clusters are only present word finally.

2.4.1 Phonotactic algorithm and epenthesis

One notable element of the language is the extent to which vowels are not specified at the level of phonology in the language. Instead, a process of epenthesis inserts a short schwa [ə̆] to conform to the syllable structure presented above. As stated, similar systems have been described for other Yam languages, in particular Nen and Komnzo, as well as other Papuan languages with the most famous example being Kalam. In this section, we shall see the explicit process by which the phonotactic constraints above are conformed to.

As stated, the epenthetic vowels are inserted to produce the phonotactic structure described in 2.8. This process may be formulated as an informal algorithm as follows:

1. Associate each specified vowel with a syllable nucleus, V.

2. In word-final position associate the last consonant with the coda position, C_4.

3. If word commences with a vowel, insert [ʔ] in word initial position.

4. Associate every other obstruent consonant with C_1.

5. Intervocalic or word-initial non-obstruent consonants are associated with C_1.

6. Any non-obstruent consonants following obstruents and preceding vowels are assigned to C_2, if allowable given the sonority constraints discussed above, otherwise associate with C_1 to create a new onset.

7. Any remaining non-obstruent consonants are assigned either to onsets or codas favouring CVC before CCVC; and CCVC before CCCVCC. If such structures are not possible due to sonority restrictions the consonant is assigned to C_1 and a new syllable is created.

8. (Optional) Reassociate the nasal element of prenasalised stops to the coda of the previous syllable if no existing coda is present.

9. Fill any unfilled nucleus positions with schwa [ə̆].

This is illustrated with examples as follows.

(2.10)   a.   /krkr/ → [kə̆r.kə̆r] 'sago'

   b.   /kspl/ → [kə̆.sə̆.pə̆l] 'cuscus'

   c.   /kwr/ → [kʷə̆r] 'pig'

   d.   /srmɛrkⁿtⁿt/ → [sə̆r.mɛr.kə̆.ⁿtə̆ⁿt] '(He) will follow (them)'

   e.   /pr/ → [pə̆r] 'tree'

Coda clusters are actually rather rare as they have such a restricted distribution, only occurring word-finally. When they do occur this can either be due to the stem ending in a possible cluster or from the result of the application of certain morphology.

(2.11)   a.   /y-mɛrk/ → [ʔi.ˈmɛrkʰ] '(He) follows (him)'

   b.   /pr-t/ → [pə̆rtʰ] 'for the wood'

　　　c.　/s-rtrɔw-ŋk/ → [sər.ˈtrɔʷŋk] '(He) destroyed (it) (remote) (perfective)'

An interesting result of the above rules is that the approximants /w/ and /j/ may only occur in C_3 if the vowel in the syllabic nucleus is phonologically specified. Otherwise they become part of the onset in either C_2 or C_1 position. This can be seen in the examples in (2.12). In (2.12a) we see the /w/ being realised as the off-glide and occurring in the syllable coda. However in example (2.12b) where there is no syllable nucleus then the /w/ is realised as part of the onset.

(2.12)　a.　/s-rtrɔw-ŋk/ → [sər.ˈtrɔʷŋk] '(He) destroyed (it) (remote) (perfective)'

　　　　b.　/kwr/ → [kʷə̆ɾ] 'pig'

2.4.2　Attested syllable structures

From the rules above, the possible syllable structures are [CV], [CVC], [CCV], [CCVC], [CCVCC] and [CVCC]. Each of these templatic patterns is attested however examples have not been observed for every possible phoneme combination. Examples of each consonantal phoneme occurring in simple onsets and codas have demonstrated for each phoneme in Section 2.1. Tables 2.7 and 2.8 at the end of the chapter, set out attested example of phoneme clusters in onsets and codas respectively. Note that a great deal many more unattested patterns exist for coda clusters in the language since they are far more restricted, as discussed in the previous section.

2.5　Morphophonemics

This section examines the phonological processes that apply after morphological content has been added to words. There are three processes, two of which involve the phonological underspecification of morphological elements and the third of which involves the insertion of glides to correct illicit vowel + vowel clusters.

2.5.1   Glide insertion

As we have seen, there are no phonological diphthongs in Ngkolmpu. Any vowel +
vowel sequences which occur as the result of morphological process are broken up by
the insertion of the glide /j/ between the vowels. Then according to the phonotactic
algorithm discussed above these are associated with the onset and the second vowel
becomes the nucleus of that syllable. We can see this for each of the vowels occurring
before the recent past imperfective marking /ɛn/ in (2.13). This could also easily be a
general rule of the phonology of Ngkolmpu, however since the only place it is observ-
able is after morphological processes it has been included here.

(2.13)   a.   /ɔ-naki-ɛn/ → [ʔɔ.na.ki.**j**ɛn] 'lift.MID.SG.RCT.IMPF'

b.   /ine-ɛn/ → [ʔi.nɛ.jɛn] 'look around.MID.SG.RCT.IMPF'

c.   /ɔ-lpuka-ɛn/ → [ʔɔl.pu.ka.**j**ɛn] 'grow.MID.SG.RCT.IMPF'

d.   /ɔ-rpitu-ɛn/ → [ʔɔr.pi.tu.**j**ɛn] 'untie.MID.SG.RCT.IMPF'

e.   /oⁿtɔ-ɛn/ → [ʔɔ.ⁿtɔ.**j**ɛn] 'watch.MID.SG.RCT.IMPF'

f.   /ɔ-rkɒ-ɛn/ → [ʔɔr.kɒ.**j**ɛn] 'loosen.MID.SG.RCT.IMPF'

2.5.2   Vowel harmony

There is some very restricted vowel harmony in Ngkolmpu that only occurs with the
diathetic prefix and not with all the verbs. The function of this prefix is discussed in
Section 6.6.1. One of the functions of this prefix is in the formation of middles and this
will furnish exemplars for this section. The form of the prefix may be either [ɛ], [a] or
[ɔ] in harmony with the lateral specification of the first vowel of the verb stem. Thus,
if the first vowel in the stem is a front vowel then the diathetic prefix will be [ɛ] (2.14).
If the first vowel in the stem is the middle vowel [a] then the diathetic prefix will be [a]
(2.15). And if the first vowel of the verb stem is a back vowel then the prefix will be [ɔ]
(2.16). If there are no vowels in the verb stem then it will be specified for lexeme. We
will represent this as /V/.

(2.14)   a.   /V-tripin/ → [ʔɛ.tri.pin] 'scratch'

      b.   /V-ke/ → [ʔɛ.ke] 'return'

      c.   /V-ᵐplæ/ → [ʔɛ.ᵐplæ] 'hit'

(2.15)   /V-waⁿse/ → [ʔa.wa.ⁿt͡ʃɛ] 'fall'

(2.16)   a.   /V-lusi/ → [ʔu.lu.si] 'arrange'

      b.   /V-wo/ → [ʔɔ.wo] 'see'

      c.   /V-rkɒ/ → [ʔɔr.kɒ] 'loosen'

It is important to note that this process of harmony does not apply to every instance of this affix in the language although it does to the vast majority. Out of 220 verbs to which this affix may either apply or has been fossilised into the stem I have collected around 20 examples of words which do not conform to this pattern. Some examples occur in (2.17), in these we must assume that this vowel is lexically specified by the verb.

(2.17)   a.   /a-ntɔngk/ → [ʔa.ⁿtɔngk] 'carry'

      b.   /a-tor/ → [ʔa.tor] 'search'

      c.   /ɔ-wnɛ/ → [ʔɔw.ne] 'drink'

2.6   Orthography

The orthography that has been used in this thesis has been developed after numerous discussions with members of the Ngkolmpu community. Whilst there is no written tradition in Ngkolmpu, the vast majority of speakers are literate in Indonesian and will occasionally write down various things in Ngkolmpu transliterating with the Indonesian orthography. Most commonly this is used for the writing of song lyrics that people have written in Ngkolmpu. As such, the orthography used here and in the dictionary and other community materials under development tries to adhere to the rules of Indonesian spelling as close as possible with some notable exceptions in line with community practice. The orthography is mixed phonemic and phonetic with characters

corresponding closely to the IPA characters and listed in the phoneme chart in Tables 2.1 and 2.5. In addition, the non-phonemic schwa is typically omitted from written words.

The first principle of the orthography is that no non-Indonesian characters are used. The Indonesian orthography uses the standard Roman alphabet of 26 characters; in Ngkolmpu only a sub-set of this total are used with a total of 17 distinct characters. As a result some sounds must be presented with bigraphs or trigraphs. Prenasalised sounds are are written as a sequence of nasal + stop so /^{n}t/ is written as <nt>. The prenasalised velar nasal stop /^{ŋ}k/ is written as the trigraph <ngk>. The open front and back vowels, /æ/ and /ɒ/, are also represented with digraphs, <ae> and <ao> respectively.

Glides are typically written as <w> for /w/ and <y> for /j/. However, glides which are realised as either off-glides or on-glides are written as their corresponding high vowels either <u> or <i> respectively. In these restricted cases, whilst there is no phonemic diphthong the orthography represents them as such. The two phonetic situations in which this occurs are when glides occur in either coda position (2.18a & 2.18b) or in clustered onsets. The onset condition is much more complex; when a glide occurs in C_2 position it is typically written as such (2.18c) except when following continuant and preceding an epenthetic vowel (2.18d). In this case the vowel [ĕ] is written as an <e> (2.18d). Although this is a complex orthographic rule it follows community practice. We can assume that the salience of the syllabic quality of on-glides in this position is driving community practice in this regard.

(2.18)   a. *taei*   /tæj/   [tæ^j]   'patience'

b. *nou*   /nɔw/   [nɔ^w]   'let's go'

c. *kwr*   /kwr/   [kwĕr]   'pig'

d. *ncuen*   /nswn/   [^{n}t͡ʃ^{w}ĕn]   1.NSG.ERG

Finally, there are three additional phonetic idiosyncrasies which are incorporated into the orthography. Firstly, the phone [^{n}t͡ʃ], which is an allophone of /^{n}s/ is written <nc>. The use of <c> to represent the alveo-palatal affricate follows its use in Indonesian. Secondly, glides which are inserted as a result of a morphophonemic process

(2.5.1) are always written with <y>. And thirdly, the underspecified phonemes found in the inflectional material are also written as their phonetic realisation either as a vowel or glide in accordance the rules presented above. So that if the underspecified phoneme occurs in either C_1 or C_2 position it will be written as a glide. In all other contexts the underspecified phonemes are written as vowels.

Cluster	Word	Phonemic	Phonetic	Translations
σ|pr	*prae*	/præ/	[pɾæ]	'hot'
σ|pl	*plaeku*	/plæku/	[ˈplæ.ku]	'shoulder'
σ|pw		*unattested*		
σ|pj	*piengku*	/pjɛŋku/	[ˈpʲɛ.ŋku]	3SG.ERG
σ|tr	*traetrae*	/trætræ/	[ˈtræ.træ]	'swamp'
σ|tl		*unattested*		
σ|tw	*otwarai*	/ɔtwaraj/	[ʔɔ.ˈtʷa.raʲ]	'to rub'
σ|tj		*unattested*		
σ|kr	*krar*	/krar/	[kɾar]	'dog'
σ|kl	*klawo*	/klawɔ/	[ˈkla.wɔ]	'child'
σ|kw	*kwr*	/kwr/	[kwər]	'pig'
σ|kj	*onakya*	/ɔnakja/	[ʔɔ.ˈna.kʲa]	'to climb/lift up'
σ|br	*brar*	/brar/	[brar]	'garden'
σ|bl		*unattested*		
σ|bw	*blapintrans*	/blapiⁿtraⁿs/	[ˈbla.pi.ⁿtraⁿs]	'(He) embraced (me) (yesterday)'
σ|bj	*bye*	/bjɛ/	[bjɛ]	'(it) is here'
σ|ᵐpr	*baempru*	/bæᵐpru/	[ˈbæ.ᵐpɾu]	'snake.ERG'

$_\sigma$|^{m}pl	*omplaej*	/ɔ^{m}plæj/	[ʔɔ.'^{m}plæ^j]	'to hit'
$_\sigma$|^{m}pw	*mpwa*	/^{m}pwa/	[^{m}p^{w}a]	'mat'
$_\sigma$|^{m}pj	*mpyae*	/^{m}pjæ/	[^{m}p^{j}æ]	'thing'
$_\sigma$|^{n}tr	*^{n}tru*	/^{n}tru/	[^{n}tɾuː]	'fish type'
$_\sigma$|^{n}tl		*unattested*		
$_\sigma$|^{n}tw	*^{n}te^{n}twae*	/^{n}tɛ^{n}twæ/	['^{n}tɛ.^{n}t^{w}æ]	'long'
$_\sigma$|^{n}tj		*unattested*		
$_\sigma$|^{ŋ}kr	*ngkremun*	/^{ŋ}kr.ɛmun/	['^{ŋ}krɛ.mun]	'sago w. meat'
$_\sigma$|^{ŋ}kl	*ilengklu*	/ilɛ^{ŋ}klu/	/ʔi.'lɛ.^{ŋ}klu/	'(He) watched (it)'
$_\sigma$|^{ŋ}kw		*unattested*		
$_\sigma$|^{ŋ}kj	*ngkiengku*	/^{ŋ}kj^{ŋ}ku/	[^{ŋ}k^{j}ə.^{ŋ}ku]	'here.ERG'
$_\sigma$|sw	*swa*	/swa/	[swa]	'arm'
$_\sigma$|sj	*olusyen*	/ɔlusjɛn/	[ʔɔ.'lu.s^{j}ɛn]	'(it) was blowing'
$_\sigma$|^{n}sw	*ncuen*	/^{n}swn/	[^{n}t͡ʃ^{w}ən]	1NSG.DAT
$_\sigma$|^{n}sj	*onciurai*	/ɔ^{n}sjuraj/	[ʔɔ.'^{n}t͡ʃ^{j}u.ra^j]	'to submerse'

Table 2.7: Attested homosyllabic onset clusters

Cluster	Word	Phonemic	Phonetic	Translations
rp|$_\sigma$			*unattested*	
lp|$_\sigma$			*unattested*	
wp|$_\sigma$			*unattested*	
jp|$_\sigma$	*tbaeip*	/tbæjp/	['tə.bæ^{j}p]	'enough'
rt|$_\sigma$	*ympmprt*	/j^{m}p^{m}prt/	['jə.^{m}pə.^{m}pərt^H]	'all'
lt|$_\sigma$	*alt*	/alt/	[ʔalt^H]	'father.com'
wt|$_\sigma$			*unattested*	
jt|$_\sigma$	*ngkait*	/$^\eta$kajt/	[$^\eta$ka^{j}t]	'yam type'
rk|$_\sigma$	*mperk*	/^{m}pɛrk/	[^{m}pɛɾk^H]	'yellow'
lk|$_\sigma$			*unattested*	
wk|$_\sigma$			*unattested*	
jk|$_\sigma$	*iweik*	/iwejk/	[ʔi.wɛ^{j}k^H]	'(He) fears (it)'
rb|$_\sigma$			*unattested*	
lb|$_\sigma$			*unattested*	
wb|$_\sigma$			*unattested*	
jb|$_\sigma$			*unattested*	
r^{m}p|$_\sigma$			*unattested*	
l^{m}p|$_\sigma$			*unattested*	

$w^m p\|_\sigma$		*unattested*		
$j^m p\|_\sigma$		*unattested*		
$r^n t\|_\sigma$	*kekirnt*	/kɛkir^{n}t/	[ˈkɛ.kiɾ^{n}t^H]	'(you) will slip'
$l^n t\|_\sigma$	*srilmpawulnt*	/sril^{m}pawul^{n}t/	[ˈsri.lə.^{m}pa.wul^{n}t^H]	'(He) will open (it)'
$w^n t\|_\sigma$	*skaeunt*	/skæw^{n}t/	[sə.ˈkæ^{wn}t^H]	'(He) tied (it)'
$j^n t\|_\sigma$	*krekaint*	/krɛkaj^{n}t/	[ˈkrɛ.ka^{jn}t^H]	'(He) will cry'
$r^\eta k\|_\sigma$	*imarngk*	/imar$^\eta$k/	[ʔi.maɾ$^\eta$k^H]	'(she) is marrying (him)'
$l^\eta k\|_\sigma$	*yowalngk*	/jɔwal$^\eta$k/	[ˈjɔ.wal$^\eta$k^H/	'(He) (could've) untied (it)'
$w^\eta k\|_\sigma$	*inowngk*	/ynɔw$^\eta$k/	[^{j}i.ˈnɔ$^{w\eta}$k^H]	'(He) (could've) distributed (it)'
$j^\eta k\|_\sigma$	*okaingk*	/ɔkaj$^\eta$k/	[ʔɔ.ˈka$^{j\eta}$k^H]	'(He) is blocked'
$ws\|_\sigma$		*unattested*		
$js\|_\sigma$		*unattested*		
$w^n s\|_\sigma$	*inowns*	/inɔw^{n}s/	[^{j}i.ˈnɔ^{wn}s]	'(they) distributed (it)'
$j^n s\|_\sigma$	*ekains*	/ɛkaj^{n}s/	[ʔɛ.ˈka^{jn}s]	'(they) cried'

Table 2.8: Attested homosyllabic coda clusters

Chapter 3

Nominal morphology

Nominals are a class of words morphologically defined by their ability to take case. This chapter discusses nominal morphology whilst nominal syntax is reserved until the following chapter. Nominal morphology is characterised by the large inventory of cases which mark the syntactic head of noun phrase constructions, pronouns and demonstratives. There are a total of 12 cases which mark both grammatical roles (3.2.2) and semantic roles (3.2.3). Case functions are particular to their syntactic scope, in which a single case may function adnominally, relationally or subordinatingly (3.2.1). Number is also marked on nominals, although compared to case marking, number marking is more restricted: number marking only occurs in the ergative case for open class nominals, although it is more prominent in the organisation of pronouns (3.3) and demonstratives (3.3.4).

Compared to verbal inflection, nominal inflection in Ngkolmpu is straightforward. There is little to no allomorphy, no inflectional classes and a clear incremental mapping between morphosyntactic / semantic functions and the corresponding morphological form. The complexity of the system lies in the number of elements and the stratification of the various syntactic-semantic functions of certain cases (3.2.1) rather than in overall organisational complexity.

3.1   Nominal formation, derivation and other nominal morphology

Nominals in Ngkolmpu consist of a stem with an optional case ending. In the case of the comitative, two case markers may occur on a single noun stem (§ 3.2.3.5). For open class nominals number is only marked in the ergative case. All subclasses of nominals may be marked for case, although most commonly it is nouns, demonstratives and pronouns that display case marking. This is the syntactic head which is typically the final element of the noun phrase. Case marking is also obligatory on any demonstrative, which occurs outside the noun phrase if present.

In this section, I discuss the nature of non-inflectional morphology which is relevant to nouns, either as targets or as part of noun formation. This starts with the infinitive morphology which allows verb stems to participate in nominal constructions and is the only derivational morphology which outputs nominals. I also discuss other nominal morphology which derives adjectives from nouns and the set of clitics which apply to nominals.

3.1.1   Infinitive

Infinitive constructions are very common in Ngkolmpu. In these constructions the infinitive form of the verb functions as a noun. As such, it inflects for case as relevant for that construction. Infinitives may participate in all the standard constructions that nouns may, as discussed in Chapter 4, however they display a slightly larger distribution than basic nouns as they also occur in cognate-object constructions (§ 5.4.2.1). Infinitives also serve as citation forms of verbs. Infinitives are a common feature of Yam languages and discussed for Nen in Evans (2015a).

The infinitive is formed from the extended stem of the verb (§ 7.1) and the infinitive affixation. The infinitive morphology consists of a circumfix which entails a suffix /-ai/ (3.1a) or /-i/ if the verb stem ends with a vowel. If the verb stem starts with a consonant, a prefix also occurs. This prefix is orthographically represented as <o> (3.1b) and phonetically varies between [ɐ] and [ɔ] in harmony with the backness and roundness

of the first vowel of the verb stem. It is typically quite short and always unstressed.

(3.1)   a.   *esemingkai mwa ksetnont ngkeye*

   esemingk-ai   mwa   k=s\tnont/   ngke=ye
   learn-INF   house   IRR=3.IRR.PFV\fine.work.RS   PROX=3.PRS.COP

   'The school house would be drawn here, here it is.' (Talking about a hand
   drawn map of the village) [20131005-KCD-JG-MapStory 054]

   b.   *otnngkai pr*

   o-tnnongk-ai   pr
   INF-fine.work-INF   wood

   'A pencil' (lit. 'A writing stick')

The above method is the most productive means for deriving infinitives, however
many verbs, around 20%, have a lexically specified infinitive form used in nominalisa-
tion constructions. In example (3.2a), we see the standard inflected form of the verb
'to sit'; this has the stem *enska*. Compare this to (3.2b) in which we see the nominalised
form of the same verb, *umans*, marked for the causative case. These are clearly not syn-
chronically related but *umans* is always the infinitive used for the verb in 3.2a. Speakers
will accept infinitives built from the verb stem of these verbs but comment that it is not
natural and the correct lexical infinitive will be provided.

(3.2)   a.   *Markus nelni enskayen*

   Markus   nel-ni   \enska/en
   Markus   earth-LOC   SG.MID.RCT.IMPF\sit.EX

   'Markus was sitting on the ground.'

   b.   *si kelua nti umanswa*

   si   kelua   nti   umans-wa
   eye   flesh   sore   sit.INF-CAUS

   '(My) buttocks are sore from sitting.'

Lexical infinitive forms are most commonly encountered in cognate-object con-
structions, discussed in Section 5.4.2.1. In these constructions the inflected form of
the verb occurs in middle morphology along with the infinitive form. This form may

be the standard infinitive or it may be a lexical infinitive (3.3b) depending on the verb with the second option being far more common in this construction.

(3.3)   a. *ngko aeibentai teibenti*

       ngko   aeibentai t\eibent/y
       1SG.ABS tell.INF   SG.MID.HOD.PFV\tell

       'I told the story.'

     b. *ngkai worko towanti*

       ngkai   waorko to\want/y
       1SG.ERG run.INF SG.MID.HOD.PFV\run.RS

       'I ran.' (lit. *I ran a run*)

3.1.2   ˛-*wa* : Adjectiviser

All nouns may function as adjectives through the application of the adjectiviser morphology. This takes the form of a suffix -*wa* which appends to the noun stem. This is identical in form to the causative case discussed in Section 3.2.3.4, although there is no semantic or functional link between them. The adjectiviser may occur with all classes of nouns but typically occurs on property nouns. This is discussed in Section 4.1.1. Example (3.4) shows the noun *sakle* 'branch', which may function as either a head noun (3.4a) or as a modifier to the head noun (3.4b).

(3.4)   a. *Salpiusu pr sakle sowongk*

       Salpius-w   pr   sakl   s\owo/ngk
       Salpius-SG.ERG tree branch SG>3.RMT.PFV\see.RS

       'Salpius saw the (tree) branch'

     b. *Salpiusu saklwa pr pi sowongk*

       Salpius-w   sakl-wa   pr   pi   s\owo/ngk
       Salpius-SG.ERG branch-ADJ tree DIST.ABS SG>3.RMT.PFV\see.RS

       'Salpius saw the branched tree'

Colour terms are formed using the adjectival marker. There are two basic color terms that have the adjectiviser fossilised in the stem, namely *wanswa* 'black' and *mplawa*

'white'. These have no meaning independent of their colour reference. Other terms are derived from basic nouns that have an association to a particular color. These color terms are entirely conventionalised, for example 'red' is *mplwa* or blood coloured (3.5).

(3.5)   a. *ngkoroko sowo piengku: 'ete mpwale moro tenimeru, mplwa irau'*

ngkoro-ko s-ow-ø   piengku: ete mpwale moro
thus-IRR   3.β.U-see.RS-SGA 3SG.ERG: ete moon   FOC
t-e-n-imer-w,   mpl-wa   y-ra-w
MID-DIA-TOW-exit.RS-RMT.SG.A, blood-ADJ 3.α.U-copula-RMT

'He saw thusly: 'Oh! The moon had come out and it was red!'

[20141110-KCD-JG-DemaStory OB]

3.1.3   *=to* : Relational clitic

The relational clitic is used to associate nominal elements as modifiers of the clause. This clitic appends to the end of the noun following any inflection. This serves to indicate that the noun modifies the entire proposition, similarly to an adverb. One of the most common uses of this element is to mark property nouns as temporal adjuncts, for example *nmaei* meaning 'olden' to *nmaeito* meaning 'before' (3.6). A common way to refer to the older style houses made from paperbark is *nmaei mwa* (3.6a) which is a noun + noun nominal construction as per Section 4.2.4. Examples (3.6b) and (3.6c) show this same word modified by the relational clitic to serve as a temporal adverb meaning 'before'. This element is glossed as ADV for adverbialiser although it is a clitic and not a derivational element.

(3.6)   a. *nmaei mwa*

nmaei mwa
olden   house

'The old-style house.'

      b. *pr ngkai nmaeito sowipi*

pr   ngkai   nmaei=to   s\ow/y=pi
tree 1SG.ERG before=ADV SG>3.HOD.PFV\see.RS=3.ABS.TOP

'I had already seen the tree.' [20140212-KCD-ML-DreamStory 017]

c. *pi nmaeito tortiwi*

pi   nmaei=to   to\rtiw/y
3.ABS   olden=ADV   SG.MID.HOD.PFV\finish.RS

'It is already finished.' [20131009-KCD-KD-AdatVideoVoiceover 083]

It is used to modify expressions of method to give them scope over the proposition (3.7). Typically, these modifiers are manner modifiers but as we have seen in (3.6c) this is not the only function of this clitic.

(3.7)   *pi pontoto ternteme poi nteme*

pi   ponto=to   te\r/nteme   poi   nteme
3.ABS   like.that=ADV   3NSG.MID.FUT-IRR.PFV\work.RS   DEM.DIST.LOC   little

'There, they work like that, a bit.' [20131002-KCD-KD-AdatStory 028]

It can be used on inflected nouns. This seems largely optional, though, as these would have the same meaning with or without the adverbial marker. Arguably, these are lexicalised constructions and both the examples in (3.8) are fairly common expressions.

(3.8)   a. *yempokanmto sriantnt, soro mpu*

yempoka-nm=to   sr\iant/nt,   soro   mpu
two-INS=ADV   3PL.FUT.DUR\go.PL,   women   2.ABS

'You women, go two by two' [20131009-KCD-KD-AdatVideoVoiceover 101]

b. mengke pompa sempo tegunmto anai

mengke   pompa   sempo   tegu-nm=to   \an/ai
INT.ALL   DIST.ABL   again   leg-INS=ADV   NSG.RMT.DUR\go.NPL

'From there to the place, we went on foot.' [20130921-KCD-ML-MamasVisitToRB-037]

This element is treated as a clitic rather than an affix for two reasons. The first is that it occurs on numerous hosts as demonstrated by the range of examples in this

section. The second is that it may occur after inflectional morphology has been applied as per the examples in (3.8).

3.1.4 *=mnto* : Ignorative clitic

The ignorative clitic takes the form *=mnto* and may be cliticised to nominal elements in any construction to indicate a lack of knowledge of behalf of the speaker regarding the referent of the element. In this way, it marks a category of epistemic modality in the nominal domain, i.e. pertaining to knowledge of the object being marked. In (3.9), it is cliticised to the ablative marked word *skola*, borrowed from Indonesian *sekolah* 'school'. This indicates that speaker is assuming that the child has returned from school but it is unknown where the child has returned from; This suggests that the element has scope over the entire predicate.

(3.9)   *mpoi klawo mompamnto tenengkei? skolahmpamnto? ah, yuai-yuaimpa.*

mpoi   klawo   mompa=mnto   ten\engke/y
maybe   child   where.ABL=IGN   SG.MID.HOD.PFV\return.home.RS
skola-mpa=mnto   yuaiyuai-mpa
school-ABL=IGN   trip-ABL

'Maybe is the child back from somewhere? maybe school? ah from a trip.'

One very typical use of this clitic is when it is attached to the interrogative pronouns to provide an indefinite of that type. For example, when attached to the word for 'what' *nor* it would mean 'anything' or 'whatever' (3.10) and when attached to the word for 'who' *oro* it can mean 'anyone' or 'whoever'. The previous example (3.9) has it occurring on the ablative question marker meaning 'from somewhere'.

(3.10)   *normto moro ktnongkengkai brar paya*

nor=mnto   moro   k=y\tnongk/ngkai   brar   paya
what=IGN   FOC   IRR=NSG.MID.RMT.IRR.DUR\write.work.EX garden   work

'We could make anything, with garden work' [20120930-KCD-KD-Before-Story 057]

3.2   Case

There are 12 cases in total including the absolutive which has no overt marking. On nouns, number is only marked in the ergative. On pronouns and demonstratives number is marked more extensively. The cases are exemplified for the word *krar* 'dog' in Table 3.1. Nominal morphology in Ngkolmpu displays little allomorphy beyond the general morphophonological alternations discussed in Section 2.5.

The cases forms are presented for the word *krar* 'dog' in Table 3.1. There are some interesting syncretisms that occur within this paradigm. These include the possessive and the dative sharing the form /-en/ and the comitative and the purposive sharing the form /-t/. This syncretism is further complicated by the fact that these cases share a form with distinct meanings across semantic domains. Both the possessive and the comitative are strictly adnominal cases whilst the dative and the purposive are relational. One tempting analysis would be to treat these as just two cases: the possessive/dative and the comitative/purposive. However, these are separate forms in the pronoun and demonstrative paradigms. As such I treat them here as distinct cases.

Case	Ending	Example
Absolutive	Ø	krar
Ergative SG	-w	krar-w
Ergative NSG	-ya	krar-ya
Dative	-en	krar-en
Possessive	-en	krar-en
Instrumental	-nm	krar-nm
Causal	-wa	krar-wa
Comitative	-t	krar-t
Purposive	-t	krar-t
Associative	-wi	krar-wi
Locative	-ni	krar-ni
Ablative	-mpa	krar-mpa
Allative	-ngke	krar-ngke

Table 3.1: Cases exemplified for *krar* 'dog'

3.2.1   The case functions

Cases in Ngkolmpu may be classified as either grammatical or semantic, following Blake (2001). Grammatical cases are defined by being assigned to syntactic roles rather than simply projecting semantic roles. Syntactic roles are defined according to numerical valence as either S, A or O[1] as per Bickel (2010) (5.3.2). Semantic cases are realised based on their alignment to purely *semantic* roles. Semantic roles are always encoded through the appropriate case, regardless of their syntactic role. For example, the dative case which marks semantic recipients regardless of whether the syntactic context treats the nominal constituent as an argument in a given construction. For a discussion of the semantic role of the dative see Section 3.2.3.1.

The semantic cases in Ngkolmpu are classified as serving adnominal, relational or subordinating functions. The analysis here is similar to what has been argued for Australian languages in Dench and Evans (1988).[2] The adnominal function is used to relate nominal constituents at the level of the noun phrase, i.e. marking a single noun phrase as adjoined to another noun phrase forming a single constituent. For example, the comitative cause marks one nominal as being related to another nominal element as in (3.11)

(3.11)   *krar pi kwrt teimeri mwampa*

krar   pi   kwr-t   t\eimer/i   mwa-mpa
dog   DEM.ABS   pig-COM   MID.SG.HOD.PFV\exit/   house-ABL

'The dog and the pig left the house. (The dog left the house with the pig).'

The relational function marks constituents as related at the level of the clause. The relational role represents the prototypical function of case and covers what are often known as core and oblique roles (Andrews, 2007a) although such a distinction is not made in this thesis. In (3.12), the instrumental case serves to indicate that the noun, *mpaeswm* 'axe', is related the entire clause with the semantics of 'instrument.'

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[1] Only S, A and O are required for describing case marking. S, A, O and R are required for describing verbal agreement as discussed in Chapter 5.

[2] I have used the term subordinating instead of complementising as I feel it is more accurate.

(3.12) *Ale pinta pr onto susornte mpaeswmnm*

ale	pinta	pr	onto	sw\so/rnte	mpaeswm-nm
fathers	3NSG.ERG	tree	can	NSG>3.RMT.IMPF\mince.EX	axe-INS

'The fathers, they chopped up all the wood with axes.'

[20131005-KCD-JG-MapStory 010]

The subordinating function marks a clause, rather than nominal, as related to the main clause. This subordinate clause consists of a case marked infinitive or nominalised form of the verb with an optional semantic complement. This serves to mark either a temporal or associative relation between the subordinate clause and the matrix clause (3.13).

(3.13) *ngkai mpowr sarmi warkonm*

ngkai	mpowr	s\arm/y	warko-nm
1SG.ERG	cassowary	SGA>3U.HOD.PFV\shoot.PFV/	running-INS

'I shot it whilst I was running.'

The semantic definition of each case clearly aligns to its semantic roles when functioning relationally or adnominally. However, the exact semantic interpretation of subordinating function is less transparent. Table 3.2 sets out an overview of the cases and their functions.

3.2.2   The grammatical cases

Core arguments are marked on an ergative/absolutive basis. This system is a typical two-term system in which the two terms are used to describe three distinct syntactic roles. The system of nominal case in Ngkolmpu marks the agentive argument of bivalent constructions (A) with the ergative case. This is contrasted against the patientive argument of the bivalent construction (O) and the sole argument of the monovalent construction (S). In later chapters we will see that four distinct terms are required to describe the entire system of grammatical relations. However, three terms are sufficient to describe the case system. A discussion of grammatical relations is the focus of Sections 5.3 and 8.4.

	Role by Function		
	Adnominal	Relational	Subordinating
Absolutive		S/O	S/O
Ergative		A	A
Dative		Recipient, Beneficiary	
Possessive	Possessor		
Instrumental		Instrument, Manner	Manner, Simultaneous Action (S/A)
Causal		Cause	Cause
Comitative	Accompaniment		
Purposive		Purpose	Purpose
Associative	Association		
Locative	Location	Location	
Ablative		Source	
Allative		Goal	Simultaneous Action (O)

Table 3.2: Roles of case by syntactic function

3.2.2.1 *Absolutive*

The absolutive case has no overt marking on the noun and does not mark number. It is typologically unusual for ergative case to mark number and the absolutive to not mark number and contrary to typological markedness expectations (Croft, 2002). However, this pattern is pervasive in Yam languages (Evans et al., 2017).

As stated above, absolutive case serves to mark S arguments, both agentive (3.14a) and patientive (3.14b), and O arguments (3.14c-3.14d). More accurately, absolutive is marked by the absence of case marking and it applies to all remaining arguments not otherwise assigned a semantic or grammatical case, i.e. it is the default case.

(3.14)   a. *Markus pantngke tonokei*

Markus   pant-ngke   to\noke/y
markus   platform-ALL   SG.HOD.PFV\lift.PFV

'Markus ascended the platform.' (earlier today)

b. *Markus ntawancei*

Markus n'ta\wance/y
Markus SG.HOD.PFV\fall.PFV

'Markus fell.' (earlier today)

c. *Markusu pr pi storui*

Markus-w   pr   pi   s\toru/y
Markus-ERG tree PROX.ABS SGA>3U.HOD.PFV\cut.PFV

'Markus cut the log.' (earlier today)

d. *Markusu pr kati Jonen smaei*

Markus-w   pr   kati   John-en s\mae/y
Markus-ERG tree leaf.ABS John-DAT SGA>3U.HOD.PFV\give.PFV

'Markus gave John the money. (lit. tree leaves) ' (earlier today)

3.2.2.2   W, ya : Ergative

The singular ergative case has the form /-W/ which may be realised as [u] when syllabic (3.15a) or [w] as a syllable coda (3.15b). This element is the underspecified phoneme /W/ as discussed in the Section 2.3. A phonetic transcription of its realisation has been included instead of the orthographic in the following examples to demonstrate its behaviour.

(3.15)   a. [kraːru markus sə̆'rampʷui]

krar-w   markus s\rampu/y
dog-SG.ERG markus SG>3.HOD.PFV\bite.RS

'The dog bit Markus.'

b. [sɛntɑw markus sə̆'rampʷui]

sento-w   markus s\rampu/y
bird-SG.ERG markus SG>3.HOD.PFV\bite.RS

'The bird bit Markus.'

The ergative case marks the A argument of bivalent and trivalent constructions.

(3.16) a. *kraru markus srmapui*

krar-w   markus s\rampu/y
dog-SG.ERG markus SG>3.HOD.PFV\bite.RS

'The dog bit Markus.' (earlier today)

b. *Markusu pr kati Jonen smaei*

Markus-w   pr   kati Jon-en   s\mae/y
Markus-SG.ERG tree leaf Jon-DAT SG>3.HOD.PFV\give.RS

'Markus gave John the money.' (earlier today)

The ergative is the only case in which number is also marked on nouns. All nominal marking is on a singular vs. non-singular basis, the non-singular form is /-ya/ (3.17). Note that this refers to open class nominals only; number is marked in most other cases in the pronouns and demonstratives (§ 3.3).

(3.17) *krarya mo poi suruontne*

krar-ya   mo   poi   sw\ruontn/e
dog-NSG.ERG wallaby DIST.LOC NSG>3.RCT.DUR\hunt.EX

'The dogs hunted wallaby' [20130820-KCD-JG-YonasFishing 006]

The ergative case is not restricted to human sentient agents but rather the 'most agentive argument' of the clause or the affector. It can be used to mark the stimulus arguments of experiencer-object constructions (3.18). See Section 5.4.2.4 for more information.

(3.18) *yaru ngko btorunt*

yar-w   ngko   b\toru/nt
sleep-SG.ERG 1SG.ABS SG>1SG.RCT.PFV\cut.RS

'I was tired.' (lit. *Sleep cut me.*)

Non-animate actors may also be encoded in the ergative (3.19).

(3.19) *mpaitoto yuaru ngko umei*

mpaito=to yuar-w   ngko   w\me/y
now=ADV   rain-SG.ERG 1SG.ABS SG>1SG.HOD.DUR\wetten

'The rain wet me.'

3.2.3   The semantic cases

As discussed, the semantic cases mark semantic roles in adnominal, relational and subordinating functions.

3.2.3.1   *en : Dative*

The dative takes the form *-en*. It functions relationally to mark recipients and benefactives of the event indicated by the verb. These may be constituents required by the verb, i.e. arguments (3.20a), or optional relational constituents, i.e. non-arguments (3.20b).

(3.20)   a.   *kraren suminngk*

krar-en   sw\minngk/
dog-DAT   SG>3.RCT.DUR\feed

'(I) fed the dogs' [20130820-KCD-JG-YonasFishing 028]

b.   *si ekreywa srkeme pncen soro irepen*

si   ekre-y-wa   s-r\keme/   pncen   soro
eye   return-INF-CAUS   SG>3.IRR.PFV\return.RS   DIST.NSG.DAT   woman
irepe-en
people-DAT

'They would give back recompense to the woman's family.' [20131002-
KCD-KD-AdatStory 027]

The dative may be used to indicate benefactive arguments, i.e. nominals that are required by the verb (3.21a), i.e. required by the lexical semantics of the verb and indexed via the undergoer prefix. It also is used to indicate benefactive non-arguments (3.21b).

(3.21)   a.   *kraren sutar ngkai pi*

krar-en   sw\tar/   ngkai   pi
dog-DAT   SG>3.RCT.DUR\cut.EX   1SG.ERG   3.ABS

'(I) cut it for the dogs' [20130820-KCD-JG-YonasFishing 025]

b. *Mama, nou, klaempien, nou amakri*

mama nou klaempi-en nou a\makr/y
mama HOR children-DAT HOR NSG.MID.PRS.DUR\burn

'Mama, let's barbecue for the children.'

Arguments marked as dative may still serve one of the core grammatical relations as in recipient-indexed constructions as discussed in Section 5.4.3. In these constructions, the recipient is indexed on and required by the verb and as such is considered a syntactic argument. However, such recipients are still marked with the dative case. These constructions are the recipient-indexing construction (3.22a) and the benefactive applicative construction (3.22b). In regards to the applicative construction, this is typologically unusual as the recipient's promotion to argument status by the applicative does not involve any case reassignment.

(3.22) a. *Markusu pr kati Jonen smaei*

Markus-w pr kati Jon-en s\mae/y
Markus-ERG tree leaf Jon-DAT SG>3.HOD.PFV\give.RS

'Markus gave John the money.' (earlier today)

b. *Markusu pr pi Jonen sotorui*

Markus-w pr pi Jon-en so\toru/y
Markus-ERG tree 3.ABS John-DAT SG>3.DIA.HOD.PFV\cut.RS

'Markus cut the log for John (earlier today).'

The dative does not function adnominally or subordinately, although it is important to point out the phonological similarity between the dative and the possessive. For open class nominals these case markers are formally identical, so an alternate analysis would postulate a single case for the dative and possessive with different semantics between adnominal uses and relational uses. However, I keep them separate in my analysis here since the cases have distinct forms in the pronouns and demonstratives and as such represent distinct categories, or feature values, for the morphology of the language. For a discussion of the logic of this analysis see the works by (Goddard, 1982) and (Corbett, 2008).

3.2.3.2   en : Possessive

The possessive takes the form *-en*. It only functions adnominally and marks one noun as possessing another.

(3.23)   *ngki bapak portar melen mwa yikan*

ngki	bapak	portar	mel-en	mwa	y-kan
this	bapak(indonesian)	village	head-POSS	house	3.DUR.PRS/is.loc.DUR

'This is the village head's house.' (pointing at a hand-drawn map)

[20131005-KCD-JG-MapStory 104]

The possessive does function relationally or in subordinating function, unless one adopts the alternate analysis discussed in the previous section regarding the fact that it is syncretic with the dative.

3.2.3.3   nm : Instrumental

The instrumental case takes the form *-nm*. In the relational function, it is typically used to mark material and non-material instruments: tools, means of transport, language and temporal relations in the relational role. In the subordinating function it serves to mark a simultaneous event conducted by the S or A argument of the main clause. It does not serve any adnominal role.

The prototypical use of the instrumental case is to mark the tool used to complete the task denoted by the main verb.

(3.24)   a.   *Ale pinta pr onto susornte mpaeswmnm*

ale	pinta	pr	onto	sw\so/rnte
fathers	3NSG.ERG	tree	can	NSG>3.RMT.IMPF\mince.EX
mpaeswm-nm				
axe-INS				

'The fathers, they chopped up all the wood with axes.'

[20131005-KCD-JG-MapStory 010]

b. *brar moro krortiu mpyeanm mensnm*

brar   moro kro\rtiw/   mpyae-nm mens-nm
garden FOC   SG.MID.IRR.PFV\finish.RS thing-INS   fire-INS

'The garden can be finished with that, with fire.'

[20140205-KCD-JG-Gardening 028]

Another common use of the instrumental case is to mark the means of transportation of a motion verb (3.25).

(3.25)   *kantnannm kwan ngkompa ngko*

kantnan-nm kw\an/   ngkompa ngko
bicycle-INS   SG.RCT.DUR\go.DUR/ PROX.ABL 1SG.ABS

'I went from here on my bike.' [20130820-KCD-JG-YonasFishing 003]

The instrumental case is also used when talking about expressing concepts in different languages. In this way the particular language is the instrument used to express something. The example in (3.26) has the speaker commenting on the fact that the cassava crackers are called 'tape' in Javanese.

(3.26)   *jawa kikinm ye pi tape*

jawa kiki-nm   ye   pi   tape
java   speak-INS 3.PRS.COP DEM cracker

In Javanese it is (called) 'tape' (cassava crackers). [20120928-KCD-ML-CookingVideo 005]

The second most common use of the instrumental is to mark temporal adjuncts. These may be a simple noun (3.27a) optionally followed by the word *kongko* 'sun, time, day' (3.27b).

(3.27)   a. *yekinm kaewit moro kwan*

yeki-nm   kaewi-t   moro kw\an/
morning-INS hunting-PURP FOC   SG.RCT.DUR\go.DUR

'In the morning, I went to hunt (with dogs).'

[20130820-KCD-JG-Yonas-Fishing 020]

b. *baoror kongkonm tenkrent sempo yentnto kelimungke*

baoror	kongko-nm	ten\kre/nt	sempo
late.afternoon	sun-INS	MID.Sg.RCT.PFV\return.RS	again

yentun-to	kelimu-ngke
through-ADV	forest-ALL

'In the afternoon, I returned home through the forest again.'

[20120924-KCD-KD-FishingStory 009]

Another common use of the instrumental is to derive manner adverbials from property nouns.

(3.28)   a. *Ow, kant koklonm*

Ow,	kant	koklo-nm
PMS,	2SG.IMP.go	quick-INS

'Ok, go, quickly!'

b. kominngkntai nteme-ntemenm

ko\minngk/ntai	nteme-nteme-nm
NSG.MID.IMP\feed	little-INS

'You eat a little bit.' [20131009-KCD-KD-AdatVideoVoiceover 113]

In subordinating function it is used to mark a simultaneous action performed by the S or the A argument of the verb. In these cases it occurs on the infinitive of the verb.

(3.29)   *ngkai kongkin ytnnongk umansnm*

ngkai	kongkin	y\tnnongk/	umans-nm
1SG.ERG	letter	SGA>3U.PRS.DUR\write.work.EX	sitting-INS

'I write the letter whilst sitting.'

This action is always performed by the S or A argument of the matrix clause. The example in 3.30 can only mean that the person who was running did the shooting , not the thing which was being shot. To express simultaneous action with the O argument the allative case is used, as discussed in Section 3.2.3.10.

(3.30)   *ngkai mpowr sarmi warkonm*

    ngkai   mpowr   s\arm/y   warko-nm
    1SG.ERG cassowary SGA>3U.HOD.PFV\shoot.PFV/ running-INS

    'I shot it whilst I was running.'

(3.31)   klawo poi youme yuanm

    klawo poi   y\oume/y yua-nm
    child   DIST.LOC 3.HOD.DUR cry-INS

    'The child sat there crying.'

3.2.3.4   *wa : Causative*

The causative case takes the form *-wa* and marks causes. It only functions relationally. It can serve to mark stimulus as in example (3.32a); here we see the causative marking the cause of the predicate being shocked. In this particular example the speaker was sitting in a shed in which a coconut fell on the roof and made a loud noise which shocked the speaker. The construction is an attributive construction of the type 'I am shocked' with the optional nominal element indicating the cause. It can also be used to mark external causers (3.32b).

(3.32)   a.   *ngko bokreiwa ye powa*

        ngko   bokrei-wa   ye   po-wa
        1SG.ABS shocked-ADJ 3.PRS.COP coconut-CAUS

        'I was shocked by a coconut.'

     b.   *nsone negu mpngkwa towlei yuarwa*

        nsone   negu   mpngk-wa to\wle/i   yuar-wa
        1SG.POSS clothing wet-ADJ   MID.SG.HOD.PFV\become.RS rain-CAUS

        'My clothes are wet because of the rain.'

3.2.3.5   *t : Comitative*

The comitative takes the form *-t*. It only functions adnominally, in which it associates an animate nominal to another animate nominal (3.33a). This relationship is one of

accompaniment and the case-marked nominal aligns to the semantic role of companion. The comitative may also co-occur with the ergative case (3.33b), I have no further examples of the comitative occurring with other cases.

(3.33)   a. *krar pi kwrt teimeri mwampa*

    krar   pi   kwr-t   t\eimer/i   mwa-mpa
    dog   DEM.ABS   pig-COM   MID.SG.HOD.PFV\exit/   house-ABL

    'The dog and the pig left the house. (The dog left the house with the pig).'

    b. *mpai alut bmerknt ngko*

    mpai   al-u-t   b\merk/nt   ngko
    2SG   father-SG.ERG-COM   SG>1SG.IMP.DUR\follow.DUR   1SG.ABS

    'You and father will follow me.'

Comitative elements are included in the number agreement marking on verbs. Notice that the agreement on the verb is singular in example (3.33a), which indicates that the comitative-marked nominal is excluded from the agreement controller. This is confirmed with the following examples (3.34). In the first of these (3.34a) the verbal agreement is unambiguously singular yet the action is performed both by the mother and the baby which are marked here with the comitative case. A more complicated example occurs in (3.34b). In this example the verbal agreement is unambiguously dual, by combining the non-plural stem of the verb (§ 7.1) with the non-singular argument agreement. Yet there are three individuals in the sentence. So the verbal agreement appears to refer to the speaker and the child Prans, with Piter excluded from the agreement, as the previous example regarding the role of the comitative marked nominal in controlling agreement.

(3.34)   a. *tempo klawot, yar teiri*

    tempo   klawo-t   yar   t\eir/y
    new   child-COM   sleep   SG.MID.HOD.PFV\sleep.RS

    (She) and the baby have gone to sleep.

b. *ni Pitert namakrou motornm, klawo naemptr, Prans*

ni	piter-t	n\amakr/ou	motor-nm,
1NSG.ABS	Peter-COM	1.NSG.RMT.DUR\travel.NPL	motorbike-INS

klawo naemptr prans
child one Prans

'Peter and I went by motorbike, with a child, Prans.'

[20130921-KCD-ML-MamasVisitToRB-007]

Interestingly, the comitative shares its form with the purposive and does not over-lap in function, i.e. one is adnominal and the other relational. This again suggests that the two could be a single case with different semantics corresponding to different syn-tactic positions. However, again these are treated separately since they correspond to distinct forms in the pronoun and demonstrative paradigms.

3.2.3.6   *t : Purposive*

The same form as the comitative case may also be used relationally, in which it ex-pressed the semantic role of purpose. In the example (3.35) we see it marking nominal adjuncts indicating purpose. This can be a standard nominal serving as an adjunct to the verb (3.35a), in an attributive clause (3.35b) or in a non-verbal clause (3.35c).

(3.35)   a. *kotipt kwan*

kotip-t   kw\an/
fish-PURP   SGA.RCT.DUR\go.DUR/

'I went (in order to find) for fish.' [20130820-KCD-JG-YonasFishing 002]

b. *nongkai-nongkait pi ye*

nongkai-nongkai-t   pi   ye
food-food-PURP   DEM   3.PRS.DUR.COP

'Those are for eating/food.' [20140205-KCD-JG-Gardening 055]

c. *brar paya onto mwat ngkene*

brar   paya   onto   mwa-t   ngkene
garden   work   can   house-PURP   DEM.PROX.FOC

'Garden work can be for houses too.' [20131005-KCM-JG-MapStory 090]

The purposive may also serve to mark a subordinate clause which marks the purpose of the main verb. In these an infinitive form of the verb inflected for the purposes denotes purpose clauses; an optional internal argument of the subordinate verb may also be included in the absolutive case, as with cassowary in (3.36).

(3.36)   *ngko mpowr parat krantngki*

> ngko   mpowr   para-t   kr\an/nt=ngki
> 1SG.ABS   cassowary hunting-PURP   SG.FUT.DUR\go.DUR/=DEM.PROX

> 'I am going to go hunt cassowary.' [20121002-KCD-JG-CassowaryStory 001]

3.2.3.7   *wi : Associative*

The associative case is only used adnominally, to associate nominal phrases with other nominal phrases. It aligns to a semantic role of association. These constructions are parallel to a nominal conjunction similar to the comitative. The associative case has a less restricted semantics than the comitative. It is used to mark association for all instances of non-animate participants (3.37a). It is also used along with the comitative case to mark animates when there are more than two participants (3.37b).

(3.37)   a. *ngko wiskarwi bopan ominangki*

> ngko   wiskar-wi   bopan   o\minangk/i
> 1SG.ABS   cassava-ASSOC   rice   SG.MID.HOD.DUR\eat.EX/

> 'I ate rice with cassava.'

   b. *ympumprt pintawi moro knontarnt*

> ympumprt   pinta-wi   moro   kn\onta/rnt
> all   3NSG.ERG-ASSOC   FOC   1NSG.RMT.IMPF\live.EX

> 'We all live together with them.'

> [20131009-KCD-KD-AdatVideoVoiceover 088]

It is unclear from my corpus whether the associative marked nominal is included within the controller for the purposes of verbal agreement.

3.2.3.8 ni : Locative

The locative is marked with /-ni/. This expresses the semantic role of location for static locations. This case may be used for both relational (3.38) and adnominal locatives (3.39).

(3.38)   a. *komponi paya naemnaempr krrnte*

        kompo-ni paya naemnaempr kr\r/nte
        well-LOC   work together   NSG.MID.FUT.DUR\work.EX

        'Will we will work together by the well.' [20131002-KCD-KD-AdatStory 015]

   b. *plawau nmku Yongkulsurni ngkei, Belandau*

        pla-wa-w   n\mk/u   Yongkulsur-ni
        white-ADJ-ERG SG>1NSG.RMT.DUR\gather.EX Yanngandur-LOC
        ngkei,   Belanda-w
        DEM.LOC Netherlands-ERG

        'The whites assembled us here in Yanggandur, the Dutch.' [20120930-KCD-KD-BeforeStory 022]

   c. *seki yopu-yopuni poi enckekai*

        seki   yopuyopu-ni poi   e\nckek/ai
        seki.tree shade-LOC   DEM.LOC NSG.MID.RMT.DUR\sit.down.EX

        'We sat in the shade of the seki tree.'

        [20130918-KCD-KD-RiverStory2012 006]

(3.39) *pompa nya wongkongke, mlaeni poto poi irei*

      pompa   nya   wongko-ngke, mlae-ni   poto poi
      DEM.ABS 3.PRS.PL.go clearing-ALL   termite.mound-LOC photo DEM.LOC
      yrei
      3.NPL.HOD.DUR.COP

      'From there, we go to the clearing, the photo at the termite mound was there.' [20130918-KCD-KD-RiverStory2012 003]

The locative is used for all static locations including inside (3.40a), on top of (3.40b) and into (3.40c).

(3.40)   a.   *portar kara ngkei omansi, payat moro oiri, ngkne mwani oiri*

portar kara   ngkei   o\mans/y   paya-t
village community DEM.PROX.LOC MID.NSG.PRS.DUR\sit.EX work-COM
moro o\ir/y,   ngkne   mwa-ni
FOC   MID.NSG.PRS.DUR\choose,   DEM.PROX.FOC   house-LOC
oiri
MID.NSG.PRS.DUR\choose

'The community meets here, for planning projects, in this building they

decide.' [20131005-KCD-JG-MapStory 075]

b.   blni skuknornt

bl-ni   kw\kno/rnt
egg-LOC   SG.FEM.RMT.IMPF\sit.atop.EX

'She was sitting on an egg.' [20141108-KCD-YG-CassowaryStory 015]

c.   *swani onto ntlngkolnt mpoi ngkei ntarsinu piengku*

swa-ni   onto nt\lngkol/nt   mpoi   ngkei
hand-LOC can   SG>2SG.HOR.DUR\stab   DEM.IGN   DEM.PROX.LOC
ntarsinu   piengku
thorn-ERG   3SG.ERG

'Maybe the thorn can stab into your hand.'

[20140205-KCD-JG-Gardening 045]

3.2.3.9   *mpa : Ablative*

The ablative functions relationally and encodes direction or movement from a location. Typically, this occurs along with a verb of motion (3.41) or as a relational adjunct describing a physical location (3.42).

(3.41)   a.   *pi mwa wolmnmpa tanimeri*

pi   mwa   wolmn-mpa tan\imer/y
3.ABS   house inside-ABL   SG.MID.HOD.PFV\exit

'She exited from inside the house.'

b. *montena moro kwan ngkompa potarmpa*

montena	moro	kw\an/	ngkompa	potar-mpa
yesterday	FOC	SG.RCT.DUR\go.NPL	DEM.PROX.ABL	village-ABL

'Yesterday I went from the village here.' [20130820-KCD-JG-YonasFishing 001]

(3.42)   *ngkompa srtoru ngkai*

ngkompa	sr\toru/	ngkai
DEM.PROX.ABL	SG>3.FUT-IRR.PFV\cut.RS	1SG.ERG

'From there I cut it (pointing at the spine).' [20121002-KCD-JG-Cassowary-Story 028]

The ablative can also be used for sources (3.43). In this example the speaker recalls eating meat from the tail of the animal. The first verb *kwominngk* is the generic verb for 'to eat' but this is then clarified with the specific word for eating meat, *swan*.

(3.43)   *kwominngk pekumpa, swan*

kw\ominngk/	peku-mpa	sw\an/
MID.SG.RCT.DUR\eat	tail-ABL	SG>3.RCT.DUR\eat.meat

'I ate the meat from the tail.' [20120924-KCD-KD-FishingStory 007]

The ablative can also be used for non-location sources (3.44). In this example the speaker is discussing a type of arrow with a round head designed for hunting birds. The ablative is used to clarify that the object was made from stone and would be hung (on the belt) for a hunting trip.

(3.44)   *mlaempa surarrnt pi, ktormiru*

mlae-mpa	sw\rar/rnt	pi	k=to\mir/u
stone-ABL	3.RMT.IMPF\COP.EX	3.ABS	IRR=MID.SG.RMT.PFV\hang.RS

'It was from stone, it would be hung.' [20141108-KCD-YG-CassowaryStory 029]

The ablative can also be used for measuring the inception point of spans of time (3.45). The numbers of the years and the word peta, 'map', are both from Indonesian.

(3.45)   *ngkne peta mitoyengki dua ribumpa, ngkengke mpaito dua ribu tiga belas ye*

ngkne   peta mi=to   ye=ngki
DEM.PROX.FOC map REL.INAN=ADV 3.PRS.DUR.COP.NPL=DEM.PROX.TOP
dua ribu-mpa,   ngkengke   mpaito dua ribu   tigabelas
two thousand-ABL DEM.PROX.ALL now   two thousand thirteen
ye
3.PRS.DUR.COP.NPL

'This map which is from 2000, until now, 2013.' [20131005-KCD-JG-MapStory 046]

3.2.3.10   ngke : Allative

The allative, along with the ablative, encode both location and directionality. The allative encodes semantic relations of movement toward a goal. It functions relationally and in subordinating functions.

It typically functions relationally, generally encoding a locational goal for verbs of movement (3.46).

(3.46)   *krarnt mwangke yart*

krarnt   mwa-ngke yar-t
SG.IRR.DUR.go house-ALL sleep-PURP

'We would go to the house for sleep.' [20120930-KCD-KD-BeforeStory 068]

It can also serve to mark a locational goal in which no movement verb is required (3.47).

(3.47)   *ngkompa, mensngke srimant sempo pompa*

ngkompa,   mens-ngke sr\ima/nt   sempo
DEM.PROX.ABL fire-ALL   SG>3.IRR.DUR\take.out.EX again
pompa
DIST.PROX.ABL

'...from here, I pull (them) out again and (put them) in the fire.' [20121002-KCD-JG-CassowaryStory 021]

The allative may also be used for the non-locational goal of verbs which do not strictly encode movement but do encode some kind of directionality, such as 'call' in (3.48).

(3.48) *kai se pno, kariant omlngke 'nou!'*

kai   s\e   pno,
ceremonial.food 2SG>3.PRS.IMP.HOR.PFV\give.RS DEM.TMP
ka\ria/nt   oml-ngke   'nou'
SG.MID.IMP.DUR\call mother-ALL HOR

'The time you give out the ceremonial food, You call to mother 'Let's (go)!'

The allative may be used to mark the end point of a span of time, meaning something like 'until'. In this example it is used on the word *nume* which is a word which refers to the day two days from now. Interestingly, the word *nume* is bidirectional, in that it can refer to either the day before yesterday or the day after tomorrow.

(3.49) *piengku uri numengke*

piengku w\ri/   nume-ngke
3SG.ERG SG>1SG.PRS.DUR\hold.DUR two.day-ALL

'He is holding me until two days from now.' [20120930-KCD-KD-BeforeStory 032]

The allative can also refer to more abstract goals although this is not a common usage (3.50).

(3.50) nongkomu brsai. Mpowerngke trsme...

nongkom-w   b\rs/ai   mpower-ngke,
brother.in.law-ERG NSG>1SG.RMT.PFV\hit.RS cassowary-ALL
t\rs/me
NSG.MID.HOD.PFV\hit.RS

'Brother-in-law hit me. They fought over the cassowary...' [20141108-KCD-YG-CassowaryStory 072]

It is also used in subordinate clauses to indicate a simultaneous action performed by the O argument of the matrix clause. In the following examples, the subordinate action cannot be interpreted as being performed by the A argument of the matrix clause. Simultaneous actions occurring with S and A arguments are indicated by the instrumental case. In this environment the case applies to the infinitive form of the verb which may occur with its internal argument or not.

(3.51)   a. *ngkai mpowr sarmi atka owneingke*

ngkai   mpowr   s\arm/y   atka   owne-i-ngke

1SG.ERG cassowary SG>3.HOD.PFV\shoot.RS water drink-INF-ALL

        'I shot the cassowary whilst it was drinking water.'

    b. *ngkai krar srsoi umansngke*

ngkai   krar s\rso/y   umans-ngke

1SG.ERG dog SG>3.HOD.PFV\hit.RS sit.INF-ALL

        'I hit the dog whilst it was sitting.'

3.3   Pronouns and demonstratives

3.3.1   Personal pronouns

Personal pronouns inflect for three persons, two numbers and all the cases above. For a full paradigm see Table 4.2. For a discussion of the syntactic behaviour of pronouns see Section 4.2.1.

As with all nominal number in Ngkolmpu, pronouns are inflected for number on a singular versus non-singular basis. Most cases inflect for number, except for the absolutive which only marks number on the first person. In addition the comitative, as it only marks single animates, does not have a non-singular form. The locative case also does not mark number since it marks single locations.

	1SG	1NSG	2SG	2NSG	3SG	3NSG
Absolutive	ngko	ni	mpu		pi	
Ergative	ngkai	ninta	mpai	mpunta	piengku	pinta
Dative	nson	ncuen	mpon	mpan	pien	pncen
Possessive	nsone	nsone	mpone	mpane	pene	pncene
Purposive	nsont	ncuent	mpont	mpant	pient	pncent
COM.ABS	ngkot	-	mput	-	pit	-
COM.ERG	ngkait	-	mpait	-	piengkut	-
ASSOC.ABS	ngkowi	niwi	mpuwi		piwi	
ASSOC.ERG	ngkaiwi	nintawi	mpaiwi	mpuntawi	piengkuwi	pintawi
Locative	ngkoni	-	mponi	-	poi	-
Ablative	nsonmpa	ncuenmpa	mponmpa	mpanmpa	pienmpa	pncenmpa
Allative	nsongke	ncuengke	mpongke	mpanngke	piengke	pncengke

Table 3.3: Ngkolmpu Personal Pronouns

The associative and comitative cases are also inflected for the ergative case if the noun they are adjoined to is in the ergative. The absolutive is used in all other roles.

There are a number of formal elements worth mentioning about the structure of the pronouns. The semantic relational cases are largely built from the dative, whilst the purely adnominal cases, comitative and associative are built from either the appropriate absolutive or ergative case depending on their syntactic role.

3.3.2 Relative pronouns

Relative pronouns are set out in Table 3.4. Relative pronouns are largely formally similar to the interrogative pronouns. These make a distinction between animate and inanimate referents and make a number distinction in the animate series. They refer to an argument of a subordinate relative clause as coreferential with an argument of the matrix clause in which the subordinate clause is contained. They are inflected for the case of their role in the subordinate clause. The syntax of relative clauses is discussed in Section 8.4.4. Gaps in the paradigm in Table 3.4 are either semantically or pragmatically unlikely and have not been attested.

| | Animates | | |
	SG	NSG	Inanimate
Absolutive	oro	ra	mi
Ergative	rau	raye	mi
Dative	ran	rayen	men
Possessive	mene	mencene	
Purposive			mnt
Comitative	rat		
Associative		rawi	*
Locative			moi
Ablative			mmpa
Allative			mngke

Table 3.4: Ngkolmpu relative pronouns

3.3.3   Interrogatives

Interrogatives are used to form content questions. They are related to the distinct sub-classes of nominals yet are syntactically equivalent to determiners. The largest set of interrogatives are the interrogative pronouns which inflect for case and number in animates; these cover the words for 'what' *nor*, 'who' *ra* and 'why, for what' *norwa*. There are also individual interrogative words: the quantifier, i.e. *mntai* 'how many' , a temporal adverb, i.e. *mno* 'when', a demonstrative, i.e. *mne* 'which' and the sentence interrogative *moro* 'how'.

Interrogatives display the same syntactic distribution as determiners, i.e. pronouns and demonstratives. For the full analysis of the distribution of determiners see Section 4.2.1. For this section it is sufficient to note that they can occur in place of the entire nominal construction (5.16) or alongside it (3.52b), if they occur with a nominal phrase they typically occur preceding the nominal phrase. Note the two absolutive arguments in (5.16); this is a cognate-object verb in which takes two absolutive arguments see Section 5.4.2.1 for more details.

| | Animates | | Inanimate |
	SG	NSG	
Absolutive	oro	raye	nor
Ergative	rau	raye	noru
Dative	ran	rayen	noren
Possessive	mene	mencene	▓
Purposive			nort
Causative			norwa
Comitative	rat		▓
Associative	▓	rawi	norwi
Locative			moi
Ablative	ranmpa	rayenmpa	mmpa
Allative	rangke	rayengke	mgnke / mose

Table 3.5: Ngkolmpu interrogative pronouns

(3.52)   a. *klaempi mpu nor ire?*

    klaempi mpu   nor   y\r/e
    children 2SG.ABS what.ABS NSG>3.PRS.DUR\work.DUR

    'What are you children doing?' [20131009-KCD-KD-AdatVideoVoiceover 067]

   b. *nor pr iritr poi?*

    nor   pr   y\ritr/   poi
    what.ABS tree 3.PRS.DUR\is.standing.NPL DIST.LOC

    'What tree is standing there?' [20140212-KCD-ML-DreamStory 019]

Table 3.5 sets out the attested interrogative pronouns. Interrogative pronouns have distinct forms for animates and inanimates with a number distinction for animates only. Interrogative pronouns take the case form appropriate for the role they are questioning. Semantically, these pronouns cover the domains of what and who. The locative cases with the inanimate series involve the words for where, where to and where from. The causative and purposive inanimate forms are typically translated as why, meaning 'what cause' and 'for what purpose' respectively.

Greyed out cells in Table 3.5 represent semantically impossible forms. The others

are semantically uncommon and have not been attested. The animate forms for certain cases are quite rare especially the animate ablative and allative forms. There are two options for the inanimate allative interrogative pronoun, *mgnke* and *mose*. The first, *mgnke*, is the productive form that is used in most constructions. The second, *mose*, is primarily used as part of the construction in (3.53). This construction is a question translated as 'where are you going?'. This is the most common form of greeting used around the village and is highly conventionalised. This appears to be an older form that has been maintained in this high frequency construction. The form can also be used on its own in place of the entire construction, so that someone might call out to another '*mose*' to enquire where the addressee is going.

(3.53)   *mose an mpu*

mose   an   mpu
where.ALL   SG.PRS.DUR.go   2SG.ABS

'Where are you going?' (greeting)

There is a single quantifier interrogative *mntai* meaning 'how many' (3.54).

(3.54)   *mntaei bori ye*

mntaei   bori   ye
how.many   REL   3.PRS.DUR.be.DUR

'How many?' [20131002-KCD-KD-AdatStory 018]

There is a temporal adverb interrogative *mno* meaning 'when' (3.55).

(3.55)   *pi mno krkewant?*

pi   mno   kra\kewa/nt
3.ABS   when   SG.MID.FUT.DUR\break

'When will it be broken?' [20131005-KCD-JG-MapStory 099]

There a demonstrative interrogative *mne* meaning 'which' (3.56). This form is similar to the focus demonstratives discussed in Section 4.3.2. This is unsurprising since the question element is typically new information.

(3.56)   *mne krar Markus srampui?*

       mne   krar Markus sr\ampu/i
       which dog   Markus SG>3.HOD.PFV\bite.RS

       'Which dog bit Markus?'

There is also the sentence interrogative *moro* which is mostly translated as 'how'. Typically it is uttered alone as simply *moro* in order to ask how something was achieved. It is also frequently used in narrative texts in which it always occurs directly before the verb. In these cases it appears to serve a backgrounding function. This is largely a stylistic choice as omitting the element does not alter the semantics and it does not appear to be playing a role in information structure, occurring on both old and new information. The following is from a story about the process of cassowary hunting (3.57). This involves a series of statements: 'I go cassowary hunting', 'I see a tree' and 'I build a hide'. However, each of the previous statements are repeated with *moro* in order to background these before the newly introduced event.

(3.57)   a. *ngko mpowr parat krantngki*

       ngko   mpowr   para-t   kr\a/nt=ngki
       1SG.ABS cassowary hunt-PURP SG.MID.IRR.DUR\go=PROX.ABS

       'This is (what happens) when I go cassowary hunting.' [20121002-KCD-JG-CassowaryStory 001]

    b. *mpowr parat moro krant*

       mpowr   para-t   moro kr\a/nt
       cassowary hunt-PURP FOC   SG.MID.FUT.DUR\go

       'I'll go cassowary hunting...' (background)

       [20121002-KCD-JG-CassowaryStory 002]

    c. *pr sriow*

       pr   sr\iow/
       tree SG.3.FUT.PFV\see.RS

       '...(and) I'll see a tree' (foreground)

       [20121002-KCD-JG-CassowaryStory 003]

d. *mpowr parat moro krant ngko*

mpowr   para-t   moro kr\a/nt   ngko
cassowary hunt-PURP   FOC   SG.MID.FUT.DUR\go 1SG.ABS

'(When) I'll go cassowary hunting...' (background)

[20121002-KCD-JG-CassowaryStory 004]

e. *pr mpumpu moro sriow, 'ah pr mpumpu ye'*

pr   mpumpu moro sr\iow/,   'ah pr   mpumpu
tree fruit   FOC   SG.3.FUT.PFV\see.RS oh tree fruit
ye'
3.PRS.DUR.COP

'...(and) I'll see a fruit tree: "Ah, this is a fruit tree"' (background)

[20121-002-KCD-JG-Cassowary-Story 005]

f. *kud srawont*

kud sr\awo/nt
hide SG>3.FUT.DUR\make.EX

'(then) I'll build a hide' (foreground)

[20121002-KCD-JG-CassowaryStory 006]

Considering the examples in (3.57) only, the use of *moro* appears to be applying to only old information. However it may also apply to new information. In example (3.58) taken from the same story, the speaker mentions the cassowary for the first time in (3.58a) yet *moro* is still used. In the following utterances, the speaker also backgrounds the time of day by referring to the call of a particular bird. The final foregrounded utterance refers back to both the cassowaries arrival and the time of day: *pno krannt* 'at that time, the cassowary comes.' As such, we can see that this is clearly not marking old information and should be thought of as a backgrounding device.

(3.58) a. *mpowr moro krannt*

mpowr   moro kr\an/nt
cassowary FOC   SG.MID.FUT.DUR\come

'...the cassowary comes' (background)

[20121002-KCD-JG-CassowaryStory 008]

b. *tupapa moro tararo*

tupapa   moro t\arwar/
evening.bird FOC   SG.MID.FUT.PFV\call.RS

'the evening bird calls out' (background)

[20121002-KCD-JG-CassowaryStory 009]

c. *pno krannt*

pno   kr\an/nt
that.time SG.MID.FUT.DUR\come

'at that time, (the cassowary) comes.'

[20121002-KCD-JG-CassowaryStory 010]

3.3.4   Demonstratives

Demonstratives are typically the final elements of nominal constructions and are obli-
gatorily marked for case along with the head of the nominal phrase. There are three
categories of demonstratives based on their deictic content: proximal, distal and igno-
rative, i.e. unknown location. Formally, these display the same initial consonant as the
1st, 3rd and 2nd pronouns respectively. The syntactic behaviour of these elements is
discussed in Section 4.2.1. These are set out in Table 3.6. There are also focus demon-
stratives which are syntactically distinct from the standard demonstratives. These are
invariant for case and so are discussed in Section 4.3.2.

   Proximal is used to locate objects close to the speaker. The following example was
spoken regarding a hand-drawn map of how the village used to be. The speaker intro-
duces the story and then clarifies by gesturing toward to the map and confirming 'this
Yanggandur'.

(3.59)   *Ngkne kraibentent ngko, nmaei potar moro bori yerau, Yongkulsur **ngki***

ngkne   kra\ibent/nt   ngko,   nmaei potar moro bori
PROX.FOC SG.MID.FUT.DUR\tell 1SG.ABS, before village FOC   REL
yrau,   Yongkulsur ngki
3.RMT.DUR.COP, Yanggandur PROX.ABS

'I will tell this (one), which is of the old village, this Yanggandur.'

[20131005-KCD-JG-MapStory 002]

	Proximal	Ignorative	Distal
Absolutive	ngki	mpi	pi
Ergative	ngkiengku	mpiengku	piengku
Dative	ngken	mpon	pien
Possessive	ngkene	mpone	piene
Instrumental	ngknm	mponm	pnm
Causal	ngkiwa	mpiwa	piwa
Purposive	ngknt	mpnt	pnt
Comitative	ngkit	mpit	pit
Associative	ngkiwi	mpiwi	piwi
Locative	ngkei	mpei	poi
Ablative	ngkngke	mpngke	pngke
Allative	ngkompa	mpompa	pompa

Table 3.6: Ngkolmpu Demonstratives

Distal is used to locate objects not close to the speaker.

(3.60) *pnm krakakont brar pi*

pnm   kra\kako/nt   brar   pi
DIST.INS SG.MID.IRR.DUR\tie.EX garden   DIST.ABS

'With that (rope), that fence should be tied.' [20140205-KCD-JG-Gardening 019]

The most common use of the distal is to make reference to some textually anaphoric referent.

(3.61)   a. *nmaei pno belandampa surarnt pi*

nmaei pno   belanda-mpa   sw\rar/rnt   pi
before that.time Netherlands-ABL 3.RMT.IMPFa\COP.EX DEM.DIST

'In that before-time, he (the pastor) was from Holland.'

[20131005-KCD-JG-MapStory 017]

b. *soi yerar pi, mat*

soi   ya\rar   pi,   mat
ritual 3.PRS.DURa\COP.EX DIST.ABS Matt

'Matt, those are our customs.' [20131009-KCD-KD-AdatVideoVoiceover 127]

There is a third category of demonstrative which is labelled as ignorative it is used when the location of the object is unknown. The object may be out of sight (3.62) but also may potentially be not experienced (3.63). In this way, it represents a type of epistemic modality regarding the knowledge of the speaker. In this example, there are two demonstratives: the proximal and the ignorative. The ignorative indicates the modality aspect whilst the proximal indicates the possible location of the event.

(3.62)   a. *mpito mpoi yerar*

mpito mpoi   y-rar
rat   IGN.LOC 3.DUR.PRS\copula.EX

'It's (probably) rats.' (in response to a sound in the wall)

b. *epi mpoi Markus ye*

epi   mpoi   Markus ye
DIST.TOP.ABS IGN.LOC markus 3.$alpha$.copula

'Maybe it's Markus there.' (in response to a knock at the door)

(3.63)   *swani onto ntlngkolnt mpoi ngkei ntarsinu piengku*

swa-ni   onto nt\lngkol/nt   mpoi   ngkei   ntarsin-w
hand-LOC can   SG>2SG.FUT.DUR IGN.LOC PROX.LOC thorn-SG.ERG
piengku
3SG.ERG

'The thorn can stab your hand here potentially.'

[20140205-KCD-JG-Gardening 045]

Demonstratives do not mark number as shown in (3.64).

(3.64)   *kwr wiskar ngki ominngki*

kwr   wiskar   pi   o-minngk-i
pig   cassava   PROX.ABS   DIA-eat-HOD.SG.A

'The pig ate this cassava root / these cassava roots.'

Chapter 4

Nominal syntax

This chapter establishes the word classes of nominals and determiners in Ngkolmpu and describes the syntactic constructions they may occur in. Nominals and determiners are morphologically characterised as words which may be marked for case. Nominals consist of nouns, adjectives, numerals/quantifiers and determiners. Adjectives are a small closed class of words and the majority of words which semantically correspond to adjectives cross-linguistically are nouns in Ngkolmpu. Determiners, consisting of pronouns and demonstratives, head their own phrases and as such are syntactically distinct from nominals.

Nominal syntax is organised around a determiner phrase, which is headed by either a demonstrative or a pronoun. When headed by a demonstrative, the demonstrative may take a nominal phrase complement, however bare nominal phrases are also common. Nominal phrases may be headed by any nominal word. The language is typically head final and as such, determiners are in final position and the head nominal typically immediately precedes it. This is the default ordering, however demonstratives are flexible whether they occur before or after the nominal phrase with no apparent change of scope or reading. In addition to this, there are numerous discourse-related constructions which involve a clause-external nominal phrase situated within the left periphery. These also involve an anaphoric demonstrative or pronoun in close proximity to the verb. These structures often appear as if determiners and noun phrase elements are discontinuous since nominal elements in the periphery do not occur with a deter-

miner. Donohue (2011) has described case marked nominal elements being able to be fully discontinuous in Kanum (Ngkolmpu). However, the data I have collected does not align with this analysis. Instead nominal phrases topicalised in the left periphery only appear discontinuous. This is discussed in more detail in Section 4.3.3.

4.1   Word classes

Both nominals and demonstratives may be morphologically categorised as any word which may be marked for case. Syntactically, nominals are any elements which head a nominal phrase, either nominal phrases or determiner phrases. The primary distinction is between determiners, which only head determiner phrases, and all other nominals, which may head the nominal phrase. The full list of relevant word classes is as follows:

- Nominals
    - Nouns
    - Adjectives
    - Numerals/Quantifiers
- Determiners
    - Demonstratives
    - Pronouns

Demonstratives and pronouns are treated as subclasses of the larger group of determiners since they have the same syntactic distribution. A discussion of the distinction between pronouns and demonstratives is in Section 4.1.4. There are no articles in Ngkolmpu.

4.1.1   Nouns

Nouns are defined negatively, as nominals which are not a part of any other nominal word class, i.e. not adjectives, demonstratives or numerals. As with all nominals, their positive definition is the ability to be marked for case and to serve as head of the noun phrase. They also cannot serve in attributive constructions without the adjectivising

marker -wa, discussed in the previous chapter in Section 3.1.2. Nouns are the largest word class in Ngkolmpu, making up just over 50% of lexical items in the corpus. This is the only class which accepts borrowings, largely from Indonesian but there are also many lexical items from neighbouring languages Marori and Marind.

Nouns are typically *entities*, such as *krar* 'dog' in (4.1a). However, they may also display other semantics like *events* such as *para* 'hunting' in (4.1b). They are the most common noun phrase heads and as such are typically marked for case. They may also be marked for number in the ergative case (§ 3.2).

(4.1) a. *krarya mo poi suruontne*

krar-ya   mo   poi   sw\ruontn/e
dog-NSG.ERG wallaby there NSG>3RCT.DUR\hunt.EX

'The dogs chased a wallaby there (yesterday).'

[20130820-KCD-YG-YonasFishing 006]

b. *...paranm onto krantei*

para-nm   onto   kr\ant/ei
hunting-INS can   1NSG.FUT.PFV\go.RS

'We can go hunting.' [20141108-KCD-YG-CassowaryStory 006]

Around 30% of nouns are *properties*. These are abstract nouns that would typically correspond to adjectives cross-linguistically. The most common use of property nouns is in attributive position in attributive constructions with the adjective marker *-wa* (4.2a). However, property nouns may also occur as the head noun of the nominal construction (4.2b) without the adjective marker.

(4.2) a. *Salpiusu saklwa pr pi sowongk*

Salpius-w   sakl-wa   pr   pi   s\owo/ngk
Salpius-SG.ERG branch-ADJ tree DEM SG>3.RMT.PFV\see.RS

'Salpius saw the branched tree.' [20140212-KCD-ML-DreamStory 02X]

b. *Salpiusu pr sakle sowongk*

Salpius-w   pr   sakl   s\owo/ngk
Salpius-SG.ERG tree branch SG>3.RMT.PFV\see.RS

'Salpius saw the tree branch.'

Nouns also occur along with the copula in predicative adjective constructions (4.3a). In this example, we see the word *kence* 'heaviness' occurring with the adjective marker. We can see that this word 'kence' may occur in other constructions without the adjective marker (4.3b) and occurring with other nominal morphology.

(4.3) a. *irepe pi kencewa ye*

irepe   pi   kence-wa   ye
person DIST.ABS heaviness-ADJ 3.PRS.COP

'The man is heavy.'

b. *pi poi kramangknt kencenm*

pi   poi   kra\mangk/nt   kence-nm
3.ABS DIST.LOC MID.SG.FUT.DUR\hold.EX heaviness-IND

'It'll be held in place by its heaviness.'

Colour terms are derived from nouns using the adjectivising morphology (§ 3.1.2). There are two basic colour terms 'black' and 'white', which have fused with the attributive marker permanently. These two terms are entirely lexicalised and have no meaning without the adjectivising marker.

(4.4) a. *plawau nmku Yongkulsurni ngkei*

pla-wa-w   n\mk/w   Yongkulsur-ni   ngkei
white-ADJ-ERG SG>1.NSG.RMT.DUR\gather.EX Yanggandur-LOC here

'The whites assembled us here in Yanggandur.' [20120930-KCD-KD-BeforeStory 022]

b. *slimpuntei wanswa atka nteme*

s\limpu/ntei   wans-wa akta   nteme
2.NSG>3.IMP.DUR\pour.EX black-ADJ water a.bit

'(You guys) pour some coffee.' [20131009-KCD-KD-AdatVideoVoiceover 070]

4.1.2 Adjectives

Adjectives are a small class of words which semantically cluster around intrinsic properties. Morphosyntactically, they are characterised as being able to occur in attributive and predicative constructions without the adjectival suffix (4.5). Only seven adjectives have been attested: *ntop* 'big', *wutkle* 'small', *ptku* 'short', *neme* 'good', *yeko* 'bad', *nmaei* 'old' and *tempa* 'new'.

(4.5) a. *srworntei mpaeswmnm, ntop pepr, wutkle pr...*

sr\owr/ntei   mpaeswm-nm, ntop pepr,   wutkl
1.NSG>3.IRR.DUR\chop.EX axe-INS,   big   yamstick, short
pr
wood

'We would chop with an axe, a large yamstick and a short stick...'

[20140205-KCD-JG-Gardening 023]

Like all nominals these may also serve to function as head of noun phrases and, as such, be marked for case (4.6a).

(4.6) a. *ntopu mo piengku sreyerknt pi*

ntop-w   mo   piengku   sr\yerk/nt=pi
big-ERG   wallaby   DEM.SG.ERG   SG>3.FUT.DUR-stalk.DUR=TOP.DIST

'The big one stalked the wallaby.'

4.1.3 Numerals and the quantifier

Numerals and the quantifier are in complementary distribution: this is the NUM position of the phrase structure rules introduced in Section 4.2. They include cardinal numerals (4.7) and a single quantifier (4.8). The quantifier is translated as 'all'; no other quantifier element has been identified.

(4.7)   *otroit mito ye pi, naempr konsopor, yempoka konsoper yow yerar*

    ortoi-t   mi=to   ye   pi,   naempr konsopor, yempoka
    dig.INF-PURP REL=ADV 3.COP DEM, one   day,   two
    konsopor yow yrar
    day   NEG 3.PRS.COP.PL

    'That digging is for one day only, not two days.'

    [20140205-KCD-JG-Gardening 050]

(4.8)   *yimpurmpurt potar kara ngkei omansi payat*

    yimpurmpurt potar   kara   ngkei o\mans/y
    all   village community here NSG.PRS.DUR\gather.EX
    paya-t
    work-PURP

    'All the community gathers here for work.'

    [20131005-KCD-JG-MapStory 078]

Numerals may serve as heads of the noun phrase and as such may be marked for case (4.9). This example is an expression which is used to discuss exchanges. It involves two clauses each containing the same verb. In the first clause only the agent is expressed and in the second just the recipient. I should note that this example translates with two distinct lexical items, give and receive. In the Ngkolmpu, the same lexeme is used twice but the different readings are given by omitting certain arguments.

(4.9)   *se naempru, naempren se*

    se   naempr-w naempr-en
    SG>3.FUT-IRR.PFV.give.RS one-ERG.SG one-DAT
    se
    SG>3.FUT-IRR.PFV.give.RS

    'One gives and one receives.' [20141108-KCD-YG-CassowaryStory 031]

4.1.4   Determiners

The determiner is the head of the determiner phrase. It is phrase final in the default ordering of elements determiner phrases. Determiners and pronouns are marked for

case along with the head of the nominal phrase. It is always marked for the same case as the nominal head it occurs with. Many of the distal forms of demonstratives and third person pronouns are similar or identical and at times it is difficult to determine whether an element is a demonstrative or a pronoun. Demonstratives may also indicate information structure. Topic or given information may be indicated on the demonstrative through a proclitic *e=* which attaches to the standard demonstrative. There is also a focus demonstrative which displays different syntactic behaviour from the standard demonstrative. Section 3.3.4 in the previous chapter contains a detailed discussion of the form and function of demonstratives and pronouns. In this section, I focus only on their syntactic behaviour.

4.1.4.1   Demonstratives

Demonstratives mark deictic position of the nominal phrase they occur with. There are three categories of demonstratives based on their deictic semantics: proximal, distal and ignorative, i.e, unknown location. Formally, these are similar to the first, third and second pronouns respectively. A table of demonstrative forms is presented in Table 3.6. The proximal demonstrative is used to locate objects close to the speaker (4.10). This example also demonstrates the demonstratives are able to occur with place names.

(4.10)   *Ngkne kraibentent ngko, nmaei potar moro bori yerau, Yongkulsur ngki*

ngkne   kr\aibent/nt   ngko,   nmaei potar moro bori
DEM.PROX.FOC SG.MID.FUTDUR\tell 1SG.ABS, before village FOC   REL
yrau,   Yongkulsur   ngki
3.RMT.DUR.COP.NPL Yanggandur DEM.PROX

'I will tell this story of the old village, this village Yanggandur.' [20131005-KCD-JG-MapStory 002]

The distal demonstrative is used to locate objects not close to the speaker (4.11). They may be close to the addressee or not.

(4.11)   *pnm krakakont brar pi*

pnm   kra\kako/nt   brar   pi
DIST.INS   SG.FUT.DUR\tie.EX   garden DIST.ABS

'With that (rope), that fence should be tied.' [20140205-KCD-JG-Gardening 019]

This most common use of the distal is an anaphoric use used to indicate a participant previously introduced within the discourse. In these cases the demonstrative typically doesn't also take a complement nominal phrase.

(4.12)   a.   *soi yerar pi, mat*

soi   yrar   pi,   mat
ritual   3.PRS.COP.PL   DIST.ABS   Matt

'Matt, those are our customs.' [20131009-KCD-KD-AdatVideoVoiceover 127]

The remaining deictic category is used when the location of the object is unknown. Usually, the nominal referent is out of sight and not experienced, in this way the ignorative demonstrative also represents a sort of modality marking and speakers typically translate it with the Indonesian word *mungkin* meaning 'maybe'. In the examples in (4.13), the modality only has scope over the entity and not the action. In my corpus, I have no examples of this form having scope of over the event, although I have only a limited number of examples of this form.

(4.13)   a.   *mpito mpoi yerar*

mpito   mpoi   yrar
rat   IGN.LOC   3.PRS.COP.PL

'It's (probably) rats.' (in response to a sound in the wall)

         b.   *epi mpoi markus ye*

epi   mpoi   markus ye
DIST.TOP.ABS   IGN.LOC   markus 3.PRS.COP.NPL

'Maybe it's Markus.' (in response to a knock at the door)

Demonstratives occurring with inanimate referents do not mark number (4.14a-4.14b). When occurring with animates in the ergative or dative case, number may be marked in the distal only, in which case the form is identical with the personal pronoun (4.14c). It is interesting to note that for the grammatical case forms, i.e. ergative, dative, absolutive, the demonstratives are identical to the third person pronouns. These cases more typically have an animate referent cross-linguistically, especially the ergative and the dative. These are also the instances which display number marking. It could be argued that in these examples it is a pronoun which occurs with animates rather than the demonstrative. However, since this neutralisation only occurs with the distal/third person I discount this analysis.

(4.14) a. *kwr wiskar ngki ominngki*

     kwr   wiskar   ngki   o\minngk/i
     pig   cassava PROX.ABS SG.HOD.DUR\eat

     'The pig ate this cassava root / these cassava roots.'

    b. *kwr wiskar pi ominngki*

     kwr   wiskar   pi   o\minngk/i
     pig   cassava DIST.ABS SG.HOD.DUR\eat

     'The pig ate that cassava root / those cassava roots.'

    c. *Yempoka melya pinta Jon ymerki*

     yempoka mel-ya   pinta   Jon   y\merk/i
     two   head-NSG.ERG 3.NSG.ERG John SG>3.HOD.DUR\follow.DUR

     'Those two followed John.'

4.1.4.2 Pronouns

Personal pronouns are marked for person, number and case. Number is not marked in the second and third person absolutive and associative absolutive forms although it is for all other case and person values. Pronouns may be used to refer to a participant which has already been established as a discourse referent. These have been discussed at length in Section 3.3. For the purposes of their syntactic behaviour, they display similar distribution to demonstratives. They occur in the same syntactic position within

	Proximal	Ignorative	Distal
Absolutive	ngki	mpi	pi
Ergative	ngkiengku	mpiengku	piengku
Dative	ngken	mpon	pien
Possessive	ngkene	mpone	piene
Instrumental	ngknm	mponm	pnm
Causal	ngkiwa	mpiwa	piwa
Purposive	ngknt	mpnt	pnt
Comitative	ngkit	mpit	pit
Associative	ngkiwi	mpiwi	piwi
Locative	ngkei	mpei	poi
Ablative	ngkngke	mpngke	pngke
Allative	ngkompa	mpompa	pompa

Table 4.1: Ngkolmpu Demonstratives

the construction although they do not take a complement. The table presenting personal pronoun forms has been reproduced in Table 4.2.

4.1.4.3   Discourse demonstratives

Two demonstratives also vary in their syntax and morphology in response to their role in the information structure of the proposition. These are the TOPIC determiner clitic and the FOCUS demonstratives. Each of which displays different morphosyntactic behaviour. Discourse structure, as relevant for nominal constructions, is discussed in further detail in Section 4.3. In this section we only discuss the forms.

The topic determiner clitic takes the form of *e=* and is procliticised to demonstratives and potentially pronouns. It displays the same syntactic behaviour as its host except it also serves to mark the discourse position of TOPIC. Table 4.3 has the attested topic demonstratives alongside their equivalent standard demonstrative. Forms have only been attested for the ergative, absolutive and locative cases. It is currently not clear whether it is possible to construct topic demonstratives from the other cases and if these are pronoun or demonstrative forms.

	1sg	1nsg	2sg	2nsg	3sg	3nsg
Absolutive	ngko	ni		mpu		pi
Ergative	ngkai	ninta	mpai	mpunta	piengku	pinta
Dative	nson	ncuen	mpon	mpan	pien	pncen
Possessive	nsone	nsone	mpone	mpane	pene	pncene
Purposive	nsont	ncuent	mpont	mpant	pient	pncent
COM.ABS	ngkot	-	mput	-	pit	-
COM.ERG	ngkait	-	mpait	-	piengkut	-
ASSOC.ABS	ngkowi	niwi		mpuwi		piwi
ASSOC.ERG	ngkaiwi	nintawi	mpaiwi	mpuntawi	piengkuwi	pintawi
Locative	ngkoni	-	mponi	-	poi	-
Ablative	nsonmpa	ncuenmpa	mponmpa	mpanmpa	pienmpa	pncenmpa
Allative	nsongke	ncuengke	mpongke	mpanngke	piengke	pncengke

Table 4.2: Personal pronouns

	Distal	Topic
Absolutive	pi	e=pi
Ergative	piengku	e=piengku
Locative	poi	e=poi
Focus.Dist	pne	e=pne

Table 4.3: Topic demonstratives

The focus demonstrative is rather different from other demonstratives in Ngkolmpu. It participates in the focus demonstrative phrase discussed in Section 4.3.2. It is used to mark the discourse position of FOCUS, also discussed in the section on the construction. There are two forms of focus demonstratives, a proximal and distal, as per Table 4.4. There is no equivalent ingnorative focus demonstrative; this is most likely due to the semantics of focus constructions, which is not easily compatible with the ignorative category.

Case	Proximal	Distal
Focus	ngkne	pne

Table 4.4: Focus demonstratives

4.2   Nominal Constructions

The two constructions relevant for the nominal domain are determiner phrases and bare nominal phrases. The determiner phrase consists of a determiner head marked for case plus a nominal phrase complement. The nominal phrase is headed by a nominal element which is also marked for case. The basic phrase structure rules and the template for nominal and determiner phrases are presented in (4.15) and exemplified in (4.16)

(4.15)   DP → (NP) , D

            D → DEM

            NP → (NUM) + (MOD) + HEAD

[[(NUM)   (MOD)   **HEAD**$_{\text{CASE.}\alpha}$]   **DEM**$_{\text{CASE.}\alpha}$]

(4.16)   *yuow ntop krar pi*

          yuow   ntop   krar   pi
          three   big   dog   DIST.ABS

'Those three big dogs.'

This section describes each of the positions available in these constructions. As stated, the determiner phrase is headed by the determiner or a pronoun. Demonstratives optionally take a nominal phrase complement, although a demonstrative or pronoun may occur without the nominal phrase. Demonstratives which do not take a complement are what might be called demonstrative pronouns, although they are identical in form.

The nominal phrase may be headed by any of the non-demonstrative nominal words that were discussed in the previous section. The head nominal may then be modified by a numeral/quanitifier element and at most one other nominal modifier, which may be a noun or adjective. The modifying noun or adjective may be derived or basic.

The structure above is the default ordering of nominal elements, however in practice these do vary somewhat. Frequently demonstratives precede the nominal phrase, although the ordering within the nominal phrase is typically rigid. Other constructions involve topicalised nominal constructions in the left periphery. In these constructions, anaphoric determiners must occur within the core of the clause. Example of these are discussed in Section 4.3. Since the topicalised elements often do not occur with a determiner for pragmatic reasons, these constructions appear like discontinuous nominal phrases yet are not. Donohue (2011) has argued that all elements in case marked nominal constructions may be discontinuous, however the analysis presented here is much more restricted. The interactions between nominal syntax and information structure along with a discussion of Donohue's analysis is discussed Section 4.3.

4.2.1   Determiner phrases

The determiner heads a phrase level element and takes a nominal phrase as complement. This may be headed by both types of determiners, demonstratives and pronouns.

The evidence for two-phrase level constituents comes from both morphological and syntactic criteria. The most important is that both the nominal head of the nominal phrase and the demonstrative are always case marked for the same function. In a single

phrase these are always case-marked identically (4.17). There is never any agreement within the NP element.

(4.17)   *ntop kraru ngkiengku mo pi yeyerki*

[[ntop krar-u] ngkiengku] mo   pi
big   dog-ERG PROX.SG.ERG wallaby.ABS DIST.ABS
y\yerk/i
SG>3.HOD.PFV\stalk.RS

'This big dog stalked the wallaby.'

The other evidence comes from adjacency. The determiner may either follow (4.18a) or precede (4.18b) the nominal phrase, but always occurs directly adjacent with the phrase if they occur within the same syntactic domain. The two syntactic domains relevant here are either within the core of the clause or the left periphery. This is discussed in further detail in Section 4.3.

(4.18)   a. *ngkai kalko pi yomreyen*

ngkai   [kalko   pi]   y\omre/en
1SG.ERG bird.type DIST.ABS SG>3.RCT.IMPF\hear.EX

'I was hearing the kalko birds.' [20130820-KCD-JG-YonasFishing 021]

b. *ngkai smpo [pi eibentei] yerpitupi*

ngkai   smpo pi   eibentei y\erpit/w=pi
1SG.ERG again DIST.ABS story   SG>3.RMT.DUR\open.DUR=DIST.ABS

'I opened (told) this story once again.'

[20131009-KCD-KD-AdatVideoVoiceover 065]

4.2.2   Nominal Heads

Any nominal, except determiners, may serve as head of the nominal phrase. It is the final element of the nominal phrase and is always marked for case as discussed in Chapter 3. We have already seen examples of most of these. The most common nominal heads are nouns (4.19).

(4.19)   a.   *Salpiusu saklwa pr pi sowongk*

Salpius-w   sakl-wa   pr   pi   s\owo/ngk
Salpius-SG.ERG   branch-ADJ   tree   DEM   SG>3.RMT.PFV\see.RS

'Salpius saw the branched tree.'

b.   *Salpiusu pr sakle sowongk*

Salpius-w   pr   sakl   s\owo/ngk
Salpius-SG.ERG   tree   branch   SG>3.RMT.PFV\see.RS

'Salpius saw the tree branch.'

Adjectives may also serve as heads of the nominal phrase. Example (4.20a) has a standard adjective as a nominal head, whilst (4.20b) is a colour term with its fossilised adjectival morphology being maintained even in the head slot.

(4.20)   a.   *ntopu mo piengku sreyerknt pi*

ntop-w   mo   piengku   sr\yerk/nt=pi
big-ERG   wallaby   DEM.SG.ERG   SG>3.FUT.DUR-stalk.DUR=TOP.DIST

'The big one stalked the wallaby.' [20141202-KCD-KD-YG-NB]

b.   *plawau nmku Yongkulsurni ngkei*

pla-wa-w   n\mk/w   Yongkulsur-ni   ngkei
white-ADJ-ERG   SG>1.NSG.RMT.DUR\gather.EX   Yanggandur-LOC   here

'The whites assembled us here in Yanggandur.' [20120930-KCD-KD-BeforeStory 022]

Numerals may also serve as the head (4.21). In this example the speaker is trying to remember how many fish he cooked, and confirms saying 'there was (about) four' in which four is a single noun phrase which is the single argument of the copula clause.

(4.21)   *...mntaimnto, surar poi eser*

mntai=mnto,   surar   poi   eser
how.many=IGN   3.RMT.DUR.COP.PL   DIST.DEM.LOC   four

'about four (fish) there.'

4.2.3　Numeral/quantified position

Nominal phrases may contain a single numeral, such as *naempr* 'one' or *yempoka* 'two' (4.22a), or the quantifier (4.22b) which modifies the head of the nominal phrase. These cannot co-occur. The order of the numeral/quantifier element is fixed within the nominal phrase.

(4.22)　a.　*otroit mito ye pi, naempr konsopor, yempoka konsoper yow yerar*

> ortoi-t　　　mi=to　　ye　　pi,　　naempr　konsopor, yempoka
> dig.INF-PURP　REL=ADV　3.COP　DEM,　one　　　day,　　　two
> konsopor　yow　yrar
> day　　　　NEG　3.PRS.COP.PL

'That digging is for one day only, not two days.' [20140205-KCD-JG-Gardening 050]

b.　*yimpurmpurt potar kara ngkei omansi payat*

> yimpurmpurt　potar　kara　　　　ngkei　o\mans/i
> all　　　　　　village　community　here　NSG.PRS.DUR\gather.EX
> paya-t
> work-PURP

'All the community gathers here for work.' [20131005-KCD-JG-MapStory 078]

4.2.4　Modifier position

The modifier position may filled by adjectives, derived adjectives, nouns and infinitives. No more than one modifier may occur in this slot. This is a distinct position from the numeral slot in that a modifier can occur with a numeral/quantifier element.

　　Example (4.23a) shows two different noun phrases. The modifier slot of each is filled with an adjective. Example (4.23b) shows the modifier slot filled with a derived adjective.

(4.23) a. *srworntei mpaeswmnm, ntop pepr, wutkle pr...*

        sr\owr/ntei   mpaeswm-nm, ntop pepr,   wutkl
        1.NSG>3.IRR.DUR\chop.EX axe-INS,   big   yamstick, short
        pr
        wood

        'We would chop with an axe, a large yamstick and a short stick...'

        [20140205-KCD-JG-Gardening 023]

     b. *Salpiusu saklwa pr pi sowongk*

        Salpius-w   sakl-wa   pr   pi   s\owo/ngk
        Salpius-SG.ERG branch-ADJ tree DEM SG>3.RMT.PFV\see.RS

        'Salpius saw the branched tree.'

The modifier slot may also be filled with a bare noun (4.24) which modifies the head nominal. There is both phonological and syntactic evidence that these are not morphological compounds. Firstly, these are two distinct phonological units with individual stress for each word. Secondly, neither can also occur with a separate modifier, so that the modifying noun element is clearly occurring in the same slot as other modifiers.

(4.24) *Salpiusu pr sakle sowongk*

        Salpius-w   pr   sakl   s\owo/ngk
        Salpius-SG.ERG tree branch SG>3.RMT.PFV\see.RS

        'Salpius saw the tree branch.'

In addition, there are a number of noun modifier constructions which display a conventionalised meaning such as those in (4.25). These are syntactically two words and cannot occur with an additional modifier; these constructions are identical in their syntax as to the construction 4.24 except they display conventionalised semantics. These may still display their compositional meaning so that *pr kati* may mean either 'tree leaves' or 'money'.

(4.25) a. *Markusu pr kati Jonen srei*

        Markus-w   pr   kati   Jon-en   s\re/i
        Markus-ERG tree leaf.ABS Jon-DAT SG>3.HOD.PFV\send.RS

        'Markus sent John the money (*lit. tree leaves*) (earlier today).'

    b. *pokos mpur bl birau*

      pokos mpur bl   b=yrau
      great   heart fruit PROX=3.RMT.DUR.COP.NPL

      '(His) heart was good.'

Infinitives, which are effectively a type of derived noun, may also occur in this slot and behave the same as regular noun modified nominal phrases.

(4.26)   *esemingkai mwa ksetnont ngkeye*

      esemingk-ai mwa   k=se\tnont
      learn-INF   house IRR=SG>3.APPL.IRR.PFV\work.RS
      ngke=ye
      PROX=3.PRS.DUR.COP.NPL

      'The school house would've been erected here (for them).' [20131005-KCD-JG-MapStory 054]

In order to have more than a single modifier of the head nominal a relative clause strategy is employed. These are discussed in Section 8.4.4.

4.3 Information structure and nominal syntax

Nominal syntax is strongly affected by the information status of the referent; typically this manifests in the location of determiner phrases. In this section, we explore the role that information structure, specifically topic and focus, have on nominal syntax. Information structure obviously has effects throughout the grammar, however these are not discussed in this thesis and in this section we will examine the role of information structure on nominal syntax only. In this section, three types of topic constructions: fronting, topic clitic, and topic determiner, and two types of focus constructions, involving two distinct determiners, are discussed. The discontinuity of nominal constructions in Ngkolmpu has been discussed in Donohue (2011), however my data and analysis is radically different from Donohue's analysis and this is discussed in Section 4.3.3.

For this section two information structure concepts will be used: topic and focus. Following Erteschik-Shir (2007, p. 7) we can define these in the following way. Topic is defined as previously available information. In the case of the nominal domain, it is an argument already introduced into the discourse and highlights what the sentence is about. Focus is new information; in the nominal domain these are constructions used to introduce or identify new participants. It can also refer to contrastive focus in which the participant was already available but new information is being brought to bear about that referent.

There are numerous constructions for indicating both topic and focus in Ngkol-mpu. In addition to the dedicated forms of determiners used to indicate both topic and focus, there are also fronting constructions which frequently appear to separate the nominal phrase from its determiner (4.27); this gives rise to the appearance of non-configurationality in the language. These constructions are discussed in further detail in the following sections and the example provided here is for illustrative purposes only.

(4.27)   a.   *ntopu, mo, piengku sreyerknt pi*

         ntopu   mo   piengku   sr\yerk/nt=pi
         big-ERG   wallaby   DEM.SG.ERG   SG>3.FUT.DUR-stalk.DUR=TOP.DIST

         'The big one stalked the wallaby.'

4.3.1   Topic constructions

Topics present old information already available to the addressee. These may be indicated by a variety of methods, including a fronting construction which locates the topic nominal construction to the left periphery of the clause. There is the topic clitic, in which an absolutive demonstrative element is encliticised to the inflected verb to indicate that the absolutive argument is the topic. And finally there is the topic determiner marker *e=*, which procliticises to a determiner to indicate topichood (cf. Table 4.3). Fronting may be combined with the verbal enclitic or the determiner proclitic but the verbal enclitic cannot co-occur with the determiner proclitic.

Nominals may be fronted to the left periphery to indicate topichood. The periph-

ery is defined as any element which is not the core. The core is defined as the predicate and its lexically specified arguments. When an element is fronted, the nominal is placed outside of the core of the clause and must have an anaphoric demonstrative or pronoun[1] occur within the core. Example (4.28) was taken from a discussion of a wallaby hunting trip, in which the speaker was discussing which of his three dogs stalked the wallaby. Both the dogs and the wallaby had been previously introduced and so this structure represents a dual topic structure in which the ergative nominal phrase, 'the big one', and the absolutive argument *mo*, wallaby, are fronted to the periphery. It is important to notice that both the ergative and the absolutive have anaphoric elements, potentially either pronouns or demonstratives, in the core of the clause. The ergative occurs before the verb and the absolutive is encliticised to the inflected verb.

(4.28)   a.   *ntopu, mo, piengku sreyerknt pi*

ntopu   mo   piengku   sr\yerk/nt=pi
big-ERG   wallaby   DEM.SG.ERG   SG>3.FUT.DUR-stalk.DUR=TOP.DIST

'The big one stalked the wallaby.'

The most common method for indicating topichood is the verbal enclitic. In this construction, an absolutive demonstrative may be encliticised to the inflected verb. The clitic never attracts stress and occurs within the intonation contour of the verb. This can only be the absolutive form of the demonstrative and can only be co-referential with the absolutive argument. It may occur in the distal (4.29a) or proximal forms (4.29b). In these examples the absolutive elements are clearly topics. In the first example (4.29a), we have a biclausal structure with two verbs. In the first clause, 'we gather the yams', the ergative argument has been omitted.[2] In the second clause the yams are now the topic of the second clause, which is indicated by the demonstrative clitic on the verb. In the second example (4.29b), the fruit has been talked about in the previous part of the story and is now the topic of the utterance.

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[1] Due to the formal similarities between demonstratives and pronouns it is often impossible to determine which of these it is.

[2] A common occurrence in Ngkolmpu.

(4.29) a. *srmonsentei sumpl, krapsenteipi*

sr\monse/ntey   sumpl,
1NSG>3.FUT.DUR\gather.EX yam
kra\pse/ntey=pi
1.NSG.MID.FUT.DUR\count.EX/=DIST.ABS.TOP

'We assemble the yams and count them.' [20140205-KCD-JG-Gardening

052]

b. *mpai moro komminngkntngki, yekompyaet kowlengk*

mpai   moro ko\mminngk/nt=ngki   yeko=mpyae=to
2SG.ERG FOC   SG.MID.FUT.DUR\eat/=PROX.ABS.TOP bad=thing=ADV
ko\wlengk
2SG.MID.FUT\SO

'If you eat this, it will be bad (for you).' (lit. you will become badly)

[20140212-KCD-ML-DreamStory 012]

In the above examples the main nominal phrase is omitted but this is not oblig-
atory. In both the following examples the nominal phrase is present along with the
corresponding encliticised demonstrative.

(4.30) a. *pr ngkai nmaeito sowipi*

pr   ngkai   nmaei=to   s\ow/i=pi
tree 1SG.ERG before=ADV SG>3.HOD.PFV\see.RS/=DIST.ABS.TOP

'The tree, I had already seen it.' [20140212-KCD-ML-DreamStory 017]

b. *kai moro kreyepi*

kai   moro kr\ey/e=pi
ceremonial.food FOC   NSG.MID.FUT.PFV\make.RS/=DIST.ABS.TOP

'The ceremonial food, we make it.' [20140205-KCD-JG-Gardening 010]

It is also possible for the nominal phrase to occur with a demonstrative and the
demonstrative enclitic.

(4.31) *yengka pi sriwurntpi*

yengka pi   sr\iwur/nt=pi
feather DIST.ABS SG>3.FUT.DUR\pluck.EX=DIST.ABS

	Distal	Topic
Absolutive	pi	e=pi
Ergative	piengku	e=piengku
Locative	poi	e=poi
Focus.Dist	pne	e=pne

Table 4.5: Topic demonstratives

'The feathers, I'll pluck them.' [20121002-KCD-JG-CassowaryStory 020]

Another common method for indicating topichood is to use the determiner clitic. This proclitic takes the form of *e=* and can procliticise to either a standard demonstrative or a focus demonstrative to indicate that the phrase is the topic (4.32). It is typically used for reintroducing a previously introduced topic. In these two examples these involve topical manner adverbials rather than arguments. These pronouns are presented again here in Table 4.5

(4.32)   a. *moro swontarnt nmaei epi*

moro sw\onta/rnt   nmaei e=pi
FOC   3.RMT.IMPF\live/ before TOP=DIST.ABS

'In that before time, we lived like this.' [20120930-KCD-KD-BeforeStory 004]

   b. *pari ngkoro bye ponto pi, sye epi pontot*

pari ngkoro b=ye   ponto pi,
cord thus   IMM=3.PRS.DUR.COP.NPL such   DIST.ABS,
s\ye/   e=pi   ponto=to
2SG>3.IMP.PFV\rip.RS TOP=DIST.ABS such-ADV

'just like that cord before, pull it like that.'

[20131009-KCD-KD-AdatVideoVoiceover 024]

4.3.2   Focus constructions

Focus denotes new information that is being introduced. Typically, in the nominal domain a focus nominal construction is used to introduce a new referent not previously

known to the addressee. It can also be used to introduce new information about an existing participant. In Ngkolmpu, focus is indicated with a focus demonstrative when the referent is new information and also definite and located in space, a feature not typically associated with focus cross-linguistically (Erteschik-Shir, 2007). In this case, a special deictic marked focus demonstrative is used to pick out the new participant from the environment. Otherwise, focus is not indicated morphosyntactically but may optionally be indicated through intonation.

The focus demonstratives are indicated in Table 4.4 repeated here in 4.6. Syntactically, these behave differently from the determiner category already discussed. They always appear on the left edge of the nominal phrase they occur with and never inflect for case. These are purely a marker of focus and deixis; they cannot be used anaphorically. They cannot co-occur with a standard demonstrative in the same phrase.

Case	Proximal	Distal
Focus	ngkne	pne

Table 4.6: Focus demonstratives

We can see in (4.33) a number of complex information-structure related exchanges. The first utterance is a statement in which the speaker makes the assertion that Markus kicked a specific dog in the environment of the two interlocutors. The second and third utterances are a second speaker who corrects the first speaker stating: 'no, Markus didn't kick that dog... he kicked that (other) dog'. In the second utterance both Markus and the dog are the topics, introduced in the previous utterance. These are marked as topics by their demonstratives occurring with the topic determiner proclitic. The dog, however, is also the focus of the clause since it is referred to by a nominal construction providing new information about the dog, namely that it is not the one that was kicked. In the final utterance the new dog is introduced and is marked with the focus demonstrative.

(4.33) a. *Markusu krar pi sneki tgunm*

markus-u   krar pi   s\nek/i   tgu-nm
markus-ERG dog   DIST.ABS SG>3.HOD.DUR\strike.RS leg-INS

'Markus kicked that dog.'

b. *Yow! epiengku Markusu epne krar yow srsei...*

yow epiengku   markus-u   e=pne   krar yow
NEG TOP.DIST.ERG.SG   markus-ERG TOP=FOC.DIST   dog   NEG
s\rse/i
SG>3.HOD.DUR\hit.RS

'No, Markus didn't hit *that* dog.'

c. *...pne krar srsei*

pne   krar s\rse/i
FOC.DIST   dog   SG>3.HOD.DUR\hit.RS

'(He) hit *that* (different) dog.' [20141030-KCD-JG-N1 032]

The demonstrative may occur with both proximal (4.34a) and distal forms (4.34b). Interestingly, the form *pno* 'that time' shares some similarity to the distal focus demonstrative. Further investigation may show a relationship between these elements.

(4.34) a. *pne mai nian mpu pi mpaitto*

pne   mai   n-yan   mpu   pi   mpait-to
FOC.DIST   road 2SG.α-go 2SG.ABS   3.ABS   now-ADV

'That road, that you now walk on.' [20120930-KCD-KD-BeforeStory 072]

b. *pno tepi akirau pne kiki*

pno   tepi a\kira/u   pne   kiki
that.time   just SG.MID.RMT.DUR\split.EX FOC.DIST   language

'At that time, the language split up.' [20120930-KCD-KD-BeforeStory 042]

4.3.3   Donohue (2011) and configurationality in Kanum/Ngkolmpu

Donohue (2011) described Kanum, i.e. Ngkolmpu, as displaying non-configurational noun phrases. In that paper, he describes a system in which noun phrases that are

marked for morphological case, i.e. non-absolutive cases, may be scrambled so that each element may occur discontiguous from all other elements of the phrase. When scrambled, each element of the noun phrase is marked for case as seen in (4.35) taken directly from Donohue (2011). This example has been transliterated into the orthography used in this chapter.

(4.35)   *ntopu mo piengku sreyerknt iryew*

ntop-w   mo   **piengku** sr\eyerk/nt   **irye-w**
big-SG.ERG wallaby **3SG.ERG** SG>3.FUT.DUR\stalk.DUR **man-ERG**

'The big man will stalk a wallaby.' (Donohue, 2011)

This is quite different from the description presented above and when I presented this sentence to speakers of the language, they unanimously rejected it. However, if the word *iryew* is removed, then the sentence is grammatical. I will not go into the details of Donohue's analysis here since the distinction between the two descriptions is one of data rather than analysis; rather I will only point out some key differences in the two data sets. It is important to note, however, that Donohue's paper, whilst published recently, is based on data taken from fieldwork conducted in 1996. So this could be viewed as a change in progress.

As we have seen in this chapter, nominal constructions only appear to be discontiguous from their demonstrative under distinct constructions and nominal phrase elements may not be discontiguous with other elements of the nominal phrase. In my entire corpus, including both naturalistic texts and targeted elicitation sessions, there are no examples of the type of discontiguous nominal construction as in (4.35). However, it is worth noting that example (4.35) would be perfectly acceptable if the element *iryew*, 'man.ERG', was removed from the utterance. The other distinguishing aspect relevant here is that I have no examples of case being marked on multiple elements of the nominal phrase besides the head and the determiner; we only ever see case marking on the demonstrative and the head nominal.

Chapter 5

Valency and basic clausal syntax

This chapter describes the syntax of simple clauses in Ngkolmpu. Grammatical relations are introduced along with an overview of the mechanisms of encoding these (5.3). The bulk of the chapter is dedicated to listing the valency constructions which comprise the basic clause types of Ngkolmpu (5.4). This includes a discussion on the syntax and semantics of valence alternations (5.5). Finally, lemmas may be classified into alternation classes based on their distribution across valency constructions (5.6).

One of the most interesting aspects of the valency systems and basic clausal syntax in Ngkolmpu relates to how the various systems for tracking grammatical relations do not align to the same units. For instance, in this chapter we show that case marking is marked on a strict absolutive pattern whilst the indexing of arguments is aligned to a split-S[1] system in which some S arguments are indexed as per A arguments and others as per O arguments. This misalignment of systems is a characteristic of Ngkolmpu morphosyntax more generally. The facts of this chapter are essential for understanding the discussion on the distribution of grammatical relations in Chapter 8.

5.1 A note on glossing conventions.

Due to the tendency to distribute the exponence of morphosyntactic features over multiple inflectional sites in verbs, it is often difficult to provide precise glosses at a mor-

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[1]Also known as an active-stative or split-intransitive.

pheme by morpheme level. In previous chapters, we provided glosses fully unified at the level of word as a solution to this problem. However, in this chapter it will be necessary to examine the individual elements of verbs to demonstrate what they are contributing in terms of indexing and agreement marking.

This chapter is focused on valency constructions and so agreement patterns are of particular importance. As we shall see in the following sections, agreement patterns involve prefixes being used to index what we will call the undergoer (U) role and suffixes for the actor (A) role. These index person and number in a relatively straightforward manner and will be indicated on the morpheme by morpheme gloss.

Contrastingly, tense, aspect and mood categories are much more complicated. Typically, affixes marks complex bundles of feature values or intersecting syncretic values. As such it is often impossible to provide a coherent gloss for the TAM value of such elements. To that end, undergoer prefixes are marked as belonging to one of three series: α, β or γ. An example of each is presented in (5.1). Each of these characters represents a complex cluster of properties which can only be provided a precise interpretation once unified at the level of the word. However since TAM is orthogonal to valency, it is not necessary to elaborate on this in this section. A full discussion of their distribution is saved until the following chapter; at this point it is only sufficient to note that these represent TAM values which will be disambiguated in the translation line of the example.

(5.1)   a.   *Markus Jon yeibenti*

Markus Jon y-eibent-y
Markus Jon 3.α.U-tell-SG.A.HOD

'Markus told John.' (durative, earlier today)

b.   *Markus Jon seibenti*

Markus Jon s-eibent-y
Markus Jon 3.β.U-tell-SG.A.HOD

'Markus told John.' (perfective, earlier today)

    c. *Markus Jon sweibent*

       Markus Jon sw-eibent-ø
       Markus Jon 3.ɣ.U-tell-SG.A

       'Markus told John.' (durative, yesterday)

5.2   Overview of valency constructions

Table 5.1 lists the valency constructions for Ngkolmpu. These are classified as mono-valent, bivalent or trivalent based on the number of arguments. Valence is indicated primarily by a combination of flagging, i.e. nominal case marking, indexing, i.e. verbal agreement, and the morphological form of the verb. These are each indicated in the table.

Verbs have four primary morphological forms depending on the valence construction in which they occur. These are the PREFIXING VERB which involves a verb stem (V) plus undergoer agreement marker (U). There is the MIDDLE VERB which involves a verb stem plus actor agreement along with the diathetic prefix (DIA) and the middle marker (MID) in place of undergoer agreement. There is a TRANSITIVE VERB which involves a verb stem plus actor suffix and undergoer prefix. Finally, the APPLICATIVE VERB involves a verb stem plus diathetic prefix along with both actor suffix and undergoer prefix.

Most verbs display morphologically related alternates between these forms. Groups of morphologically related verbs, or lemmas, may be classified into classes based on the sets of valency constructions they may occur with. These classes are discussed in Section 5.6. The most common pattern involves alternation between transitive verbs, middle verbs and applicative verbs. However, a number of other patterns are also possible.

5.3   Encoding grammatical relations

Grammatical relations are indicated through the morphological shape of both nominal and verbal elements of the clause. Arguments are flagged with morphological case and

Construction	Flagging	Indexing
Monovalent		
Intransitive	NP_{ABS}	U-V
Middle	NP_{ABS}	MID-DIA-V-A
Bivalent		
MIDiddle reflexive/reciprocal	NP_{ABS} + $PRO_{R/R}$	MID-DIA-V-A
Cognate-object	NP_{ABS}, NP_{ABS}	MID-DIA-V-A
Transitive	NP_{ERG}, NP_{ABS}	U-V-A
Transitive experiencer-object	NP_{ERG}, NP_{ABS}	U_{EXP}-V-A_{SG}
Trivalent		
Ditransitive recipient index	NP_{ERG}, NP_{ABS}, NP_{DAT}	U_R-V-A
Ditransitive theme indexing	NP_{ERG}, NP_{ABS}, NP_{DAT}	U_T-V-A
Benefactive applicative	NP_{ERG}, NP_{ABS}, NP_{DAT}	U_B-DIA-V-A

Table 5.1: Overview of valency constructions

are indexed with inflectional agreement on the verb. Word order also plays a role but is too flexible to be a reliable diagnostic.

This chapter takes as basic a set of a grammatical relations derived from the numerical valence of a verb in a construction, following Bickel (2010), which itself is based on a long tradition in the typological literature. This has one argument for monovalent constructions (S), two arguments for bivalent constructions (A & O) and three distinctions required for trivalent constructions (A, O & R), as per table 5.2.

1	2	3
S	A	A
	O	O
		R

Table 5.2: Marcoroles defined by valence

These grammatical roles are cross-cut based on a hierarchy of semantic roles of 'most agent like' and 'most goal like'. These are indicated as in Table 5.3. This distinction allows us to account for the full range of morphosyntactic behaviour of valence related constructions. This terminology was established in Comrie (1978) and Dixon

(1979). For a discussion of a hierarchy of semantic roles see Fillmore (1968) for the classic exposition and Levin and Rappaport Hovav (2005) for a more modern discussion.

S	single argument of a monovalent clause
A	most agent-like argument of a bivalent/trivalent clause
O	non-agent-like argument of a bivalent/trivalent clause
R	most goal-like argument of a trivalent clause

Table 5.3: Macroroles defined by semantics

One of the interesting typological features of the language, and a pervasive characteristic of the entire language family (Evans, 2012; Evans et al., 2017) , is the tendency for complementary systems which encode the same set of features to be organised along contrasting lines. The two systems relevant for our discussion of grammatical relations in this chapter are the case system and the verbal agreement system. These systems both make use of numerical valency and the same hierarchy of semantic roles yet align differently. As we shall see in the rest of this section, nouns are flagged on an ergative-absolutive alignment whilst the verbal agreement is aligned to a split-S system. Since agreement has a split-S system we shall also add the additional roles of S_A and S_O representing the split.

This chapter does not propose any larger abstract syntactic units like subject or object beyond the roles above. Whilst there are other syntactic consequences of grammatical relations beyond basic clausal syntax they do not show any evidence for larger units. Instead, a fine grained system of roles derived from those above with the two additional S elements is distributed across a number of semi-independent systems, each of which divides the full set of roles into a smaller set of larger abstract units, and thus the complexity is only apparent once the systems are seen juxtaposed. Chapter 8 examines the nature of grammatical relations once all morphosyntactic operations have been considered.

5.3.1 Word order constraints

Ngkolmpu is largely a verb final language, though in practice word order can vary in numerous ways. As discussed in Section 4.3, word order is highly sensitive to pragmatic constraints such as topicality, including animacy and argument saliency, as well as new versus old information. However, in pragmatically neutral circumstances, if such a thing exists, there is a strong tendency to order the constituents AOV (5.2).

(5.2) *Markus pr pi storui*

Markus-w   pr   pi   s\toru/i
Markus-ERG tree 3.ABS SG>3.HOD.PFV\cut.PFV

'Markus cut the log (earlier today).'

5.3.2 Case marking

As we have seen in Chapter 3, there are two grammatical cases: the ergative and the absolutive. As also discussed in that chapter, the alignment of dative case is semantic, despite the grammatical role of R being used in the definition of trivalent clauses. The alignment from grammatical relations to morphological case is typical for an ergative/absolutive aligned language with recipients and goals obligatorily marked with the dative case. Noun phrases are marked for case on both the final element of the phrase and on the demonstrative if present. For a full discussion of the nominal cases see Section 3.2; for a discussion of the structure of noun phrases see Chapter 4.

The absolutive case has no morphological content and marks both S and O arguments, i.e. the single argument of monovalent clauses (5.3a) and the non-agentive argument of a bivalent clause (5.3b) and the non-agentive, non-goal argument of trivalent clauses (5.3c).

(5.3) a. *Markus ntawancei*

Markus n=t\awance/i
Markus FOC=SG.M.HOD.PFV\fall.RS

'Markus fell (earlier today).'

b. *Markusu pr pi storui*

Markus-w   pr   pi   s\toru/i
Markus-ERG tree 3.ABS SG>3.HOD.PFV\cut.RS

'Markus cut the log (earlier today).'

c. *Markusu pr kari Jonen smaei*

Markus-w   pr   kati   Jon-en   s\mae/i
Markus-ERG tree leaf.ABS John-DAT SG>3.HOD.PFV\give.PFV

'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

The ergative case marks the most agent-like semantic role of bivalent or trivalent clauses (A).

(5.4)   a. *Markusu pr pi storui*

Markus-w   pr   pi   s\toru/i
Markus-ERG tree 3.ABS SG>3.HOD.PFV\cut.PFV

'Markus cut the log (earlier today).'

b. *Markusu pr kati Johnen smaei*

Markus-w   pr   kati   Jon-en   s\mae/i
Markus-ERG tree leaf.ABS John-DAT SG>3.HOD.PFV\give.PFV

'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

The dative case is used to mark any recipient or benefactive. The dative is not considered a grammatical case since recipients and benefactives are always marked in dative case regardless of their role in the clause. In example (5.5), the recipient is both a semantic argument of the verb and indexed on the verbal prefix. This suggests that the recipient here has been promoted to an O argument to take the indexing yet is marked with dative case.

(5.5)   *Markusu pr kati Johnen smaei*

Markus-w   pr   kati   Jon-en   s\mae/i
Markus-ERG tree leaf.ABS John-DAT SG>3.HOD.PFV\give.PFV

'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

5.3.3   Verb Morphology

Verbs index up to two arguments. Following terminology established for languages of the family, these are the undergoer prefix and the actor suffix (Evans, 2015b). The full set of forms of these are discussed in more detail in Sections 6.7.1 and 6.8.2; for the purposes of this section I will illustrate examples with the default forms. The names, actor and undergoer, suggest a semantic alignment of agreement, however semantics alone is not sufficient to determine the agreement pattern; to some extent this must be specified for each construction. In other words, although there appears to be some clustering of semantics, the alignment of agreement must be characterised as partly lexical. The actor suffix indexes A arguments and S arguments in middle constructions. The undergoer prefix marks O arguments, S arguments in the intransitive construction and R arguments in recipient-indexing ditransitive construction and the benefactive applicative.

As stated, the actor suffix indexes A arguments (5.6-5.7) and S arguments of middle constructions (5.8). It is formally identical in all valence constructions. This suffix indexes for both person and number, although person is only distinguished in the non-singular and only for certain TAM categories. In middle constructions, the undergoer prefix is either left unmarked or is filled with a person number invariant prefix. This is discussed in section 5.4.1.2. See Chapter 6 for the full details of verbal morphology.

(5.6) a. *piengku ngko umplae*

piengku   ngko   w-mplae-ø
3SG.ERG   1SG.ABS 1SG.α.U-hit.EX-SG.A

'He is hitting me.'

b. *pinta ngko umplaei*

pinta   ngko   w-mplae-y
3NSG.ERG 1SG.ABS 1SG.α.U-hit.EX-NSG.A

'They are hitting me.'

(5.7)   a.   *pi ban arwar*

pi   ban   ø-a-rwar-ø
3.ABS   shout.ABS MID-DIA-shout-SG.A

'He shouts.' (lit. *He shouts a shout*)

b.   *pi ban arwari*

pi   ban.ABS ø-a-rwar-y
3.ABS   shout   MID-DIA-shout-NSG.A

'They shout.' (lit. *They shout a shout*)

(5.8)   a.   *Markus awampre*

Markus ø-a-wampre-ø
Markus MID-DIA-fall.EX-SG.A

'Markus is falling.'

b.   *pi awamprei*

pi   ø-a-wampre-y
3.ABS   MID-DIA-fall.EX-NSG.A

'They are falling.'

The undergoer prefix indexes the S of prefixing verbs (5.9). The undergoer is organised along three series, α, β and γ, based on a complex tense, aspect and mood interaction. Since TAM is orthogonal to the discussion of valency these will not be elaborated in this chapter although for reference they are discussed in detail in Chapter 6.

(5.9)   a.   *mpu poi noume*

mpu   poi   n-oume
2.ABS   DIST.LOC 2SG.α.U-be.located.NPL

'You are sitting there.'

b.   *pi poi youme*

pi   poi   y-oume
3.ABS   DIST.LOC 3.α.U-be.located.NPL

'He is sitting there.'

The undergoer prefix indexes the O arguments of bivalent constructions both the transitive (5.10) and for the experiencer of experiencer-object constructions (5.11).

(5.10)   a. *piengku ngko umplae*

   piengku ngko   w-mplae-ø
   3SG.ERG 1SG.ABS 1SG.α.U-hit.EX-SG.A

   'He is hitting me.'

b. *piengku ni nmplae*

   piengku ni   n-mplae-ø
   3SG.ERG 1NSG.ABS 1NSG.α.U-hit.EX-SG.A

   'He is hitting us.'

(5.11)   a. *yaru ngko btorunt*

   yar-w   ngko   b-tor-nt-ø
   sleep-ERG 1SG.ABS 1SG.β.U-cut.EX-FUT-SG.A
   'I am tired.' (lit. *Sleep will cut me.*)

b. *yaru ngko nttorunt*

   yar-w   ni   nt-toru-nt-ø
   sleep-ERG 1NSG.ABS 1SG.β.U-cut.EX-FUT-SG.A
   'We are tired.' (lit. *Sleep will cut us.*)

Finally, the undergoer prefix indexes either O (5.31) or R (5.13) of trivalent constructions, depending on the verb. It also indexes the R argument of the benefactive applicative (5.14).

(5.12)   a. *Markusu mpu Jonen knrei*

   Markus-w   mpu   Jon-en   kn-re-y
   Markus-ERG 2SG.ABS John-DAT 2SG.β.U-send.RS-SG.A.HOD

   'Markus sent you to John (earlier today).'

b. *Markusu ngko Jonen brei*

   Markus-w   ngko   Jon-en   b-re-y
   Markus-ERG 1SG.ABS John-DAT 1SG.β.U-send.RS-SG.A.HOD

   'Markus sent me to John (earlier today).'

(5.13)   a. *Markusu pr kari Jonen smaei*

Markus-w   pr   kati   Jon-en   s-mae-y
Markus-ERG tree leaf.ABS John-DAT 3.β.U-give.RS-NSG.A.HOD

‘Markus gave Jon the money (*lit. tree leaves*) (earlier today).’

b. *Markusu pr kati nson bmaei*

Markus-w   pr   kati   nson   b-mae-y
Markus-ERG tree leaf.ABS 1SG.DAT 1SG.β.U-give.RS-NSG.A.HOD

‘Markus gave me the money (*lit. tree leaves*) (earlier today).’

(5.14)   a. *Markusu pr pi Jonen sotorui*

Markus-w   pr   pi   Jon-en   s-o-toru-y
Markus-ERG tree 3.ABS John-DAT 3.β.U-DIA-cut.RS-SG.A.HOD

‘Markus cut the log for John (earlier today).’

b. *Markusu pr pi nson botorui*

Markus-w   pr   pi   nson   b-o-toru-y
Markus-ERG tree 3.ABS 1SG.DAT 1SG.β.U-DIA-cut.RS-SG.A.HOD

‘Markus cut the log for me (earlier today).’

That different constructions index S with either a prefix or a suffix is a common feature of Yam languages. Typically in Yam languages, this split is organised around a stative vs. dynamic semantic contrast. Under such a system dynamic S is indexed via the actor suffix, i.e. like the A, whilst the stative S is indexed via the undergoer prefix, i.e. like the O. However, in Ngkolmpu the semantic basis is less clearly operating on any synchronic level than has been argued for Nen, where almost all prefixing verbs are stative (Evans, 2015b). Whilst most stative verbs do prefix their S argument in this manner, there are a total of 18 verbs which index S with a prefix, of which only 11 are stative. (Donohue, 2008b) describes similar systems in which the verbal aspect or aktionsart categories of the verb govern a split in S marking. However for Ngkolmpu, the semantics alone are not sufficient to characterise the split and must be considered to be, at least partially, idiosyncratic to particular verbs and indexed in their lexical entry.

5.3.4   Diathetic prefix

In addition to the agreement patterns marked above there is also a diathetic prefix which takes the form of a vowel between the undergoer prefix and the verb stem. The vowel occurs on middle form verbs (5.15a) and applicative verbs (5.15c). In this sense, it can be thought of as derivational affix marking ambifixing verbs occurring in non-transitive constructions. This line of reasoning is discussed in more detail in the following section. The prefix takes the form of a vowel which harmonises with the first vowel in the verb stem as discussed in Section 2.5.2.

(5.15)   a.   *Markus tawancei*

Markus   t-a-wanse-y
Markus   MID.PFV-DIA-fall.RS-SG.A.HOD

‘Markus fell (earlier today).’

b.   *Markusu pr pi swancei*

Markus-w   pr   pi   s-wanse-y
Markus-ERG tree   3.ABS   3.β.U-fall.RS-SG.A.HOD

‘Markus felled the tree.’

c.   *Markusu pr pi nson bawancei*

Markus-w   pr   pi   nson   b-a-wance-y
Markus-ERG tree   3.ABS   1SG.DAT   1SG.β.U-DIA-fall.PFV-SG.A.HOD

‘Markus felled the tree for me.’

5.4   Valency constructions

In this section we examine each of the valency constructions summarised in Table 5.1. Constructions are characterised by the number of arguments, nominal morphology, verbal morphology and the alignment of semantic/grammatical roles to morphological indicators. This section is divided into monovalent, bivalent and trivalent constructions.

5.4.1   Monovalent constructions

Monovalent constructions index just a single argument on the verb and have just a single obligatory argument. These are the intransitive construction and the middle construction.

5.4.1.1   The intransitive construction

NP-ABS$_i$, U$_i$-V

The basic intransitive construction has a single argument realised in the absolute case which indexed with the undergoer prefix (5.16). There is no actor suffix in this construction, although in cases where the actor suffix is required for TAM information it appears in the singular form regardless of the number value of the argument (5.17). As such, it has not been included in the gloss.

(5.16)   a.   *mpu poi noume*

mpu   poi   n-oume
2.ABS   DIST.LOC   3.α.U-is.located.NPL

'You are sitting there.'

b.   *pi poi youme*

pi   poi   y-oume
3.ABS   3.ABS   DIST.LOC   3.α.U-is.located.NPL

'He is sitting there.'

(5.17)   a.   *ngko poi woumei*

ngko   poi   w-oume-y
1SG.ABS   DIST.LOC   1SG.α.U-is.located.NPL-HOD

'I was sitting there (earlier today).'

b. *ni poi noumei*

ni   poi   n-oume-y
1NSG.ABS DIST.LOC 1NSG.α.U-is.located.NPL-HOD

'We (two) were sitting there (earlier today).'

c. *ni poi nontai*

ni   poi   n-onta-y
1NSG.ABS DIST.LOC 1NSG.α.U-is.located.PL-HOD

'We (3+) were sitting there (earlier today).'

The sole argument may be either the single argument of a copula clause (5.18a), the *located* argument of a posal verb (5.18b) or the *agent* of the dynamic prefixing verb (5.18c-5.18d).

(5.18)   a. *klawo pi neme ye*

klawo pi   neme ye
child   3ABS good 3U.PRS:is.DUR

'The child is good.'

b. *pi poi imitr*

pi   poi   y-mitr
3.ABS 3.ABS DIST.LOC 3U-is.hanging.NPL

'He is sitting there.'

c. *Markus kirorngke yamaker*

Markus kiror-ngke y-amaker
Markus K-ALL   3U-walk.DUR

'Markus is walking to Kiror (name of garden).'

d. *Markus impaturai*

Markus y-mpatura-y
Markus 3U-jump-HOD

'Markus jumped.'

5.4.1.2   Middle

NP-ABS$_i$, M-DI-V-A$_i$

The middle construction has a single argument (S) realised with the absolute case and is indexed with the actor suffix. The verb is the middle form, i.e. the undergoer prefix is either is filled with the person/number invariant middle marker depending on tense and aspect, though in some TAM combinations it is not realised by any overt marker. The verb stem also takes the diathetic prefix.

The middle marker takes the the form 'k' in future tense categories, 't' in non-future perfective aspect and is unfilled in all other TAM combinations. The prefix is discussed in detail in Section 6.7.1.2.4.

(5.19)   a. *Markus krawance*

      Markus k-r-a-wanse-ø
      Markus MID.FUT-N2.FUT-DIA-fall.RS-SG.A

      'Markus will fall.'

  b. *Markus tawancei*

      Markus t-a-wance-y
      Markus MID.PFV-DIA-fall.RS-SG.A.HOD

      'Markus fell (earlier today).'

  c. *Markusu awamprei*

      Markus ø-a-wampre-y
      Markus MID-DIA-fall.EX-SG.A.HOD

      'Markus was falling (earlier today).'

The single argument that occurs in a middle construction may be either an agent (5.20a) or patient (5.20b). This is determined by the lexical semantics of the verb in question. Verbs in this class also display a number of interesting semantic features in the relationship between a verb in the middle form and its equivalent in the transitive construction as discussed in Section 5.5. As stated in Section 2.5.2, the form of the diathetic prefix constructions is either lexically specified (5.20a) or more typically matches the following vowel of the verb stem in a case of vowel harmony (5.20b).

(5.20)   a.   *ngkai nmaeito towncei pantngke*

    ngkai   nmaei=to   t-o-wse-y   pant-ngke
    1SG.ERG before=ADV MID.PFV-DIA-ascend.RS-SG.A.HOD platform-ALL

    'I have already ascended the platform.'

    b.   *nmaei mwa pi tekwanti*

    nmaei mwa pi   t-e-kewant-y
    before mwa 3.ABS MID.PFV-DIA-smash.RS-SG.A.HOD

    The old house got smashed.

Agentive middle constructions have semantics which characterise the actor as both initiator and endpoint or as autobenefactive (Kemmer, 1993). They have just a single argument who is the agent but also displays some characteristic of either the patient or beneficiary of the action. Consider the examples in (5.21). In example (5.21a) we have the middle form of the verb *ontai*, 'to dress', in which John is the agentive initiator and also the endpoint. Compare this to the transitive form of the same verb in (5.21b) in which John is clearly non-agentive.

(5.21)   a.   *Jon tantai*

    Jon   t-a-nta-y
    John MID.PFV-DIA-dress.RS-SG.A.HOD

    'John got dressed.'

    b.   *Omlu Jon sntai*

    Oml-w   jon   s-nta-y
    Mother-ERG John 3.β.U-dress.RS-SG.A.HOD

    'Mother dressed John.'

Patientive middles are semantically decausative. They have just a single argument which is a semantic patient (5.22a). The causation process is simply not referenced in the clause and it is impossible to make reference to the agent/cause in these constructions.

(5.22) a. *brar pi ekewai*

        brar   pi   ø-e-kewa-y
        garden 3.ABS MID-DIA-destroy-NSG.A.HOD

        'The garden got smashed up.'

    b. * *brar pi ekewai Markuswa*

        brar   pi   ø-e-kewa-y   Markus-wa
        garden 3.ABS MID-DIA-destroy-NSG.A.HOD Markus-CAUS

        'The garden got smashed up by Markus.'

5.4.2 Bivalent constructions

Bivalent constructions are defined as requiring two core arguments. These include the cognate-object construction (5.4.2.1), the reflexive/reciprocal construction (5.4.2.2), the experiencer-object construction (5.4.2.4) and the transitive construction (5.4.2.3). These are ordered in terms of increased semantic transitivity (Hopper & Thompson, 1980).

5.4.2.1 Cognate-object

NP-ABS$_i$ + NP-ABS + M-DI-V-A$_i$

Cognate-object constructions involve two absolutive realised arguments and the middle form of the verb. These are rather unusual since semantically, these may be either one or two place predicates. In the broadest sense these are syntactically bivalent since they occur with two arguments. Morphologically, the verb is indexed for just a single argument and the second argument does not trigger case marking. In addition, the second argument has a more restricted semantics and it is not available for syntactic constructions such as focus or topic constructions. The single full argument is A and is indexed via the actor suffix. The cognate-object nominal the infinitive of the verb; sometimes this is the productive morphological infinitive (5.23a) but for some verbs this is a lexically specified syncronically unrelated form (5.23b). This constructions are still labelled cognate-object despite this fact that not all cognate-objects are

cognate with the verb stem although most are. Infinitives and nominalisation is discussed in Section 3.1.1.

(5.23)   a.   *ngko aeibentai teibentai*

      ngko   aeibentai t-eibenta-y
      1SG.ABS tell.INF   MID.PFV-tell-SG.A.HOD

      'I told the story.'

    b.   *ngko woarko toiwanti*

      ngko   woarko t-o-ywant-y
      1SG.ABS run   MID.PFV-DIA-run.RS-SG.A.HOD

      'I ran.' (lit. *I ran a run*)

Verbs which occur in this construction are verbs which would be typically be either monovalent or bivalent in other languages yet display a mid-level of semantic transitivity based on a definition similar to that presented by Hopper and Thompson (1980). The two most salient types of verbs which participate in this construction are semantic one-place predicates that display high agentivity (5.24a) or two-place predicates which display a highly salient or expected internal argument (5.24b).

(5.24)   a.   *piengku ban tarwari*

      pi   ban   t-a-rwar-y
      3SG.ABS shout MID.PFV-DIA-shout.RS-SG.A.HOD

      'He shouted.' (lit. *He shouted a shout*)

    b.   *piengku nongkai ominngki*

      pi   nongkai ø-o-minngk-y
      3SG.ABS food   MID-DIA-eat-SG.A.HOD

      'He ate the food.'

Verbs which are semantic two-place predicates and belong to this class, i.e. 'to eat', 'to drink' or 'to carry', may take a full nominal constituent in the cognate object position (5.25). The constituent has all the referential features associated with these as discussed in Chapter 4. However, this DP still has a reduced syntactic function in that they must occur directly before the verb and they cannot be the target of the topicalisation

construction. These contrast with verbs of this class that are semantically one-place predicates. These take a empty nominal which is typically cognate to the verb stem with the verb stem as per example (5.23a). This element may be either an infinitive form or a lexicalised nominal form which is likely historically related to the verb. This type is not able to occur with a full nominal constituent. For both of these constructions the non-agentive nominal must occur directly before the verb.

(5.25)   *pi nongkai bl pi ominngki*

pi   nongkai bl   pi   ø-o-minngk-y
3SG.ABS food   egg 3.ABS MID-DIA-eat-SG.A.HOD

'He ate that yam.'

The fact that the O arguments are not available for the full range of syntactic behaviour afforded full nominals suggests that these do not have the status of full arguments. One potential analysis is that these are a type of semi-transitive verb; one that takes two arguments at the broadest level but to which one of these arguments is not provided with the full status in the morphosyntax. This O argument is not available for case marking, argument indexing or as a target of the specific information constructions. This approach also somewhat accounts for the dual absolutive pattern, since the O argument is not available at the level of case assignment and does not trigger the use ergative case for the A argument, nor does it available for agreement or other syntactic constructions.

5.4.2.2   Middle: reflexive/reciprocal

NP-ABS$_i$ + PRO.R/R$_i$, M-DI-V-A$_i$

The reflexive/reciprocal construction is similar to the middle construction. The verbal morphology is identical (5.26) and any verbs which may partake in the patientive middle construction may also take part in this construction. This construction has the sole argument realised with absolutive case and a reflexive/reciprocal pronoun. Syntactically these constructions involve two arguments although semantically these

refer to the same participant. The sole semantic argument is indexed with the actor suffix. The verb displays middle morphology, i.e. the undergoer slot is filled by the middle prefix and the verb occurs with the diathetic prefix. This construction is used for events which may be semantically either reflexive or reciprocal. Verbs which are *agentive* in the middles do not occur in this construction as expected since they already have a reflexive type semantics. See Section 5.4.1.2 for a discussion of agentive vs. patientive middles.

(5.26)   a. *Jon totorui*

Jon   t-o-toru-y
John   MID.PFV-DIA-cut.PFV-SG.A.HOD

'John got cut.'

b. *Jon piengkuto totorui*

Jon   piengkuto   t-o-toru-y
John   3SG.R/R   MID.PFV-DIA-cut.PFV-SG.A.HOD

'John cut himself.'

The R/R pronoun is built from the ergative form of the pronoun with the additional *to* element. Table 5.4 lists ergative pronouns and their corresponding R/R forms. This *to* element is similar in appearance to the adverbial clitic discussed in Section 3.1.3 although it is not currently clear if this is the same element. The R/R pronoun must always follow the full pronoun and there are no attested examples of it occurring after the verb.

	Ergative	R/R
1SG	ngkai	ngkaito
2SG	mpai	mpaito
3SG	piengku	piengkuto
1.NSG	ninta	nintato
2.NSG	mpunta	mpuntato
3.NSG	pinta	pintato

Table 5.4: Table of ergative and R/R pronouns

The R/R construction may have either a reflexive or reciprocal interpretation. Usually this is disambiguated through context although there sometimes disambiguation is not possible. Example 5.27 without any context may be interpreted as either reflexive or reciprocal.

(5.27) pi   pintato   ø-a-mangk-ns
        3.ABS 3NSG.ERG.R/R MID-DIA-hold.PL-NSG.A.HOD
        'They held themselves / each other.'

5.4.2.3 Basic Transitive

NP-ERG$_i$, NP-ABS$_j$, U$_j$-V-A$_i$

The transitive construction involves two syntactic arguments which are both indexed on the verb. The A argument is marked with ergative case and indexed via the actor suffix. The O argument is marked in the absolutive and indexed via the undergoer prefix.

(5.28) a. *piengku ngko umplae*

            piengku ngko   w-mplae-ø
            3SG.ERG 1SG.ABS 1SG.α.U-hit.EX-SG.A

            'He is hitting me.'

        b. *piengku ni nmplae*

            piengku ni   n-mplae-ø
            3SG.ERG 1NSG.ABS 1NSG.α.U-hit.EX-SG.A

            'He is hitting us'

All transitive verbs participate in this construction. This construction is available to the vast majority of the verbs in Ngkolmpu from across the semantic range. More specific semantics of transitive clauses relates to the subclass of the verb and is discussed in the section on alternations (Section 5.5).

5.4.2.4   Experiencer-object

NP-ERG$_i$, NP-ABS$_j$, U$_j$-V-A$_i$

Experiencer-object constructions are a sub-type of the basic transitive construction with a largely idiomatic alignment of semantic roles. In these constructions the stimulus aligns with A, and is thus assigned ergative case and indexed with the actor suffix. The experiencer aligns with O and is assigned absolutive case and is indexed with the undergoer prefix. The verb used is *otorui* 'to cut' (5.29a). This verb is formally identical to the standard dynamic verb 'to cut' although with a different alignment to semantic roles.

(5.29)   a. *yaru ngko btorunt*

yar-w   ngko   b-toru-nt-ø
sleep-ERG 1SG.ABS 1SGU.PFV-cut.PFV-FUT-SG.A

'I am tired.' (lit. *Sleep will cut me.*)

5.4.3   Trivalent constructions

Trivalent constructions require three arguments. These are case marked with ergative, absolutive and dative. The verb indexes just two arguments: the A argument is indexed with the actor suffix, and the undergoer prefix indexes either the R or the O argument depending on class. Any transitive verbs which occur in a trivalent construction through the benefactive applicative are marked with the diathetic prefix, although lexically ditransitive verbs do not occur with this marker.

5.4.3.1   Ditransitive, recipient indexing

NP-ERG$_i$, NP-ABS , NP-DAT$_j$, U$_j$-V-A$_i$

In the recipient-indexing ditransitive construction A is marked with ergative and the actor suffix. O is marked with the absolutive and not indexed. The R argument

is marked with the dative and indexed with the undergoer prefix. The verbs which participate in this construction are *omaei* 'to give' and *armaekai* 'to show'.

(5.30) a. *Markusu pr kari Jonen smaei*

Markus-w   pr   kati   Jon-en   s-mae-y
Markus-ERG tree leaf.ABS John-DAT 3.β.U-give.RS-NSG.A.HOD

'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

b. *Markusu pr kati nson bmaei*

Markus-w   pr   kati   nson   b-mae-y
Markus-ERG tree leaf.ABS 1SG.DAT 1SG.β.U-give.RS-NSG.A.HOD

'Markus gave me the money (*lit. tree leaves*) (earlier today).'

5.4.3.2   Ditransitive Theme Indexed

NP-ERG$_i$, NP-ABS$_j$, NP-DAT , U$_j$-V-A$_i$

The theme-indexing ditransitive is identical with other ditransitive constructions except that it indexes the theme, or the O argument, with the undergoer prefix. The single verb which belongs to this class is *orei* 'to send'. Example (5.31) exemplifies the theme indexing with first and second person pronouns although the verb is more typically used for inanimate themes. These examples have been chosen simply to highlight the theme indexing on the verb as third person forms do not alternate for number.

(5.31) a. *Markusu mpu Jonen knrei*

Markus-w   mpu   Jon-en   kn-re-y
Markus-ERG 2SG.ABS John-DAT 2SG.β.U-send.RS-SG.A.HOD

'Markus sent you to John (earlier today).'

b. *Markusu ngko Jonen brei*

Markus-w   ngko   Jon-en   b-re-y
Markus-ERG 1SG.ABS John-DAT 1SG.β.U-send.RS-SG.A.HOD

'Markus sent me to John (earlier today).'

5.4.3.3   Benefactive applicative

NP-ERG$_i$, NP-ABS , NP-DAT$_j$, U$_j$-DI-V-A$_i$

The benefactive applicative construction marks A with ergative case and indexes with the actor suffix, O with absolutive case and R with the dative case. The R argument is also indexed with the undergoer prefix. The verb also takes the diathetic prefix found in other constructions.

(5.32)   a. *Markusu pr pi Jonen sotorui*

Markus-w   pr   pi   Jon-en   s-o-toru-y
Markus-ERG tree 3.ABS John-DAT 3.β.U-DIA-cut.RS-SG.A.HOD

'Markus cut the log for John (earlier today).'

b. *Markusu pr pi nson botorui*

Markus-w   pr   pi   nson   b-o-toru-y
Markus-ERG tree 3.ABS 1SG.DAT 1SG.β.U-DIA-cut.RS-SG.A.HOD

'Markus cut the log for me (earlier today).'

5.5   Valence alternations

Lexically related verbs in Ngkolmpu may be said to belong to a single *lemma*. All the lexemes under a single lemma share a number of features including an identical infinitive, if one exists, and related semantics. In addition to this they largely share the same stems and stem distribution. Lexemes of a single lemma differ in their argument structure and their morphological pattern, i.e. intransitive, middle, transitive or applicative. The relation between verbs of a single lemma is known as a valence alternation. This section explores valence alternations. This section lists the structural relations between pairs of alternating verbs. Each pair is also characterised in relation to the semantic basis of the alternation.

5.5.1   Transitive ↔ patientive middle

The transitive-patientive middle alternation is an alternation between an agentive transitive and a decausative.

In the transitive construction (5.4.2.3) the agentive argument is realised with ergative case and marked with the actor suffix. The patientive argument is realised with absolutive case and then indexed with the undergoer prefix. This is as we expect for a prototypical transitive construction. In the corresponding middle construction the single argument is the patientive argument of the transitive clause and the agent is left unexpressed. As the patient is the sole argument, it is realised with absolutive case and is indexed with the actor agreement; the agent argument is not expressed and cannot be expressed. The undergoer slot is filled by the middle prefix and the diathetic vowel is present for verbs whose stems do not commence with a vowel.

Verbs which participate in this alternation usually have a highly affected patient argument. These include the verbs corresponding to the following semantic categories: 'to break', 'to cut', 'to destroy', 'to hit', 'to kick', 'to stir', 'to prepare', 'to dry', 'to separate', 'to open'.

(5.33)   a. *Markusu brar pi ikewai*

   Markus-w   brar   pi   y-kewa-y
   Markus-ERG garden 3.ABS 3U-destroy-NSG.A.HOD

   'Markus smashed up the garden.'

b. *brar pi ekewai*

   brar   pi   ø-e-kewa-y
   garden 3.ABS MID-DIA-destroy-NSG.A.HOD

   'The garden got smashed up.'

The middle decausative construction denotes an action either without obvious agentive input or without specifying that input compared to the transitive version. The middle entails no specification about the agent role. It is not possible to include any agent argument even as an oblique role as the example below demonstrates. This construction can be used if the speaker does not wish to specify the agent, the agent of the event

is unknown or unclear.

(5.34) * brar   pi   ø-e-kewa-y   markus-wa
        garden   3.ABS   MID-DIA-destroy-NSG.A.HOD   Markus-CAUS
        'The garden got smashed up by Markus.'

5.5.2   Transitive ↔ agentive middle

The transitive-agentive middle alternation may be characterised as an alternation between a transitive or causative and a semantic middle or autobenefactive.

In this alternation we have a typical transitive construction; the agent argument is realised with ergative case and marked with the actor suffix. The non-agent argument is realised with absolutive case and then indexed with the undergoer prefix. In the middle construction, the single argument is the agent who is either both initiator and endpoint or the action has some autobenefactive characteristic. The agent is realised in the absolutive case and indexed with the actor suffix. The undergoer slot is filled by the middle prefix and the diathetic vowel is present for the relevant verbs.

Verbs which participate in this alternation include 'to chase/flee', 'to call/shout', 'to carry up/to ascend', 'to dress'. In the transitive form they are clear two-place predicates which have a low semantic transitivity usually by way of less affected patentive argument in the transitive construction (5.35).

(5.35)   a. *Jonu Markus srwari*

            Jon-w   Markus   s-rwar-y
            John-ERG   Markus   3.β.U-call.RS-SG.A.HOD

            'John called to Markus.'

         b. *Jon tarwari*

            Jon   t-a-rwar-y
            John   shout   MID.PFV-DIA-call.RS-SG.A.HOD

            'John called out.'

The middle construction of these verbs is the agentive middle which, as discussed, involves the initiator of the action also being the endpoint. It sometimes unclear in

these constructions if the single argument of the middle construction is agent or patient, such as for the word for 'to flee' which corresponds to the transitive verb 'to chase' (5.36), which displays a causative semantics.

(5.36) a. *Jon ertekai*

   Jon   ø-e-rteka-y
   John   MID-DIA-flee.DUR-SG.A.HOD

   'John fled.'

  b. *Jonu Marku irktekai*

   Jon-w   Markus   y-rteka-y
   John-ERG   Markus   3.α.U-chase.DUR-SG.A.HOD

   'John chased Markus.'

In other examples the sole argument is clearly agentive yet is also the patient (5.37).

(5.37) a. *Jon tantai*

   Jon   t-a-nta-y
   John   MID.PFV-DIA-dress.RS-SG.A.HOD

   'John dressed.'

  b. *Omlu Jon sntai*

   Oml-w   Jon   s-nta-y
   Mother-ERG   John   3.β.U-dress.RS-SG.A.HOD

   'Mother dressed John.'

5.5.3   Transitive ↔ cognate-object

The transitive-cognate-object alternation is an alternation between an underlying event encoded in the cognate-object construction with a middle verb and the corresponding external causative in the transitive construction. The cognate-object may be either a semantically single or a two-place predicate, which is instantiated in the grammar as a cognate-object construction.

In the transitive construction there is an external agentive argument which causes a secondary actor to perform the action. The external agent is flagged as ergative and

indexed with the actor suffix. This is as we would expect since this argument is the most agentive, i.e. A. The caused actor is then marked in absolutive case and indexed as an undergoer. In the corresponding cognate-object construction the agent is treated like an S and the construction includes a reduced argument element, this may either be the semantic patient or an empty cognate-object type element (5.4.2.1). Both nominal elements are realised in the absolutive. The agent is indexed with the actor suffix and the semi-argument is not indexed at all. The undergoer slot is filled by the middle prefix and the diathetic vowel is present for the appropriate verbs.

All cognate-object verbs participate in the alternation. These are characterised as either one-place predicates with higher semantic transitivity and two-place predicates with low semantic transitivity. Generally one-place predicates are highly agentive in their lexical semantics (5.38) whilst the two place predicates display highly salient or expected patientive arguments (5.39). The transitive construction on these verbs involves an external causer argument who is outside the basic lexical semantic of the verb. The O argument of this construction corresponds to the S argument of the cognate-object construction as evidenced in the examples below.

(5.38)   a. *Jon warko toiwoanti*

Jon   warko   t-o-ywoant-y
John   run   MID.PFV-DIA-run-SG.A.HOD

'John ran.'

b. *Markusu Jon siewoanti*

Markus-w   jon   s-ywoant-y
Markus-ERG John 3U.PFV-run-SG.A.HOD

'Markus made John run.'

(5.39)   a. *Jon atka ownei*

Jon   atka   ø-owne-y
John   water   MID-drink-SG.A.HOD

'John drank water.'

b. *Markusu Jon swnei*

Markus-w   Jon   s-owne-y
Markus-ERG   John   3.β.U.PFV-run-SG.A.HOD

'Markus made John drink.'

5.5.4   Transitive ↔ intransitive

A very small number of verbs alternate between the transitive construction and the intransitive construction. These are *okongkai* 'to stand up', *impaturai* 'to jump/fly' and *einei* 'to look around'. These three verbs all behave differently regarding this alternation.

The verb *okonai* 'to stand up' in the transitive construction involves an agentive causer argument realised in the ergative and indexed with the actor agreement. The theme argument is realised as the absolutive and indexed with the undergoer prefix (5.40). In the intransitive construction there is a single agentive argument who stands. As the sole argument it is realised in absolutive case yet is indexed as an undergoer as per the intransitive construction. This is semantically an alternation between a dynamic intransitive verb and causative. This verb is distinct from the stative stand discussed in section 5.4.1.1.

(5.40)   a. *Markus ikongki*

Markus y-kongk-y
Markus 3.α.U-stand.up-HOD

'Markus stood up.'

b. *Markusu pr ikongki*

Markus-w   pr   y-kongk-y
Markus-ERG tree 3.α.U-stand.up-SG.A.HOD

'Markus stood the log up.'

The verb *ompaturai* 'to jump/fly/throw' participates in the transitive-agentive middle alternation as well as the transitive-intransitive alternation. This verb means 'to throw' when used in the transitive construction (5.41a), 'to fly' when used in the middle construction (5.41b) and 'to jump' in the intransitive construction (5.41c).

(5.41)   a. *Markusu mlae impaturai*

   Markus-w mlae y-mpatura-y
   Markus-ERG stone 3.α.U-throw.EX-SG.A.HOD

   'Markus threw the stone.'

  b. *Markus ompaturai*

   Markus ø-o-mpatura-y
   Markus MID-DIA-throw.EX-SG.A.HOD

   'Markus flew.' (as in a plane or under a supernatural force)

  c. *Marku impaturai*

   Markus y-mpatura-y
   Markus 3.α.U-throw-HOD

   'Markus jumped.'

The verb *einei* 'to look around' may be used in a transitive construction meaning to 'to look for' (5.42a). In this case the searcher is the agent and is realised in the ergative case and indexed as actor. The thing which is searched for is realised as the absolutive and indexed as undergoer. In the intransitive construction the single argument is agentive and the predicate describes a dynamic action in which one searches around but not specified for any object in particular (5.42b). The action described by this verb usually involves looking around without success rather than searching for something thoroughly.

(5.42)   a. *Markusu nsone kamplen yeinei*

   Markus-w nsone kamplen y-einei-y
   Markus-ERG 1SG.POSS bag 3.α.U-look.around.EX-SG.A.HOD

   'Markus looks around for my bag.'

  b. *Markus yeinei*

   Markus y-eine-y
   Markus 3.α.U-look.around.EX-HOD

   'Markus looks around.'

5.5.5 Transitive ↔ benefactive applicative

This alternation occurs with all transitive verbs which have verbs stems starting with a consonant. It may be characterised as a alternation between a standard transitive and a transitive with a beneficiary argument.

In the transitive construction (5.4.2.3) the agent argument is realised with ergative case and marked with the actor suffix. The non-agent argument is realised with absolutive case and then indexed with the undergoer prefix. The benefactive applicative introduces an additional core beneficiary argument which is realised in the dative case and indexed with the undergoer prefix. The agent is realised with the ergative and indexed with the actor suffix. The patient, or non-agent/beneficiary argument is realised with absolutive case and not indexed on the verb.

The benefactive applicative indicates that the action was performed for someone else's benefit (5.43a) or to indicate that the action is performed whilst assisting someone (5.43b).

(5.43)   a.   *Ngkai omlen kwr weyerki*

         Ngkai   oml-en   kwr   w-e-yerk-y
         1SG.ERG   pig   mother-DAT   3F.α.U-DIA-hunt.DUR-SG.A.HOD

         'I was hunting pig for mother.'

   b.   *Markusu nson pr bewancei*

         Markus-w   nson   pr   b-e-wanse-y
         Markus-ERG   1SG.DAT   tree   3.β.U-DIA-fall.RS-SG.A.HOD

         'Markus helped me fell the trees.'

5.6 Alternation classes

In this section, lemmas are divided into alternation classes based on the set of verbs which belongs to that lemma. Each lemma may only have one verb of each morphological pattern, i.e. intransitive, middle, transitive and applicative, although many display only a subset of these.

The driving factor of valence alternation classes are the morphological classes introduced in Section 5.2 which are discussed in more detail in Section 6.2. As such, these are not strictly defined semantically; rather they display correlation to or clustering of semantic factors. The most relevant semantic division being the stative versus dynamic contrast, which clusters around the prefixing versus ambifixing morphological classes. However, many alternation classes simply represent an idiosyncratic relationship between lexemes.

The distinction between verbs of a single lemma is related to the derivational process of VOICE as found in many languages of the world, however there are a number of key distinctions. Firstly, the relationship between verbs of a single lemma is primarily morphological rather than purely related argument structure. For example, a lemma may have both a middle verb and a transitive verb, yet they may both be bivalent verbs. An example of this is the lemma *ominngkai* 'to eat' which has a middle bivalent form (5.44a and a transitive bivalent form, which is a causative (5.44b).

(5.44)   a. *piengku nongkai ominngki*

        pi   nongkai ø-o-minngk-y
        3SG.ABS food   MID-DIA-eat-SG.A.HOD

        'He ate the food.'

    b. *piengku kwr iminngki*

        pi   kwr   y-minngk-y
        3SG.ABS food 3.α.U-eat-SG.A.HOD

        'He fed the pig.'

In addition to this, for most classes the morphologically simplest form is the transitive. This suggests that the transitive form is the basic form and the middle and the applicative are derived forms. This seems a reasonable claim but it has some unusual consequences in Ngkolmpu since the majority of semantically one-place predicates are of this class. Under such a derivational treatment, this would suggest that the causative form of a verb like 'fall' is the morphologically basic form and yet the basic semantics of the monovalent alternate correspond to a morphological derived form. For these reasons, I label the relationship between verbs as DIATHESIS instead of VOICE. In addi-

tion, we will discuss the relationship in terms classes of related lexemes in order to not privilege any particular morphological form as more basic.

5.6.1 Class 1 - Prefixing monovalent

The first class is the prefixing monovalent class. These are defined as having only a single lexeme. This single lexeme belongs to the prefixing morphological class discussed in Section 6.2. The prefixing morphological class is defined as indexing its sole argument (S) with a prefix. Verbs belonging to this class only participate in the intransitive construction (Section 5.4.1.1). The intransitive construction is a monovalent construction with a prefixing verb.

The lemmas which belong to this class are: *ye* 'to be', *yeme* 'to be located', *yamakr* 'to walk' and *ytora* 'to arrive'. Note these verbs do not have infinitive and thus the citation forms of these are in the third person singular present tense form.

5.6.2 Class 2 - Ambifixing monovalent

This class is the ambifixing monovalent class. It has a verb in the middle morphology only. The single verb in the lemma participates in the middle construction. The only two members of this class are the directional related pair for 'to come' and 'to go'. See Section 6.6.2 for a discussion of direction encoding on verbs.

5.6.3 Class 3 - Omnivalent

This is by far the largest alternation class in Ngkolmpu. Lemmas in this class have three lexemes with distinct morphological patterning. These are the middle form, the transitive form and the benefactive applicative. The middle form verb may participate in either the cognate-object construction (Section 5.4.2.1) or the middle construction (Section 5.4.1.2). Verbs of lemmas in this class which participate in the middle construction may also participate in the reflexive/reciprocal construction (Section 5.4.2.2). All the verbs in this class are characterised as having their stems commence with a consonant. There are 130 identified lemmas which belong to this class, and they are listed in Table

5.6 at the end of this chapter. We can see an example of the three lexemes of the lemma *owamprei* 'to fall' in (5.45) and for *omerkntnai* 'to follow' in (5.46).

(5.45) a. *Markus tawancei*

    Markus t-a-wanse-y
    Markus MID.PFV-DIA-fall.RS-SG.A.HOD

    'Markus fell (earlier today).'

    b. *Markusu pr pi swancei*

    Markus-w pr pi s-wanse-y
    Markus-ERG tree 3.ABS 3.β.U-fall.RS-SG.A.HOD

    'Markus felled the tree.'

    c. *Markusu pr pi nson bawancei*

    Markus-w pr pi nson b-a-wance-y
    Markus-ERG tree 3.ABS 1SG.DAT 1SG.β.U-DIA-fall.PFV-SG.A.HOD

    'Markus felled the tree for me.'

(5.46) a. *Markus omerki*

    Markus ø-o-merk-y
    markus MID-DIA-follow.DUR-SG.A.HOD

    'Markus got followed (earlier today).'

    b. *Markus pr pi ymerki*

    Markus-w Jon y-merk-y
    markus-ERG jon.ABS 3.α.U-fall.DUR-SG.A.HOD

    'Markus followed Jon (earlier today)'

    c. *Markus Jon nson yomerki*

    Markus-w jon nson y-o-merk-y
    Markus-ERG jon.ABS 1SG.DAT 1SG.α.U-DIA-fall.DUR-SG.A.HOD

    'Markus followed John for me (earlier today)'

5.6.4   Class 4 - Transitive ambivalent

This class is the second most common alternation class. It is distinguished from Class 2 by having verb stems which commence with a vowel. Lemmas in this class have two

lexemes with distinct patterning. These forms are the middle verb and the transitive verb. As with the previous class the middle forms may be either the middle construction (Section 5.4.1.2) and the reflexive/reciprocal construction (Section 5.4.2.2) or the cognate-object construction (Section 5.4.2.1). There are 33 lemmas which have been identified as belonging to this class, these are listed in Table 5.7 at the end of this chapter. We can see the alternation in example (5.47).

(5.47) a. *pi ban tarwari*

   pi   ban   t-a-rwar-y
   3SG.ABS   shout   MID.PFV-DIA-shout.RS-SG.A.HOD

   'He shouted.' (lit. *He shouted a shout*)

   b. *piengku John sarwari*

   pi   jon   s-a-rwar-y
   3SG.ABS   jon   3.β.U-DIA-shout.RS-SG.A.HOD

   'He called to John.' (lit. *He shouted a shout*)

5.6.5 Class 5 - Ditransitive ambivalent

The lemmas in this class have two lexemes with distinct morphological forms: the ditransitive and a middle form. The ditransitive construction may be either theme indexing or recipient indexing depending on the verb involved. The middle construction is the basic middle and the reflexive/reciprocal construction. All the basic ditransitive verbs, i.e. non-applicative forms, belong to lemmas of this class. These are *omaei* 'to give', *orei* 'to send' and *armaekai* 'to show'.

(5.48) a. *Markusu mpu Jonen knrei*

   Markus-w   mpu   Jon-en   kn-re-y
   Markus-ERG 2SG.ABS John-DAT   2SG.β.U-send.RS-SG.A.HOD

   'Markus sent you to John (earlier today).'

   b. *ngko torei*

   pr   kati   t-o-re-y
   tree leaf   MID.PFV-DIA-send.RS-SG.A.HOD

   'The money got sent (earlier today).'

5.6.6   Class 6 - Prefixing ambivalent with middle

There is a single lemma of this class which corresponds to the various meanings of 'to throw' (5.50). It has a prefixing form, a middle form and a transitive form. The prefixing verb, as with all prefixing verbs, participates in the intransitive construction. The prefixing verb has the meaning of 'to leap'. The middle form participates in the basic middle construction. The middle verb has the meaning 'to fly'. The transitive verb participates in the transitive construction and has the meaning 'to throw'.

(5.49)   a. *Markusu mlae impaturai*

   Markus-w   mlae   y-mpatura-y
   Markus-ᴇʀɢ   stone   3.α.U-throw.ᴇx-ꜱɢ.ᴀ.ʜᴏᴅ

   'Markus threw the stone.'

   b. *Markus ompaturai*

   Markus   ø-o-mpatura-y
   Markus   ᴍɪᴅ-ᴅɪᴀ-throw.ᴇx-ꜱɢ.ᴀ.ʜᴏᴅ

   'Markus flew (as in a plane or under a supernatural force)'

   c. *Markus impaturai*

   Markus   y-mpatura-y
   Markus   3.α.U-throw.ᴇx-ʜᴏᴅ

   'Markus jumped.'

5.6.7   Class 7 - Prefixing ambivalent without middle

Lemmas of this class have two distinct verb forms and prefixing and a transitive form. The prefixing form participates in the intransitive construction and the transitive form participates in the transitive construction. There are two lemmas which belong to this class. These are *oritukai* 'to die' and *inei* 'to look around'.

(5.50)   a. *Ngkai John inei*

   nakgi   John   y-ne-y
   1ꜱɢ.ᴇʀɢ   John   3.α.U-look.around.ᴇx-ꜱɢ.ᴀ.ʜᴏᴅ

   'Markus looked around for John.'

3rd singular present form	Translation
ikompr	'be standing'
intompr	'be inside'
imitr	'be hanging'
yeme	'be sitting'
imtr	'be laying'
irnontompr	'be stuck'
imowmpr	'be leaning'
iritr	'be upright'
ingkirtompr	'be wedged'
ikn	'be sitting atop something'

Table 5.5: Set of positional verbs

b. *Ngkai y-ne-y*

ngkai   y-ne-y
1SG.ERG 3.α.U-look.around.EX-HOD

'I searched around.'

5.6.8   Class 8 - Positionals

The last class of lemmas entail a set of lexemes which are a transitive, a middle and a positional verbs. All the lemmas in this class display a positional semantics. The transitive forms are in transitive constructions and are used to indicate a causative in which the O argument is placed in a position. The middle verb participates in the middle construction and is a decausative or self-causative verb meaning to enter the position. Finally the positional verb is a prefixing verb. It is stative in semantics and is used to indicate a position or pose.

Positional verbs are a closed class of verbs which denote postures and spatial positions. Ten have been identified for Ngkolmpu. These verbs are common in the language family; Evans (2014) reports over three dozen such verbs in Nen. The system in Ngkolmpu is far less elaborated than in Nen, however the overall system is quite similar. A full list of these verbs in included in Table 5.5.

Positional verbs can denote posture, such as: 'be in a sitting position' (5.51b) 'be in a standing position' (5.51a) or 'be in a leaning position'.

(5.51) a. *pi nelni youme*

            pi   nel-ni   y-oume
            3ABS earth-LOC 3.α.U-sit.NPL

            'He is sitting on the ground.'

      b. *pr pi kelimuni iritr*

            pr   pi   kelimu-ni y-ritr
            tree 3ABS forest-LOC 3.α.U-stand.NPL

            'That tree is standing in the forest.'

Positional verbs may also denote position in respect to some point of reference. These include 'be on top of something' and 'be inside something'.

(5.52) a. *pi pantni ikn*

            pi   pant-ni   y-kn
            3ABS platform-LOC 3.α.U-be.on.top.NPL

            'It is on top of the platform.'

      b. *pi mwai intompt*

            pi   mwa-ni   y-ntompr
            3ABS house-LOC 3.α.U-inside.NPL

            'It is in the house.'

As stated, positional verbs have a corresponding transitive verb of placement. The positionals are formed by adding a derivational suffix to the transitive verb stem. This is either *tr* (5.53) or *mpr* (5.54) depending on the verb. The choice of derivational suffix is entirely arbitrary.

(5.53) a. *piengku kamplen prni imi*

            piengku kamplen pr-ni   y-mi-ø
            3SG.ERG bag   tree-LOC 3.α.U-hang-SG.A

            'He is hanging the bag in the tree.'

b. *kamplen prni imitr*

kamplen pr-ni   y-mitr
bag   tree-LOC 3.α.U-be.hanging.NPL

'The bag is hanging in the tree.'

(5.54) a. *piengku kamlen mwani into*

piengku kamplen mwa-ni   y-nto-ø
3SG.ERG bag   house-LOC 3U-hang-SG.A

'He is putting the bag inside the house.'

b. *kamplen mwani intompr*

kamplen mwa-ni   y-ntompr
bag   house-LOC 3U-be.hanging.NPL

'The bag is inside the house.'

There are few verbs for which this derivation are not synchronically systematic and must be memorised (5.55).

(5.55) a. *piengku pr iko*

piengku pr   y-ko-ø
3SG.ERG tree 3U-stand-SG.A

'He stands the log up.'

b. *pi ikn*

pr   y-kn
tree 3U-be.standing.NPL

'The log is standing.'

Lemma	Translation	Lemma	Translation
oamnagkai	'to request'	orei	'to rip'
oblnei	'to smash'	oreyai	'to bury (dead)'
obsukai	'to lift'	oriai	'to unwrap ceremonial food'
oitbrei	'to separate'	oriarai	'to funerate'
okai	'to ask'	orikoi	'to lay out'
okai	'to cry'	orirai	'to weave'
okakoi	'to tie'	orkoi	'to unfasten'
okemkai	'to close'	orkoi	'to pick fruit'
okerei	'to return'	ormangkei	'to dry '
okewai	'to break'	ormingkai	'to wear a weapon'
okonai	'to stand'	ormiturai	'to pull'
okorai	'to divide'	orncrai	'to chew'
okrai	'to pile'	orntoi	'to peel off'
okrkai	'to steal'	oroi	'to hide'
olaknai	'to break apart'	orpakui	'to scatter, spread'
olapinai	'to hug'	orpenai	'to ready'
olengkai	'to roll over'	orpitui	'to untie'
olewei	'to scrub'	orpongkai	'to cover'
olibungkai	'to wash'	orpunai	'to cut into two'
olilmongkai	'to loosen'	ortai	'to destroy'
olimplai	'to pour'	ortai	'to pound'
olkusikai	'to glimmer'	ortinngkai	'to clean'

olmplaei	'to fetch water'	orui	'to plant'
olmputokai	'to sink'	oruntnai	'to hunt'
olmulai	'to get down'	oruskoi	'to admit'
olngkolai	'to stab'	osamingkei	'to school'
olokai	'to make fire'	osiprai	'to undress'
olpukai	'to grow'	osoi	'to mince'
olusi	'to arrange'	osoi	'to slice'
olusy	'to blow'	osui	'to fold'
omakrai	'to burn, cook'	otarai	'to cut'
omangkai	'to hold'	otimpitrai	'to cover'
omarentnai	'to circumnavigate'	otnmngkai	'to tie'
omarngkai	'to marry'	otnongkai	'to writework'
ombtibai	'to stop'	otrbrai	'to share'
omei	'to put out'	otripinai	'to scratch'
omerkntnai	'to follow'	otroi	'to dig'
omibnai	'to roll up'	otrrai	'to tear'
ominsrai	'to extend'	otryai	'to scatch itch'
omirintei	'to peel'	otukoi	'to move'
omkui	'to gather'	otwarai	'to rub'
omonsai	'to assemble'	owaki	'to plant'
ompangkai	'to push out'	owakinai	'to build'
ompaturai	'to fly, jump'	owaloi	'to do, make'
omplaei	'to hit'	owamprai	'to fall'
omtrai	'to sleep'	owanai	'to think'

omulantnai	'to stir'	owantokoi	'to enter'
onaempunai	'to grate'	oweikai	'to fear'
onakyai	'to lift up'	owertao	'to burn'
oncrekai	'to wake'	oworai	'to fell tree'
onekutrai	'to kick'	owortnai	'to prepare festival'
ongkinai	'to slip'	owowongkai	'to nest'
onongkui	'to heap'	owowturai	'to get'
onowai	'to distribute'	owrei	'to fish w/net'
onowai	'to shoot'	owrekai	'to lift from water'
onsiurai	'to enter water'	owsenai	'to ascend'
onsuknai	'to pack up'	owurai	'to bite'
operai	'to put together'	oyanai	'to eat meat'
opinoi	'to touch'	oyapongkai	'to encircle'
oprmangkai	'to repair'	oyerai	'to say'
opsai	'to count'	oylmpawulai	'to open'
opuknai	'to wrap'	oyopoi	'to rub up'
orai	'to work'	oyrai	'to chew betel'
orampukai	'to finish fasting'	oyrwai	'to heat up'
okaingkai	'to block'		

Table 5.6: Table of omnivalent lemmas (class 2)

Lemma	Translation	Lemma	Translation
atunaengk	'to agree'	arnaro	'to know (or person or fact)'
ontongk	'to bring'	akr	'to mention'
arwar	'to call'	ure	'to remove'
iko	'to close up'	onimpatr	'to shine'
ayakntn	'to crawl'	oysentn	'to run'
eruk	'to desire'	owko	'to see'
antoko	'to dress'	anwantk	'to smell'
owne	'to drink'	ula	'to so'
ominngk	'to eat'	eyekntn	'to stalk '
aintakn	'to flatter'	aleka	'to start'
artib	'to finish'	oyer	'to talk'
omr	'to hear'	okre	'to throw out'
awo	'to make'	ibent	'to tell'
aemura	'to nod'	owal	'to unite'
armpa	'to prevent'	anto	'to wait'
aempl	'to play, laugh at'	anto	'to watch'
aetnangk	'to order'		

Table 5.7: Table of ambivalent lemmas (class 3)

Chapter 6

Verb morphology

This chapter is a description of the morphological structure of verbs in Ngkolmpu, including both lexical and inflectional morphology. It sets out the internal structure of all verbs in the language and lists all the affixal material for each inflectional site. It establishes all the morphological structure of verbs except for stems which are handled in Chapter 7. The morphological material discussed in this chapter serves to establish verbs as a word class on morphological grounds.

Verbs are by far the most morphological complex elements in the language with paradigms characterised by an extensive tendency to distribute the exponence of tense, aspect and mood categories across multiple inflectional sites on the verb including fused with agreement markers. Verbal paradigms are large and verbs are marked for agreement with up to two arguments, direction, diathesis and verbal number.

Verbs are classified into morphological classes based on their indexing, as either prefixing or ambifixing (5.6). The set of morphosyntactic and morphosyntactic features relevant for describing verbs are listed in Section 6.3. These features serve as the basis for the more theoretical discussion in later chapters and are expanded upon in Chapter 9. The bulk of this chapter is dedicated to describing the distribution of the various morphological forms at each given morphological locus (6.4). These morphological loci comprise three primary inflectional sites and two lexical prefixes. Verbs are also characterised by a complex system of stem alternation that interacts with the inflection; this topic is held off until Chapter 7.

The examples in this chapter are taken from both elicitation and naturalistic data in order to make the particular relevant forms as explicit as possible. Naturalistic data is primarily used in establishing the semantics of the categories. However, when discussing structural and paradigmatic aspects of the verb much of the data comes from paradigm elicitation. Thus, for the bulk of this chapter elicited data is used.

6.1   How to read this chapter

This chapter provides the descriptive backbone of the remainder of the thesis. Primarily, the chapter concerns itself with establishing the set of relevant information required to inflect a verb, i.e, inflectional classes, features, the inflectional template and the set of forms that populate each of the inflectional sites.

As mentioned in Chapter 1, Ngkolmpu is notable for the way feature values are distributed across the inflectional sites of verbs. This means that the realisation of individual feature values is typically complex involving multiple affixal elements, each of which is required to provide a precise interpretation of the inflected verb; This phenomenon is known as distributed exponence (Caballero & Harris, 2012, p. 170). Consider the paradigm in Table 6.1. These are the forms of second singular acting on third person across TAM for the verb *opinoi* 'to touch'. Given this paradigm, it is difficult to precisely state what the realisation of any given category is. To illustrate, in order to state what the realisation of future-irrealis, one is resorted to saying that this category realised by the combination of the *s-*, i.e. β, prefix and either two zero suffixes or a *nt* suffix and the zero suffix. Note that the complexity of this description increases once agreement features are considered as well.

Given these facts, it is often difficult to provide a inventory of realisations for each category as one might often find in a typical descriptive grammar. Instead, this chapter will focus on providing the reader with the set of information required to inflect a verb and a discussion of the semantics of each category. However, the reader will have to wait until Chapter 8 for a more synthetic approach in which the particular realisations of features combinations are presented.

In order to properly inflect a verb in Ngkolmpu, one needs to know both its inflec-

	Perfective	Durative	Imperfective
Future Potential	s-pino-ø-omo-ø	s-pino-nt-omo-ø	
Imperative-Hortative	s-pino-ø-ø	s-pino-nt-ø	
Future-Irrealis	s-pino-ø-ø	s-pino-nt-ø	
Present		y-pino-ø-ø	
Hodiernal Past	s-pino-ø-y	y-pino-ø-y	y-pino-en-ø
Recent Past	s-pino-nt(ro)-ø	sw-pino-ø-ø	
Remote Past	s-pino-ngk-ø	y-pino-ø-w	sw-pino-rnt-ø
Past-Potential		y-pino-ngk-ø	

Table 6.1: Paradigm of 2SG>3 forms of *opinoi* 'to touch'

tional class and the set of features that the verb will inflect form. Inflectional classes are established Section 6.2. Inflectional features are introduced in Section 6.3. In these sections, the reader will not be assumed to understand the precise realisation of these features; instead examples are provided to illustrate facts regarding the semantics and distribution of the various relevant categories.

The remainder of the chapter involves cataloguing the forms that populate each of the inflectional sites in Ngkolmpu. Each inflectional site is introduced and listed. Then, each of the individual elements are discussed for each inflectional site. This will then be supplemented by the information provided on stems in the Chapter **??** and synthesised in a theory-informed description in Part II of this thesis.

6.2 Overview of morphological classes

There are two broad morphological classes of verbs in Ngkolmpu which are labelled prefixing and ambifixing following terminology established for Nen by Evans (2015a). These labels refer to the locus of argument agreement: either by prefix alone or with both a prefix and a suffix respectively. There is a strong correlation between morphological classes and the valence alternation classes established in Chapter 5, although the nature of the classes is quite different, with morphological classes referring to lex-

emes and the alternation classes referring to lemmas, i.e. groups of morphologically related lexemes. Ambifixing verbs involve the full set of morphological possibilities whilst prefixing verbs partake in only a subset. The morphological templates for verbs are discussed in Section 6.4.

6.2.1   Ambifixing verbs

The largest morphological class of verbs are ambifixing verbs, which make up the vast majority of the verb lexicon, accounting for 90% of collected verbs. These verbs include:

- all transitive verbs, which index the O argument by the undergoer prefix and the A argument by the the actor suffix.
- all ditransitive verbs, which index either the recipient or their theme with the undergoer prefix, depending on class, and the A argument by the actor suffix
- all morphologically middle verbs, which index their sole argument with the actor suffix and the undergoer slot is unfilled[1] or filled with a person/number invariant middle prefix. These are the vast majority of one-place predicates in the language as well as some two-place predicates. These typically alternate with a morphologically transitive form. For more details of their syntactic behaviour see Chapter 5.

Ambifixing verbs, unlike prefixing verbs, have infinitives. These are formed from the extended stem and infinitive morphology as discussed in Section 3.1.1. The restricting of infinitives to ambifixing verbs only is a typological feature of the language and has been described for both Komnzo (Döhler, 2016) and Nen (Evans, 2015a).

Transitive (6.1a) and ditransitive (6.1b) verbs index two arguments. The morphologically middle verbs index a single argument with the actor suffix; these may be syntactically monovalent (6.1c) or bivalent (6.1d). Monovalent middle verbs index their sole argument with the actor suffix whilst bivalent middle verbs index the A argument with the actor suffix.

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[1]i.e. filled with a zero form.

(6.1) a. *Markusu ni nmerki*

   Markus-w   ni   n-merk-y
   Markus-SG.ERG.SG 1NSG.ABS 1NSG.α.U-follow.DUR-SGA.HOD

   'Markus followed us.' (earlier today)

b. *Markusu omlen pr kati bnaei*

   Markus-w   oml-en   pr   kati
   Markus-SG.ERG.SG mother-DAT tree leaf
   b-nae-y
   3SG.FEM.β.U-give.RS-SGA.HOD

   'Markus gave mother the money.' (earlier today) (perfective)

c. *pr pi tawancei*

   pr   pi   t-a-wance-y
   tree 3.ABS MID.PFV-DIA-fall.RS-SGA.HOD

   'That tree fell.' (earlier today)

d. *Markus nongkai bl ominngki*

   Markus nongkai bl   ø-ominngk-y
   Markus food   seed MID-eat.EX-SGA.HOD

   'Markus ate yams.' (earlier today)

There are two subclasses of ambifixing verbs which are determined by the initial phoneme of the stem. Verbs whose stems commence with a vowel have an inherent diathetic prefix which restricts their participation in valency constructions. Middle verbs which have a vowel initial stem do not occur with an additional diathetic prefix (Section 6.6.1). No vowel-initial verb stem may occur in an applicative construction (5.5.5). Verb stems which commence with a consonant may freely combine with all morphological material given all other restrictions.

6.2.2   Prefixing verbs

Prefixing verbs are a restricted closed class of verbs. This morphological class includes monovalent verbs which index their sole argument with a prefix (6.2).

(6.2)   a. *mpu poi noume*

mpu   poi   n-oume
2.ABS DIST.DEM.LOC 3.α.U-ys.located.NPL

'You are sitting there.'

b. *pi poi youme*

pi   poi   y-oume
3.ABS 3.ABS DIST.DEM.LOC 3.α.U-ys.located.NPL

'He sitting there.'

(6.3)   *nmaei yow peto yemeu ngki, Ngkolmpu kara*

nmaei yow peto y-eme-w   ngki,   Ngkolmpu
before NEG very 3.α.U-is.located.PL-RMT.DUR PROX.ABS Ngkolmpu
kara
community

'Long ago, the Ngkolmpu community lived simply.' (lit. lived not exces-
sively) [20120930-KCD-KD-BeforeStory 006]

This class is common to Yam family languages. In other Yam languages it has been characterised as displaying predominantly stative semantics (Evans, 2015a). This is less predominant in Ngkolmpu and represents only about half of the words in this class (See Chapter 5 for a more detailed discussion of this). The verbs of this morphological class include positional verbs, which are a closed set of 10 verbs, many of which are derived from active verbs of placement, and the copula, all of which are stative. But this class also consists of a number of dynamic verbs including the verbs for walk, stand up, fly, jump, search, die and arrive. The copula has some particularly irregular forms and is discussed in Section 6.9.

These verbs occur with a more restricted set of the inflectional markings discussed in Section 6.4. They do not occur with middle marking nor may they occur with the diathetic prefix. These verbs do occur with actor suffixes for most tense, aspect and mood values, except for those actor suffixes which indicate TAM in the singular. In these cases the actor suffix indicates TAM features only.

6.3 Overview of verbal categories

This section lays out the inflectional categories as required to understand the basic morphological structure of Ngkolmpu verbs.

6.3.1 Tense, aspect and mood

There are a total of 16 tense, aspect and mood categories formally inflected on the verb. The tendency for distributed exponence is most clearly visible in the inflectional TAM marking. This section sets out the set of values which are inflected on the verb. The following section (6.4) indicates the particular inflectional markings of the verbs. The distribution of morphological content on the verb is the dedicated topic of Chapter 8 and discussed in Chapter 9.

It is not entirely possible to separate tense, aspect and mood in Ngkolmpu although it is useful to discuss them as somewhat independent variables. Distributionally, tense and aspect largely cross-cut with some interesting interactions discussed below. However, mood is closely entwined with both tense and aspect and as such cannot be separated from either of these features. In this section we will discuss these separately, with the caveat however that things are more complicated than an individuated analysis would suggest. Table 6.2 sets out a paradigm of TAM values. There are three aspect values, perfective, durative and imperfective (6.3.1.1). These cross-cut with five tense values, future, present, hodiernal past, recent past and remote past (6.3.1.2). There is no present perfective form for reasons discussed below and imperfective aspect values only exist in the past tenses with a collapsing of the tenses hodiernal past and recent past. There are also mood distinctions built into this paradigm with three distinct mood categories in the future tense across both perfective and durative aspect: future potential, future-irrealis and imperative-hortative (6.3.1.3). There is also a past potential form in the remote past tense for the durative aspect.

Formally the TAM marking is largely conflated with the agreement affixes. There is dedicated TAM marking on verbs but the system itself can be considered distributed across the agreement system and the dedicated inflectional TAM sites. The template

	Perfective	**Durative**	**Imperfective**
Future	future potential imperative-hortative future-irrealis	future potential imperative-hortative future-irrealis	
Present		Present	
Hodiernal past	hodiernal past	hodiernal past	recent past
Recent past	recent past	recent past	
Remote past	remote past	remote past past potential	remote past

Table 6.2: Paradigm of TAM values

for verb inflection is dicussed in Section 6.4.

6.3.1.1 Aspect

There are three inflectional categories of aspect in Ngkolmpu, the perfective, the durative and the imperfective. Traditional accounts of aspect, such as found in Comrie (1976), are usually organised around the distinction between perfective and imperfective. The imperfective may potentially be divided between habitual and continuous aspects. In Ngkolmpu, we see a slightly different pattern in which the primary semantic distinction is between perfective, i.e. construing events without reference to internal structure, and non-perfective. The semantically non-perfective categories in Ngkolmpu, however, do not correspond to the typical divisions found in the aspect typology literature regarding the imperfective such as Comrie (1976). Instead the distinction between the two categories is largely one of degree rather than type. The durative and imperfective may both be used to express events with respect to their internal structure, although if an event is sufficiently extended or repeated then the imperfective is used. The one area that does provide some correlation with Comrie (1976) is that only the imperfective aspect may be used to indicate habitual.

Verbs mark aspect through a combination of undergoer prefix, TAM suffix and the actor suffix depending on the particular TAM value. Typically, all three are needed to

determine the exact aspect values and so its not possible to state the realisation of a given aspect value. In addition, for most verbs aspect is also marked through a system of stem alternation. However, all aspect values may be determined through affixal information alone, so that stem alternation can be considered a type of multiple exponence of aspect values.

The perfective aspect is used for describing situations as a complete whole without making reference to the internal structure of the event (Comrie, 1976, p. 16). Punctual, non-iterative situations are always realised with the perfective aspect, however complex durative events may also be used with the perfective if the speaker chooses not to make reference to that internal structure. In example (6.4) the speaker is describing a story in which a man is hunting a cassowary and in this utterance he describes how the man in the story raised his club and struck the cassowary. Here the verb 'to hit' *omplaei* is in the perfective form as it is a single punctual strike. Although a non-punctual event, the action of raising the club is also described here in the perfective to highlight the single swift action of striking the cassowary. As has been described for related languages, Nen (Evans, 2015a) and Komnzo (Döhler, 2016) perfective is frequently used to indicate an inceptive or inchoative meaning (6.5).

(6.4) *bpe piengku moro siengk, pi srsngk, naeimam*

bpe   piengku moro s-ye-ngk-ø   pi
club 3SG.ERG FOC   3.β.U-raise.RS-RMT.PFVSG.A 3.ABS
s-rso-ngk-ø   naeimam
3.β.U-hit.RS-RMT.PFV-SG.A dead

'He raised his club and he hit it dead.' [20141108-KCD-YG-CassowaryStory 040]

(6.5) *baoror kongkonm tenkrnt sempo yentunto kelimungke*

boaror   kongko-nm t-e-n-kre-nt-ø
late.afternoon sun-INS   MID.PFV-DIA-TOW-return.RS-RCT.PFV-SGA
sempo yentun=to   kelimu-ngke
again   continue=ADV forest-ALL

'In the late afternoon, we commenced returning again through the forest.'

[20120924-KCD-KD-FishingStory 009]

For verbs which display a stem alternation, a specific stem, labelled the restricted stem, only may occur with perfective aspect and this stem may not occur in any other aspect. Stems are introduced in Section 6.5 and discussed in detail Chapter 7. Perfective, in this language, is highly restricted and cannot occur with pluractional events; these events consist of either an event repeated three or time or a absolutive argument with a cardinality of three or more. Notice that the combination of repeated event (6.6b) or a plural, i.e. 3+, absolutive argument (6.6c) are ungrammatical. Instead, to express these pluractional events either the durative or imperfective aspect must be used (6.6d) and a perfective meaning is not possible. See Chapter 7 for a much more detailed discussion of the interactions between pluractionality and aspect.

(6.6)   a. *Markusu Jon srsoi*

   Markus-w   Jon   s-rso-y
   Markus-SG.ERG.SG John 3.β.U-hit.RS-HOD.SG.A

   'Markus hit John.' (perfective)

   b. *Markus-w   Jon   yuowmpr   s-rso-y
   Markus-SG.ERG.SG John three.times 3.β.U-hit.RS-HOD.SG.A
   'Markus hit John three times.' (perfective)

   c. *Markus-w   yuow mel pi   s-rso-y
   Markus-SG.ERG.SG three head 3.ABS 3.β.U-hit.RS-HOD.SG.A
   'Markus hit those three.' (perfective)

   d. *Markusu yuow mel pi implaei*

   Markus-w   yuow mel pi   y-mplae-y
   Markus-SG.ERG.SG three head 3.ABS 3.α.U-hit.EX-HOD.SG.A

   'Markus hit those three.' (durative)

The imperfective and durative, by contrast, classify the event as occurring with internal duration. The durative is the default form and portrays events that are either non-punctual (6.7a) or iterative (6.7b). When occurring with the iterative form, the extended or plural stem is used depending on verb class, as discussed in Chapter 7. Diagnostic of this class is the ability to occur with either the durative stem (6.8a), glossed as DUR, or the extended stem (6.8b), glossed as EX. For positional verbs, it may occur

with either the non-plural (6.9a) or plural stem (6.9b). These stems are discussed in
more detail in Chapter 7.

(6.7) a. *moro sumakr pnm mensnm*

    moro sw-makr-ø   pnm   mens-nm
    FOC   3.γ.U-burn.EX DEM.INS fire-INS

    'I cooked (the fish) with the fire.' [20130820-KCD-YG-YonasFishing 014]

    b. *yempokanmto sriantnt, soro mpu, kamplaentei, pna prurwa*

    yempoka-nm=to s-r-yantn-nt,   soro   mpu,
    two-INS=ADV   3.β.U-N2.FUT-go.PL-FUT, women 2SG.ABS,
    k-amplae-nt-ei,   pna   prur-wa
    MID.FUT-hit.EX-FUT-FUT.NSG.A because lazy-ADJ

    'Off you go two at a time, you women, hit yourselves because you are

    lazy.' [20131009-KCD-KD-AdatVideoVoiceover 101]

(6.8) a. *Markusu Jon sumerk*

    Markus-w   Jon   sw-merk-ø
    Markus-SG.ERG.SG John 3.γ.U-follow.DUR-SG.A

    'Markus followed John.' (yesterday)

    b. *Markusu Jon sumerkntn*

    Markus-w   Jon   sw-merkntn-ø
    Markus-SG.ERG.SG John 3.γ.U-follow.EX-SG.A

    'Markus followed John.' (yesterday) (repeatedly)

(6.9) a. *Mwa poi ikn*

    mwa   poi   y-kn
    house DIST.DEM.LOC 3.α.U-be.located.NPL

    'The house stands there.'

    b. *Mwa poi ikan*

    mwa   poi   y-kan
    house DIST.DEM.LOC 3.α.U-be.located.PL

    'The houses stand there.'

The category of imperfective covers a more extended sense of imperfectivity than the durative. It is restricted to the past tense values only. The imperfective is used for habituals, both present (6.10a) and past (6.10b). It is used for sufficiently extended events, either in duration (6.11a) or iteration (6.11b). It is not clear what is the precise sufficient extent which distinguishes the imperfective from the durative. The term imperfective has been chosen for this category since it covers a lot of the semantic ground that traditional imperfective forms cover, including iterated, continuous and crucially, habitual.

(6.10)   a.   *pne kraru Markus pi imerkntnen yentunto*

pne   krar-w   Markus pi
DIST.DEM.FOC dog-ERG.SG   Markus 3.ABS
y-merkntn-en-ø   yentun=to
3.α.U-follow.EX-IMPF.RCT-SG.A   continue=ADV

'That dog always follows Markus.'

b.   *pne kraru Markus pi ymerkntnrnt yentunto*

pne   krar-w   Markus pi
DIST.DEM.FOC dog-ERG.SG   Markus 3.ABS
y-merkntn-rnt-ø   yentun=to
3.α.U-follow.EX-IMPF.RCT-SG.A   continue=ADV

'That dog always followed Markus.'

(6.11)   a.   *Kiror poi swontarnt*

Kiror poi   sw-onta-rnt
Kiror DIST.DEM.LOC 3.γ.U-live.PL-RMT.IMPF

'They lived there in Kiror (old village).' [20120930-KCD-KD-BeforeStory 014]

b.   *Ale pinta pr onto susornte mpaeswmnm*

Ale   pinta   pr   onto sw-so-rnt-e
fathers 3.NSG.ERG tree can   3.γ.U-mince.PL-RMT.IMPF-IMPF.NSG.A
mpaeswm-nm

axe-INS

'The men chopped the wood with axe heads.'

[20131005-KCD-YG-MapStory 010]

6.3.1.2   Tense

The five distinct tense values that verbs may be inflected for in Ngkolmpu are as follows:

- future
- present
- hodiernal past
- recent past
- remote past

These are inflected, as with other TAM values, through a combination of the undergoer prefix, the TAM suffix and the actor suffix. These display some restriction as to their combinatorics with aspect values which is visible in the Table 6.2. All tenses occur with the durative aspect. There is no present tense with the perfective aspect, which we can attribute to the semantics of the system as perfective events are portrayed without respect to their internal duration, which naturally conflicts with a present tense event occurring at the moment of speech. Finally, only the past tenses occur with imperfective aspect and the three-way past distinction is reduced to just two past tense categories.

Future tense forms are used for future time reference (6.12). There are three distinct moods in the future tense. These are future-irrealis, future potential and the imperative-hortative; this is discussed in the following section in more detail.

(6.12)   *ngko powa kreibentnt mpon*

ngko	po-wa	k-r-eibent-nt	mpon
1SG.ABS	coconut-CAUS	MID.FUT-N2.FUT-tell-FUT.DUR-SG.A	2SG.DAT

'I will tell you of the coconut.' [20140212 KCD-ML-DreamStory 001]

The present tense is used for events which occur at the moment of speaking (6.13). These, naturally, are durative in nature.

(6.13)   *mpaito klawo mpai ngkyitnongk pi*

mpaito klawo mpai   ngk=y-tnongk-ø   pi
now   child SG.ERG PROX=3.α.U-write-SG.A 3.ABS

'Now, you child are writing this down.' [20120930 KCD-KD-BeforeStory 071]

The most complex tense distinctions occur in the past, with a three way past distinction between hodiernal past, recent past and remote past. There is no evidence of superclassing or semantically default past tense (Corbett, 2012, p. 21). The hodiernal past is used to refer to events that occur before the speech event yet earlier today (6.14). Speakers will often say this is from midnight until the speech moment. In practice, it refers to an event from when the speaker had woken up that day; when discussing an event that happened before going to sleep but after midnight rather than the hodiernal past it will be the recent past that would be typically used, although I do not have a recorded example of this. The hodiernal past can also be used as a relative tense (Comrie, 1985) for an event which occurs before the context time (6.15).

(6.14)   *Oml ngki mpanmpa anni, mwampa*

Oml   ngki   mpan-mpa ann-y,   mwa-mpa
mother PROX.DEM.ABS side-ABL   come.NPL-HOD.SG.A house-ABL

'This woman has come from over the side, from (her) house.' [20131009-KCD-KD-AdatVideoVoiceover 001]

(6.15)   *ntop mens ngkai sikerai poi, ymakeri*

ntop mens s-iker-ai   poi,   ngkai
big   fire 3.β.U-build.fire.RS-RMT.NSG.A DIST.LOC 1SG.ERG
y-maker-y
3.α.U-burn.EX-HOD.SG.A

'We made a big fire there, then I grilled (the fish).' [20130918-KCD-KD-RiverStory2012 016]

The recent past tense is used to indicate an event which occurred yesterday and potentially the day before. The recent boundary of the time reference strictly refers to an

event which occurred before the start of the day of the speech event (6.16a). However, the distal boundary is slightly less clear; in elicitation speakers typically state that the recent past tense is used for only yesterday. In practice this is less clearly adhered to, the example in (6.16b), taken from field notes, was uttered two days after the event.

(6.16)   a.   *montena moro kunyani klaempiwi likongke*

montena   moro   kw-n-ya=ni
yesterday   FOC   RCT.DUR-1.NSG.α.U-walk.PL=1.NSG.ABS
klaempi-wi   liko-ngke
children-ASSOC   river-ALL

'Yesterday, we walked to the river with the children.' [20120924-KCD-KD-FishingStory 001]

b.   poi kwantn, yuai-yuai

poi   kw-w-antn,   yuai-yuai
DIST.DEM.LOC   RCT.DUR-1SG.α.U-go.PL   go.INF-go.INF

'I was travelling around there.'

The remote past tense is used to indicate an event which occurred two days ago or earlier. There is distal boundary to this category and it can refer to events that can be two days ago, such as in the story in (6.17a), or at the dawn of time (6.17b).

(6.17)   a.   *ngko yuaito moro teiyengk yirow*

ngko   yuai=to   moro   t-e-iye-ngk-ø
1SG.ABS   go.INF=ADV   FOC   PFV.MID-DIA-mention.RS-RMT.PFV-SG.A
yirow
Rawa.Biru

'I mentioned that I was going on a trip to Rawa Biru.' [20130921-KCD-ML-MamasVisitToRB-001]

b.   *nmaei ni ngkoro kunontarnt...*

nmaei ni   ngkoro   kw-n-onta-rnt
before 1NSG.ABS   thus   RMT.IMPF-1NSG.α.U-ys.loc.PL-RMT.IMPF

'Long ago, we lived like this...' [20120930-KCD-KD-BeforeStory 001]

As stated, the imperfective aspect is restricted to past time reference and the hodiernal past and recent past tenses are collapsed into a single category. Though I label

this category recent past imperfective, it comprises the absolute time reference of both hodiernal (6.18a) and recent past tenses (6.18b). It cannot be used in a relative time sense as with the hodiernal tense. This form is also used for the habitual (6.18c).

(6.18) a. kaewimpa, poi kwantnn, yuai-yuai, nmto yow termi

        kewi-mpa,   poi   kw-w-antn-en,   yuai-yuai,
        hunting-ABL, DIST.DEM.LOC RCT.DUR-1SG.α.U-go.PL go.INF-go.INF
        nmto   yow t-e-rm-y
        something NEG MID.PFV-DIA-shoot.RS-HOD.SG.A

        'I've just come from hunting, I was walking here and there, but not a thing was shot.' [20131009-KCD-KD-AdatVideoVoiceover 007]

    b. *poi nontayen seki nelni*

        poi   n-onta-en   seki   nel-ni
        DIST.DEM.LOC 1NSG.α.U-ys.loc.PL-RCT.IMPF tree.type ground-LOC

        'there we sat under a seki tree.' (yesterday)

        [20120924-KCD-KD-FishingStory 002]

    c. *pne kraru Markus pi ymerkntnen yentunto*

        pne   krar-w   Markus pi
        DIST.DEM.FOC dog-ERG.SG Markus 3.ABS
        y-merkntn-en-ø   yentun=to
        3.α.U-follow.EX-IMPF.RCT-SG.A continue=ADV

        'That dog always follows Markus.'

6.3.1.3   Mood

The primary mood distinction is between realis and irrealis. Unlike the tense and aspect systems, which are largely cross-cutting variables, the mood system is more complex in the way that it combines with the other categories. More detailed discussion on the nature of the independence of these features is found in Chapter 9.

    All the non-future tense and aspect combinations above are realis-indicative mood. Realis is not marked on the verb and represents the default interpretation of the modal semantics. It represents that the event is a state of fact or that the speaker believes the event is a statement of fact.

In the future tense there is a three-way distinction within the irrealis mood. These categories are labelled the future-irrealis, the imperative-hortative and the future potential. The future-irrealis is used for basic future time reference (6.19a). It is also used to mark hypothetical statements or instructions in procedural texts. Example (6.19b) comes from a text on how to properly start a garden. In these example, we have future-potential forms which are indicated by the generic future markers glossed as FUT. The future-irrealis is the typical form given in elicitation when no context is given.

(6.19) a. *ngko powa kreibentnt mpon*

> ngko   po-wa   k-r-eibent-nt   mpon
> 1SG.ABS coconut-CAUS MID.FUT-N2.FUT-tell-FUT.DUR-SG.A 2SG.DAT

> 'I will tell you of the coconut.' [20140212 KCD-ML-DreamStory 001]

   b. *mens-mens kreye poi*

> mens-mens k-r-e-e   poi
> fire-fire   FUT.MID-N2.FUT-make.DUR-1.NSG.A DIST.DEM.LOC

> 'We would make a big fire there.' [20140205-KCD-YG-Gardening 009]

Closely related to this form is the imperative-hortative. which is formally identical to the future-irrealis forms except in cases of second singular or first non-singular undergoer agreement. This distinction is most clear in the prefixing verbs, which mark their sole argument with a prefix. In these verbs, there is a clear formal distinction between future-irrealis and imperative-hortative forms (6.20). However in ambifixing verbs, the majority of imperative-hortative uses do not entail a second singular or first non-singular undergoer, since in these verbs the second singular or first non-singular would be the A argument in a transitive construction and therefore indexed as the actor. In these cases the forms are identical to the future-irrealis mood (6.21). The difference between future-irrealis and imperative-hortative in such cases is only visible once you have an imperative with a first non-singular undergoer as in (6.22).

(6.20) a. *mpu mwangke ntmakrnt*

> mpu   mwa-ngke   nt-makr-nt
> 2SG.ABS house-ALL 2SG.β'.U-go.DUR-DUR.FUT

> 'You will go home.'

    b. *mpu mwangke knmakrnt*

       mpu   mwa-ngke kn-makr-nt
       2SG.ABS house-ALL 2SG.β.U-go.DUR-DUR.FUT

       '(You) go home!'

(6.21) *mpai pi srso*

       mpai   pi   s-rso-ø
       2SG.ERG 3.ABS 3.β.U-hit.RS-SG.A

       'You will hit him.' (future) or 'Hit him!' (imperative).

(6.22) a. *mpai ni ntrso*

       mpai   ni   nt-rso-ø
       2SG.ERG 1.NSG.ABS 1.NSG.β.U-hit.RS-SG.A

       'You will hit us.' (future)

    b. *mpai ni knrso*

       mpai   ni   kn-rso-ø
       2SG.ERG 1.NSG.ABS 1.NSG.β'.U-hit.RS-SG.A

       'Hit us!' (imperative)

There are also two potential moods which mark events which are not actual but considered possible. The future potential marks an event which is possible in the future. The example in (6.23a) is from a description of a mourning ritual which describes people being freed from a fast involving certain taboo relationships between people. The example is reported speech in which the reported speaker announces that they may now visit the addressee whilst previously they could not. The past potential is used to talk about past events which did not actually occur but had the potential to occur (6.23b). The past potential form above always is formed with the alpha prefix plus the *ngk* suffix. It may occur in either durative (6.23c) or perfective (6.23b) aspect as indicated by the stem.

(6.23) a. *ngko briantntomo mpangke*

    ngko   b-r-yantn-nt-omo   mpangke
    1SG.ABS 1SG.β.U-N2.FUT-go.PL-DUR.DUR-FUT.POT 2SG.ALL

    'I may go to you.' [20131009-KCD-KD-AdatVideoVoiceover 057]

    b. *kmaeko irsongk prngke pop*

    kmae=ko y-rso-ngk-ø   pr-ngke pop
    try=IRR   3.α.U-hit.RS-PST.POT-SG.A tree-ALL true

    'She was about to hit (the child) on the log.'

    [20141120-KCD-YH-HuntressStory 058]

    c. *kmaeko implaengk prngke pop*

    kmae=ko y-mplae-ngk-ø   pr-ngke pop
    try=IRR   3.α.U-hit.EX-PST.POT-SG.A tree-ALL true

    'She was about to beat (the child) on the log.'

6.3.2 Agreement

Verbs mark agreement for up to two arguments, actor and undergoer as discussed. These mark person and number for both arguments and gender in the undergoer prefix. All argument number is marked on a singular vs. non-singular basis (6.24) in both pronouns and agreement.

(6.24) a. *ngko tawancei*

    ngko   t-a-wance-y
    1SG.ABS MID.PFV-DIA-fall.RS-HOD.SG.A

    'I fell.' (earlier today)

    b. *ni yempoka mel tawanceme*

    ni   yempoka mel   t-a-wance-me
    1NSG.ABS two   head MID.PFV-DIA-fall.RS-HOD.1.NSG.A

    'We two fell.' (earlier today)

Actor agreement largely only indexes number. Person is never marked in the singular, although for some TAM values there is a person distinction in the non-singular.

This person marking varies according to the TAM category. For one series non-singular person is marked opposing first non-singular against second and third non-singular. The other actor agreement series groups first and second non-singular against third non-singular. The formal details of each series is discussed in Section 6.8.2.

Undergoer agreement indexes all three persons and numbers, except that number is not distinguished in the third person. The undergoer paradigm has an unusual paradigm shape characterised by underspecification and referrals. The description of this is found in Section 6.7.1 and a more explicit analysis is found later in the thesis in Section 9.3.1.

Gender plays a minor part in undergoer agreement. Ngkolmpu does not display a true gender system in which all nominals are classified as belonging to a particular gender; rather it marks natural gender, i.e. biological sex, of singular animate beings. Gender is restricted to being marked on the undergoer prefix. Singular female referents are marked (6.25a) using a form which identical in form to either the first person singular agreement marker or the middle marker. Males, inanimates and non-singular undergoers regardless of sex are marked identically (6.25b). In this way, female gender is indicated whilst all other categories use the default form.

(6.25)   a. *Markusu pi umerki*

Markus-w   pi   w-merk-y
Markus-SG.ERG   3SG.ABS   3SG.FEM.α.U-follow.DUR-HOD.SGA

'Markus followed her.' (earlier today)

b. *Markusu pi imerki*

Markus-w   pi   y-merk-y
Markus-SG.ERG   3.ABS   3SG.α.U-follow.DUR-HOD.SGA

'Markus followed him or them.' (earlier today)

The status of the agreement features are also relevant for the discussion of feature distribution in Section 8.3. Person and number features are also important for the discussion regarding autonomous organisation in Section 9.3.

6.3.3   Diathesis

The category of morphological diathesis is indicated on ambifixing verbs only. Ambifixing verbs are unmarked in the transitive, or marked with the diathetic vowel when in either middle or applicative. These verb forms then participate in distinct valence-related constructions as established in Chapter 5. This morphological voice is correlated with syntactic valence but the two are not perfectly aligned.

Verbs unmarked for diathesis occur with both the actor suffix and the undergoer prefix. The transitive form of the verb always occurs in transitive constructions as per Section 5.4.2.3. Middle verbs occur with the diathetic prefix discussed in Section 6.6.1. They also occur with the actor suffix, however they do not occur with the undergoer prefix. Instead, they occur with the middle prefix or with no prefix in this same location, depending on the TAM value of the verb. The middle verb occurs in a number of distinct valence constructions. The applicative form of the verb occurs with the diathetic prefix, the actor suffix and the undergoer prefix. For these verbs, however, the undergoer prefix indexes a benefactive argument rather than the O argument. The applicative form only occurs in the applicative construction.

6.3.4   Direction

Verbs in Ngkolmpu may be marked for the direction of the event although this is a rather restricted aspect of the verbal morphology. For events that entail a movement toward the situational locus of the speech event, this may be marked with *n* occurring immediately before the stem. This may refer to the location of the speech event or a relative position significant to the narrative. Verbs not marked with a directional prefix are not specified for direction. A more detailed discussion can be found in Section 6.6.2.

6.4   Structure of the Ngkolmpu verb

This section describes the Ngkolmpu verb as comprised of a number of distinct morphological loci or sites. These sites represent the layers of inflectional and lexical ma-

terial including the complex stem. This chapter focuses on the inflectional and lexical layers whilst the system of stem alternation, which is conditioned inflection, is discussed in the following chapter (Chapter 7). In this chapter, each morphological site is defined by the competing forms for that position. Each site is discussed in turn with the competing forms listed for each site along with their morphosyntactic and semantic distribution. A more synthetic approach to describing the inflectional categories can be found in Section 8.1.

Table 6.3 is the maximal morphological template for verbs in Ngkolmpu. This holds for ambifixing verbs which have a consonant initial stem. Those which have a vowel initial stem follow the same template although they may not occur with an additional diathetic marker. All other verbs involve a subset of this maximal template and will be discussed in turn. This template consists of a verb stem, a set of lexical prefixes and two sets of inflectional affixes, a set of suffixes and a set of prefixes. The stem is broken down into a root and an optional thematic; the mapping of stems to inflectional features is briefly introduced in Section **??** and in discussed in full details in Chapter 7. The lexical prefixes (6.6) consist of the directional (6.6.2) and the diathetic prefixes (6.6.1). The inflectional prefixes include the undergoer prefix (6.7.1) which indexes the person, number and gender of the undergoer argument. It is also involved in TAM marking. This can be further separated into two component elements for certain TAM and person/number combinations to a TAM marker and agreement marker. The other element in the inflectional prefixes is the cross-indexing marker which indicates the person of either argument in future tenses (6.7.2). The inflection suffixes consist of a TAM suffix which indicates various TAM combinations without reference to agreement marking (6.8.1). The second element in the inflectional suffix is the actor marker which indexes the person and number of the actor as well as TAM information (6.8.2).

Morphological middles take a slightly restricted verbal template. They must occur with the diathetic prefix as discussed and instead of the undergoer slot prefix they take a middle prefix. Otherwise the template is identical to that presented in Table 6.3. Prefixing verbs on the other hand have a considerably more restricted template as presented in Table 6.4. They may not occur with the diathetic prefix and the actor agreement slot only serves to mark TAM information and does not indicate any agree-

Inflectional prefixes			Lexical prefixes		Stem		Inflectional suffixes	
undergoer							TAM	actor
(TAM)	Undergoer_PERS/NUM + TAM	(Cross-index_PERS)	(Diathetic)	(Directional)	Root	(Thematic)	(TAM suffix)*	Actor_PERS/NUM TAM +

Table 6.3: Maximal verbal template

ment.

Inflectional prefixes				Stem		Inflectional suffixes	
Undergoer						TAM	TAM
(TAM)	undergoer_PERS/NUM + TAM	(Cross-index_PERS)	(Directional)	Root	(Thematic)	(TAM suffix)*	TAM

Table 6.4: Prefixing verbal template

Due to the nature of exponence relations in Ngkolmpu it is impossible to associate most inflectional sites, or even pieces of inflection material, to any single or combination of features or values. The converse is also true in that it is also impossible to associate many features or values to any single point of inflection. As such, the discussion here will focus on the formal aspects of morphological material whilst the following chapters will take a more detailed look at the distribution of these categories. For this reason, morphological sites are given labels based on their dominant or most obvious morphological feature although at times this will be largely arbitrary. As such, these labels must be considered just labels which correspond to some functional content to ease comprehension. Do not take this to mean that all phonological content in a given site marks the functional content of the label relevant to that site or that it marks only that function.

The agreement prefixes group (§ 6.7.1) is complex and consists of two layers: the TAM prefix and the undergoer agreement. These two layers may also contain a portmanteau covering both layers. Following this there is additional agreement in the form of the cross-indexing marker, which marks non-second person for both arguments. Following this is the lexical prefix group which consists of diathetic and directional prefixes which immediately precede the verb stem (§ 6.6). Immediately following the verb stem are a series of aspect and mood markers (§ 6.8) which allow some highly restricted co-occurrences. Finally there is the actor agreement marker which, like the undergoer markers, also encodes tense, aspect and mood (§ 6.8.2).

This chapter organises each of the morphological elements into larger groups based on contiguity and function, such as grouping the TAM suffix and the actor agreement into a single unit labelled the inflectional suffixes. This is due to the fact that it is slightly misleading to discuss verbs in a true templatic sense due to the complex exponence relations. This section will discuss each of these groups in turn, detailing any internal structure within the group.

6.5   Stems

A full discussion of the distribution of stems is reserved until the following chapter. However, at this point is necessary to provide the reader with a brief overview of forms and glossing practices as used in this chapter.

Verbs in Ngkolmpu display a system of rich alternation driven by interactions between pluractionality and aspect. Briefly, the two parameters cross-cut indicating an event is either pluractional or non-pluractional and one of three aspect values: perfective, durative or imperfective. Different verbs in Ngkolmpu display different patterns of stem distribution over this set of categories. For some verbs, the distribution of stems is purely semantic, i.e. corresponding to a single feature value. For these verbs, standard glossing practices will be used in which the stems will be labelled for the semantic category as in (6.26).

(6.26)   *pi yakreyen nkompa pompa*

     pi   y-**akre**-en-ø   ngkompa   pompa
     3.ABS   3.α.U-**walk.IMPF**-IMPF-SG.A   PROX.ABL   DIST.ABL

     'He was walking here and there.' (Imperfective)

For most other verbs the distribution of stems is more complex. In these cases, verbs have up to three stems labelled: restricted, durative and extended. The default stem distribution is presented in Table **??**. There are a few things worth noting at this point. The extended stem, glossed EX, serves to indicate that an event is either imperfective or pluractional. The durative stem, DUR, is used for a non-pluractional durative event. Finally, the restricted stem, RS, is used for non-pluractional perfective events. Pluractional perfective events are not possible in Ngkolmpu. It should also be noted that many verbs are defective in lacking one of the three stems. A full discussion of the semantics and interaction of these categories is the topic of the next chapter and I will not repeat the argumentation here. Instead, it should be noted that these categories will be assumed for the analysis presented in this chapter.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional	Restricted	Durative	Extended
Pluractional	-	Extended	Extended

Table 6.5: Default pattern of verbal stem distribution

Finally, other verbs display a single stem which does not alternate for aspect and pluractionality. In these cases, no additional glosses will be added to the stem. One example of this is the verb *eibentei* as presented in (6.27).

(6.27)   *Markus Jon yeibenti*

     Markus   Jon   y-**eibent**-y
     Markus   Jon   3.α.U-**tell**-SG.A.HOD

     'Markus told John.' (durative, earlier today)

6.6   The lexical prefixes

This section discusses the two lexical prefixes. The first is the diathetic prefix, which marks ambifixing verbs as being either middle or applicative. The other is the directional element which marks direction toward the speech event, i.e. venitive. Compared to the inflectional categories of agreement and TAM, which in Ngkolmpu involve very complex patterns of organisation, these two elements are quite straightforward.

6.6.1   Diathetic prefix

Between the inflectional prefix and before the directional or stem may occur the diathetic valence marker. This vowel occurs with ambifixing verbs that have stems starting with a consonant. It serves to mark both middle verbs and applicatives. In this sense it can be thought of as marking the verb as deviating from canonical transitivity in either direction. This vowel harmonises with the first vowel in the verb stem as discussed in Section 2.5.2.

Example (6.28) shows the diathetic prefix occurring with a middle form verb (6.28a) and the benefactive applicative (6.28c). The example in (6.28b) shows the vowel not occurring in a standard transitive. This pattern is the same for all ambifixing verbs whose stem does not begin with a vowel. This prefix takes the form of a non-high vowel which harmonises with the first non-high vowel of the verb stem. This harmony effect follows the rules set out in Section 2.5.2.

(6.28)   a.   *Markus tawancei*

Markus   t-a-wance-y
Markus   MID.PFV-DIA-fall.RS-SGA.HOD

'Markus fell.' (earlier today)

b.   *Markusu pr pi swancei*

Markus-w   pr   pi   s-wance-y
Markus-SG.ERG   tree   3.ABS   3U.PFV-fall.RS-SGA.HOD

'Markus felled the tree.'

c. *Markusu pr pi nson bawancei*

Markus-w   pr   pi   nson   b-a-wance-y
Markus-SG.ERG tree 3.ABS 1SG.DAT 1SGU.RS-DIA-fall.PFV-SGA.HOD

'Markus felled the tree for me.'

The single diathetic prefix for all non-canonically transitive verbs is a common feature of the Tonda subgroup languages. This is contrasted with the Nambu languages in which there are distinct valency increasing and decreasing markers (Evans, 2015b) (Siegel, 2015). Arguably, this was a distinction made in the protolanguage that has been lost in Tonda.

As stated, ambifixing verbs which have stems which commence with a vowel may not occur with the diathetic prefix. Interestingly, the majority of vowels in this position similarly harmonise with the following vowel in the stem. This suggests that these vowels are fossilised diathetic prefixes inherent to the stem. Another point of interest is that these verbs cannot participate in the benefactive applicative construction. This would potentially suggest that they lack a true transitive form and have a inherent benefactive reading as a transitive verb. This is a tempting argument when you consider examples like (6.29).

(6.29)   a. *Markus eibentei teibenti*

Markus eibent-ei t-eibent-y
Markus tell-INF   MID.β-tell-SG.A.HOD

'Markus told a story.' (earlier today)

b. *Markus Jon yeibenti*

Markus Jon y-eibent-y
Markus Jon 3.α.U-tell-SG.A.HOD

'Markus told John.' (earlier today)

Example (6.29a) shows the verb *eibentei* 'to tell' as a middle verb. In this example, the middle verb participates in the cognate object construction (§ 5.4.2.1), whilst in example (6.29b) the verb is transitive. One possible analysis would suggest that vowel initial verb stems have an inherent benefactive or recipient reading to them. So that

having a vowel initial stem and undergoer agreement as in (6.29b) aligns the under-goer with a recipient. These verbs would then simply lack any corresponding consonant initial transitive form. This would unify the structure in (6.29b) with the applicative constructions. However, this analysis is less convincing when you consider other verbs with an inherent vowel that are closer to prototypical transitive verbs, i.e. 'to put', 'to put out'. These same verbs do not have recipient undergoers in their corresponding bivalent construction (6.30) rather their undergoers are themes. Thus, a simpler analysis suggests that these forms simply have an embedded vowel that fills the diathetic slot but which no longer serves to indicate diathesis. Middle verbs are possible since they take a different prefix in the undergoer slot and are still distinguishable, however applicatives would be formally indistinguishable from the transitive form since they take the same undergoer marker and therefore are not possible.

(6.30)   *mpai sento pi teimer mwampa*

mpai   sento pi   t-eimer-ø   mwa-mpa
2SG.ERG bird   DIST.ABS 3SG.FEM.β.U-put.out.RS-SG.ABS house-ABL

'(You) throw the birds out of the house!' (imperative) (perfective)

In Chapter 5 I give a list of all the verbs which begin with an inherent vowel. We can see from that list that there is no clear semantic classification which we can use to characterise this class or explain the inherent diathetic vowel.

6.6.2   Directional

The direction of an event is marked with *-n-* in the venitive, i.e. toward the speech event or frame of reference. This is glossed as TOW. When it is lacking there is no directional meaning associated with the event. Example (6.31a) shows the directional marker occurring on the verb whilst example (6.31b) shows a verb unmarked for direction. This particular form is identical to the venitive marker in Komnzo (Döhler, 2016) occurring in the same slot. However, Ngkolmpu lacks the andative marker found in that language. Interestingly, the ordering in Tonda languages between the directional and the diathetic prefix is the opposite of the Nambu languages (Evans, 2015a).

(6.31)   a. *Pr pi tanwancei*

pr   pi   t-a-n-wance-y
tree 3.ABS MID.PFV-DIA-TOW-fall.RS-SGA.HOD

'The tree fell toward us.' (earlier today)

b. *Pr pi tawancei*

pr   pi   t-a-wance-y
tree 3.ABS MID.PFV-DIA-TOW-fall.RS-SGA.HOD

'The tree fell.' (earlier today)

The point of reference for the direction need not be located at the location of the speaker or addressee but can be the point of reference of the speech event. The example in (6.32) was uttered during a fictional story that could not be placed in space relative to the speech event.

(6.32)   *pompa, moro yanmakr mwangke*

pompa,   moro y-a-n-makr   mwa-ngke
there.ABL FOC   3.α.U-DIA-TOW-walk.DUR house-ALL

'then, he came to the house.'

The absence of a directional prefix does not necessarily preclude a venitive meaning; rather, the verb itself is unmarked for direction. In this way, it is clear that the absence of form here is not meaningful and this is not a two-part paradigmatic contrast. Thus, the directional element is clearly less inflectional if we consider obligatory realisation as a diagnostic of inflection. Following this, we can say that this is suggestive that directionality is not a part of the inflectional system but a word formation process. Example (6.33) states that the actor will return to the village. The village in the story is the village of Yanggandur where the speech event is taking place, yet the directionality is not specified although possible.

(6.33)   *yekinm, nkreke potarngke*

yeki-nm   n=k-r-eke-ø   potar-ngke
morning-INS FOC=MID.FUT-FUT-return.home.DUR-SG.A village-ALL

'In the morning, he will return to the village.'
[20141108-KCD-YG-CassowaryStory 066]

6.7   The inflectional prefixes

The inflectional prefixes consist of the undergoer prefix and the cross-indexing prefix. The undergoer prefix is one of the more complex inflectional elements in the language. It serves to mark undergoer agreement for person, number and gender. It also serves to mark tense, aspect and mood. This prefix can also be broken into the subcomponents for certain TAM and agreement values, these being the TAM prefix and the undergoer marker. The cross-index marker serves to indicate person values of either actor or undergoer in future forms only.

6.7.1   The undergoer prefix

The undergoer agreement group is made up of two morphological layers: a TAM prefix and the undergoer agreement. The undergoer agreement markers are one of the most morphological complex elements of the entire language. The complexity of these forms has been discussed by Donohue (2015) and is also discussed in Chapter 9. The undergoer marker serves to mark agreement of the undergoer role, i.e. the O argument of transitive ambifixing verbs and the S arguments of prefixing verbs. In addition, it plays an important part in the distribution of TAM information across the verb. However, it is difficult to provide a precise TAM value interpretation of the undergoer prefix as a result of the way TAM marking is distributed in Ngkolmpu. As such, we shall treat the TAM value of the undergoer forms as distributionally belonging to a number of series, marked as α, β and γ following Evans (2015a), which represent abstract clusters of potential functions.

6.7.1.1   TAM prefix

The tense prefix makes up part of the γ-series of the undergoer prefix although it also displays evidence that it has a distribution independent of the undergoer prefix. It marks tense, aspect and mood and interacts with the person, number and gender agreement of the undergoer for non-middle forms. The prefix marks recent past tense in the durative aspect (6.34a) and remote past in the imperfective aspect (6.34b).

	1	2	3MASC	3FEM
SG	kw	kw	sw	kw
NSG	kw	sw	sw	kw

Table 6.6: Paradigm of the TAM prefix

(6.34) a. *Markusu ngko kumplae*

Markus-w   ngko   kw-w-mplae-ø
Markus-SG.ERG 1.ABS   RCT-1.α.U-hit.EX-SG.A

'Markus beat me.' (yesterday)

b. *Markusu ngko kumplaernt*

Markus-w   ngko   kw-w-mplae-rnt-ø
Markus-SG.ERG 1.ABS   RMT-1.α.U-hit.EX-IMPF.RMT-SG.A

'Markus was beating me.' (two or more days ago)

There are only two forms for this prefix, *kw-* and *sw-*, or more technically /kW/ and /sW/ where the capital 'W' is the underspecified phoneme /W/ discussed in Section 2.3. The set of forms are set out in Table 6.6. The *kw-* prefix is the default form and is used for everything except the generic third person marking, which includes third person singular male and third person non-singular as well as second non-singular. These are all indicated by the *sw-* form. Examples below show the prefix occurring with first person (6.35a-6.35b) and second singular (6.35c). In these examples it co-occurs with the undergoer prefix. Notice that in the orthography line in example 6.35a the undergoer prefix is not present on the surface due to morphophonological processes which deletes the double /W/ (see Chapter 2). However, it is clearly present when combined with the *n* prefix as in (6.35c).

(6.35) a. *Markusu ngko kumerk*

Markus-w   pi   kw-w-merk-ø
Markus-SG.ERG 1SG.ABS RCT.DUR-1SG.α.U-follow.DUR-SGA

'Markus followed me.' (yesterday)

b. *Markusu ni kunmerk*

Markus-w   ni   kw-n-merk-ø
Markus-SG.ERG 1NSG.ABS RCT.DUR-1NSG.α.U-follow.DUR-SGA

'Markus followed us.' (yesterday)

c. *Markusu mpu kunmerk*

Markus-w   mpu   kw-n-merk-ø
Markus-SG.ERG 2SG.ABS RCT.DUR-2SG.α.U-follow.DUR-SGA

'Markus followed you.' (yesterday)

d. *Markus pi kwawmpr*

Markus pi   kw-ø-a-wmpr-ø
Markus 3ABS   RCT.DUR-MID-DIA-fall.EX-SGA

'Markus stumbled yesterday.'

The *sw-* marks third person regardless of number (6.36a) and second non-singular (6.36b). The *sw-* form does not co-occur with the undergoer marker and instead forms a portmanteau which crosses both inflectional layers. We can see in (6.36a), that since neither the absolutive third person pronoun nor undergoer prefix mark number, the interpretation of number may be either singular or non-singular. Whereas in 6.36b the interpretation must be non-singular since the singular interpretation is not possible with second person. A full discussion of the unification of features across morphology and syntax is discussed in Chapter 8.

(6.36)   a. *Markusu pi sumerk*

Markus-w   pi   sw-merk-ø
Markus-SG.ERG 3.ABS 3.γ.U-follow.DUR-SGA

'Markus followed him/them.' (yesterday)

b. *Markusu mpu sumerk*

Markus-w   mpu sw-merk-ø
Markus-SG.ERG 2.ABS 3.γ.U-follow.DUR-SGA

'Markus followed you two.' (yesterday)

The most notable feature of the *sw* form is that it does not co-occur with the additional undergoer prefix. An alternative analysis would be to treat the tense prefix and

the undergoer as a single prefix. However there is strong evidence that in these examples the TAM prefix is indeed independent from the undergoer prefix. Outside of the *sw-* form the TAM prefix does not occur in any other form, that is, it does not inflect for the other agreement values. In addition to this, this prefix also occurs with middles which do not occur with undergoer agreement. Middle verbs in non-future durative and imperfective values do not occur with any marker in the undergoer prefix slot, yet the TAM prefix still occurs in these where relevant (6.37).

(6.37) a. *Markus pi kwawmpr*

Markus pi   kw-ø-a-wmpr-ø
Markus 3ABS RCT.DUR-MID-DIA-fall.EX-SG.A

'Markus stumbled.' (yesterday)

b. *Markus pi kwawmprnt*

Markus pi   kw-ø-a-wmpr-rnt-ø
Markus 3ABS RMT.IMPF-MID-DIA-fall.EX-SG.A

'Markus was stumbling.' (two or more days ago)

The patterns of syncretism in this paradigm correspond with those of the undergoer prefix for the third persona and second non-singular forms. These syncretisms are discussed in the following section. Also, see Chapters 8 and 9 for a more theoretical approach. In those chapters it is argued that the second person non-singular involves a referral to the third person which is marked by *sw*. The *kw-* form then stands as a default.

The interpretation of the tense value of this marker is aspect dependent. In the durative aspect this marker indicates recent past (6.38a) yet in the imperfective aspect it indicates remote past (6.38b). One possible analysis is that the interpretation of tense markers in the imperfective aspect is shifted one tense category to the past compared to the durative. This is discussed in Chapter 9 and ultimately discounted on a synchronic level but could be a possible diachronic explanation for the current value of this prefix. This form is only used in realis-indicative forms of the verb.

(6.38)   a. *Markusu ngko kumerk*

Markus-w   ngko   kw-w-merk-ø
Markus-SG.ERG   1SG.ABS   RCT.DUR-1SG.α.U-follow.DUR-SGA

'Markus followed me.' (yesterday)

b. *Markusu ngko kumerkntnernt*

Markus-w   ngko   kw-w-merkntn-rnt-ø
Markus-SG.ERG   1SG.ABS   RMT.IMPF-1SG.α.U-follow.EX-IMPF.RCT-SGA

'Markus was following me.' (two or more days ago)

6.7.1.2   The undergoer prefix

The undergoer prefix indexes the person, number and natural gender of the undergoer grammatical role. This location also marks the lack of such a role in cases of middle verbs. Since this marker is not entirely separable from the TAM prefix above, the term undergoer agreement will usually be used to refer to the complex inflectional group entailing the tense marker as well as this undergoer prefix, whilst the term undergoer prefix or marker will refer to just the forms localised in this inflectional site. The undergoer group, including the tense marker, displays three distinct series which are labelled α, β and γ. The choice between these series is dependent on the tense, aspect and mood category of the verb. In the first part of this section we discuss the shape and details of the agreement paradigm, which are consistent across TAM values, and in the second section we discuss the nature of each series α, β and γ.

The undergoer prefix indexes the most patient-like argument of transitive clauses (O), single arguments of prefixing intransitive clauses (S), and recipients (R) of the benefactive applicative and certain other ditransitive verbs. This combined role is labelled the undergoer. Undergoers are indexed for number: singular and non-singular, person: 1, 2 and 3 and natural gender: male, which is the default form, and female. The basic paradigm shape is indicated in Table 6.7. This is just α-series prefix however the same underlying paradigm shape is identical across each series.

We can see in Table 6.7 the basic shape of the undergoer paradigm which holds across each series. The paradigm is notable in its use of a small number of forms for a

	1	2	3	3FEM	MID
SG	w	n	y	w/ø	ø
NSG	n	y	y	y	ø

Table 6.7: Undergoer agreement paradigm for the α-series

comparatively large number of cells with four distinct forms, including the absence of form used with middle verbs, which are treating here as an element of this paradigm since it displays forms in the β-series. The unusual syncretisms in the paradigm are discussed at length in Chapter 9 and are essential to establishing the autonomy of the agreement subparadigm in that chapter.

The undergoer prefix marks number on a singular (6.39a) vs. non-singular (6.39b) basis, except in the third person male forms in which number is never marked.

(6.39) a. *Markusu ngko umerki*

     Markus-w   ngko   w-merk-y
     Markus-SG.ERG   1SG.ABS   1SG.α.U-follow.DUR-HOD.SGA

     'Markus followed me.' (earlier today)

   b. *Markusu ni nmerki*

     Markus-w   ni   n-merk-y
     Markus-SG.ERG   1NSG.ABS   1NSG.α.U-follow.DUR-HOD.SGA

     'Markus followed us.' (earlier today)

The undergoer prefix also marks three persons (6.39a) and (6.40).

(6.40) a. *Markusu mpu nmerki*

     Markus-w   mpu   n-merk-y
     Markus-SG.ERG   2SG.ABS   2SG.α.U-follow.DUR-HOD.SGA

     'Markus followed you.' (earlier today)

   b. *Markusu pi imerki*

     Markus-w   pi   y-merk-y
     Markus-SG.ERG   3.ABS   3SG.α.U-follow.DUR-HOD.SGA

     'Markus followed him / them.' (earlier today)

Gender marking is restricted to third person singular (6.41a) and only applies to natural gender, that is animates with a sex distinction. In the α-series, female sex is indicated with either a /W/ or a zero form depending on the verb. Males and inanimates and non-singular groups are marked with a /J/. Thus, we can say that female sex is marked and the males and inanimate are a default marker. Groups of two or more are not marked for gender (6.41b) in that the non-singular is identical for male, female or mixed groups. The form of the gender marker is either identical in form with the first singular or the middle marker depending on the verb. Verbs are not consistent as to which way this syncretism patterns across these series. That is, if a verb indexes the third person female form like a first singular form for the α-series then it may not necessarily index the β-series female marker in the same way, although most verbs prefer either one strategy or the other. In the instances in which the female gender is marked as per the middle marker, there are some sensitivities to TAM which interact with the α, β and γ in interesting ways and are discussed below.

(6.41) a. *Markusu pi umerki*

Markus-w   pi   w-merk-y
Markus-SG.ERG 3SG.ABS   3SG.FEM.α.U-follow.DUR-HOD.SGA

'Markus followed her.' (earlier today)

b. *Markusu pi imerki*

Markus-w   pi   y-merk-y
Markus-SG.ERG 3SG.ABS   3SG.α.U-follow.DUR-HOD.SGA

'Markus followed them (gender unspecified).' (earlier today)

The middle marker occurs in this inflectional site, that is the undergoer prefix slot. For the α-series this is zero-marked, yet for the β-series this is /t/ and in future forms of the verb this is /k/. The middle marker is used to mark middle verbs which may occur in middle (6.42a) constructions, cognate-object constructions (6.42b) and reflexive/reciprocal constructions (6.42c), which are discussed in Chapter 5. The middle marker is always person, number and gender invariant and must co-occur with the diathetic prefix discussed in Section 6.6.1. The examples are reiterated in 6.42.

(6.42) a. *Markus awamprei*

        Markus ø-a-wampre-y
        Markus MID-DIA-fall.EX-SGA.HOD

        'Markus stumbled.' (earlier today)

  b. *piengku nongkai ominngki*

        piengku nongkai ø-o-minngk-y
        3SG.ERG food   MID-DIA-eat-HOD

        'He ate (the food).'

  c. *pi pintat amangkns*

        pi   pinta-t   ø-a-mangk-ns
        3ABS 3NSG.ERG-COM MID-DIA-hold.EX-NSGA.HOD

        'They held themselves / each other.'

The undergoer prefix is one of the features common to all languages in the family. In each of the languages of the family it serves to mark agreement with the unusual undergoer grammatical role as well as serving to mark TAM. Following the analysis presented for other languages in the family, such as those found in Evans (2015a) for Nen, Siegel (2015) for Nama and Döhler (2016) for Komnzo, arbitrary Greek letters have been assigned to each of the three series since determining the exact value of TAM features realised by a given form is usually not possible.[2] In Ngkolmpu, the linking between these series and TAM values is slightly more transparent than for other languages of the family but has some unique complications.

The different forms corresponding to the various series of undergoer prefix are summarised in Table 6.8. The α-series is the default series, the forms of which we have already discussed. Phonologically, the β-series displays the same place of articulation as the α-series yet is more fortis. The β-series has three slightly different variants, which could arguably be considered distinct series with clearer semantics, yet for the majority of forms of the paradigm these are identical and function is not clearly determinable. The γ-series consists of the tense marker discussed in the previous section

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[2]Note that the use of Greek letters in this context is essentially a morphomic analysis (Round, 2015) which I extend in Chapter 9.

plus the α-series marker except for the instances in which the portmanteau (*sw-*) form occurs.

	1SG	2SG	3SG	3SG.FEM	1NSG	2NSG	3NSG	MID
α	w-	n-	y-	w-/ø-	n-	y-	y-	ø-
β	b-	kn-	s-	b-/t-	kn-	s-	s-	t-
β′	b-	kn-	s-	b-/k-	kn-	s-	s-	k-
β″	b-	nt-	s-	b-/t-	nt-	s-	s-	k-
γ	kw-w-	kw-n-	sw-	kw-ø-	kw-n	sw-	sw-	kw-ø-

Table 6.8: Paradigm of undergoer prefixes

The α-series is the default and as such is defined negatively from the other two series. As such, it makes sense to discuss the role of the β and γ series first. The β-series is used to mark perfective aspect, the β′-series marks imperative-hortative modality and the β″-series serves to mark future-irrealis and future potential mood. Semantically these are related in that they all mark irrealis modality. Formally the β-series are largely identical except for the second singular / first non-singular forms and some feminine and middle forms.

The γ-series serves to mark either recent past in the durative aspect or remote past in the imperfective aspect. It is comprised of the α-series plus the TAM prefix except for the generic third person and second non-singular forms.

We will now discuss the functions of each series in turn, starting with the β-series as it is the most complex, then the γ-series and finally the α-series as it is the default form and is defined negatively from the other series. An overview of the prefixes is presented in Table 6.9Add.

6.7.1.2.1   β-series

The three β-series are clearly phonologically related to the α-series and to each other. The β-series share the same place of articulation with the α-series although with a more fortis manner. However, no single unified phonological operation can derive one from the other in a synchronic analysis.

Series	Semantics
α	default
β	perfective
β′	imperative-hortative
β″	future (non imperative-hortative)
γ	recent past durative OR remote past imperfective

Table 6.9: Undergoer prefixes by function

The β-series consists of three sub-types, indexed here as primes. Each of the β-series sub-type represents a clear TAM values. The β-series is used for perfective aspect, the β′-series for imperative-hortative mood and the β″-series to mark future-irrealis as well as future potential mood. However, since this series are largely identical it would be a mistake to treat these series as entirely separate and as realising a single value. The vast majority of the β-series are common across all series, as such it is not clear how to assign a TAM value to most of the prefixes in this paradigm. This is especially so for the first singular and the third person as these forms are identical across all the β-series. In addition the forms common to all the β-series are the typically highest frequency forms, third person and first singular. As such, it would miss the actual characterisation of the paradigm to treat these as truly independent series. The exact interpretation of the function of a given undergoer marker is one of the driving forces behind the problems of distributed exponence throughout the rest of this thesis.

Since the third singular forms can be used across all functions, we will use these to exemplify each of the given functions from all the β-series. Example (6.43) is perfective aspect, for non-future tenses: hodiernal past, recent past and remote past.

(6.43)   a. *Jonu pr pi storui*

Jon-w   pr   pi   s-toru-y
John-ERG.SG tree DEM.ABS 3β.U-cut.RS-HOD.SGA

'John cut the tree.' (earlier today) (perfective)

b. *Jonu pr pi storunt*

Jon-w   pr   pi   s-toru-nt-ø
John-ERG.SG tree DEM.ABS 3β.U-cut.RS-RCT.PFV-SGA

'John cut the tree.' (yesterday) (perfective)

c. *Jonu pr pi storungk*

Jon-w   pr   pi   s-toru-ngk-ø
John-ERG.SG tree DEM.ABS 3β.U-cut.RS-RMT.PFV-SGA

'John cut the tree.' (two or more days ago) (perfective)

Example (6.44) indicates the use of β-series as imperative-hortative in both durative and perfective aspect.

(6.44)   a. *Mpai Jon smerknt*

mpai   Jon   s-merk-nt-ø
2SG.ERG John 3β.U-follow.DUR-FUT-SGA

'(You) follow Jon!'

b. *Mpai John smerba*

mpai   Jon   s-merba-ø
2SG.ERG John 3β.U-follow.RS-SGA

'(You) follow John!' (perfective)

Example (6.45) indicates the use of the β-series as the future-irrealis in durative and perfective aspect. Example (6.46) exemplifies the use of the β-series as the future potential in both aspects.

(6.45)   a. *Markusu Jon srmerknt*

Markus-w   Jon   s-r-merk-nt-ø
Markus-SG.ERG John 3β.U-N2.FUT-follow.DUR-FUT-SGA

'Markus will follow John.'

b. *Markusu Jon srmerba*

Markus-w   Jon   s-r-merba-ø
Markus-SG.ERG John 3β.U-N2.FUT-follow.RS-SGA

'Markus will follow John.' (perfective)

(6.46) a. *Markusu Jon srmerkntomo*

Markus-w   Jon   s-r-merk-nt-omo-ø
Markus-SG.ERG John 3β.U-N2.FUT-follow.DUR-FUT-POT-SGA

'Markus might follow John.'

b. *Markusu Jon srmerbamo*

Markus-w   Jon   s-r-merba-omo-ø
Markus-SG.ERG John 3β.U-N2.FUT-follow.RS-POT-SGA

'Markus might follow John.'

The female forms of the β-series, like the other series, are identical to either the first singular form (6.47a) or the middle form (6.47b) depending on the verb. Which form is chosen is entirely arbitrary and is assumed to be a conjugational feature of the verb.

(6.47) a. *Markusu imel soro brmerba*

Markus-w   imel   soro   b-r-merba-ø
Markus-SG.ERG maiden woman 3SG.FEM.β.U-N2.FUT-follow.RS-SGA

'Markus will follow the young woman.' (perfective)

b. *Markusu imel soro trme*

Markus-w   imel   soro   t-r-me-ø
Markus-SG.ERG maiden woman 3SGFEM.β.U-N2.FUT-hold.RS-SGA

'Markus will hold the young woman.' (perfective)

For those β-series forms which are identical across the subsets we can say that the β-series mark a combination of perfective aspect and the future tense forms, entailing future-irrealis, imperative-hortative and future potential. However, we can distinguish between these functions through the forms of the second singular/first non-singular[3] and the middle forms.

The β″-series displays a unique form for the second singular/first non-singular forms (*nt-*), whilst the other two subseries use the form (*kn-*) for this element. The *kn-*

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[3]These two forms are always identical. In Chapter 9, I argue that this shared identity is the result of a rule of referral.

form of the β and β′ series is used for the perfective forms (6.48) and the imperative-hortative (6.49). The *kn* form is widely attested through Yam languages as a second person form.

(6.48) a. *ngkai mpu kneibenti*

ngkai   mpu   kn-eibent-y
1SG.ERG 2.ABS 2SG.β.U-tell-SG.A.HOD

'I have just told you.'

b. *piengku ni kneibenti*

piengku ni   kn-eibent-y
3SG.ERG 1.NSG.ABS 1NSG.-tell-SG.A.HOD

'He has just told us.'

For prefixing verbs, which are intransitive and mark their sole argument as an undergoer, the use of a particular form grouping second singular and the first non-singular together for imperative-hortative is unsurprising (6.49).

(6.49) a. *mpu knmakrnt*

mpu   kn-makr-nt
2SG.ABS 2SG.β.U-walk-FUT

'(You) go!'

b. *ni knmakrnt*

ni   kn-makr-nt
1NSG.ABS 1NSG.β.U-walk-FUT

'Let's go!'

However, the vast majority of verbs in Ngkolmpu are ambifixing verbs, which index their patientive argument with this undergoer prefix. Thus, we have the unusual case in which we have a special imperative-hortative form used for second singular and first non-singular *patientive* arguments. Definitionally, imperative-hortative constructions are characterised by the person of their agent addressee, second person for imperatives and first non-singular for hortatives. This unusual situation is possibly the result

of the change in progress from a system in which all verbs were prefixing to the ambifixing case dominant today. In practice these forms in ambitransitive are rather rare since it is pragmatically difficult to produce a hortative with a second singular patient and hortatives are only possible with first person subjects in Ngkolmpu. The attested examples from ambifixing verbs are largely from imperatives with a first non-singular O argument (6.50).

(6.50)   *mpai ni kneibentnt*

mpai   ni   kn-eibent-nt-ø
2SG.ERG 1.NSG.ABS 1.NSG.β.U-tell-SG.A

'(You) tell us!'

For prefixing verbs, this marking is transparent with a distinction between the imperative-hortative and the other future irrealis forms. Yet for ambifixing verbs, in which this basic pattern has been transplanted, we end up with a gap in the paradigm, this then being filled by the main β-series forms (6.51).

(6.51)   a. *Mpai Jon smerknt*

mpai   Jon s-merk-nt-ø
2SG.ERG Jon 3.β.U-follow.DUR-FUT-SGA

'(You) follow Jon!'

b. *Mpai ngko bmerknt*

mpai   ngko   b-merkn-nt-ø
2SG.ERG 1SG.ABS 1SG.β.U-follow.DUR-FUT-SGA

'(You) follow me! (perfective)

The β''-series has a unique second singular or first non-singular marker used for the other future forms, namely *nt-* ($/^{n}t/$). Examples (6.52) show future-irrealis forms with second singular undergoers and examples (6.53) show first non-singular undergoers.

(6.52)   a. *ngkai mpu nteibentnt*

ngkai mpu nt-eibent-nt-ø
1SG.ERG 2.ABS 2SG.β.U-tell-FUT-SG.A

'I will tell you.'

b. *piengku mpu nteibentnt*

piengku mpu nt-eibent-nt-ø
3SG.ERG 2.ABS 2SG.β.U-tell-FUT-SG.A

'He will tell you.'

c. *ninta mpu nteibentntei*

ninta mpu nt-eibent-nt-ei
1NSG.ERG 2.ABS 2SG.β.U-tell-FUT-NSG.A

'We will tell you.' (non-hortative)

(6.53)   a. *piengku ni nteibentnt*

piengku ni   nt-eibent-nt-ø
3SG.ERG 1NSG.ABS 1NSG.β.U-tell-FUT-SG.A

'He will tell us.'

b. *mpai ni nteibentnt*

mpai ni   nt-eibent-nt-ø
2SG.ERG 1NSG.ABS 1NSG-tell-FUT-SG.A

'You will tell us. (non-imperative)

The future-irrealis forms of prefixing verbs with the second singular and first agreement also display the *nt-* form (6.54). These are non imperative-hortative.

(6.54)   a. *mpu ntmarkrnt sotangke*

mpu nt-markr-nt   sota-ngke
2.ABS 2SG.β.U-walk-FUT Sota-ALL

'You will go to Sota.' (non-imperative)

b. *ni ntmarkrnt sotangke*

ni   nt-markr-nt   sota-ngke
1NSG.ABS 1NSG.β.U-walk-FUT Sota-ALL

'We will go to Sota.' (non-hortative)

The other peculiarity about the set of β-series is the third person female marking.[4] As discussed, female undergoers are indexed in the third person singular and this form is always syncretic with another form in the paradigm. This is either the first person singular form, *w*, or the middle marker, depending on the verb involved. In the β-series, for verbs which mark female forms as per the first singular forms, the forms of the female agreement are constant across TAM values as with the other series. However, for verbs which mark female agreement forms with a middle marker this is more complicated.

In the default β-series, used for perfective marking, the female undergoer forms are identical to the middle markers *t*. The example in (6.55a) is a cognate object construction (section 5.4.2.1) in which the verb has middle morphology and takes either a cognate object or an infinitive O argument. We can see in example (6.55b) that the standard transitive with a female undergoer is in the same form as the middle in the previous example. Yet we are able to distinguish between these constructions since in the transitive construction (6.55b) the agent is marked with ergative case lacking in the cognate-object construction (6.55a).

(6.55)   a. *Markus eibentei teibenti*

Markus eibent-ei t-eibent-y
Markus tell-INF   MID.β-tell-SG.A.HOD

'Markus told a story.' (earlier today)

b. *Markusu Lena teibenti*

Markus-w   Lena t-eibent-y
Markus-SG.ERG.SG Lena 3SG.FEM.β.U-tell-SG.A.HOD

'Markus told Lena.' (earlier today)

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[4]I use the term female here rather than feminine since it only applies to animates.

It is important to note that the verb in example (6.55), *eibentei* 'to tell/inform', has a stem starting with a vowel and as such does not take the diathetic vowel in the middle constructions. These verbs occur with the vowel in all constructions, including the transitive construction where it is typically absent, and may not participate in the benefactive applicative. For a verb which takes the diathetic vowel in the monovalent constructions the middle verb and feminine undergoer transitive verb are not identical (6.56).

(6.56) a. *Lena tawancei*

         Lena t-a-wance-y
         Lena MID.β-DIA-fall.RS-SG.A.HOD

         'Lena fell over.' (earlier today)

    b. *Markusu Lena twancei*

         Markus-w   Lena t-wance-y
         Markus-SG.ERG Lena 3SG.FEM.β.U-fall-SG.A.HOD

         'Markus tripped Lena.' (earlier today) (lit. Markus felled Lena)

In the β'-series, there is a middle marker distinct from the basic β-series. The β'-series are used for imperative-hortative forms and the female forms are identical to the middle markers (6.57).

(6.57) a. *mpu eibentei keibent*

         mpu   eibent-ei k-eibent-ø
         2SG.ABS   tell-INF   MID.β'-tell-SG.A

         '(You) tell a story!'

    b. *mpai Lena keibent*

         mpai   Lena k-eibent-ø
         2SG.ERG   Lena 3SG.FEM.β.U-N2.FUT-tell-SG.A

         '(You) tell Lena.'

c. *mpai Jon seibent*

mpai   Jon   s-eibent-ø
2SG.ERG John 3.β.U-tell-SG.A

'(You) tell John.'

For the β′′-series, which are used to mark the future potential and future-irrealis forms, the female undergoer marker does not correspond to the middle marker for this series but rather the middle marker of the default β-series (6.58).

(6.58)   a. *Lena kremengknt*

Lena k-r-emengk-nt-ø
Lena MID.β-N2.FUT-hold.EX-FUT.DUR-SGA

'Lena will be held.'

b. *Markusu Lena temengknt*

Markus-w   Lena k-emengk-nt-ø
Markus-SG.ERG.SG Lena 3SG.FEM.β-hold.EX-FUT.DUR-SGA

'Markus will hold Lena'

The middle marker is discussed in more detail in section (6.7.1.2.4) as it displays a certain amount of autonomy from the rest of the undergoer paradigm.

6.7.1.2.2 The γ-series

The γ-series comprises the α-series and the TAM prefix. In third person and second non-singular the two fuse to form the portmanteau form *sw*. The γ-series is more restricted in function than the α-series and the β-series. The γ-series marks the combination of either durative aspect with recent past tense (6.59a) or imperfective aspect with remote past tense (6.59b)

(6.59)   a. *Markusu ngko kumplae*

Markus-w   ngko kw-w-mplae-ø
Markus-SG.ERG 1.ABS RCT-1.U-hit.EX-SG.A

'Markus beat me.' (yesterday)

b. *Markusu ngko kumplaernt*

Markus-w   ngko   kw-w-mplae-rnt-ø
Markus-SG.ERG   1.ABS   RMT-1.U-hit.EX-IMPF.RMT-SG.A

'Markus was beating me.' (two or more days ago)

The first person forms for the γ-series appear on the surface to have only the tense prefix and not the α-series element (6.59a). As discussed in Section 2.5.2, the sequence of two underspecified phonemes is realised as a single phoneme; this is then realised as a glide in onset/coda position or the corresponding high vowel in syllable position.

Similarly, the female form for the γ-series is realised with no overt element in the undergoer slot. As stated, for the β-series the female forms are identical to either the middle prefix or the first person singular agreement. However in the α-series, which makes up part of the γ-series, the first singular marker is *w-* and the middle marker has no overt phonological realisation. Thus, given the phonological constraints above, the two would appear identical on the surface. The example in (6.60) shows the morphophonemic to phonetic realisation of the verb *omplaei* 'to hit' if the female forms were identical with the first singular. Example (6.61) shows the same realisation if the female form were identical to the middle marker. Notice these are identical in the phonetic realisation.

(6.60)   /kw-w-ᵐplæ-ø/   → ['kʊᵐplæ]
         RCT-FEM|1SG.α-hit.DUR-SG.A

(6.61)   /kw-ø-ᵐplæ-ø/   → ['kʊᵐplæ]
         RCT-FEM|MID.α-hit.DUR-SG.A

6.7.1.2.3   The α-series

The α-series is the default marking for undergoer agreement with respect to TAM. See Chapter 9 for a detailed argumentation for this analysis and the particular the nature of this default. For now it is sufficient to note that the β and γ series serve to mark more specific TAM values whilst the α-series is the most general and thus is defined negatively from those already discussed.

In the most common use of the α-series, it serves to mark durative aspect in the non-future tense. This excludes the recent past durative forms which are marked by the γ-series discussed above; except of course where the α-series co-occurs with the γ-series, i.e. in the first person and second singular forms. Examples in (6.62) show present, hodiernal past and remote past tenses all with durative aspect.

(6.62)   a. *Markusu Jon imerk*

  Markus-w Jon y-merk-ø
  m-SG.ERG   Jon 3.α.U-follow.DUR-SG.A

  'Markus follows Jon.'

     b. *Markusu Jon imerki*

  Markus-w Jon y-merk-y
  m-SG.ERG   Jon 3.α.U-follow.DUR-HOD.SG.A

  'Markus followed Jon.' (earlier today)

     c. *Markusu Jon imerku*

  Markus-w Jon y-merk-w
  m-SG.ERG   Jon 3.α.U-follow.DUR-RMT.SG.A

  'Markus followed Jon.' (two or more days ago')

The α-series is also used in the imperfective aspect. There are only two distinct imperfective aspect forms: the recent past imperfective, entailing both the recent past and the hodiernal past of other aspect values, and the remote past. The recent past forms are exemplified in (6.63).

(6.63)   *Markusu Jon imerkntnen*

  Markus-w Jon y-merkntn-en-ø
  m-SG.ERG   Jon 3.α.U-follow.EX-IMPF.RCT-SG.A

  'Markus was following Jon.' (up to two days ago)

6.7.1.2.4   The middle marker

The middle marker occurs in the same formal location as the undergoer marker but displays slightly different formal patterning than the α, β and γ series of the under-

goer prefix. It could be argued that the middle marker does not participate in the same paradigm as the undergoer prefix, as verbs occurring with the middle marker may be thought of as being derived through a valence changing process and so are not participating in the same paradigm. However, they are treated as both participating in the undergoer paradigm since they occur in the same structural position and serve to mark similar TAM distinctions.

The morphosyntactic distribution of middle markers is discussed in Chapter 5. In this chapter it is sufficient to note that the middle marker marks ambifixing verbs as middle. The middle marker does not index any argument, i.e. it is person/number invariant. Yet it still serves to mark TAM in a manner similar to that of the other undergoer prefixes. The forms of the middle marker are summarised in Table 6.10. They are labelled as the default form, the perfective form and the future form. These are similar to the α, β and γ of the undergoer markers but have a slightly different distribution. We will address each in turn, starting with the future, then the perfective and finally the default as its distribution may be defined as capturing the elsewhere environment.

	form
default	ø-
perfective	t-
future	k-

Table 6.10: Summary of middle Prefixes

The future middle marker, *k-*, marks all future TAM combinations. This includes the standard future-irrealis in both durative (6.64a) and perfective aspect (6.64b). This will be exemplified with the verb *eibentei* 'to tell'. In this example, the verb is in its middle form as this is a cognate-object construction, as such a nominalised form of the verb occurs as the O argument which is not indexed on the verb (See Section 5.4.2.1 on page 143).

(6.64)   a. *Markus eibentei keibentnt*

Markus eibent-ei k-eibent-nt-ø
Markus tell-INF   FUT.MID-tell-FUT.DUR-SG.A

'Markus will tell a story.'

    b. *Markus eibentei keibent*

       Markus eibent-ei k-eibent-ø-ø
       Markus tell-INF   FUT.MID-tell-PFV.FUT-SG.A

       'Markus will tell a story.' (perfective)

The future middle marker also marks the imperative-hortative in both durative (6.65a) and perfective aspect (6.65b). Since these are identical to the future-irrealis for middle verbs it could be said that there is no formal distinction between these two categories, as is the case for the majority of the undergoer paradigm.

(6.65)   a. *Markus, mpai eibentei keibentnt*

       Markus, mpai   eibent-ei k-eibent-nt-ø
       Markus 2SG.ERG tell-INF   FUT.MID-tell-FUT.DUR-SG.A

       'Markus, you tell a story.'

      b. *Markus, mpai eibentei keibent*

       Markus, mpai   eibent-ei k-eibent-ø-ø
       Markus 2SG.ERG tell-INF   FUT.MID-tell-PFV.FUT-SG.A

       'Markus, you tell a story.' (perfective)

The future-potential form also takes the future middle marker in both durative (6.66a) and perfective aspect (6.66b). This form is formally distinguished from other future forms through the presence of a potential suffix.

(6.66)   a. *Markus eibentei keibentntomo*

       Markus eibent-ei k-eibent-nt-omo-ø
       Markus tell-INF   FUT.MID-tell-FUT.DUR-FUT.POT-SG.A

       'Markus might tell a story.'

      b. *Markus eibentei keibentomo*

       Markus eibent-ei k-eibent-nt-omo-ø
       Markus tell-INF   FUT.MID-tell-FUT.DUR-FUT.POT-SG.A

       'Markus might tell a story.' (perfective)

The perfective middle marker, *t-*, is used to mark all non-future tenses of the perfective middles. These are the hodiernal past (6.67a), recent past (6.67b) and remote past (6.67c). These are all past tenses since there is no present tense in the perfective aspect in Ngkolmpu.

(6.67)   a.   *Lena tawancei*

Lena   t-a-wance-y
Lena   MID.PFV-DIA-fall.RS-SG.A.HOD

'Lena fell over.' (earlier today) (perfective)

b.   *Lena tawancent*

Lena   t-a-wance-nt-ø
Lena   MID.PFV-DIA-fall.RS-PFV.RCT-SG.A

'Lena fell over.' (yesterday) (perfective)

c.   *Lena tawancengk*

Lena   t-a-wance-ngk-ø
Lena   MID.PFV-DIA-fall.RS-PFV.RMT-SG.A

'Lena fell over.' (two or more days ago) (perfective)

Finally the default middle marker has no phonological content and is used for all remaining forms. It is included in this paradigm despite having null phonological content since it exists within a series of contrasts which do have phonological content. Example (6.68) shows the marker occurring with non-future tenses occurring in the durative aspect. In some other Tonda languages this is a velar nasal *ŋ*; see Döhler (2016) for Komnzo and Quinn (2014) for Wartha Thuntai. This phoneme has been lost in Ngkolmpu along with the prefix.

(6.68)   a.   *Markus pi awmpr*

Markus pi   ø-a-wmpr-ø
Markus 3ABS   MID-DIA-fallEX-SG.A

'Markus is stumbling.'

b. *Markus pi awmpri*

> Markus pi   ø-a-wmpr-y
> Markus 3ABS MID-DIA-fallEX-HOD.SG.A

'Markus stumbled.' (earlier today)

c. *Markus pi awmpru*

> Markus pi   ø-a-wmpr-w
> Markus 3ABS MID-DIA-fallEX-RMT.SG.A

'Markus stumbled.' (two or more days ago)

Like the α-series undergoers, the default middle marker also co-occurs with the *kw-* tense marker that takes part in γ-series TAM combinations, recent past tense and durative aspect (6.69a) and remote past tense and imperfective aspect (6.69b).

(6.69)   a. *Markus pi kwawmpr*

> Markus pi   kw-ø-a-wmpr-ø
> Markus 3ABS RCT.DUR-MID-DIA-fall.EX-SG.A

'Markus stumbled.' (yesterday)

b. *Markus pi kwawmprnt*

> Markus pi   kw-ø-a-wmpr-rnt-ø
> Markus 3ABS RMT.IMPF-MID-DIA-fall.EX-SG.A

'Markus was stumbling.' (two or more days ago)

It also serves to mark recent past tense in the imperfective aspect (6.70).

(6.70)   *Markus pi awampren*

> Markus pi   ø-a-wmpr-en-ø
> Markus 3ABS MID-DIA-fall.EX-IMPF.RCT-SG.A

'Markus was stumbling.' (yesterday)

6.7.2   Cross-indexing agreement

Immediately following the undergoer agreement is another agreement marker, the cross-index agreement marker. This marker is distinct from the undergoer group. This

is an unusual element of the Ngkolmpu verb that is sensitive to combinations of *both arguments simultaneously* when occurring in bivalent or trivalent constructions. This fact motivates the name cross-indexing marker since it marks both arguments. It can also occur in monovalent clauses in which it is only sensitive to a single argument. It takes the form *r* and occurs with future tenses when the actor is not second person *and* the undergoer is neither second person singular nor first person non-singular.

In Chapter 9, I argue that the syncretisms in the agreement forms in the undergoer paradigm are the result of directional rules of referral. In these rules, the first non-singular undergoer refers to the second person and the second person non-singular in fact refers to the third person. Under such an analysis the cross-indexer is actually a non-second person marker, or a 1/3 person marker, and makes no reference to number. However, the goal of this chapter is a pre-theoretical analysis and as such I will not assume the directional analysis in the description for this chapter in order to retain the surface detail of the data in the presentation.

As stated, the cross-index marker marks all future tenses in durative and perfective aspects in addition to its cross-indexing function. Example (6.71) shows it occurring in future-irrealis.

(6.71)   a.   *Markusu Jon srmerknt*

Markus-w   Jon   s-r-merk-nt-ø
Markus-SG.ERG John   3β.U-N2.FUT-follow.DUR-FUT-SGA

'Markus will follow John.'

b.   *Markusu Jon srmerba*

Markus-w   Jon   s-r-merba-ø
Markus-SG.ERG John   3β.U-N2.FUT-follow.RS-SGA

'Markus will follow John (perfective)'

It is used for imperative-hortative mood, although it only occurs in hortative constructions with ambifixing verbs (6.72). This is because it cannot be used for imperatives since they logically entail a second person actor. The verbs must also be ambifixing since prefixing verbs treat their sole argument as an undergoer. Since specific

imperative-hortative forms occur with second person singular and first person non-singular undergoers, the *kn* forms discussed above, these forms are identical to standard future tenses.

(6.72) a. *Ninta Jon srmerknt*

        ninta   Jon s-r-merk-nt-ø
        1NSG.ERG Jon 3β.U-N2.FUT-follow.DUR-FUT-SGA

        'Let's follow Jon!'

    b. *Ninta Jon srmerba*

        ninta   Jon s-r-merba-ø
        1NSG.ERG Jon 3β.U-N2.FUT-follow.DUR-SGA

        'Let's follow Jon! (perfective)

It also shows up in the future-potential forms (6.73).

(6.73) a. *Markusu Jon srmerkntomo*

        Markus-w   Jon s-r-merk-nt-omo-ø
        Markus-SG.ERG Jon 3β.U-N2.FUT-follow.DUR-FUT-POT-SGA

        'Markus might follow Jon.'

    b. *Markusu Jon srmerbamo*

        Markus-w   Jon s-r-merba-omo-ø
        Markus-SG.ERG Jon 3β.U-N2.FUT-follow.RS-POT-SGA

        'Markus might follow Jon.' (perfective)

The most interesting part of this element is that it appears sensitive to the person and number of both arguments. The form occurs when the actor is either first or third person and the undergoer is either first person singular, second person non-singular or third person regardless of number. In other words it occurs when the actor is non-second person and the undergoer is neither second singular or first non-singular. A paradigmatic matrix of actor and undergoer is in Table 6.11 and instances where the cross-index marker occurs are marked with an 'x'. Greyed out cells represent logically impossible combinations.

			UNDERGOER					
			SG			NSG		
			1	2	3	1	2	3
ACTOR	SG	1			x		x	x
		2						
		3	x		x		x	x
	NSG	1			x		x	x
		2						
		3	x		x		x	x

Table 6.11: Distribution of cross-index marker across undergoer and actor

As stated, this marker does not occur if the actor argument is in the second person, regardless of number (6.74). It does occur for all other persons of the actor.

(6.74)   a. *Mpai Markus smerknt*

      mpai   Markus s-merk-nt-ø
      2SG.ERG Markus 3.β.U-follow.DUR-FUT-SG.A

      'You will follow Markus.'

     b. *Mpunta Markus smerkntei*

      mpunta   Markus s-merk-nt-ey
      2NSG.ERG Markus 3.β.U-follow.DUR-FUT-NSG.A

      'You (plural) will follow Markus.'

It also does not occur if the undergoer is in either second person singular (6.75a) or first person non-singular (6.75b). Note that second non-singular undergoers do occur with the cross-index (6.75c).

(6.75)   a. *Markusu mpu ntmerknt*

      Markus-w   mpu nt-merk-nt-ø
      Markus-SG.ERG 2.ABS 2SG.β.U-follow.DUR-FUT-SGA

      'Markus will follow you'

    b. *Markusu ni ntmerknt*

      Markus-w   ni   nt-merk-nt-ø
      Markus-SG.ERG 1NSG.ABS 1NSG.β.U-follow.DUR-FUT-SGA

      'Markus will follow us'

    c. *Markusu mpu srmerknt*

      Markus-w   mpu   s-r-merk-nt-ø
      Markus-SG.ERG 2.ABS 2.NSG.β.U-follow.DUR-FUT-SGA

      'Markus will follow you'

For middle marked verbs, which only have a single actor argument, the cross-index occurs with first and third person actors (6.76).

(6.76)   a. *ngko krekei mwangke*

        ngko   k-r-eke-ø   mwa-ngke
        1SG.ABS MID.FUT.N2.FUT.return.home-SG.A house-ALL

        'I will return home'

     b. *pi krekei mwangke*

        pi   k-r-eke-ø   mwa-ngke
        3NSG.ABS MID.FUT.N2.FUT.return.home-SG.A house-ALL

        'He will return home'

For prefixing verbs, which mark their sole argument with a prefix, i.e. an undergoer, the cross-index occurs if the sole argument is neither second singular nor first non-singular.

(6.77)   *Mpu yempoka mel srmakrnt yirowngke*

      mpu   yempoka mel   s-r-makr-nt   yirow-ngke
      2.ABS two   head 2NSG.β.U-N2.FUT-walk.DUR-FUT Rawa.Biru-ALL

      'You two walk to Rawa Biru.' (Imperative)

One potential analysis for the cross-index is that it is part of the undergoer marker group and present in non-imperative future forms. This is a tempting analysis due to

the connection between second person actors and imperatives. Under typical conditions, it would be unlikely for a marker which marks O arguments, i.e. the undergoer, to have a dedicated form for imperatives, however given that this is the case for Ngkolmpu, when you consider the β forms this analysis seems more likely. Following this line of analysis, the second singular undergoer and first non-singular undergoer forms simply do not have the *r* form variant. However in the following section, I will show that this analysis is problematic for a number of reasons.

Firstly, an analysis which treats the cross-index marker as part of the undergoer prefix would imply that the *r* marker is possible with a second person actor with a non-imperative future-irrealis meaning as in example (6.75). However, this example is ungrammatical and any attempts to produce such a form are always flatly rejected by speakers. The *r* in example (6.75) is glossed as a future marker under this analysis meaning a non imperative-hortative future.

(6.78)   * mpai   Markus s-r-merk-nt-ø
          2SG.ERG Markus 3.β.U-FUT-follow.DUR-FUT-SG.A
          'You will follow Markus.' (non-imperative)

Additionally, we can see that the *r* occurs with non-singular imperatives occurring with prefixing verbs (6.79). In these verbs, the sole argument is indexed as an undergoer and, as we have seen, second non-singular undergoers do occur with the *r* form even in the imperatives as illustrative in (6.79).

(6.79)   *Mpu yempoka mel srmakrnt yirowngke*

          mpu   yempoka mel   s-r-makr-nt   yirow-ngke
          2.ABS two   head 2NSG.β.U-FUT-walk.DUR-FUT   Rawa.Biru-ALL

          'You two walk to Rawa Biru.' (Imperative)

We have seen then that the marker occurs in future-irrealis, future potential and imperative-hortative; the latter occurring only rarely. Given these facts, it is clear that the cross-indexing marker cannot be considered a marker of non-imperative future forms and must instead actually be a generic future which displays the unusual cross-indexing pattern as presented in Table 6.11. This analysis is also further supported by argumentation from a more theoretical perspective in Chapter 9.

	Final V	Final C	Final r	Final W/Y
Recent SG	-nt-ø	-ro-ø	-o-ø	-nt-ø
Recent NSG	-nt-rans	-ro-ns	-o-ns	-nt-rans
Remote SG	-ngk-ø	-ø-u	-ø-u	-ø-u
Remote NSG	-ngk-ai	-ø-ai	-ø-ai	-ø-ai

Table 6.12: Perfective suffix classes

6.8   The inflectional suffixes

The inflectional suffixes consist of two distinct inflectional sites. Immediately following the verb stem is the TAM suffix. This alternates for tense, aspect and mood and does not express any agreement features. Typically, all the forms in this slot are mutually exclusive, as definitional of a slot, however there is a single form which includes two markers occurring simultaneously, the durative future marker and the future potential, in the durative future potential form of the verb. Following this marker is the actor agreement which indexes the person and number of actors and serves to indicate tense, aspect and mood also.

Depending on the final segment of the verb stem, there are different inflectional classes for past tense perfective forms. These only effect the inflectional suffixes and only in the recent and remote tenses in the perfective aspect. These effect both TAM and the actor suffix. These suffixes classes are presented in Table 6.12. There are two primary classes corresponding to vowels and consonants. The consonant class has a subclass of verb stems ending with *r*. In addition, there is a mixed class which displays properties of both classes for verb stems ending in underspecified phonemes.

6.8.1   The TAM suffixes

Immediately following the verb stem are a series of TAM suffixes. Unlike the other marking of TAM in Ngkolmpu these do not participate in any part of the agreement marking in the language. However, as is characteristic of the TAM marking in Ngkolmpu these markers display some unusual patterns of syncretism. There are seven distinct

ø	Default
nt	Future durative
nt	Recent perfective 1
ro	Recent perfective 2
omo	Future-potential
ngk	Remote perfective and past-potential
en	Recent imperfective
rnt	Remote imperfective

Table 6.13: TAM suffixes

forms for these markers including a zero form for the default. These have to be divided into two layers since the *-omo-* future potential may co-occur with the *nt* durative future marker. The forms are listed in Table 6.13.

6.8.1.1   *en : Recent past imperfective*

The *en* suffix occurs directly after the verb stem and does not co-occur with any other TAM suffixes. It serves only to mark recent past in the imperfective aspect.

(6.80)   *Markusu Jon imerkntnen*

Markus-w   Jon   y-merkntn-en-ø
m-SG.ERG   Jon   3.α.U-follow.EX-IMPF.RCT-SG.A

'Markus was following Jon (up to two days ago).'

As discussed above the recent past imperfective is a complex category. It is layered across two tense distinctions from the other aspect values, i.e. hodiernal past (6.81a) and recent past (6.81b).

(6.81)   a. *mpaitto yekinm Markusu Jon imerkntnen*

mpait=to   yeki-nm   Markus-w   Jon   y-merkntn-en-ø
now=ADV   morning-INS   m-SG.ERG   Jon   3.α.U-follow.EX-IMPF.RCT-SG.A

'This morning, Markus was following Jon.'

    b. *montena Markusu Jon imerkntnen*

       montena   Markus-w Jon y-merkntn-en-ø
       yesterday m-SG.ERG   Jon 3.α.U-follow.EX-IMPF-RCT-SG.A

       'Yesterday, Markus was following Jon.'

This same form is also used for present habituals (6.82).

(6.82)   *pne kraru Markus pi ymerkntnen yentunto*

       pne   krar-w   Markus pi   y-merkntn-en-ø
       DIST.DEM.FOC dog-ERG.SG Markus 3.ABS 3.α.U-follow.EX-IMPF-RCT-SG.A
       yentun=to
       continue=ADV

       'That dog always follows Markus.'

6.8.1.2   *rnt : Remote past imperfective*

The *rnt* suffix, like the *en* suffix, occurs directly after the verb stem and does not co-occur with any other TAM suffix. It serves only to mark remote past in the imperfective aspect. This can also be used for past habituals.

(6.83)   *Markusu ngko kumerkntnernt*

       Markus-w   ngko   kw-w-merkntn-rnt-ø
       Markus-SG.ERG 1SG.ABS RMT.IMPF-1SG.α.U-follow.EX-IMPF-RCT-SGA

       'Markus was following me (later than yesterday).' or 'Markus used to follow me.'

6.8.1.3   *nt : Future-irrealis/Recent past perfective*

The *nt* suffix serves to mark future tense in the durative aspect (6.84a). This form is often identical to the recent past in the perfective aspect (6.84b) however these are not always the same form as discussed in the following section.

(6.84)   a. *Markusu Jon srmerknt*

   Markus-w   Jon   s-r-merk-nt-ø
   Markus-SG.ERG John 3β.U-N2.FUT-follow.DUR-FUT-SGA

   'Markus will follow John.'

   b. *Jonu pr pi storunt*

   Jon-w   pr   pi   s-toru-nt-ø
   John-ERG.SG tree DEM.ABS 3β.U-cut.RS-RCT.PFV-SGA

   'John cut the tree.' (yesterday) (perfective)

This form and the *omo* future potential marker are the only elements in this site which may co-occur. This happens in the durative future potential (6.85).

(6.85)   *Markusu Jon srmerkntomo*

   Markus-w   Jon s-r-merk-nt-omo-ø
   Markus-SG.ERG John 3β.U-N2.FUT-follow.DUR-FUT-POT-SGA

   'Markus might follow John.'

The *nt* suffix is also used to mark recent past in the perfective aspect for verb stems ending in a vowel or an underspecified phoneme, /J/ or /W/ (6.86).

(6.86)   *Jonu pr pi storunt*

   Jon-w   pr   pi   s-toru-nt-ø
   John-ERG.SG tree DEM.ABS 3β.U-cut.RS-RCT.PFV-SGA

   'John cut the tree.' (yesterday) (perfective)

6.8.1.4   *ro : Recent past perfective*

For verb stems ending with a consonant, the *ro* suffix is used to mark recent past tense in the perfective aspect (6.87a). This suffix has the allomorph *o* when occurring before /r/ (6.87b).

(6.87) a. *Markusu Jon seibentro*

Markus-w   John s-eibent-ro-ø
Markus-SG.ERG.SG Jon   3.β.U-tell-RCT.PFV-SG.A

'Markus told Jon.' (yesterday)

b. *Markusu Jon sarwaro*

Markus-w   John s-arwar-o-ø
Markus-SG.ERG.SG Jon   3.β.U-call.RS-RCT.PFV-SG.A

'Markus called Jon.' (yesterday)

6.8.1.5 *ngk : Past-potential/remote past perfective*

The *ngk* suffix serves to mark the past potential, which is part of the durative aspect
(6.88a). It also marks the remote past in the perfective tense for verb stems ending in a
vowel (6.88b). These do not co-occur with another marker. I have chosen to use label
this as past-potential/remote past perfective rather than provide a unified category
label for the sake of transparency.

(6.88) a. *Markusu Jon imerkngk*

Markus-w   Jon y-merk-ngk-ø
Markus-SG.ERG Jon 3.α.U-follow.DUR-PST.POT-SGA

'Markus followed Jon.' (not-actual)

b. *Jonu pr pi storungk*

Jon-w   pr   pi   s-toru-ngk-ø
John-ERG.SG tree DEM.ABS 3.β.U-cut.RS-RMT.PFV-SGA

'John cut the tree.' (two or more days ago) (perfective)

6.8.1.6 *omo : Future potential*

The *omo* suffix marks future potential mood. Future potential mood can occur with
both durative aspect (6.89a) and perfective aspect (6.89b). This co-occurs with the
future durative marker, *nt*, as discussed in Section 6.8.1.3.

(6.89)   a. *Markusu Jon srmerkntomo*

   Markus-w   Jon   s-r-merk-nt-omo-ø
   Markus-SG.ERG John   3.β.U-N2.FUT-follow.DUR-FUT-POT-SGA

   'Markus might follow John.'

   b. *Markusu Jon srmerbamo*

   Markus-w   Jon   s-r-merba-omo-ø
   Markus-SG.ERG John   3.β.U-N2.FUT-follow.RS-POT-SGA

   'Markus might follow John.'(perfective)

6.8.2   The actor suffix

The actor suffix is the final element in the verb. It marks agreement in person and number for actor arguments. To quickly summarise, actor arguments are the single (S) argument of middle verbs and the (A) argument of transitive verbs. Unlike TAM marking, which is distributed across inflectional sites, actor agreement is entirely independent from undergoer agreement apart from the cross-index marker. In Chapter 9, I argue that the two agreement paradigms are autonomous from each other as evident in both distance between the elements on the verb and also in the organisational structure of the subparadigm. Undergoer markers primarily mark person whilst the actor agreement largely marks number, namely singular vs. non-singular. However much like the undergoer marker, the actor layer also interacts with tense, aspect and mood.

Similarly to the undergoer marker, the actor markers fall into three distinct series. However unlike the undergoer marker, these series much more directly align to distinct TAM values, at least in the singular forms, if we assume the use of defaults to capture the general case. The forms for the singular agreement are summarised in Table 6.14. The actor marker does not mark person in the singular form although person is marked in the non-singular for certain TAM values. It is something of a typological rarity to mark person in the non-singular and not in the singular and against certain typological markedness expectations, such as found in Croft (2002, p. 20). The three forms correspond to hodiernal past in perfective and durative aspect, the remote past in the durative aspect and then a default which is zero marked to cover all other TAM values. Interestingly, there is a far greater range of TAM distinctions made in the non-

default	ø
hodiernal past	y
remote past	w

Table 6.14: Singular forms of actor suffixes

singular form of the actor marker although these are largely redundant and only the three distinctions made in the singular are required for fully determined TAM values. As such we shall examine the three singular forms in turn.

The *y*, phonemically the underspecified phoneme /J/, form is used specifically only for hodiernal tense in both durative (6.90a) and perfective aspects (6.90b). In the imperfective, hodiernal past is merged with recent past and does not form a category of inflection. This is a clear case of a form corresponding to both a clear TAM value and a singular tense value.

(6.90) a. *Markusu ngko umerki*

Markus-w   ngko   w-merk-y
Markus-SG.ERG 1SG.ABS 1SG.α.U-follow.DUR-HOD.SGA

'Markus followed me.' (earlier today)

b. *Markusu ngko bmerbai*

Markus-w   ngko   b-merba-y
Markus-SG.ERG 1SG.ABS 1SG.β.U-follow.RS-HOD.SGA

'Markus followed me.' (earlier today) (perfective)

The *w*, phonemically /W/, is used for remote past in the durative aspect (6.91a) and in the perfective aspect for verb stems ending in a consonant. It does not occur in the imperfective aspect (6.91b).

(6.91) a. *Markusu Jon imkerku*

Markus-w Jon y-merk-w
m-SG.ERG   Jon 3.α.U-follow.DUR-RMT.SG.A

'Markus followed Jon.' (two or more days ago)

b. *Markusu ngko kumplaernt*

Markus-w   ngko kw-w-mplae-rnt-ø
Markus-SG.ERG 1.ABS RMT-1.α.U-hit.EX-IMPF.RMT-SG.A

'Markus was beating me.' (two or more days ago)

The *ø* is the default and is used for all other TAM combinations with singular actors and with prefixing verbs. The zero marked form appears in the morphological line in the glossed examples since the absence of phonological content is paradigmatically contrasted with the *w* and the *y* forms and is essential for interpreting the TAM value of the fully inflected verb. I will not exemplify all 13 functions of the default actor suffix here.

Interestingly, the singular actor agreement obligatorily occurs with prefixing verbs regardless of the number of the single argument. This is because the actor suffix is essential for the determining of complete TAM values. This is exemplified for both hodiernal past (6.92) and remote past durative forms (6.93). Since this element is insensitive to person and number for prefixing verbs, when it occurs with these verbs I will gloss this simply with its TAM value.

(6.92) a. *Markus ymakri Sotangke*

Markus y-makr-y   sota-ngke
Markus 3.α.U-walk.DUR-HOD sota-ALL

'Markus walked to Sota.' (earlier today)

b. *Markus Jonet ymakri Sotangke*

Markus Jon-t   y-makr-y   sota-ngke
Markus John-COM 3.α.U-walk.DUR-HOD sota-ALL

'Markus and John walked to Sota.' (earlier today)

(6.93) a. *Markus ymakru Sotangke*

Markus y-makr-w   sota-ngke
Markus 3.α.U-walk.DUR-RMT sota-ALL

'Markus walked to Sota.' (earlier today)

b. *Markus Jonet ymakru Sotangke*

Markus	Jon-t	y-makr-w	sota-ngke
Markus	John-COM	3.α.U-walk.DUR-RMT	sota-ALL

'Markus and John walked to Sota.' (earlier today)

One possible analysis of this would be that the singular forms of the actor agreement are not agreement forms at all but simply TAM markers which are contrasted with agreement markers which only mark non-singular. This is perhaps supported by the fact that actor suffixes never mark person in the singular, since under this analysis they are not agreement markers at all.

In the non-singular the forms of the actor suffix become much more complicated as they mark a much finer grained TAM distinction along with a person distinction in certain cases. Many of the non-singular tense distinctions refine the default reading of the singular. This marking is largely redundant, however, since the default reading of the singular is sufficient to determine all TAM values given all other morphological elements in the verb. The full list of the actor forms, singular and non-singular, is presented in Table 6.15. For the majority of forms, the actor suffix never marks person. It is only two sub-series of the default marking which display any person marking at all. However, to say that the person marking of actors is a marginalised part of the system is to neglect the fact that the two sub-series which mark person are the most common actor marking forms in the language including the overall default pattern.

Table 6.15 sets out the full set of forms for actor suffixes in Ngkolmpu. The table is deliberately unmarked for function and it is sufficient to note the forms at this point. Notice that the distinctions made in the non-singular do not align to the same distinctions made in the singular. This, along with the fact that the singular forms occur without any agreement trigger in prefixing verbs, support the possible analysis that the singular and non-singular forms are actually distinct from each other as systems. As such, we shall discuss each form of the non-singular in turn and exemplify each of the TAM functions of each given form. Table 6.16 contains the paradigm of non-singular forms aligned with functions.

The non-singular forms that occur with the remote durative singular (*w*) take the

SG	1NSG	2NSG	3NSG
ø	y	e	e
ø	ei	ei	me
ø	y	y	y
ø	e	e	e
ø	rans	rans	rans
ø	ai	ai	ai
y	me	me	me
y	ns	ns	ns
w	ai	ai	ai

Table 6.15: Full paradigm of actor suffix forms

	1NSG	2NSG	3NSG
default	y	e	e
future	ei	ei	me
future-potential	y	y	y
imperfective	e	e	e
recent perfective	rans	rans	rans
remote past	ai	ai	ai
hodiernal perfective	me	me	me
hodiernal durative & recent perfective 2	ns	ns	ns

Table 6.16: Paradigm of non-singular actor suffixes

form *ai*. This *ai* marks more than just remote durative (6.94a); it also marks remote perfective (6.94b) and past potential forms (6.94c) all in the non-singular. If we detach the TAM value of the non-singular from the singular forms this *ai* form can be described as a remote past tense non-singular marker with the exclusion of the imperfective remote past. This involves inclusion of past potential in remote past despite the fact that it has a generic past tense interpretation. This marker does not vary for person.

(6.94) a. *Pinta pr pi ytarai*

pinta   pr   pi   y-tar-ai
3NSG.ERG tree DEM.ABS 3.α.U-cut.EX-RMT.NSGA

'They cut down the trees.' (two or more days ago)

b. *Pinta pr pi storungkai*

pinta   pr   pi   s-toru-ngk-ai
3NSG.ERG tree DEM.ABS 3β.U-cut.RS-RMT.PFV-RMT.NSGA

'They cut down the trees.' (two or more days ago) (perfective)

c. *Pinta pr pi ytarngkai*

pinta   pr   pi   y-tar-ngk-ai
3NSG.ERG tree DEM.ABS 3.α.U-cut.EX-POT-RMT.NSGA

'They cut down the trees.' (two or more days ago) (non-actual)

The non-singular form for the hodiernal past in the durative aspect is *ns* (/^{n}s/) (6.95a). This form is also used for non-singular in the recent past in the perfective aspect for verbs ending with a final consonant (6.95b). This form also does not vary for person of the actor.

(6.95) a. *Pinta ngko umerkns*

pinta   ngko   w-merk-ns
3NSG.ERG 1SG.ABS 1SG.α.U-follow.DUR-HOD.NSGA

'They followed me.' (earlier today)

b. *Ninta mo srwmtawns*

Ninta   mo   s-rwmtaw-ro-ns
1.NSG.ERG wallaby 3.β.U-hunt.RS-RCT.PFV-NSG.A

'We hunted a wallaby.' (earlier today)

The non-singular form for the hodiernal past in the perfective aspect is *me* (6.97). This form also does not vary for person of the actor.

(6.96)   *Pinta ngko bmermame*

pinta   ngko   b-merba-me
3NSG.ERG 1SG.ABS 1SG.β.U-follow.RS-HOD.NSGA

'They followed me.' (earlier today) (perfective)

The non-singular form for the recent past in the perfective aspect is *rans* (/rɒⁿs/) (6.97). This form does not vary for the person of the actor. This form is arguably homophonous with the *ns* hodiernal past durative marker since the 'ra' element could be considered part of the TAM suffix, which it is for verbs that do not display a stem alternation.

(6.97)   *Pinta ngko bmerbantrans*

pinta   ngko   b-merba-nt-rans
3NSG.ERG 1SG.ABS 1SG.β.U-follow.RS-RCT.PFV-RCT.PFV.NSGA

'They followed me.' (yesterday) (perfective)

There is just a single non-singular form for the imperfective aspect regardless of tense. It takes the form of *e* (/ɛ/) and does not vary for person. Example (6.98a) shows it occurring with a non-singular actor in the imperfective aspect and recent past tense; (6.98b) shows it occurring with remote past tense.

(6.98)   a. *Pinta ngko umplaeyene*

pinta   ngko   w-mplae-en-e
3NSG.ERG 1.ABS   RMT-1.α.U-hit.EX-IMPF.RMT-SG.A

'They were beating me.' (yesterday)

b. *Pinta ngko kumplaernte*

pinta   ngko   kw-w-mplae-rnt-e
3NSG.ERG 1.ABS RMT-1.α.U-hit.EX-IMPF.RMT-SG.A

'They were beating me.' (two or more days ago)

There is a dedicated non-singular marker for the future-potential forms regardless of aspect. It takes the form *y* and does not vary for person. Example (6.99) shows it occurring with durative aspect and example (6.99b) shows it occurring with perfective aspect.

(6.99)   a. *Pinta Jon srmerkntomoi*

pinta   Jon   s-r-merk-nt-omo-y
3NSG.ERG Jon   3β.U-N2.FUT-follow.DUR-FUT-POT-SGA

'They might follow John.'

b. *Pinta Jon srmerbamoi*

pinta   Jon   s-r-merba-omo-y
3NSG.ERG Jon   3β.U-N2.FUT-follow.RS-POT-SGA

'They might follow John.' (perfective)

For the non-potential future tenses, i.e. future-irrealis and imperative-hortative in durative and perfective aspects, the non-singular actor marker is either *ei* or *me*. These two forms are dependent on the person value of the actor. Interestingly, unlike the undergoer which groups second and third non-singular, this particular actor suffix groups first and second person non-singular together in opposition to the third non-singular. Example (6.100) shows the *ei* form being used in future-irrealis for both durative and perfective.

(6.100)   a. *Ninta Jon srmerkntei*

ninta   Jon   s-r-merk-nt-ei
1NSG.ERG John 3β.U-N2.FUT-follow.DUR-FUT-FUT.1NSGA

'We will follow John!'

b. *Ninta Jon srmerbai*

ninta   Jon   s-r-merba-ei
1NSG.ERG John   3β.U-N2.FUT-follow.RS-FUT.1NSGA

'We will follow John! (perfective)

Example (6.101) shows the *ei* form being used in imperative-hortative for both durative and perfective.

(6.101)   *Mpunta ni kneibentntei*

mpunta   ni   kn-eibent-nt-ei
2NSG.ERG   1NSG.ABS   2SG.β.U-tell-FUT-FUT.2NSGA

'(You all) tell us!' (durative and perfective)

These forms also display an alternation for person in which the first and second person non-singular forms are realised by a *ei* and the third person non-singular is realised by a *me* which is the same form as the one used for the perfective hodiernal past non-singulars. Example (6.102) shows all three persons and the distinction between first and second vs. third for just the future-irrealis in the durative aspect, however the perfective and both the imperative-hortative forms display an identical pattern.

(6.102)   a. *Ninta Jon srmerkntei*

ninta   Jon   s-r-merk-nt-ei
1NSG.ERG John   3β.U-N2.FUT-follow.DUR-FUT-FUT.1NSGA

'We will follow Jon!'

b. *Mpunta Jon srmerkntei*

mpunta   Jon   s-merk-nt-ei
2NSG.ERG John   3β.U-follow.DUR-FUT-FUT.2NSGA

'You will follow John!'

c. *Pinta Jon srmerknteme*

pinta   Jon   s-r-merk-nt-me
3NSG.ERG John   3β.U-N2.FUT-follow.DUR-FUT-FUT.3NSGA

'They will follow John!'

The final actor marker is the default form which is used for the present tense dura-
tive (6.103a) and the recent past durative (6.103b). This marker also alternates based
on the person value of the actor and similarly to the above form there are only two dis-
tinct forms for this marker. The forms for this marker are *y* and *e*, both of which are al-
ready used for other more specific actor suffixes. Unlike the previous example (6.100)
this form groups first non-singular against second and third non-singular much more
like the undergoer marker.

(6.103) a. *ni awamprei*

ni   ø-a-wampre-y
1NSG.ABS   MID-DIA-fall.EX-1.NSGA

'We are stumbling.'

b. *ninta kwawamprei*

ni   kw-ø-a-wampre-y
1NSG.ABS   RCT-MID-DIA-fall.EX-1.NSGA

'We stumbled.' (yesterday)

The examples in (6.104) show the grouping for the person values for the non-singular
default actor marker. Notice the identical forms for second and third non-singular.

(6.104) a. *ninta kwawamprei*

ni   kw-ø-a-wampre-y
1NSG.ABS   RCT-MID-DIA-fall.EX-1.NSGA

'We stumbled.' (yesterday)

b. *mpunta kwawampreye*

mpu   kw-ø-a-wampre-e
2.ABS   RCT-MID-DIA-fall.EX-2.NSGA

'You (pl.) stumbled.' (yesterday)

c. *pi kwawampreye*

pi   kw-ø-a-wampre-e
3.ABS   RCT-MID-DIA-fall.EX-3.NSGA

'They stumbled.' (yesterday)

It is interesting to note that the two groups of TAM functions for which the actor agreement marks person distinctions, whilst both having only two forms, pattern differently. As such, all three person values must be available for the indexing of actors. See Chapter 9 for a discussion of the availability of person in the organisation of the actor paradigm.

6.9   The copula

The copula largely aligns with the prefixing verb template. It has distinct forms for the restricted, the durative and the extended stem paradigms. The restricted and extended stems are regular, following the exact inflectional paradigm described above for prefixing verbs. The restricted stem takes the form *e* and the extended stem *rar*. The durative forms, however, are more irregular and display some suppletive forms.

The durative copula paradigm is laid out in Table 6.17. This is for seven of the eight tense and mood categories which combine with the durative aspect. The past-potential category is missing from the paradigm as no data was collected on it. The basic agreement shape is that of the undergoer agreement pattern with the same syncretism described in Section 6.7.1.2. There are three distinct stems which combine with the standard inflections for the particular TAM categories. The stem *ro* is used for the future forms and the remote past. The stem *re* is used in the hodiernal past. The stem *reye* is used for recent past and present female forms. Finally the durative present form of the copula is the agreement marker plus a vowel. For first person singular this is orthographically represented as *o*, phonetically closer to /ɑ/. For the other forms this is orthographically represented as *e*, phonetically /ɛ/.

Imperative-hortative

	1	2	3	3FEM
SG	bront	knront	sront	bront
NSG	knront	sront	sront	

Future-irrealis

	1	2	3	3.FEM
SG	bront	ntront	sront	bront
NSG	ntront	sront	sront	

Future-potential

	1	2	3	3.FEM
SG	brontomo	ntrontomo	srontomo	brontomo
NSG	ntrontomo	srontomo	srontomo	

Present

	1	2	3	3.FEM
SG	wo	ne	ye	reye
NSG	ne	ye	ye	

Hodiernal past

	1	2	3	3.FEM
SG	urei	nrei	yrei	urei
NSG	nrei	yrei	yrei	

Recent past

	1	2	3	3.FEM
SG	kureye	kunreye	sureye	kureye
NSG	kunreye	sureye	sureye	

Remote past

	1	2	3	3.FEM
SG	urou	nrou	yrow	urow
NSG	nrou	yrou	yrow	

Table 6.17: Paradigm of durative forms of copula

Chapter 7

Verb stems, aspect classes and (plur)actionality

The majority of verbs in Ngkolmpu display a rich system of stem alternation. Each verb in Ngkolmpu corresponds to one of a number of core alternation patterns (7.1). These alternations are driven by complex interactions between distinct categories of pluractionality and aspect (7.2). Many verbs are defective in lacking one or more of the possible stems according to the lexical semantics of the verb. The number of stems is used to establish a set of aspect classes. Ngkolmpu displays fairly convincing evidence that these stem alternations, and by extension the features that they realise including pluractionality, are inflectional rather than lexical (7.3).

7.1 Stem alternation

Verbs in Ngkolmpu have up to three stems. These stems alternate according to a complex interaction of pluractionality and aspect. In this section we will mostly be concerned with the particular distribution of forms, whilst features and their values which govern this distribution are discussed in Section 7.2.

There are two values of pluractionality in Ngkolmpu: pluractional and non-pluractional. This is cross-cut by the three distinct aspect values: perfective, durative and imperfective. Stem alternation is not the only loci of aspect marking but it is the only morpho-

logical marking of pluractionality. Aspect is also marked through a combination of the undergoer prefix, the TAM suffix and the actor suffix as discussed in the previous chapter.

The default stem pattern, accounting for 85% of the lexicon, involves verbs having up to three stems, labelled RESTRICTED, DURATIVE and EXTENDED. The restricted stem is used only for perfective aspect, the durative stem is used for durative aspect and the extended stem is used for the imperfective aspect and all pluractional events *regardless of aspect*. This distribution is shown in Table 7.1. As already discussed in Section 6.3.1.1 and discussed further in Section 7.2.4.2, the combination of pluractional and perfective aspect is not a possible combination for any verb in Ngkolmpu, which is why this cell remains unfilled in the Table 7.1. Whilst, this default pattern holds for the majority of the lexicon[1], it is important to note that most verbs are defective in lacking either one or two of the stems. For a verb which is defective in lacking a stem it is not possible to inflect a verb for that category nor is it possible to express that category with that verb.

In addition to this default pattern, approximately 9% of verbs have a single stem which may be used across all aspects and both pluractional and non-pluractional forms.

The remaining 6% of verbs pattern differently from both of the patterns discussed. There are three verbs, the verb 'to walk' and the directional derivatives of 'to come' and 'to go' which display idiosyncratic stem distribution. The remaining 5% are positional verbs which belong to one of two possible alternate stem distributions discussed in Section 7.1.3. These patterns are often more transparent and when these verbs align more closely to semantic values they are labelled as such. For example, the verb *yamakr* 'to walk' has a single stem which is used for imperfective and only for imperfective: this is thus labelled the imperfective stem and glossed appropriately as discussed in section 7.1.2.

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[1]It would be interesting to see how loanwords interact with the complexity of this system, however there are no observed instances of verbs as loanwords in Ngkolmpu. Similar has been observed for Komnzo (Döhler, 2016, p. 133).

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional	Restricted	Durative	Extended
Pluractional	-	Extended	Extended

Table 7.1: Default pattern of verbal stem distribution

As stated, most verbs are defective in lacking one or two stems. Out of the verbs which display the default pattern, around 30% have an extended stem only, i.e. a single stem which can only be used for imperfective aspect and pluractional events. This is known as the one-stem default pattern. The majority of verbs (60%) have two stems, which are the restricted stem and the extended stem, i.e. they are defective in lacking a durative stem. This is known as the two-stem default pattern. Finally, 10% of these verbs display all three stems. This is known as the three-stem default pattern. Although only a small number of verbs display all three stems, the same distribution of stems holds across all these verbs. These basic patterns are exemplified with verb stems in Tables 7.2-7.5. It is worth noting that all verbs of this pattern have an extended stem. This excludes the three verbs of movement and the positional verbs. Note that lacking a stem means that category is not expressible by verbs exhibiting that pattern.

The number of stems a verb has is correlated to the lexical aspect or aktionsart of that verb. We can make use of a concept of aktionsart in the tradition of Vendler (1967) and Dowty (1979)[2], in which we can describe the inherent aspectual meaning of verbs using a number of parameters. In our case, we will refer to three binary parameters: punctual vs. durative, telic vs. atelic and stative vs. dynamic. The Ngkolmpu aspect classes, defined by stem distribution, correlate strongly with these aktionsart classifications. However, the classifications do not characterise all the verbs of a given class, only the majority. We can think of these classes as being a semantically driven system with an additional level of lexical specification.

Verbs of the one-stem default pattern are labelled one-stem verbs. One-stem verbs are typically unbounded or inherently plural events. These include verbs like *orai* 'to

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[2]For an impressive overview of various approaches to classifying aspect and aktionsart see Sasse (2002).

work' or *onowai* 'to distribute'. All the verbs which belong to this class are durative and most are atelic. Defining these verbs as being entirely atelic is problematic though, as verbs like *ominngkai* 'to eat' also belong to this class. The stem distribution is exemplified for the verb *okrai*, 'to pile', in Table 7.2. In this table, '-' represents impossible forms, i.e. those which are never attested in the language, whilst blank forms are those which do not occur for this particular stem pattern.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional			kr
Pluractional	-	kr	kr

Table 7.2: Distribution of stems for *okrai* 'to pile'

Verbs of the two-stem default pattern have a restricted stem and an extended stem. All two-stem verbs are telic. These verbs include durative telic verbs like *omakrai* 'to burn something' and punctual verbs like *omplaei* 'to hit'. The stem distribution of two-stem verbs is displayed in Table 7.3.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional	lmputo		ilmputok
Pluractional	-	lmputok	ilmputok

Table 7.3: Distribution of stems for *olmputokai* 'to sink'

Verbs of the three stem default pattern, except one, are atelic durative verbs. Largely this involves non-basic verbs of motion, i.e. the verbs for 'follow', 'return' and 'circumnavigate'. This class also includes the copula. The single exception to the characterisation of this class as durative atelic is the verb *owurai* 'to bite'. The stem distribution is exemplified for the verb *omerkntnai*, 'to follow', in Table 7.4.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional	merba	merk	merkntn
Pluractional	-	merkntn	merkntn

Table 7.4: Distribution of stems for *omerkntnai* 'to follow'.

In addition to the patterns above, there are the single-stem pattern which make up about 9% of identified verbs. These verbs display a single stem which can be used for all aspect values and both pluractional and non-pluractional events as exemplified for the verb *eibentai* 'to tell' in Table 7.5. This is excluding the combination of perfective and pluractional, which is an impossible combination in this language. These verbs are mixed according to their lexical aspect. Most verbs of this type are durative and telic, with two exceptions: *olngkolai* 'to stab' and *aemurai* 'to nod' which are punctual.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional	eibent	eibent	eibent
Pluractional	-	eibent	eibent

Table 7.5: Distribution of stems for *eibentai* 'to tell'.

7.1.1   Formal patterns of stem alternations

Verbs which display a stem alternation display a number of interesting asymmetries in the relationship between stems. In terms of distribution, all verbs of the type discussed above have an extended stem. If a verb has more than one stem it will also have a restricted stem. Only if a verb has a both an extended and a restricted stem may it have a durative. This suggests a hierarchy of significance of stems in which the extended stem is the most basic, followed by restricted and then the durative. We can posit a hierarchy of prominence as in (7.1). Not only do all verbs have an extended stem, the extended stem is always used to derive the infinitive form if the verb has one. Infinitives cannot be derived from either of the other stems.

(7.1)   Hierarchy of stem of prominence:

EXTENDED « RESTRICTED « DURATIVE

In terms of how inflected forms are constructed, we see an almost inverse pattern: for verbs which display multiple stems, except for a few cases of suppletive forms, the restricted stem serves as the phonological base from which other forms are derived. For two verb stems the extended stem is built from the restricted stem, as visible in Table 7.3. For three-stem verbs, the durative stem is built from the restricted and is then used to form the extended stem, visible in Table 7.4. This suggests a hierarchy of phonological derivation as in (7.2) exemplified for the verb *omerkntnai* 'to follow' in (7.3). However, it is important to note here that there are a very large number of phonological processes which derive one stem from another, with many processes specific to a single lexeme. In addition, which process a verb undergoes to derive its stems is not deducible from any formal or semantic criteria. This makes determining the phonological relationship between stems difficult, although we can generalise over these patterns to create nine distinct formal classes as presented in Tables 7.6 and 7.7.

(7.2)   Hierarchy of stem generation:

EXTENDED « DURATIVE « RESTRICTED

(7.3)   *merkntn* « *merk* « *merba*

EXTENDED « DURATIVE « RESTRICTED

The forms of the stems are not tied to the particular stem functions; rather they align to the hierarchy in (7.2). To clarify, there are a set of processes that target restricted stems and wether they derive durative or extended stems depends on the verb in question, i.e. two stem verbs derive extended stems from restricted yet three stem verbs derive durative stems from restricted and extended stems from the durative. Another way to state this is that the process used to derive a stem is sensitive to the input element rather than the result. As such we can talk about processes which input restricted stems, in Table 7.6, and processes which input durative stems in Table 7.7. We will talk about suppletion as one of these processes, however suppletion can target

both restricted and durative. Out of the total stem pairs, 13 are suppletive. All other verbs display some level of identity between the stems.

For processes which input restricted stems, the most common pattern between stems involves appending a thematic element to the restricted stem after deleting any final consonant or cluster of the restricted stem. The most common forms of this thematic material are *ngk*, with 16 examples across pairs of stems. The next most common are *ka* and *k* with 9 examples each. There are 19 examples of idiosyncratic elements which involve the alternation of some final element of the stem. In additional to this there are 32 examples of some idiosyncratic element being added to the restricted stem. Problematic to this analysis are 14 examples in which the restricted stem has more phonological material than another stem. In these examples, one analysis would be to treat the final element of the restricted stem as deleted to form the next stem. We can treat this as a case of morphological subtraction. The alternate analysis would have 11 distinct thematic elements being added to extended stems in order to derive restricted stems.

There are a number of processes which input durative stems to produce extended stems. There are five examples of suppletion. Equally common, with five examples, is the appending of *ntn* to the durative stem. There is one example of subtraction. The remaining examples involve adding a final *i* or *e* to the restricted stem. Examples of each of these are listed in Table 7.7.

7.1.2　Verbs of basic motion

There are three verbs of basic motion, the verb 'to walk' and the directional derivatives of 'to come' and 'to go', which display idiosyncratic stem distribution. The verb for 'to walk', *yamakr*, has three stems. The verbs for 'come' and 'go' have two stems.

The verb for 'to walk', which is often used as a more generic travel verb, has three stems, a durative stem, a durative pluractional stem and an imperfective stem. This is a morphologically prefixing verb. This distribution of stems is exemplified in Table 7.8. This verb is particularly unusual since it indicates imperfective with a stem distinct from the durative pluractional stem.

Type	Restricted	Result[3]	Translation
C# → ngk	onto	ontongk	'to bring'
	atunaent	atunaengk	'to agree'
	marw	marngk	'to marry'
C# → ka	nsey	nseka	'to sit down'
	lmputo	lmputoka	'to sink'
	ritu	rituka	'to die'
C# → k	onte	ontek	'to put inside'
	ncrey	ncrek	'to wake'
	merba	merk	'to follow'
X# → Y	ule	ula	'to be so'
	rtiw	rtib	'to finish'
	noke	noki	'to lift'
Subtraction	lusya	lusy	'to blow'
	wakino	wakin	'to build'
	lewent	lewe	'to scrub'
Suppletive	ey	akr	'to mention'
	munse	oyer	'to talk'
	rs	mplae	'to hit'

Table 7.6: Formal processes targeting restricted stems

Type	Durative	Result	Translation
Suppletive	rampuka	wur	'to bite'
	lengkl	anto	'to watch'
	owna	mntra	'to sleep'
_# → $_n$tn	ayak	ayakntn	'to crawl'
	eyerk	eyerkntn	'to stalk'
	merk	merkntn	'to follow'
_# → $_i$/e	me	mei	'to put out'
	lus	lusi	'to arrange'
	ibitr	ibitre	'to separate'
Subtraction	reyar	reya	'to bury (dead)'

Table 7.7: Formal processes targeting durative stems

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		amakr	akre
Pluractional	-	ya	akre

Table 7.8: Distribution of stems for *yamakr* 'to walk'

The verbs for 'to come' and 'to go' display two stems, a durative stem and an extended stem. These are the only exceptions to the pattern that a verb must have a restricted stem before it may have an extended stem. The patterns are identical for both verbs so we can exemplify the distribution using the forms of 'to go' in Table 7.9.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		an	antn
Pluractional	-	antn	antn

Table 7.9: Distribution of stems for *an* 'to go'

7.1.3   Positional verbs

There are two distinct characteristics of positional verbs: no positional verbs have a restricted stem and positional verbs never occur in perfective aspect. It is impossible to express these verbs with a perfective meaning. These verbs are stative. The default pattern has just two stems: a pluractional stem and a non-pluractional stem. The other pattern, restricted to a single verb, has three stems, a durative stem and imperfective stem and a pan-aspectual plural stem.

The default pattern of positional verbs is presented in Table 7.10. The pluractional form of these stems is derived from the non-pluractional form through the addition of *kan* to the right edge of the verb stem. The exception is *ikn*, 'to be in a sitting position atop something' which has the suppletive stems, *kn* non-pluractional and *kan* pluractional. This potentially is the origin of the pluractional thematic element of the other positional verbs pluractional stem.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		ritr	ritr
Pluractional	-	ritrkan	ritrkan

Table 7.10: Stem distribution for *iritr* 'to be in a standing position'

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		eme	owme
Pluractional	-	onta	onta

Table 7.11: Stem distribution for *yeme* 'to be in a sitting position'

There is a single three-stem positional verb, *yeme* 'to be in a sitting position', presented in Table 7.11. It has a durative stem used for non-pluractional durative events, an imperfective used for non-pluractional imperfective events and a pluractional stem used in both durative aspect and imperfective aspect for pluractional events.

7.1.4   Summary of stem patterns

Table 7.12 contains a summary of the total stem patterns found in Ngkolmpu. The first column is the stem pattern. The second column is the percentage of verbs that display that pattern. The remaining columns represent the possible feature combinations relevant for stem selection. In this case, P refers to pluractional whilst NP refers to the non-pluractional.

Empty cells represent forms which do not exist. For example, verbs exhibiting the default 2-stem pattern do not occur with any durative non-pluractional forms. Notice, that no pattern has the combination of perfective and pluractional; it is for this reason that I argue that pluractional and perfectivity are incompatible in this language in Section 7.2.4.2.

Pattern	%	NP.PFV	P.PFV	NP.DUR	P.DUR	NP.IMPF	P.IMPF
Default 3-stem	8.5%	RS	-	DUR	EX	EX	EX
Default 2-stem	51%	RS	-		EX	EX	EX
Default 1-stem	25.5%		-		EX	EX	EX
Single stem	9%	EX	-	EX	EX	EX	EX
Positional	5%		-	DUR	DUR	IMPF	IMPF
Sit	0.25%		-	DUR	P	IMPF	P
Walk	0.25%		-	NP.DUR	P.DUR	IMPF	IMPF
Come/Go	0.5%		-	DUR	EX	EX	EX

Table 7.12: Summary of stem patterns in Ngkolmpu

7.2   (Plur)actionality

In this section we look at the details of the features which govern the alternation of stems for verbs in Ngkolmpu. As stated the two features are pluractionality and aspect. Aspect has been discussed in Section 6.3.1.1, so this section is largely focused on exploring the role of pluractionality in stem alternation.

Before we begin the discussion, I need to discuss some terminological issues as there are multiple terms for the phenomenon in question and none of them are entirely satisfying. The term *pluractional* was introduced by (Newman, 1980). It was originally intended to replace the term *intensive verb* that was used by linguists working on Niger-Congo languages. In addition, there is the term *verbal number* first introduced in (Durie, 1986) and also used in (Corbett, 2000).

The term pluractional is problematic. These verbs occur in pairs or triplets where one form is the pluractional form and the others are not and yet the term focuses on just a single value of what is a multi-value set. In this grammar, categories are assumed to be captured by features which have a set of values. Features are named based on a common property that all the values represent. However, pluractionality derives its name from one of the values rather than the class to which each of the values belong. An equivalent would be to refer to the morphosemantic category of argument number as *plurality* rather than *number*.

However, the alternate term verbal number is also problematic for a number of different reasons. Whilst it is of an appropriate structure in which the category is not named for any single value, the specification of *verbal* within the category name is a misnomer. Firstly, what Durie (1986) calls nominal number is also marked on verbs and as such the category of pluractionality is not uniquely 'verbal'. Secondly, whilst the use of the term number captures the relatedness of the domains of number it is also potentially ambiguous and easily confusable when discussing differences between categories. Finally, the major problem is that the term is that the term *verb* is a category within the domain of morphosyntax yet the category under question is a semantic category which classifies events or actions rather than verbs.

To that end, I will refer to the phenomenon as (plur)actionality, although for readability this will typically be without the paranotheses. The feature will be formalised as *actionality*[4] and, in Ngkolmpu, this has two values *plural* and *non-plural*. These will be glossed as PL and NPL where appropriate. I will use the term *pluractional* to refer the concept of plural actionality and its associated forms since it already features so prominently in the literature. Non-plural actionality will be referred to as *non-pluractional*. I will also make use of two terms introduced by Corbett (2000) to cover the two domains of (plur)actionality: these are *participant number* and *event number* and are discussed in the following section. The term *argument number* will be used to unambiguously refer to the standard domain of number, i.e. what has been referred to as nominal number by Durie (1986) and Corbett (2000).

7.2.1   Pluractionality in typological context

Pluractionality is a category, typically lexical, which is typically referred to as "expressing a multiplicity of events" (Hofherr & Laca, 2012, p. 1). Newman (2012, p. 195) describes pluractionals and the domain of plural events as a semantically complex concept consisting of a range of semantic features as follows:

> Pluractionals indicate repetition, frequentativeness, habitualness, and succession of action over time; expansiveness and scattered distribution

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[4]The term actionality has been used by various authors as an English equivalent to aktionsart (Tatevosov, 2002) although this usage is not particularly common.

in space; actions affecting multiple persons, animals, or objects, either in large number or individually; and actions (often embodied in intransitive verbs) carried out by multiple persons, either as a group or individually.

Of the semantic domains listed by Newman, the most commonly discussed, and most relevant to Ngkolmpu, refer to "the number of times an action is done or the number of participants in the action" (Veselinova, 2006, p. 149). This basic distinction between actions and participants is the basis of the two dimensions identified by Corbett (2000), which he labels *event number* and *participant number* respectively.

In addition to event number and participant number, various other semantic dimensions mentioned by Newman have been discussed in the literature. The most extensive of these pertains to distributivity, which is conceived of as plural events distributed across participants, space or time. A thorough exploration of the issues pertaining to pluractionality and distributivity can be found in Hofherr and Laca (2012). Other work has discussed the notion of pluractionality as a type of lexical aspect or aktionsart such as found in Cusic (1981) and later Hrakovskij and Khrakovskiĭ (1997).

The two domains most relevant for the Ngkolmpu data that we examine in the following sections are event number and participant number. Event number refers to the iteration or repetition of events. At its simplest this involves a distinction between single events and multiple events and may include such events as habituals or iteratives. Event number is often closely related to aspect; this is even more significant for Ngkolmpu since both the aspect system and verbal number system share the system of stem alternation as part of their realisation. Corbett (2000) directly cautions against treating realisations of repeated action aspectual features as instances of verbal number. This is particularly significant since the conceptual distinction between event plurality and aktionart is a subtle one. If we consider aktionsart to refer to the inherent temporal properties of a given verb then verbs which display habitual or iterative features would be considered a type of aktionsart and an example of event plurality. The language specific applications of these distinctions are discussed in much greater detail in Section 7.2.2.

Participant number refers to the number of participants that events are performed

either by or to. Typically this is restricted to S and O arguments, i.e.absolutive arguments (Corbett, 2000, p. 252). For example, if a single person sits down this is a singular event yet if multiple people sit this is a plural event. Contrastingly, argument number refers to the cardinality of referents rather than relating to number of participants the event effects. The distinction of participant number from argument number marked on the verb is the focus of much work on verbal number, see Frajzyngier (1985) and, in more detail, Durie (1986). This is particularly important in Ngkolmpu since argument number and verbal number are both marked on the verb but are clearly distinct categories. The work of Durie (1986) particularly makes the importance of distinguishing between these two categories quite clear since not only are they often realised very differently from each other, they serve quite different functions.

Corbett's typology discusses languages which marked event number and participant number distinctly. However, Ngkolmpu marks both these semantic concepts identically and would be treated as a 'mixed language' according to Corbett (2000). The language-specific category of pluractional in Ngkolmpu should be considered to entail either (or both) of these semantic domains. In addition, it is helpful to make the conceptual distinction between the two as they provide different analytic challenges.

The position implicit in all the above propositions is that pluractionality and the expression of event plurality is a lexical feature of verbs. This statement is the overt claim of Mithun (1988) in her analysis of Central Pomo, a view that is reflected in the typological overviews by Corbett (2000) and Durie (1986). Other purely descriptive works differ in their treatment of this phenomenon. Frajzyngier (1993) in his grammar of Mupun lists the marking of event plurality via stem alternation, i.e. pluractionality, in his section of lexical features. In contrast, in his grammars of Pero and Wandala (Frajzyngier, 2012, 1989), in which the expression of verbal plurality is discussed at length, he never overtly addresses the questions as to whether this is an inflectional or lexical category. However, in these languages the productivity of the system and similar features to those found in Ngkolmpu suggests this is a candidate for an the inflectional treatment and deserve closer attention. Veselinova (2006) is one of the few works to examine this question in broader typological context in her work looking at properties of stem suppletion. In her section on verbal number, which we are calling

(plur)actionality, she argues that some languages display evidence that verbal number pairs should be considered paradigmatic derivational suppletion. In this case the category is still a feature of the lexicon but is semi-productive and maintains a formal relationship between singular and plural forms of the verb. In Section 7.3, I argue that verbal number is best analysed as inflectional in Ngkolmpu.

7.2.2   Pluractionality in Ngkolmpu

In verbs in Ngkolmpu which display a stem alternation (around 60%), the alternation is sensitive to pluractionality. As discussed, this can be conceived of as either participant number or event number; both are marked identically as in example (7.4). Note the use of *mel* 'head' in these examples, this is used to refer to counted groups of animates.

(7.4)   a.   *Markusu John sumerk*

Markus-w   John sw\merk/
Markus-SG.ERG John SG>3.RCT\follow.DUR

'Markus followed John (yesterday).'

b.   *Markusu yuow mel pi sumerkntn*

Markus-w   yuow mel   pi   sw\merkntn/
Markus-SG.ERG three head DEM.ABS   SG>3.RCT\follow.EX

'Markus followed those three (people) (yesterday).' *Participant number*

c.   *Markusu John yuowmpr sumerkntn*

Markus-w   John yuowmpr   sw\merkntn/
Markus-SG.ERG John three.times SG>3.RCT\follow.EX

'Markus followed John three times (yesterday).' *Event number*

7.2.3   Pluractionality and argument number

One of the key analytic challenges of identifying pluractionality in a given language is when both pluractionality and argument number are marked on verbs, as we find in Ngkolmpu. Much of the literature has focused on the distinctions between these two categories. Works such as Durie (1986), Gil (1993) and Corbett (2000) give us

a number of diagnostics for distinguishing between the categories. In Ngkolmpu, the distinction between the two categories is quickly evident despite both being marked on the verb, as they have different realisations, display different alignments and mark different values. The following sections examine these diagnostics in turn and provide descriptive coverage of these phenomena whilst explicitly establishing the category of pluractionality.

7.2.3.1   Different locations

The most immediately obvious distinction between the marking of verbal number and argument number is the location of their realisation. Argument number is realised at the peripheries of the verb, that is on the agreement affixes, whilst pluractionality is realised through stem alternation.

As we have seen, verbs are indexed for up to two arguments. The number of the actor is encoded by a suffix, that of the undergoer by a prefix. A point which confuses this somewhat is that number is not marked for third person undergoers. See Section 5.3 for a more detailed discussion of argument structure and an explanation of the terms used here. Compare this to examples below in which pluractional marking for the verb *akinai* 'to erect' is marked through stem alternation. Example (7.5a) represents a singular event marked with the durative stem. For plural events, via either participant number (7.5b) or event number (7.5c) then the extended stem must be used.

(7.5)   a.   *Markusu lampu pr pi swowo*

Markus-w   lampu   pr   pi   sw\owo/
Markus-SG.ERG   light   tree   DEM.ABS   SG>3.RCT.DUR\erect.DUR

'Markus erected that light post (yesterday).'

b.   *Markusu yuow pr pi swakin*

Markus-w   yuow   pr   pi   sw\akin/
Markus-SG.ERG   three   tree   DEM.ABS   SG>3.RCT.DUR\erect.EX

'Markus erected those three poles (yesterday).'

c. *Markusu lampu pr pi swakun yuowmpr*

Markus-w   naempr lampu pr   pi   sw\akin/
Markus-SG.ERG one   light   tree DEM.ABS SG>3.RCT.DUR\erect.EX
yuowmpr
three.times

'Markus erected that one light post three times (yesterday).'[5]

7.2.3.2   Different alignment

Event number, i.e. pluractionality when it involves the number of participants, is typ-
ically sensitive to the absolutive argument regardless of the organisational system of
the language (Durie, 1986). As we have seen in Chapter 6, argument number marking
on verbs in Ngkolmpu marks agreement on a split-S system. Compare this to mark-
ing of verbal number triggered by participant plurality in which the absolutive (7.6)
argument is the only possible trigger. The plurality of the ergative argument is never
relevant for verbal number (7.6c).

(7.6)   a. *Markusu John sumerk*

   Markus-w   John sw\merk/
   Markus-SG.ERG John SG>3.RCT.DUR\follow.DUR

   'Markus followed John (yesterday).'

   b. *Markusu yuow mel pi sumerkntn*

   Markus-w   yuow mel   pi   sw\merkntn/
   Markus-SG.ERG three head DIST.ABS SG>3.RCT.DUR\follow.EX

   'Markus followed those three (people) (yesterday).'

   c. *pinta yuow melya John sumerki*

   pinta yuow mel-ya   John sw\merk/i
   3.NSG three head-NSG.ERG John NSG>3.RCT.DUR\follow.DUR

   'Those three (people) followed John (yesterday).'

---

[5]Because it kept falling down after each attempt.

(7.7)   a. *ngko krenteknt mwangke*

        ngko   kr\ntek/nt   mwa-ngke
        1SG.ABS SG.FUT.DUR\return.DUR house-ALL

        'I will return home.'

    b. *ni krnentnti mwangke*

        ni   kr\nent/nti   mwa-ngke
        1.NSG NSG.FUT.DUR\return.EX house-ALL

        'We (3+) will return home.'

Prefixing verbs also display an absolutive agreement pattern with the S of the prefixing verb marked with a prefix, like the O argument of transitive verbs. As this is the same alignment as verbal number marking, alignment is a less strong diagnostic for the distinction between nominal number and verbal number. However, whilst the status of this absolutive pattern of agreement appears similar to the pattern of marking of participant number, it is restricted to a sub-part of the overall system, i.e. prefixing verbs only. If we compare the entire system of argument number marking on verbs, we have a split system, which only sometimes displays an absolutive alignment. Thus, we must consider the parameters of both systems, the argument number system and the pluractionality system to be operating under distinct alignment patterns and which is suggestive that these are distinct systems. See Chapter 8 for a discussion of mixed alignment systems in the language.

7.2.3.3   Different values

The final piece of evidence we have to demonstrate a distinction between nominal and verbal numbers is that they operate on different values of number. Argument number marks singular versus non-singular, one or more, whereas verbal number marks plural, three or more, versus non-plural, less than three. This naturally involves something of a simplification since argument number refers to cardinality of entities whilst verbal number is inherently more complex involving cardinality of events repeated and potentially distributed over either space or time. However for the purposes of this diagnostic, we are interested in what point in the cardinality value is significant for the expression of the categories, in this case it is either two or three.

Example (7.8) demonstrates argument number for the actor argument. The actor argument in example (8.4a) is singular, example (8.4b) refers to two actors which involves the non-singular agreement marking but the durative verb stem. Example (8.4b) involves three actors, which maintains the non-singular agreement marking but triggers the use of the extended stem. As such, pluractionality is clearly sensitive to a value of three or more.

(7.8)　a.　*ngko krnteknt mwangke*

　　　　ngko　　　kr\ntek/nt　　　　　　mwa-ngke
　　　　1SG.ABS　SG.FUT.DUR\return.DUR　house-ALL

　　　　'I will return home.'

　　　b.　*ni krnteknti mwangke*

　　　　ni　　　　kr\ntek/nti　　　　　　mwa-ngke
　　　　1NSG.ABS　NSG.FUT.DUR\return.DUR　house-ALL

　　　　'We (2) will return home.'

　　　c.　*ni krnentnti mwangke*

　　　　ni　　　　kr\nent/nti　　　　　　mwa-ngke
　　　　1NSG.ABS　NSG.FUT.DUR\return.EX　house-ALL

　　　　'We (3+) will return home.'

It is important to note that the same distinction is held for event number as well as participant number (7.9).

(7.9)　a.　*ngko krnteknt mwangke*

　　　　ngko　　　kr\ntek/nt　　　　　　mwa-ngke
　　　　1SG.ABS　SG.FUT.DUR\return.DUR　house-ALL

　　　　'I will return home.'

　　　b.　*ngko yempokampr krnteknt mwangke*

　　　　ngko　　　yempokampr　kr\ntek/nt　　　　　　mwa-ngke
　　　　1SG.ABS　two.times　　SG.FUT.DUR\return.DUR　house-ALL

　　　　'I will return home twice.'

    c. *ngko yuowmpr krnentnt mwangke*

ngko   yuowmpr   kr\nent/nt   mwa-ngke
1SG.ABS three.times SG.FUT.DUR\return.EX house-ALL

'I will return home three times.'

Interestingly, this results in a type of emergent dual marking that arises from the interaction between the two systems. The combination of non-singular argument number marking for the absolutive argument combined with a non-pluractional verb stem allows a dual reading to be inferred. In practice this is often not evident as third person undergoers, the most frequent absolutive marked arguments, do not mark argument number, either in the nominal or verbal morphology. This can result in an ambiguity between singular and dual absolutive arguments with non-plural verbs (7.10a).

(7.10)   a. *Markusu pi sumerk*

Markus-w   pi   sw\merk/
Markus-SG.ERG 3.ABS SG>3.RCT.DUR\follow.DUR

'Markus followed him / them two (yesterday).'

          b. *Markusu pi sumerkntn*

Markus-w   pi   sw\merkntn/
Markus-SG.ERG 3.ABS SG>3.RCT.DUR\follow.EX

'Markus followed them / him (three times) (yesterday).'

7.2.4   Pluractionality and aspect

Verbs in Ngkolmpu are marked for one of three categories of aspect: perfective, durative or imperfective, as discussed in Section 6.3.1.1. Typically, aspect is marked through the use of a dedicated suffix which immediately follows the verb and the use of the agreement markers. In each of the following sections, I shall give a brief overview of each of these systems however the aspectual system is primarily discussed in Chapter 6. For the purposes of this discussion, the most interesting fact about the aspect system is that is also uses the same system of stem alternation as verbal number. This is potentially unsurprising, since pluractionality and aspect cover similar semantic do-

mains. In the following section I argue that they must be considered distinct systems despite using the same formal apparatus.

7.2.4.1 Aspect and stems

Verbs in the perfective take a tense-invariant undergoer agreement prefix, known as the β-series (§ 6.7.1). In addition to this, there are a number of TAM suffixes which immediately follow the verb stem along with a set of perfective actor agreement prefixes which do alternate for tense (§ 6.8.1).

Out of the verbs which mark perfective, which is about 70% of total verbs[6], 90% of these use a dedicated stem, namely the restricted stem. This is not functionally motivated since the external inflectional material, the affixes, are sufficient for fully determining the aspect value. The following example demonstrates a distinction between perfective and durative inflection.

(7.11)   a.   *Markusu John sumerk*

   Markus-w   John sw\merk/
   Markus-SG.ERG John SG>3.RCT.DUR\follow.DUR

   'Markus followed John (yesterday).' Durative

   b.   *Markusu John smerbant*

   Markus-w   John s\merba/nt
   Markus-SG.ERG John SG>3.RCT.PFV\follow.RS

   'Markus followed John (yesterday).' Perfective

As discussed, many verbs also display a distinct stem for imperfective aspect known as the extended stem (7.12).

(7.12)   *Markusu John imerkntn*

   Markus-w   John y\merkntn/n
   Markus-SG.ERG John SG>3.RCT.IMPF\follow.EX

   'Markus was following John (yesterday).'

---

[6]Note that whilst 85% of verbs follow the basic stem patterning as presented in Section 7.1, many are defective in lacking a restricted stem. As such around only around 70% of total verbs mark perfective.

As we have seen, this extended stem is also used to express pluractionality. This suggests that these are driven by a single value which unifies the two categories. However, as we shall see, Ngkolmpu displays evidence that whilst these features share the same formal apparatus the two are distinct yet interrelated categories.

7.2.4.2 Pluractionality and perfectivity

As stated, pluractionality and perfective aspect are not a possible combination in Ngkolmpu. Consider the examples in (7.13). In (7.13a), we have a perfective recent past form expressed by the beta prefix and the *nt* suffix together with the restricted stem. This is ungrammatical when combined with either trigger of pluractionality, i.e. event number (7.13b) or participant number (7.13c). This is to be expected since the restricted stem is non-pluractional. However, constructing a perfective with either of the other stems is also ungrammatical and there remains no other way to construct a perfective pluractional construction. Typically, speakers would use durative with the extended stem (7.13d-7.13e) although it is important to note that these are durative events rather than perfective.

(7.13)   a. *Markusu Jon smerbant*

Markus-u   Jon   s\merba/nt
Markus-SG.ERG John SG>3.RCT.PFV\follow.RS

'Markus followed John.' (perfective) (yesterday)

   b. **Markusu yuowmpr Jon smerbant*

Markus-w   yuow   mel pi
Markus-SG.ERG three.times Jon SG>3.RCT.PFV\follow.EX
sw\merkntn/

'Markus followed John three times.' (perfective) (yesterday)

   c. **Markusu yuow mel pi smerbant*

Markus-w   yuow mel pi   sw\merkntn/
Markus-SG.ERG three head DEM.ABS SG>3.RCT.PFV\follow.EX

'Markus followed those three (people).' (perfective) (yesterday)

d. *Markusu yuowmpr Jon sumerkntn*

    Markus-w   yuow   mel pi
    Markus-SG.ERG three.times Jon SG>3.RCT.DUR\follow.EX
    sw\merkntn/

    'Markus followed John three times.' (durative) (yesterday)

e. *Markusu yuow mel pi sumerkntn*

    Markus-w   yuow mel pi   sw\merkntn/
    Markus-SG.ERG three head DEM.ABS SG>3.RCT.DUR\follow.EX

    'Markus followed those three (people).' (durative) (yesterday)

This is also the case for verbs which belong to the single-stem pattern, i.e. a single stem used for all aspects and regardless of pluractionality. In (7.14), we can see that the combination of perfective morphology, here indicated by the beta prefix and the *nt* suffix, and pluractionality is ungrammatical (7.14b-7.14c). Pluractional events may only be expressed in either the durative or imperfective aspects (7.14d-7.14e).

(7.14)   a. *Markusu Jon seibentnt*

         Markus-u   Jon   s\eibent/nt
         Markus-SG.ERG John SG>3.RCT.PFV\tell

         'Markus followed John.' (perfective) (yesterday)

     b. **Markusu yuowmpr Jon seibentnt*

         Markus-w   yuow   mel pi   sw\eibent/
         Markus-SG.ERG three.times Jon SG>3.RCT.PFV\tell

         'Markus told John three times.' (perfective) (yesterday)

     c. **Markusu yuow mel pi seibentnt*

         Markus-w   yuow mel pi   sw\eibent/
         Markus-SG.ERG three head DEM.ABS SG>3.RCT.PFV\tell

         'Markus told those three (people).' (perfective) (yesterday)

     d. *Markusu yuow mel pi sweibent*

         Markus-w   yuow mel pi   sw\eibent/
         Markus-SG.ERG three head DEM.ABS SG>3.RCT.DUR\tell

         'Markus told those three (people).' (durative) (yesterday)

e. *Markusu yuow mel pi yeibenten*

Markus-w	yuow	mel	pi	sw\eibent/
Markus-SG.ERG	three	head	DEM.ABS	SG>3.RCT.IMPF\tell

'Markus told those three (people).' (imperfective) (yesterday)

This is particularly interesting since an absolutive argument with a cardinality of three or more is obligatorily a pluractional event which cannot be combined with perfectivity. Note, that this holds for the entire verbal lexicon; there are no verbs in the language which allow pluractional semantics or the pluractional stem to occur with perfective inflection.

7.2.4.3   Distinguishing pluractionality from aspect

We have seen that the categories of aspect and pluractionality overlap with respect to both semantics and to their formal expression. These categories are clearly closely related, yet they entail neither exactly the same distribution nor semantics. In this section, we see evidence that these must be treated as distinct categories for certain verbs in the language and thus for the overall system. I also explore additional subtleties regarding differences in the distribution and semantics of these two categories.

We can clearly see that these are distinct categories analytically as not all verbs in the language express both these categories using the same stem. Consider Tables 7.8, 7.11 and 7.10 repeated here in Tables 7.13, 7.15 and 7.14. These are the paradigms of stem distribution for the verbs, 'to walk', 'to be in a standing position' and 'to be in a sitting position' respectively. These are all prefixing verbs with 'to walk' being one of the dynamic prefixing verbs and the other representing the set of stem distributions for all positional verbs. We see three distinct patterns here that treat pluractional forms distinct from imperfective forms, as such we require distinct categories to capture the distribution of forms in this regard. Interestingly, we see contrasting patterns as to the distribution of these stems. In one pattern, the verb *yamakr* 'to walk' marks imperfective as without regard to pluractionality. The other pattern, in both the positional verb distributions, marks pluractional with a single stem regardless of the aspect value. This suggests that neither category inherently overrides the other.

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		amakr	akre
Pluractional	-	ya	akre

Table 7.13: Distribution of stems for *yamakr* 'to walk'

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		ritr	ritr
Pluractional	-	ritrkan	ritrkan

Table 7.14: Stem distribution for *iritr* 'to be in a standing position'

	Aspect		
	Perfective	**Durative**	**Imperfective**
Non-pluractional		eme	owme
Pluractional	-	onta	onta

Table 7.15: Stem distribution for *yeme* 'to be in a sitting position'

Semantically, we can also argue for a clear distinction between the two categories which is borne out in the distribution of stems in the language. Whilst both categories are obligatorily marked with the extended stem for those verbs which have an extended stem, the use of one category does not necessarily imply the other. First, we have already seen a number of examples in which pluractional verbs are not inflected for imperfective aspect, as the pluractional durative verb in (7.1) demonstrates. If we assume inflection to be obligatory then we must assume in this example that the semantics of pluractionality does not entail imperfectivity.

7.1. *Markusu John sumerkntn*

Markus-w   John sw\merkntn/n
Markus-SG.ERG John SG>3.RCT.DUR\follow.EX

'Markus was following John (yesterday).'

In addition to the above, we can see that the reverse is also true, i.e. that use of the imperfective does not necessarily entail pluractionality. Consider example (7.15) in which the imperfective inflection is used to mark a semantically durative yet unequivocally singular event. There is no interpretation which we can conceive of this utterance as being plural; the participant number is singular as indicated by the verb agreement. Thus, we can see that imperfective aspect does not automatically entail pluractionality.

(7.15)   *nmaei pno pastor belandampa surarntpi*

nmaei pno   pastor belanda-mpa su\rar/rnt=pi
before that.time pastor Holland-ABL   SG.RMT.DUR\be.EX=DIST.ABS

'At that time (long ago), the paster was from Holland.' [20131005-KCD-YG-MapStory 017]

In more controlled examples we can see how this works. The example in (7.16a) is formally imperfective and as such it may have an iterative, habitual or a continuous interpretation. Whilst iterativity and habituality may be considered forms of pluractionality, it does not follow that continuousness must also entail plurality unless one

assumes that continuousness involves a plurality of time points. However, this position is not maintainable. Consider the example (7.16b); in this example the absolutive argument is singular and the extended stem is used. The translation of this unambiguously involves a repeated event; if pluractionality could also entail continuousness then this should also be interpreted as involving a durative event yet it cannot.

(7.16) a. *Markusu John imerkntnen*

Markus-w   John y\merkntn/n
Markus-SG.ERG John SG>3.RCT.IPFV\follow.EX

'Markus was following John (yesterday).' (durative, iterative or habitual)

b. *Markusu John sumerkntn*

Markus-w   John sw\merkntn/
Markus-SG.ERG John SG>3.RCT.DUR\follow.EX

'Markus followed John (a few times) (yesterday).'

It is clear that both the semantics and expression of pluractionality and imperfective aspect are related. However, since they do not overlap entirely, i.e. neither one entails the other, descriptive adequacy requires us to posit two distinct categories in the formal system of this language. The question as to whether the concept of plural events and imperfectivity are features of the same domain is a much broader question to be answered by theoretical linguists and typologists. It is clear at this point however, that the two must be treated as distinct categories analytically in this language.

7.3 Grammatical status of stem alternation

In this chapter, I have claimed that pluractionality is an *inflectional* category in Ngkolmpu, i.e. that it is part of the grammar rather than the lexicon. The arguments for this come from the extent of pluractionality in the system; Ngkolmpu displays one of the most extensive examples of pluractionality to date with over 70% of verbs displaying an alternation sensitive to pluractional semantics. However, the strongest evidence

comes from the fact that all three stems appear to belong to a single lexeme and share an infinitive.

Treating pluractionality as inflectional is contrary to the position that is often argued in the theoretical and typological literature. (Corbett, 2000) implicitly holds the viewpoint that verbal number (here pluractionality) is a lexical feature of verbs, that is, that the pairs of alternating stems used to express pluractionality are separate but related lexical items. (Mithun, 1988) examines such pairs in Central Pomo and argues for a similar treatment as in Corbett's typology. This viewpoint is often implicit or not considered in much of the other descriptive work on categories of verbal number and pluractionality in various languages.

Veselinova (2006), examines this claim in her typology looking at cross-linguistic patterns of suppletion. She establishes that, for a number of languages, the relation between pluractional pairs should be considered paradigmatic derivation, in which the two forms exist as derivationally distinct forms in the lexicon but have a paradigmatic, i,e: predictive, relationship with each other. This position is very similar to what (François, 2012) has argued for Hiw. In this section, I argue that there is evidence in Ngkolmpu that verbal number should not only be considered paradigmatic, as per this definition, but also inflectional. As such, this potentially requires a revision of the typologies and a new look at the edge case languages in which verbal number has been categorised as instances of paradigmatic derivation.

The alternate analysis, in which pluractionality and therefore stem alternation is lexical, would involve positing separate lexemes for each of the stems in the language. This is the typical approach taken in regarding the purely aspectual alternations in Slavic languages (Dahl, 1985). A similar approach is implicit in Fedden (2014) in his analysis of Mian aspectual verb stems, in which aspectually distinct stems are derivationally related to each other. However this case also distinct from Ngkolmpu since it only involves aspect distinctions and nor pluractionality. These points aside, determining between inflection and derivation is always clear; in an earlier work Fedden (2011) treats the same pairs of stems as belonging to single verb, which suggests an inflectional approach. This just demonstrates that the distinction between inflection and derivation is not always clear cut. However in Ngkolmpu, there is more clear ev-

idence that the stems belong to a single lexeme: all three stems always share a single infinitive form and that infinitive is always formed from the extended stem and cannot be formed from any other stems (7.17). Contrastively, in Mian each stem may form its own infinitive.

(7.17)   a. *ngko mwangke onentainm srtiuro*

ngko   mwa-ngke o-nent-ai-nm   s\rtiu/ro
1SG.ABS house-ALL THM-return.EX-INF-INST SG>3.RCTPST.PFV\finish

'I finished returning home (yesterday).'

b.   * ngko   mwa-ngke o-ntek-ai-nm   s\rtiu/ro
1SG.ABS house-ALL THM-return-INF-INST SG>3.RCTPST.PFV\finish

c.   * ngko   mwa-ngke eke-ai-nm   s\rtiu/ro
1SG.ABS house-ALL return.PFV-inf-inst SG>3.RCTPST.PFV\finish

Infinitives are always built from the extended stem regardless of the pluractionality or aspectual value of the proposition. The example in (7.17) above is a singular, punctual event in which the main verb is in the perfective form yet the infinitival adjunct takes the extended stem. Thus, it appears that infinitives are not sensitive to the semantic properties of pluractionality and aspectual distinctions. If we take the analysis that each of the stems is a distinct lexical item then we must posit infinitives for only those forms which correspond to imperfectivity and pluractionality, i.e. the extended stem. This is problematic since infinitives clearly do not entail those features as example (7.17) shows. In addition, this means that a huge percentage of the lexicon is defective in lacking infinitive forms. Thus, for reasons of parsimony we should treat these as single forms all participating in a single lexeme rather than independent lexical items, which suggests that the relationship in question is an inflectional one.

Part II

Distribution

Chapter 8

Distributed exponence and parallel structures

In this chapter we explore the notions of distributed exponence and parallel structures in syntax and semantics. This chapter aims to chart the distribution of feature values and syntactic categories across the systems of the language by providing an explicit description of the elements which realise each relevant category. The discussion is framed within a typological context, with the aim of providing a typologically relevant description of distributed exponence.

This chapter is divided into four sections. In Section 8.1, we set out a typology of exponence relationships in which to situate distributed exponence. This allows us to provide an explicit and typologically informed definition of distributed exponence for use in the rest of the chapter. The remainder of the chapter seeks to describe and classify the instances of distributed exponence in Ngkolmpu. Section 8.2 explores the role of distributed exponence in the inflectional morphology of verbs. Section 8.3 explores how mismatches between elements across morphological domains can also be seen as a type of feature distribution. This involves person and number features in both nominal morphology, especially pronominals, and the corresponding agreement markers on verbs. There is also a discussion of the interactions between distinct systems which result in interactions at the level of semantics. The final section (8.4) examines distribution across morphosyntactic resources which make reference to grammatical re-

lations, in particular how the five-term system of Ngkolmpu grammatical relations is distributed across four distinct two-term morphosyntactic systems.

8.1 Distributed exponence in typological context

In this section, I provide an explicit definition of distributed exponence and place it within a more general typology of exponence. The notion of exponence, and thus distributed exponence, is strictly related to the domain of inflectional morphology (Stump, 2001). However, I also take a more abstract definition of distributed exponence in order to identify a number of analogous structures in other levels of the grammar in Ngkolmpu, specifically in the syntax and semantics. The parameters of typological variation defined in this section will be used to characterise the empirical discussion in the following sections. Before we define distributed exponence, it is necessary to establish a typology of exponence relationships.

8.1.1 Typology of exponence

In this section, I present a typology of exponence more generally in which we can later situate distributed exponence. This is presented in order to more carefully articulate and understand the types of relationships that exponence phenomena hold. The study of the various exponence phenomena has been the focus of many recent studies (Baerman, Brown, & Corbett, 2005; Baerman, Corbett, & Brown, 2010; Maiden & Goldbach, 2011; Stump & Finkel, 2013; Harris, 2016); Stump (2016) provides the most comprehensive overview of the relevant phenomena, with a particular focus on the role of such phenomena for Paradigm Function Morphology, however there is no existing work that serves to provide a unified typology of exponence relationships. Our aim in this section is to provide a brief overview of the set of exponence phenomena and to provide a unified framework for comparing and understanding them.

This section makes use of a number of concepts from canonical typology (Corbett, 2006). Canonical typology aims to set out a possibility space of phenomena or languages by identifying the parameters of variation of the phenomenon under investiga-

tion. Let us start with the definition of exponence adapted from Stump (2001, p. 11):

(8.1) **Exponence** is the (only) association between inflectional markings and morphosyntactic and morphosemantic properties.

Given our definition of exponence, we can define the simplest exponence relationship as: a unique one-to-one relationship between inflectional content and form. This relationship is known as *canonical exponence*. From this, we can identify two points of possible variation as deviation: 1. deviation from the one-to-one mapping of content to form and 2. deviation from having a unique mapping, i.e. having unique exponents for each value. However, we shall see that violation of the uniqueness of exponents is actually a type of many-to-one relationship, in which many features share a single form. Given this, we can classify all possible exponence phenomena as either many-to-one or one-to-many. Many-to-many phenomena can be described in terms of interacting many-to-one and one-to-many phenomena.

Extending the logic of this division, we can further classify these by the type of relationship on the 'many' side. These can be classified as either a disjunction, i.e. x OR y, or conjunction, i.e. x AND y. Further, these can be operating either within a paradigm, i.e. a single lexeme, or across paradigms, i.e. different lexemes. For example, a single feature value might have multiple realisations for a single lexeme, i.e. English past tense of 'to burn' may be either *burned* or *burnt*, or a feature value might have different realisations for different lexemes, i.e. English past tense may be realised by a suffix, *walked*, or ablaut, *rode*. The particular details of each phenomena will be discussed and exemplified in more detail later in this section. For now, we only need to note that these parameters allow us to create possibility space of exponence phenomena as presented in Table 8.1; you also notice that disjunctive relationships are not possible across paradigms, this is also discussed later. In the rest of this section, I exemplify and examine each phenomenon in turn, starting with disjunctive relationships within a paradigm. This set of relationships will serve as the basis of our discussion of distributed exponence later in this chapter and the next.

Within a single paradigm, the disjunctive many-to-one mapping of content to form is known as *syncretism*. This is one the most common and well known of exponence

	Many-to-one	One-to-many
Within a paradigm		
Disjunction	syncretism	overabundance
Conjunction	cumulative exponence	multiple exponence
Across paradigms		
Conjunction	homophony	inflectional classes

Table 8.1: Typological space of exponence phenomena

	SG	PL
NOM	stēll-a	stēll-ae
ACC	stēll-am	stēll-ās
GEN	stēll-ae	stēll-ārum
DAT	stēll-ae	stēll-īs
VOC	stēll-a	stēll-ae
ABL	stēll-a	stēll-īs

Table 8.2: Latin paradigm of stēlla 'star' - first declension

phenomena and is discussed in Matthews (1974) but for an in-depth discussion of the topic from both a typological and theoretical perspective see Baerman et al. (2005). Syncretism involves multiple feature values, of either the same feature or different features, realised by a single form. Classic examples of this come from nominal paradigms such as the Latin first declension paradigm presented in Table 8.2, which contains numerous instances of syncretism. For example, consider the -*a* suffix, which serves to mark the nominative, the vocative or the ablative all in the singular. This is generally thought of as a violation of having unique exponents for each feature. However, under our typology, we can see that this phenomenon involves multiple distinct feature values mapping on to a single form. In addition, this is a disjunctive relationship, as the presence of the -*a* suffix does not entail all three of the cases simultaneously, only that it may potentially be any one of these.

We can characterise syncretism as the result of a number of distinct structural features. At the broadest level, these involve three distinct structural motivations: underspecification, defaults and morphomic categories. How these different structural

relationships are modelled is discussed in Section 9.1.2. For this chapter, we only need to note that underspecification involves the capturing of natural classes, the related notion of a default represents an elsewhere distribution and morphological forms that represent the intersection of multiple feature values that do not form any natural class we will call morphomic categories.

The one-to-many disjunctive relationship is known as *overabundance* (Thornton, 2011). The canonical example of this phenomenon involves a single feature value which has multiple optional realisations. For example, in certain varieties of English there are two optional realisations of the past tense form of the verb *to burn* either *burnt* or *burned*. Both these realisations are semantically equal, i.e. they have the same meaning and distribution, although these may be associated with sociolinguistic variables.

Now we turn to conjunctive phenomena. In the case of many-to-one, this is known as *cumulative exponence* (Matthews, 1974). This involves multiple feature values, of different features, which are realised by a single form. Consider the Latin paradigm once again, notice the suffix -*am* realises both accusative case and singular simultaneously. This is distinct from syncretism since only this set of values is associated with this form, yet there are a number of interesting interactions with syncretism. As stated, syncretism involves a disjunctive relationship between features; formally this may be classified as an inclusive disjunction when it involves values of distinct features. For example, the β-series prefix realises either future tense or perfective aspect, however it is a logical possibility that this involves the intersection of future tense and perfective aspect. In these cases it also involves cumulative exponence, yet at other times the prefix only entails one of these two feature values. Thus, cases of syncretism may also be classified as to whether they potentially entail cumulative exponence and viceversa. More generally cumulative exponence may be classified by the number and type of features marked by a single form.

Contrasting with cumulative exponence is extended or multiple exponence. Matthews (1974) refers to this with the term extended exponence, however most contemporary authors now refer to this phenomenon as multiple exponence, which I will also do here. Caballero and Harris (2012) is a good overview of the issues of multiple exponence and Harris (2016), as yet unpublished, promises to be a very extensive examination

of this phenomenon. Multiple exponence entails the one-to-many realisation of content to form, so that a single feature is realised by multiple elements on the verb. As an example, consider the English past participle of 'write' *written*. In this case the past participle is indicated with both the vowel ablaut and the *en* suffix, e.g. [ɹaɪt] → [ɹɪt-ən]. Cases of multiple exponence may be characterised by the number of location of inflectional sites and the feature involved.

In addition to the phenomena above, which all refer to exponence relationships within a paradigm, exponence relationships can also hold across paradigms. The first of these involves the many-to-one relationship in which distinct feature values share a single realisation yet occur in different paradigms. This is generally known as *inflectional homophony* but also as *polyfunctional exponence* (Stump, 2014). A trivial example of this type is the *s* suffix in English, which marks both plural on nouns and present tense and third person singular agreement on verbs. In relation to our typology this involves multiple feature values realised by a shared form in different paradigms.

Exponence may also be mapped one-to-many across different lexemes. This involves a single feature value which has multiple realisations for different lexemes. For example, the feature of past tense in English may be realised as either the suffix *-ed*, i.e. *walked*, or a stem ablaut, i.e. *wrote*, depending on the lexeme involved. Instances of this phenomenon are what are commonly known as *inflectional classes*. Stated simply, this phenomenon involves a single feature value with multiple realisations depending on the lexeme. The topic of inflectional classes is a large one with a long history of discussion in the literature. Stump and Finkel (2013) is a thorough and unique discussion of the issues of inflectional classes.

These phenomena are the primary exponence phenomena, i.e. the logical set of possible basic exponence relationships. This set will allow us to define distributed exponence, which is notably absent from the typology, from this explicit typological perspective. As we shall see, distributed exponence is actually a secondary phenomenon made up of various specific interactions of these primary phenomena. In Section 8.2.2, I classify each example of distributed exponence in the inflection of TAM categories by the variations found in each component phenomenon discussed in this section.

	Perfective	**Durative**	**Imperfective**
Future Potential	s-pino-ø-omo-ø	s-pino-nt-omo-ø	
Imperative-Hortative	s-pino-ø-ø	s-pino-nt-ø	
Future-Irrealis	s-pino-ø-ø	s-pino-nt-ø	
Present		y-pino-ø-ø	
Hodiernal Past	s-pino-ø-y	y-pino-ø-y	y-pino-en-ø
Recent Past	s-pino-nt(ro)-ø	sw-pino-ø-ø	
Remote Past	s-pino-ngk-ø	y-pino-ø-w	sw-pino-rnt-ø
Past-Potential		y-pino-ngk-ø	

Table 8.3: Paradigm of 2sg>3 forms of *opinoi* 'to touch'

8.1.2   Distributed exponence

In this section, we define the phenomenon of distributed exponence. Consider the partial Ngkolmpu verbal paradigm in Table 8.3. Given this paradigm, it is not possible to state a single exponent of future tense, a category which subsumes future potential, imperative-hortative and future-irrealis. Instead, we must resort to saying that future tense is realised by the combination of the prefix *s-* and the *-ø* actor suffix. In this way we say the *exponence* of future tense is *distributed* over the prefix and the suffix.

It is clear that this future tense example is related to multiple exponence as it involves marking of features in multiple sites, namely both the prefix and suffix. Thus, we can describe this as a type of multiple exponence, though multiple exponence alone is not sufficient to define the phenomenon. In addition, we need to specify that none of the individual elements alone are sufficient to determine the feature values; only once multiple elements have been considered can one determine the feature values. In multiple exponence, features are typically marked redundantly on the word yet in distributed exponence this is not the case. This typically reflects interactions of distinct patterns of syncretism. In our example, the *s-* prefix is not sufficient to determine that a form is future tense since it also occurs in the perfective aspect. Similarly, the *-ø* suffix occurs in a number of different feature values beyond future tense. As such, we can define distributed exponence as a secondary phenomenon resulting in a specific

SG.A   3.U   FUT   POT   DUR
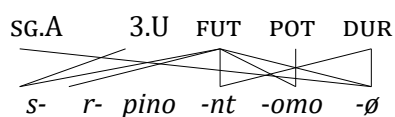
s-   r-   pino   -nt   -omo   -ø

Figure 8.1: Mapping of exponence for *srpinontomo* 'one might touch him'

interaction between multiple exponence and syncretism.

From this we can provide a specific definition of distributed exponence as follows:

(8.2)   **Distributed exponence** is the phenomenon in which morphosyntactic and morphosemantic properties are marked *non-redundantly* at *multiple inflectional sites*.

We have seen that the feature of multiple inflectional sites is a characteristic of multiple exponence. As such, we can characterise any example of distributed exponence as we would multiple exponence, i.e. with respect to the number and location of inflectional sites. In addition, we have seen that the characteristic of non-redundancy is the result of contrasting patterns of syncretism at each inflectional site, which cross-cut each other to deliver a more specified result. Note that syncretism at each inflectional site must be organised along contrasting lines in order for us to say that the features are distributed: if the syncretism of each inflectional site were identical then we could not see that exponence is distributed. Thus distributed exponence must be characterised as integrated contrastive syncretisms. In addition we must also characterise it in the same way that we would characterise syncretism, i.e. whether the syncretism is motivated by underspecification, defaults or morphomic structure. Finally, we know that cumulative exponence is also sensitive to syncretism and this must likewise be considered; cumulative exponence plays a strong role in the organisation of the Ngkolmpu paradigms and we also discuss this at length when characterising the exponence relationships of the Ngkolmpu verbal paradigm.

For a concrete example, the interactions between multiple exponence and cumulative exponence can be demonstrated diagrammatically for the word form *srpinontomo* 'one might touch him' as per Figure (8.1).

From a typological perspective, the term distributed exponence may be used to

3.SG	*y-trom-ngr*
3.DU	*yä-trom-aran*
3.PL	*yä-trom-ngr*

Table 8.4: Partial paradigm of Nen *tromngr* 'to be erected'

characterise exponence relationships at a number of distinct levels: in terms of the exponence of specific feature values, the exponence of those features more generally or as a characterisation of entire paradigms or languages. To illustrate this, let us consider a simple example of distributed exponence from Nen (Evans, 2015a). Table 8.4 is a partial paradigm of the Nen verb *tromngr* 'to be erected'; from this paradigm, we can say that the exponence of the feature value 'plural' is distributed across the prefix *yä* and the suffix *ngr*. However, we can also make the generalisation that the exponence of number is distributed across the prefix and the suffix. Finally, we can say that verbs in Nen display distributed exponence as a typological feature of the organisation of their paradigms. In this way, distributed exponence may be thought of as a gradient phenomena characterised by the extent to which each specific feature value is distributed. The canonical case of distributed exponence would involve all feature values for all features for a given lexeme being distributed across every inflectional site. However, such examples are unlikely to occur in natural language; instead, we can categorise examples of distributed exponence by the extent to which specific values that make up the paradigm are distributed across their inflectional sites.

From a more synthetic perspective, the issue of distributed exponence can be thought of as the interaction between multiple abstract units. These units represent the syncretic categories, from whichever type, particular to each inflectional site. These can be thought of as dividing the total possibility space of paradigm into a number of smaller units. The interactions between the two units, then, may either fully or partially determine the feature values of the inflected word. Take again the simple example of distributed exponence from Nen (Evans, 2015a) in Table 8.4. In this example the exponence of 'plural' is distributed over the prefix *yä-*, non-singular, and the suffix *-ngr*, non-dual. We can think of these two paradigms as abstract shapes that divide the three values into two values as per Figure 8.2. Once these are unified, we get the full three

Prefix   Suffix   Unified paradigm
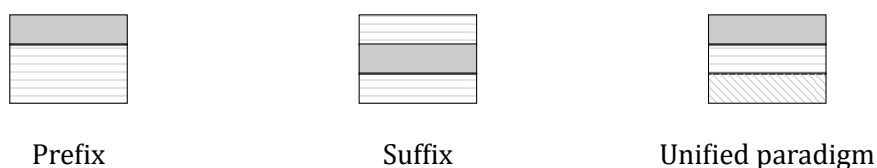
Figure 8.2: Distribution of number features

	Common nouns	Pronouns
A	-ngku	-ø
S	-ø	-ø
O	-ø	-nya

Table 8.5: Yankunytjatjara case endings (vowel final stems)

value set that defines the entire paradigm.

By considering distributed exponence as this particular type of interaction of abstract units we can draw interesting parallels to other units of grammar. This involves any instances where grammatical systems collapse their total number of distinctions to a subset of those total distinctions. In addition, another grammatical system referring to the same set of principles collapses the set into a different number of abstract units. A classic problem of this sort comes from instances where languages have two concurrent case systems, such as in many Australian languages. Table (8.5), adapted from Goddard (1982), comes from Yankunytjatjara dialect of Western Desert Language. In this language, common nouns are marked on an ergative-absolutive basis whilst pronouns and anaphorics are marked on an nominative-accusative basis. Goddard (1982) argues that these are not two concurrent systems but rather a tripartite system in which each subsystem only refers to certain subsets of that system. In the later sections of this chapter, we shall see similar types of pattern in the semantics and in the syntax of Ngkolmpu.

8.1.3   Distributed exponence in the literature

The term exponence comes from Matthews (1972, 1974) in which it is used to refer to the relationship between inflectional content and inflectional material. The term is used to refer to any relationship between these elements in order to distance itself

from the purely incremental relationship inherent to the concept of a morpheme. The term has been used in the post-Matthews tradition of word-and-paradigm models and in what has more recently become known as realisational approaches to morphology (Stump, 2001). Matthews (1974) introduced three types of complex exponence relationships: cumulative exponence, extended exponence and multiple exponence, all of which we discussed above.

The term distributed exponence is not in common use but has been used in a few different, although related, ways. The way it is used in this thesis is the same as Caballero and Harris (2012). Their work is a typology of multiple exponence and whilst they recognise that distributed exponence is best treated as a specific subtype of multiple exponence, they exclude it from their typology, although they do provide an example of distributed exponence from Georgian. Schreiner and Stone (2015) use the term in their discussion of the exponence of a particular future modal form in Cherokee. Arka (2012) also uses the term in his discussion of the expression of dual in Marori, an unrelated but neighbouring language to Ngkolmpu. Döhler (2016) in his grammar of Komnzo, a language related to Ngkolmpu, describes the same phenomenon under the term 'distributed morphology', note that he uses the term to describe what I am calling distributed exponence and not the theory of morphology with the same name. Evans (2015a) working on the more distantly related Nen, describes distributed exponence as 'cross-paradigm unification'. Essentially, these are all the same phenomenon.

Other authors have identified a number of other phenomena that are clearly related to but not identical to distributed exponence. Cable (2010), in an unpublished seminar paper, discussed a topic he calls radically discontinuous exponence in Na-Dene languages. Despite this paper being unpublished it has had some impact on the discussion of distributed exponence and is worth mentioning here. Cable defines radically discontinuous exponence as a single feature expressed via a discontinuous sequence of units, none of which are individually the realisation of any identifiable inflectional feature. Functionally, this definition would describe the set of phenomena that we are investigating under distributed exponence. The major point of departure is that Cable sees this as a subtype of discontinuous exponence, a phenomenon which is strictly embedded in a generative model of morphosyntax, in which syntactic heads, or rather the

features associated with them, are expressed by discontinuous realisations counter to cross-linguistic expectations encoded within the generative framework.

8.1.4   Distributed exponence and morphological complexity

It is worth relating this discussion to the discussion of morphological complexity, especially as it pertains to exponence. In recent years, the discussion of the notion of complexity has received a great deal of attention (Ackerman & Malouf, 2013; Stump & Finkel, 2013; Baerman, Brown, & Corbett, 2015). Notions of complexity have become crucial in our understanding of the limits of the functional and cognitive impacts on language. Distributed exponence represents crucial new ground in this discussion as both a relatively unexplored type of complex exponence and one that is an extreme edge case in the design space of exponence, being both relatively uncommon and involving multiple complex phenomena. The simplest model of exponence is a one-to-one mapping between feature values and their exponents. This is the canonical ideal of exponence (Corbett, 2006) as discussed. Thus, any characterisation of the above types of exponence will represent different dimensions of morphological complexity. Distributed exponence which represents the intersection of multiple primary complex exponence phenomena can then be classified as additionally complex.

8.2   Distributed exponence in Ngkolmpu verbal inflection

At no place in the grammar of Ngkolmpu is the notion of distributed structure more apparent than in the inflectional morphology of verbs. Primarily, this concerns tense, aspect and mood features realised across the three TAM marking inflectional sites discussed in Section 6.4. However, in certain contexts person and number may also be said to be distributed across these sites. In this section, we explore the empirical issues of how each feature is distributed and begin the analysis to establish these elements as semi-autonomous subparadigms.

To exemplify these phenomena we will use the verb *opinoi* 'to touch'. An inflectional paradigm for this verb is presented in Table 8.6. This is the paradigm of forms

	Perfective	**Durative**	**Imperfective**
Future Potential	s-pino-ø-omo-ø	s-pino-nt-omo-ø	
Imperative-Hortative	s-pino-ø-ø	s-pino-nt-ø	
Future-Irrealis	s-pino-ø-ø	s-pino-nt-ø	
Present		y-pino-ø-ø	
Hodiernal Past	s-pino-ø-y	y-pino-ø-y	y-pino-en-ø
Recent Past	s-pino-nt(ro)-ø	sw-pino-ø-ø	
Remote Past	s-pino-ngk-ø	y-pino-ø-w	sw-pino-rnt-ø
Past-Potential		y-pino-ngk-ø	

Table 8.6: Paradigm of 2sg>3 forms of *opinoi* 'to touch'

across tense, aspect and mood controlled for person and number of its arguments. All forms in the paradigm represent third singular actor acting on third singular undergoer, except for the imperative-hortative forms which are second singular actor. Table 8.7 contains the 'future' forms, i.e. future potential, future-irrealis and imperative hortative. These are indexed as having a second person subject acting on a first singular undergoer. These forms have been included since imperative-hortative forms display a different undergoer prefix for this combination of agreement features as discussed in Section 6.7.1. I will note that there are no imperfective forms in the non-past tenses which is why the forms are absent from the paradigm.

These paradigms will form the basis of our discussion of distributed exponence. Verbs of this class display just enough inflectional material to fully determine the entire inflectional paradigm and are therefore ideal for discussing the limits of distributed exponence. In addition, they display the most regular patterning of affixes, lack a stem alternation, and in the singular actor display the same inflectional material as prefixing verbs despite being an ambifixing verb.

In Chapter 6, we discussed the inflectional sites of the Ngkolmpu verb. For the inflection of tense, aspect and mood values there are primarily three relevant inflectional sites, the undergoer prefix, the TAM suffix and the actor suffix. A verbal inflection template is presented in Table 8.8. Five inflectional sites are indicated. For the purposes

	Perfective	Durative	Imperfective
Future-Potential	nt-pino-omo-ø	nt-pino-nt-omo-ø	
Imperative-Hortative	kn-pino-ø-ø	kn-pino-nt-ø	
Future-Irrealis	nt-pino-ø-ø	nt-pino-nt-ø	

Table 8.7: Paradigm of 2SG>1NSG 'future' forms of *opinoi* 'to touch'

of this section, we will treat the undergoer prefix along with the TAM prefix as a single site as it is for third person undergoer agreement. The two suffixes will be treated as independent subparadigms. The cross-indexing marker which also marks future tense is discussed where relevant but since it may be absent in certain person and number combinations it is not a required part of the TAM inflection and can be largely excluded from our discussion.

Inflectional prefixes		**Stem**	**Inflectional suffixes**	
undergoer			TAM	actor
(TAM)	Undergoer PERS/NUM + TAM	(Cross-index PERS)	(TAM suffix)*	Actor PERS/NUM + TAM

Table 8.8: Verbal inflection template

8.2.1   Interactions of sub-paradigms

One way to think about distributed exponence is as the interaction between multiple independent units of organisation, each of which makes reference to a single set of feature values. In the case of distributed exponence of TAM marking, we can consider this the interaction between three loci of verbal inflection: the undergoer prefix, the TAM suffix and the actor suffix. Each site, or subparadigm, makes reference to the set of 16 TAM features but collapses the number of distinctions down to a smaller set of syncretic forms. From this perspective, distributed exponence concerns the interactions
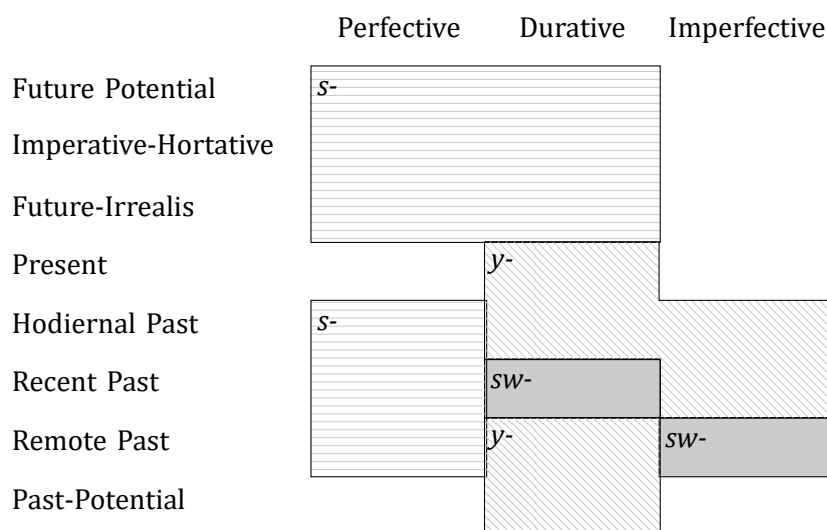
Figure 8.3: Undergoer paradigm shape

between the paradigm or subparadigm shapes. In the the remainder of this section, we consider each of the paradigm shapes in turn.

There are three distinct series of undergoer prefixes plus two sub-series of the β-series. However, since the three main series are sufficient to fully determine all of the 16 feature values once all inflectional material has been considered, it is simpler to consider just the three series as the most relevant for understanding distributed exponence. The undergoer prefixes are the most abstract of the three subparadigms; each series indicates a combination of features which are not reducible to any coherent underspecified feature value.

If we take the paradigm of TAM feature values as presented in Table 8.6 and generalise over only the form of the undergoer prefix we can abstract a paradigm shape as per Figure 8.3.

Turning to the TAM suffix subparadigm, if we take the minimal amount of specification at a given inflectional site there are six distinct forms including the default zero marked form. Note that this is for the verb *opinoi* 'to touch' as presented in Table 8.3, verbs whose stem ends in a consonant display a slightly different pattern; although the same number of distinctions is still maintained. We should also note that in the future potential durative there is a co-occurrence of two elements which belong to this inflec-

| | Perfective | Durative | Imperfective |

Future Potential — *-omo*

Imperative-Hortative — *-ø* / *-nt*

Future-Irrealis

Present — *-ø*

Hoderinal Past — *-en*

Recent Past — *-nt*

Remote Past — *-ngk* / *-rnt*

Past Potential — *-ngk*

Figure 8.4: TAM suffix paradigm shape

tional site: both the *nt* of future durative and the *omo* of the future potential. As such, this is a distinct cell which shares identity across other cells in this paradigm. We can then visualise this particular paradigm shape as per Figure 8.4.

Finally we have the actor suffix paradigm shape. There are three affixes which occur in this slot for all verbs and supply the minimal, although sufficient, number of distinctions needed to determine features of the inflected verbs once combined with the inflectional sites. This paradigm shape is considerably simpler and is presented in Figure 8.5.

Once we combine all three visualised subparadigms we can see the total of 16 TAM distinctions fully realised as per Figure 8.6. By visualising the paradigms in this manner it makes it much clearer how the process of distributed exponence works. In each of the three subparadigms the total number of possible distinctions are reduced to a much smaller subset through a variety of morphological structures. However, when each subparadigm is apposed to the other relevant subparadigms in the word we see the full set of 16 distinctions as presented above.

	Perfective	Durative	Imperfective
Future Potential	-ø		
Imperative-Hortative			
Future-Irrealis			
Present			
Hodiernal Past	-i		
Recent Past	-ø		
Remote Past		-u	
Past-Potential		-ø	
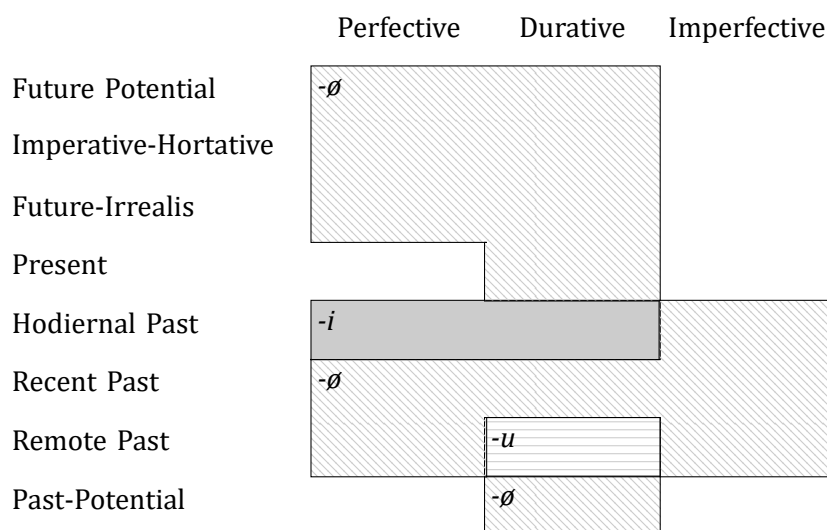
Figure 8.5: Actor paradigm shape

8.2.2   Distribution of tense, aspect and mood

We have seen broadly how tense, aspect and mood are articulated through the inter-actions between each of the inflectional sites. In this section, we take a more analytic approach and examine each value in order classify its exponence based on our typo-logical classifications presented in Section 8.1.

As discussed, not all categories are distributed to the same degree; indeed, in Ngkol-mpu many features and their values are not distributed at all. Consider again the para-digm of *opinoi* 'to touch' repeated here in Table 8.9. In this paradigm there are a num-ber of forms and features which are fully determined by a single affix and therefore are not examples of distributed exponence. The imperfective values, for instance, are indicated by TAM suffixes which are unique to those particular cells as highlighted in bold. In these examples, all three TAM feature values are fully specified and there is no distribution of TAM values. Compare this to the hodiernal past forms, indicated by italics in the table; ignoring for now the problem of the imperfective, in these exam-ples hodiernal past tense is fully specified by the suffix, i.e. it is unique to this tense value. In these examples, the aspect value appears to be indicated by the prefix yet since these alone are insufficient to indicate aspect, i.e. these prefixes are not unique to these cells, we must say that aspect is distributed across the two inflectional sites for

Figure 8.6: Combined TAM paradigm shape

these forms. So that we have some features and values, namely hodiernal past tense, which are fully specified whilst others, namely aspect, are distributed. At the other extreme is the present tense durative form, which is indicated by the intersection of three default forms, all three of which are required to determine all three of the TAM features of this form.

In the remainder of this section, I explore the extent and the details of the distribution for each of the feature values presented in (8.3).

	Perfective	**Durative**	**Imperfective**
Future Potential	s-pino-ø-omo-ø	s-pino-nt-omo-ø	
Imperative-Hortative	s-pino-ø-ø	s-pino-nt-ø	
Future-Irrealis	s-pino-ø-ø	s-pino-nt-ø	
Present		y-pino-ø-ø	
Hodiernal Past	*s-pino-ø-y*	*y-pino-ø-y*	y-pino-**en**-ø
Recent Past	s-pino-nt(ro)-ø	sw-pino-ø-ø	
Remote Past	s-pino-ngk-ø	y-pino-ø-w	sw-pino-**rnt**-ø
Past-Potential		y-pino-ngk-ø	

Table 8.9: Paradigm of 2sg>3 forms of *opinoi* 'to touch'

(8.3) • ASPECT: PERFECTIVE, DURATIVE, IMPERFECTIVE

• TENSE: FUTURE, PRESENT, HODIERNAL PAST, RECENT PAST, REMOTE PAST

• MOOD: REALIS, IRREALIS, POTENTIAL, IMPERATIVE-HORTATIVE

For each value we will examine its classification as distributed exponence. This involves examining the extent of its multiple exponence and the types and nature of the syncretism, with a particular focus on instances where we have contrastive syncretism. Finally, we explore any interactions with cumulative exponence. Cumulative exponence between agreement and TAM will be assumed and not discussed in this section.

8.2.2.1 Aspect

Aspect displays a prominent role in the organisation of the paradigm. Aspect is marked in all three inflectional sites, although typically the combination of undergoer prefix and the TAM suffix is sufficient to determine the aspect value for most forms. The actor suffix rarely is required in the determination of aspect; there is only one instance where the actor suffix is required to determine the aspect value of the verb, i.e. the remote durative. This one example also fully determines the aspect value in question. In addition, both imperfective values are fully determined by the TAM suffix.

8.2.2.1.1   Perfective

As stated, aspect in general is indicated at all three inflectional sites relevant for TAM and thus so is perfective aspect in particular. The undergoer prefix plus the TAM suffix is always sufficient to fully determine that a form is perfective aspect. There is just a single example in which perfective is fully specified by a single affix, the recent past perfective marker *ro* for verbs stems ending with a consonant. Since this value is fully specified by the suffix, this example cannot be considered distributed exponence. All other perfective forms may be classified as distributed exponence across the two inflectional sites.

Perfective aspect is always indicated by the β-series prefix in the undergoer location. This form is also used for all future tense forms. Since the intersection of perfective and future is neither a natural class or the default form, this syncretism can be classified as morphomic. For the categories which are both future and perfective the β-series prefix is also an instance of cumulative exponence. There are three TAM suffixes relevant for the indicating perfective aspect. The unmarked default is the most common across the paradigm. The *ro* suffix has already been discussed, whilst its counterpart for verb stems ending in a vowel, *nt*, is syncretic with the future durative marker in a morphomic pattern. Lastly, we have the *ngk* suffix that when combined with the β-series is used to indicate remote past perfective. This form is also syncretic with the past-potential durative marker. Whilst these share similar semantics, marking past time reference, under our feature values above they must be treated as an instance of morphomic paradigm shape, i.e. not reducible to syntax or semantics alone, since there is no precise feature value which captures both forms.

As stated, the β-series prefix is only classified as cumulative exponence of TAM features when occurring in future perfective forms, otherwise it does not entail cumulative exponence beyond its conflation with agreement marking. The two TAM suffixes that occur in the perfective both indicate the combination of tense and aspect. Realis mood is also assumed as inherent to these past tense values.

8.2.2.1.2   Durative

All aspect values are marked at all three sites. As with the perfective aspect, the under-
goer prefix plus the TAM suffix is usually sufficient to fully determine durative aspect.
There is a single exception in the durative: the remote past durative form, indicated by
the *-w* actor suffix. For verbs which have stems ending in a vowel this suffix fully spec-
ifies both tense and aspect, whilst for consonant final verb stems this form indicates
tense and that the form is non-imperfective. All other forms are classified as involving
distributed exponence of durative aspect across these two sites.

   All three undergoer prefixes are used to indicate durative aspect in different combi-
nations. These display three complex syncretisms as discussed in the previous section.
The β-series is used for future durative and syncretic with the perfective aspect. How-
ever, when the β-series occurs in the durative aspect it does not involve any cumulative
exponence with other TAM values. The γ-series is used for the recent past durative but
is also syncretic with the remote past imperfective. This is another morphomic pattern
of syncretism. The other forms are indicated with the α-series, which is the default pat-
tern. Two TAM suffixes, besides the default zero marked suffix, are relevant for durative
aspect. The first is the *nt* future durative. This is syncretic with the recent past perfec-
tive for certain verbs. The second is the *ngk* past potential form that is also used to
mark remote past perfective.

   In terms of cumulative exponence, the γ prefix marks both recent past and durative
aspect. In the TAM suffix, we see the *nt* suffix marking both future tense and durative
aspect. Similarly, *ngk* marks both durative aspect and potential mood. The *w* actor
suffix marks both remote past and durative aspect. For verbs in which this form is
unique to these combinations, it fully specifies tense and aspect. For other verbs it
fully specifies tense and only partially specifies aspect.

8.2.2.1.3   Imperfective

Imperfectivity is always fully specified by its TAM suffix. The undergoer prefix is also
sensitive to imperfective aspect and alternates depending on the tense value. How-

ever, all other aspect marking for imperfective aspect cannot be considered distributed exponence; rather, this is multiple exponence. These two TAM suffixes are unique to these values and not syncretic with any other values. However, they do vary for tense and thus are examples of cumulative exponence in realising both tense and aspect.

8.2.2.2   Tense

Tense is the most varied of the three features in terms of its marking. It is marked across all three inflectional sites. Tense is fully specified in both the future durative and remote durative but this is restricted to the durative aspect.

8.2.2.2.1   Future

Future tense is the most complex inflectional tense marking in Ngkolmpu as it displays a rich mood distinction not found elsewhere in the paradigm. Future tense forms are indicated through a combination of the β-series undergoer prefix and the zero form TAM suffix in the perfective aspect and the *nt* suffix in the durative. However, future tense is fully specified in the future-potential mood as indicated by the marker *omo*. The cross-indexing marker also interacts in a complex way with future tense marking and if present it serves to full specify future tense in future potential and future-irrealis forms. However, there are many agreement situations where it is not present at all.

As stated, the β-series prefix is syncretic with both future tense and perfective aspect. The *nt* suffix is syncretic with some recent past perfectives, however this is not the case for all verbs. The actor suffix which occurs in this position is the default marker.

There are some interesting interactions with future tense and cumulative exponence. The *omo* future potential marker marks both future tense and potential mood. The *nt* suffix marks both future tense and durative aspect. Again, β-series forms used for future perfective entail cumulative exponence but not for future durative forms.

8.2.2.2.2   Present

There is just a single present tense form. It occurs in the durative aspect and is marked using the α-series prefix and the two zero marked default prefixes. All three elements are required to determine that this is the future form. We can thus say that present tense is distributed across all three sites. All three inflectional sites in this regard are the default forms. A form that is indicated by the interaction of numerous defaults is probably the most common type of distributed exponence cross-linguistically.

8.2.2.2.3   Hodiernal past

Hodiernal past is indicated with the *y* actor suffix with aspect indicated via an alternation between α and β prefixes. Thus, we can say that hodiernal past is fully specified by this suffix. We can note that there is no hodiernal past category in the imperfective aspect, however its semantic range is covered by a category I am calling recent imperfective. Under this analysis, we could say that the category of hodiernal past is fully specified by the actor suffix. The alternate analysis has a hodiernal past imperfective category that displays full word syncretism with the recent past and thus the *y* suffix only fully specifies hodiernal past in perfective and duratives.

The hodiernal past is indicated by the α and β prefixes, whose patterns of syncretism have already been discussed at length and involve a default and a morphomic pattern respectively. The TAM slot is filled with the zero default form. The actor suffix is always unique to this hodiernal past, taking into consideration the caveats regarding recent imperfective. Since this form only specifies hodiernal past with no cumulative exponence, it is an example of underspecification as it only indicates a single feature instead of three.

There is no cumulative exponence beyond the combination of person and number marking and TAM marking on the undergoer prefix and suffix.

8.2.2.2.4   Recent past

Recent past tense is indicated by all three of the undergoer prefixes, the α in imperfective aspect, β in perfective and γ in durative. However, in the imperfective, recent past is fully specified as are all values in the imperfective. In the perfective, recent past is fully specified by verbs which use the *ro* suffix, i.e. consonant final verb stems, but not for the majority of verbs. In the durative, recent past is indicated through the γ prefix and the default suffixes and thus constitutes distributed exponence.

Patterns of syncretism for these three forms are fairly minimal apart from each of three undergoer prefixes and the default suffixes. Contrastingly, cumulative exponence is far more prominent as each of the undergoer prefixes serves to mark both tense and aspect in these cells. The TAM suffixes that also occur in these values mark a combination of tense and aspect.

8.2.2.2.5   Remote past

The remote past forms are also indicated by all three undergoer prefixes. However, compared to the recent past the use of the durative and imperfective are reversed, with the α marking durative, the γ marking the imperfective and the β marking the perfective. The imperfective form again is fully specified. Recent past tense is also fully specified by the use of the *w* suffix in the durative and the perfective for verbs whose stems end with a consonant. For vowel final stems, the remote perfective, however, is distributed across a combination of the β prefix and the *ngk* suffix.

In terms of cumulative exponence, the prefixes serve to mark both tense and aspect. The TAM suffixes of the imperfective and the perfective both mark a combination of tense and aspect in these examples. For the durative this is the actor suffix rather than the TAM suffix, however it can be characterised similarly.

8.2.2.3   Mood

There are four mood values: realis, irrealis, imperative-hortative and potential. Realis is subsumed by all non-future tenses except for the specific past potential category. Arguably, past potential could be itself a mood separate from future potential since they share no formal properties, just similar semantics. However, we will treat potential as a single value here although since the future and past potential forms share no exponents each will be discussed individually.

8.2.2.3.1   Irrealis

Generic irrealis mood always combines with future tense, if not future time reference, in the form of the future-irrealis form. Like all future tenses, it is indicated by a combination of the β-series prefix and the default zero marked actor suffix. In the durative form, it also occurs with the *nt*, however this occurs across moods in the future tense. Thus, we can say that irrealis is distributed over the undergoer prefix and the actor suffix.

For most person and number values, the future-irrealis and imperative-hortative are entirely identical. However, the second singular and first non-singular undergoer these are separate as shown in Table 8.7. The β' suffix used to mark irrealis mood is syncretic with future potential forms and so these forms are still distributed. This particular relationship is one of underspecification.

8.2.2.3.2   Potential

The two potential moods are marked with a specific TAM marker. In the future potential this form is unique to future potential and fully specifies the inflected forms as potential mood. In the past potential, the TAM suffix *ngk* is also used for a realis mood value and instead we must say that potential mood in the past potential is distributed across the prefix and the TAM suffix.

Since the future potential form is unique, it is not syncretic with any other category.

In the past potential category, the form is syncretic with perfective remote past. This is a morphomic syncretism.

The *omo* form which marks future potential is an example of cumulative exponence, serving to mark future tense and potential mood. The *ngk* suffix similarly serves to mark both past tense and potential mood.

8.2.2.3.3   *Imperative-hortative*

The imperative-hortative forms are marked through a combination of the undergoer prefix and the actor suffix. These forms are identical to the future-irrealis category for most person and number values and as such the discussion here will only touch on what was not covered in that section. The only distinction occurs in the 2nd singular and 1st non-singular undergoer agreement forms, in which the β' prefix is used. This is syncretic with perfective more generally in a morphomic relationship.

8.2.2.4   *Aggregated tense, aspect and mood values*

In this section, I briefly consider the single feature analysis in light of our discussion above. Instead of three independent features, this analysis entails a single aggregated TAM feature with 16 distinct values, each of which corresponds to the filled cells of the paradigm in Table 8.3. From this perspective there are three categories which are fully specified and are not candidates for distributed exponence. These are the recent past imperfective and the remote past imperfective for all verbs. For verb stems ending with a consonant, the recent past perfective form is fully specified by its TAM suffix, whilst for verb stems ending in a consonant the remote durative is fully specified. All other forms are distributed over multiple inflectional sites.

8.3   Distribution across domains

The tendency to distribute features across multiple systems is not restricted to the word level in Ngkolmpu. Features are also distributed across morphological domains at the level of syntax. In this section we explore how person and number are distributed

across both pronouns and agreement markers. Parallel to this, we also see distinct feature sets or verbal number and nominal number interacting at the level of semantics to create dual marking in the language which otherwise makes no reference to a category or feature value of dual.

8.3.1   Free nominals and agreement

The systems of pronouns and verbal agreement in Ngkolmpu are organised along contrasting parameters in a way that allows for the distribution of the features of person and number across their interactions. Relevant to the interactions between agreement and pronouns are the ergative, absolutive and dative free pronouns as these are the only cases which occur on indexed nominals and, naturally, both agreement markers.

The ergative and dative pronouns distinguish all three persons in both singular and non-singular. Thus we can discount these from our discussion of distribution since they already fully determine the feature values of the nominal to which they refer. The absolutive pronouns only mark number in the first person. The paradigm of absolutive pronoun forms is repeated here in Table 8.10. These can be abstracted to the paradigm shape presented in Figure 8.7 as we have done for the affixes on verbs in the previous section.

	1	2	3
SG	ngko	mpu	pi
NSG	ni	mpu	pi

Table 8.10: Absolutive pronoun paradigm

Figure 8.7: Absolutive pronoun paradigm shape

As we have seen, absolutive arguments may occur indexed by either agreement affix: the actor suffix, as in middle constructions (§ 5.4.1.2), or by the undergoer, such as in transitive construction (§ 5.4.2.3) and for prefixing verbs in intransitive construc-

tions (§ 5.4.1.1). Whilst both the agreement markers and the pronouns indicate the same type of features, i.e. person and number, they are organised along contrasting lines as discussed below. In addition, the absolutive argument may occur with either of the agreement markers and as such we must consider all combinations of these markers and the absolutive pronouns.

The undergoer prefix paradigm for person and number is presented in Table 8.11. All three persons are distinguished but number is not distinguished in third person agreement. Whilst we have number distinguished in most person values, there are only three unique forms. This creates a rather unusual paradigm shape that can be abstracted to the shape in Figure 8.8; notice that the two non-adjacent cells of second singular and first non-singular are identical.

	1	2	3
SG	w	n	y
NSG	n	y	y

Table 8.11: Undergoer agreement paradigm

If we compare these two paradigms together, as they would occur in an utterance, we get a unified paradigm shape as per Figure 8.9. This has person and number distinguished for first and second persons but not for third person. Thus we can say that the expression of person and number is distributed over both the pronoun and the agreement. Interestingly, neither undergoer agreement nor absolutive pronouns mark number; as such, number is rarely marked in this position. However, since pluractionality is sensitive to the absolutive argument, the cardinality of the this argument can usually be inferred as we will see in the following section.
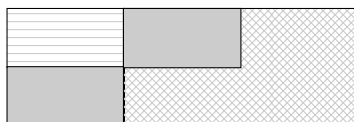
Figure 8.8: Undergoer agreement paradigm shape

In the actor agreement, we see a simpler yet more interesting pattern. For most actor agreement markers series we have only a distinction of number, i.e. person is not

Absolutive   Undergoer   Combined
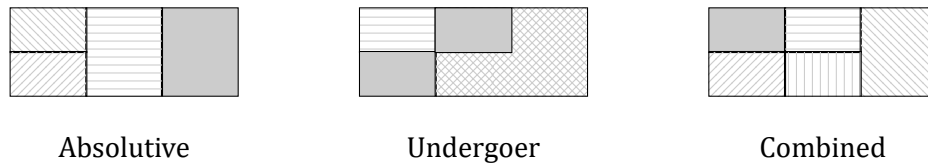
Figure 8.9: Distribution of undergoer values

	1	2	3
SG	∅	∅	∅
NSG	e	e	e

Table 8.12: Actor agreement paradigm

marked. The paradigm of forms for the default actor agreement is given in Table 8.12 and abstracted to a paradigm shape in Figure 8.11. Thus when we combine the strictly number marking actor agreement paradigm with the primarily person marking of the absolutive paradigm, we get a fully realised paradigm of six cells indicating all person and number combinations. We can say that in these instances the expression of person and number is distributed over both the pronoun and the agreement marker in such a way that person is indicated by pronouns and number by the agreement. We can note however, that in these cases the expression of number in first person is a case of multiple marking, i.e. a structure parallel to multiple exponence rather than actually distributed.

We have also seen that for some tense, aspect and mood categories the actor suffix does mark person values. Two distinct patterns may occur: the first groups third person against first and second in the non-singular, and the other groups first against second and third. These two paradigms are presented in Tables 8.13 and 8.14 respectively. These are interesting because they display a distinct organisation from the absolutive paradigm in Table 8.10. In the absolutive paradigm, the feature of number is
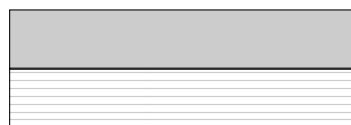
Figure 8.10: Actor agreement paradigm shape

Absolutive   Actor suffix   Combined
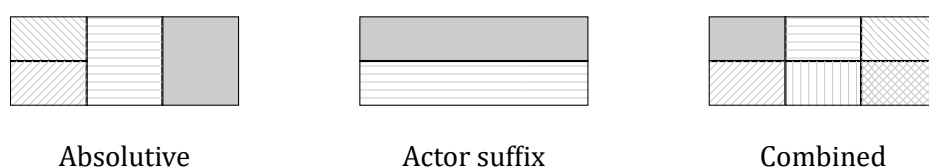
Figure 8.11: Distribution of actor values

	1	2	3
SG	∅	∅	∅
NSG	ei	ei	me

Table 8.13: Actor agreement paradigm 2

dependent on person, that is, number is only marked for a specific person value, a feature not unusual cross-linguistically (Brown & Hippisley, 2012, p. 58). However, in the actor agreement paradigms we see the complete opposite in structure: the feature of person appears dependent on number. In the actor paradigms which display person marker, person is entirely dependent on number, that is, person is only marked in the non-singular. Thus, these paradigms display a level of strong independence from each other despite both referring to the same features, a thread which is taken up in the following chapter. It should be noted that the actor agreement markers which do mark person do not affect the combined paradigm of available values although not all values can be considered distributed in these instances.

8.3.2   Argument number and pluractionality

In Section 7.2.3, we saw that the features of argument number and pluractionality are grammatically distinct categories. Argument number serves to count the cardinality of an argument, indicating that a nominal element is either singular or non-singular.

	1	2	3
SG	∅	∅	∅
NSG	y	e	e

Table 8.14: Actor agreement paradigm 3

Pluractionality, contrastingly, counts the iteration of the event, either distributed over the members of the set denoted by the absolutive argument or as repeated events. Pluractionality serves to indicate whether the event is plural or non-plural. However, it is clear that these two categories are semantically related as the two features interact semantically. This interaction occurs via morphosyntactic interactions in a way that is similar to the types of distribution that we have been discussing.

As stated, argument number is marked on both verbs via agreement, most pronouns, and on nominals marked for ergative case. Argument number is always organised on a singular vs. non-singular basis as evidenced by (8.4).

(8.4) a. ngko   kr\ntek/nt   mwa-ngke
           1SG.ABS SG.FUT\return house-ALL
           'I will return home.'

       b. ni   kr\ntek/nti   mwa-ngke
           1NSG.ABS NSG.FUT\return house-ALL
           'We (2) will return home.'

       c. ni   kr\nent/nti   mwa-ngke
           1NSG.ABS NSG.FUT\return.EX house-ALL
           'We (3+) will return home.'

Pluractionality is marked via verb stem alternation as discussed in Chapter 7. Pluractionality serves to mark event plurality which may be triggered by either *event number* or *participant number*. Event number involves the iteration of the event (8.5b). Participant number involves plural absolutive arguments (8.5c). Pluractionality is marked on the basis of plural (3 or more) vs. non-plural (less than 3). It should be clear here that participant number is closely related to argument number despite being a different type of feature.

(8.5) a. *Markusu John sumerk*

           Markus-w   John sw\merk/
           Markus-SG.ERG John SG>3.RCT\follow.DUR

           'Markus followed John (yesterday).'

b. *Markusu John yuowmpr sumerkntn*

Markus-w	John	yuowmpr	sw\merkntn/
Markus-SG.ERG	John	three.times	SG>3.RCT\follow.EX

'Markus followed John three times (yesterday).' *Event number*

c. *Markusu yuow mel pi sumerkntn*

Markus-w	yuow	mel	pi	sw\merkntn/
Markus-SG.ERG	three	head	DEM.ABS	SG>3.RCT\follow.EX

'Markus followed those three (people) (yesterday).' *Participant number*

The key way that the domains of pluractionality and argument number interact is through the interaction of participant number and the argument number of the absolutive argument. This can be seen in Example (8.6a) in which argument number is marked as non-singular by both the undergoer prefix and the absolutive pronoun. Yet this verb is in the durative stem, i.e. a non-plural stem. This stem indicates that the event is a non-plural event, meaning that both the event was iterated less than three times and that there are less than three absolutive arguments. Thus, if the number of the absolutive argument is more than one, i.e. non-singular, and less than three, i.e. non-plural, then there is a strict reading of two participants, i.e. dual. Yet, in our description both systems are entirely two-term systems. There has been no need to posit a number category of dual in Ngkolmpu and indeed there is no dual category. However, one can unambiguously indicate that undergoers are dual in Ngkolmpu in this manner. Evans (2012) describes the indicating of a category of dual through the interaction of two number markings, namely singular vs. non-singular and plural vs. non-plural as an areal feature. The systems he describes are clear examples of distributed exponence. The Ngkolmpu system uses the same type of contrast to achieve a similar result, but is less clearly a case of canonical distributed exponence since it uses different categories to achieve a dual marking.

(8.6)   a. *Markusu ni kunmerk*

Markus-w	ni	kwn\merk/
markus-SG.ERG	1NSG.ABS	SG>1NSG.RCT.DUR\follow.NPL

'Markus followed us (two) (yesterday).'

b. *Markus pi sumerk*

Markus-w	pi	sw\merk/
markus-SG.ERG	3.ABS	SG>3.RCT.DUR\follow.DUR

‘Markus followed him / those two (yesterday).’

Unlike distributed exponence, in which the realisation of particular feature values is distributed across a number of elements, in this case we have the full realisation of two distinct and specific feature values. Yet, since they have a semantic characterisation that overlaps, they interact in their semantics to produce an interpretation which is a typical inflectional category of argument number cross-linguistically. Their interaction is thus very similar to the notion of the distributed exponence. In this case, we can say that the meaning of dual is *distributed* over the systems of verbal number and nominal number. This is similar to what has been described for Hopi as a ‘constructed dual’ from the perspective of LFG (Sadler, 2011).

It is important to note at this point that the precise realisation of dual is not actually fully realised for most nominals. As we have seen, neither the absolutive pronoun nor the undergoer agreement mark number for third person values. Thus, if a non-plural stem occurs, and since nominal number is not marked, then the interpretation of nominal number may be either one or two, i.e. singular or dual. This is exemplified in (8.6b), in which the event is non-plural so the absolutive argument may be either singular or dual and the event is iterated less than three times. Thus, for the majority of cases, i.e. all third person pronouns and nominal phrases which do not occur with a numeral marker, we cannot provide a precise number interpretation as per the other persons. However, the semantics of number may be said to be distributed over these systems. This semantic distribution over a separate but related system appears to provide some level of compensation for the lack of number marking in absolutive arguments and undergoer marking, since a certain amount of number reference is often recoverable from the verbal number domain.

A	
S$_A$	S$_O$
O	
R	

Table 8.15: Possibility space of grammatical terms

8.4 Distribution in the syntax

In this section we apply the notion of distributed expression to the syntactic categories of grammatical relations. In Chapter 5, we introduced a set of grammatical relations, S, A, O and R. We saw that S is split between the S of prefixing verbs and the S of ambifixing verbs. We have also seen that the alignment of the case marking system is different from the alignment of the agreement system. In this section, I introduce two syntactic constructions, simultaneous action clauses and relative clauses, and show that these also display different alignment systems. From an analytical perspective, we can see that to describe the grammatical relations system for Ngkolmpu we must have four distinct terms. However in practice, any given morphosyntactic system which makes reference to grammatical relations only makes reference to a sub-set of those terms. This is parallel to the notion of distributed exponence discussed for TAM marking, in which there are 16 distinct TAM values in total but any given inflectional site makes a reduced distinction between these values.

In total, there are four distinct morphosyntactic systems which make reference to grammatical relations in Ngkolmpu. These are case-marking, the agreement system of verbs up to two arguments, and two systems of interclausal syntax, the first of which are the simultaneous action clauses which were introduced in Chapter 3, and the second of which are relative clauses which have not been discussed elsewhere in the grammar.

We could stylise the total possibility space as the set of terms as presented in Table 8.15. This represents the total possibility space of grammatical relations in Ngkolmpu as previously established.

Ergative
Absolutive
Dative

Table 8.16: System of case marking over grammatical terms

8.4.1   Case marking

We have already seen that grammatical case marking in Ngkolmpu makes reference to a two-term system, ergative and absolutive. In addition, the dative case is used to mark recipients. The basic argumentation can be seen in examples (8.7).

(8.7)   a. *Markus ntawancei*

   Markus n=t\awance/i
   Markus FOC=SG.M.HOD.PFV\fall.RS

   'Markus fell (earlier today).'

   b. *Markusu pr pi storui*

   Markus-w   pr   pi   s\toru/i
   Markus-ERG tree 3.ABS SG>3.HOD.PFV\cut.RS

   'Markus cut the log (earlier today).'

   c. *Markusu pr kari Jonen smaei*

   Markus-w   pr   kati   Jon-en   s\mae/i
   Markus-ERG tree leaf.ABS John-DAT SG>3.HOD.PFV\give.PFV

   'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

We can consider the case system as an abstraction over the total number of possible grammatical relations in which this particular system reduces this space down to a smaller set of contrasts. The grammatical case marking system then takes the overarching set of total grammatical relations as per Table 8.15 and reduces it down to the three terms as in Table 8.16. Just as we have done with our other distributed systems, we can visualise this as an abstract shape over the possibility space of grammatical terms in Ngkolmpu as per Figure 8.12.
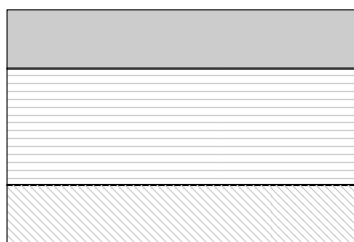
Figure 8.12: Case marking grammatical shape

Unlike the morphological categories and structures that characterise the paradigm shapes of the verbal subparadigms, the shape of grammatical relation categories are driven by syntactic considerations. Here we have an ergative system which we can assume is driven by the same syntactic-semantic considerations of ergative systems more generally, particularly elements like agency. So, whilst we typically think of morphological structure as being more arbitrary and syntactic structure as more motivated by the semantics, we still see parallel structures in which particular systems make use more abstracted categories, be they morphological, syntactic or semantic.

8.4.2   Agreement

The agreement system is extremely complex and is discussed at length in Chapters 5 and 6. The conclusion of those chapters is that the agreement system is a split-S system, in which there are two distinct morphological types of monovalent verbs. The first type indexes their sole argument with the actor suffix, as per the A argument of a transitive verb. The second type indexes their sole argument with the undergoer prefix, as per the O argument of a transitive verb. For a detailed discussion of how this system works see Chapters 5 and 6.

The specifics of this split-S agreement system is a two term system which we may call actor and undergoer and has been described for other Yam family languages as well (Evans, 2015a; Döhler, 2016). In this system only two distinctions are made and the two types of S argument are divided between the two possibilities and recipients selected by the verb are typically indexed as undergoers. This split in morphological indexing is both syntactic in nature yet also semantically driven or at least correlated. From our total number of possible arguments we can generalise over these a set of
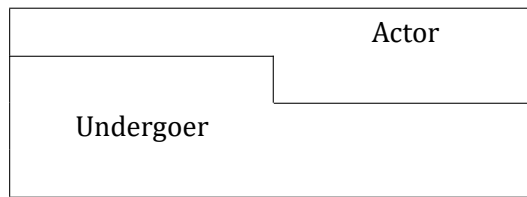
Table 8.17: System of agreement over grammatical terms

categories as per Table 8.17. This can also be abstracted to the shapes in Figure 8.13.
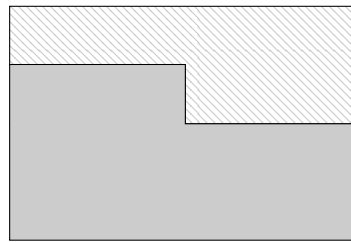
Figure 8.13: Agreement grammatical shape

8.4.3 Subordinate coreference

As we saw in Chapter 3, there is a set of subordinate constructions which mark a subordinate event which shares an argument with the matrix clause. In these constructions, the subordinate verb occurs as an infinitive and may take an O argument if bivalent. The S or A argument of the subordinate verb, depending on its valence, is coreferential with an argument from the matrix clause. This is indicated by the subordinating case marker that occurs on the infinitive verb, either the instrumental or the allative (§ 3.2.1). It is important to note that there is no construction of this type that makes reference to the R argument.

If the subordinate verb is marked with the instrumental case it indicates that the coreferential argument of the subordinate is coreferential with either the S or the A argument of the matrix clause (8.8). These have a strict alignment to the S or A argument; for example in (8.9c) the subordinate clause must refer the A argument, that is, the person running was the speaker. It cannot be interpreted to mean that the cassowary was running.

(8.8)   a.   *ngkai kongkin ytnnongk umansnm*

        ngkai   kongkin y\tnnongk/   umans-nm
        1SG.ERG letter   SGA>3U.PRS.DUR\write.workEX sitting-INS

        'I write the letter whilst sitting.'

    b.   klawo poi youme yuanm

        klawo poi   y\oume/y yua-nm
        child   DIST.LOC 3.HOD.DUR cry-INS

        'The child sat there crying'

    c.   *ngkai mpowr sarmi warkonm*

        ngkai   mpowr   s\arm/y   warko-nm
        1SG.ERG cassowary SGA>3U.HOD.PFV\shoot.PFV/ running-INS

        'I shot the cassowary whilst I was running.'

If the subordinate verb is marked with the allative case it indicates that the coreferential argument of the subordinate is coreferential with the O argument of the matrix clause (8.9). This is the opposite pattern to the instrumental case and has a similarly strict meaning. Example (8.9b) can only mean that the dog was sitting, and does not mean that the speaker was the one sitting.

(8.9)   a.   *ngkai mpowr sarmi atka owneingke*

        ngkai   mpowr   s\arm/y   atka   owne-i-ngke
        1SG.ERG cassowary SG>3.HOD.PFV\shoot.RS water drink-INF-ALL

        'I shot the cassowary whilst it was drinking water.'

    b.   *ngkai krar srsoi umansngke*

        ngkai   krar s\rso/y   umans-ngke
        1SG.ERG dog SG>3.HOD.PFV\hit.RS sit.INF-ALL

        'I hit the dog whilst it was sitting.'

    c.   *ngkai mpowr sarmi warkongke*

        ngkai   mpowr   s\arm/y   warko-ngke
        1SG.ERG cassowary SGA>3U.HOD.PFV\shoot.PFV/ running-ALL

        'I shot the cassowary whilst *it* was running.'

Instrumental
Allative

Table 8.18: Subordinate coreference over grammatical terms
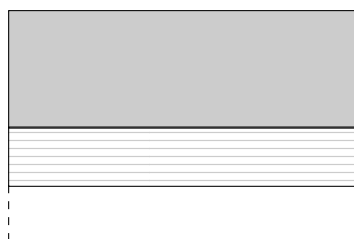
Figure 8.14: Subordinate coreference grammatical shape

These constructions, then, are organised around an accusative alignment. That is an alignment system in which the S argument is treated like the A argument rather than the O argument. This is in contrast with the two existing systems we have seen. We can then abstract this over the total grammatical relations possibility space as a generalised structure in Table 8.18. Again this is abstracted to the shape in Figure 8.14.

8.4.4   Relative coreference

Relative clauses are another type of interclausal syntactic relationship. These have not been previously discussed in this thesis. Relative clauses in Ngkolmpu display a number of unusual properties including having a strict ergative alignment in contrast to the subordinate coreference constructions.

Relative clauses are defined as a subordinate clause which delimits the reference of an nominal element by specification of the events of the subordinate clause (Andrews, 2007b, p. 206). To discuss these relationships it is useful to talk about the matrix nominal phrase and the relative nominal phrase. The latter is expressed by a relative pronoun, the set of which were presented in Chapter 3 and are reproduced here in Table 8.19. Note that the full set of relative pronouns was not obtained and gaps in the paradigm represent unknown forms. The relative nominal phrase is always a relative pronoun and it may serve any grammatical function in the relative clause taking

| | Animates | | |
	SG	NSG	Inanimate
Absolutive	mi/oro	ra	mi
Ergative	rau	raye	mi
Dative	ran	rayen	men
Possessive	mene	mencene	
Purposive			mnt
Comitative	rat		
Associative		rawi	*
Locative			moi
Ablative			mmpa
Allative			mngke

Table 8.19: Ngkolmpu relative pronouns

the appropriate case. In (8.10), the relative clause, indicated by the square brackets, occurs outside of the nominal phrase. Additionally, the head, *irepe*, occurs inside the matrix nominal phrase rather than in the relative clause. Thus, under the standard typology relative clauses in Ngkolmpu are what is known as adjoined relative clauses (Hale, 1974). It is clear that the relative clause is subordinate to the matrix clause as it occurs with a relative pronoun rather than a full pronoun which would be the case for two consecutive full clauses. In addition the relative clause occurs with the relative particle *bori* directly before the verb.

(8.10)   *Jonu irepe pi srrso tentwa mi bori ye*

Jon-w   piengku irepe pi   sr\rso/   [tent-wa
John-ERG.SG 3SG.ERG man   DIST.ABS SG>3.FUT.PFV\hit.RS tall-ADJ
mi   bori ye]
REL.ABS.INAN REL   3SG.PRS.COP.NPL

'John will hit the man who is tall.'

It is common for languages to restrict the syntactic behaviour of the relative nominal phrase element. This is typically discussed in terms of an accessibility hierarchy (Keenan & Comrie, 1977) in which the relative nominal phrase may only serve certain

functions in the relative clause. In Ngkolmpu this is not the case, since the relative nominal phrase may serve any role in the relative clause. However, rather unusually, it is the role of the matrix nominal phrase that is restricted. In Ngkolmpu only an absolutive matrix nominal phrase may be coreferential with the relative clause. In example (8.10) the relative clause refers only to the absolutive argument, *irepe pi* 'the man', and cannot mean that John is tall. This is confirmed in example (8.11) in which the relative clause can only refer to the man and never to the dog.

(8.11)   *kraru piengku irepre pi srrampu ntop mi bori ye*

krar-w   piengku irepe pi   sr\rampu/   [ntop
dog-ERG.SG 3SG.ERG man   DIST.ABS SG>3.FUT.PFV\bite.RS big
mi   bori ye]
REL.PRO REL 3SG.PRS.COP.NPL

'The dog will bite the man who is big.' '*The dog, who is big, will bite the man.'

The examples in (8.12) show the relative nominal phrase occurring in ergative (A) function (8.12a), absolutive (O) function (8.12b), absolutive (S) function co-occurring with both the S matrix argument (8.12c) and the O matrix argument (8.12d). Note that it is not possible for any of these relative clauses to have a reading in which the relative nominal phrase is coreferential with the ergative matrix nominal phrase.

(8.12)   a. *Jonu piengku pi srrso Markus rau bori ymerki*

Jon-w   piengku pi   sr\rso/   [Markus
John-ERG.SG   3SG.ERG 3.ABS SG>3.FUT.PFV\hit.RS markus
rau   bori y\merk/i]
REL.PRO.ERG   REL SG>3.HOD.PFV\follow

'John will hit he who followed Markus.'

b. *Jonu piengku pi srrso Markusu mi bori ymerki*

Jon-w   piengku pi   sr\rso/   [Markusu
John-ERG.SG   3SG.ERG 3.ABS SG>3.FUT.PFV\hit.RS markus.ERG.SG
mi   bori y\merk/i]
ABS.REL REL SG>3.HOD.PFV\follow

'John will hit he who Markus followed.'

c. *pne irepe tawancei [tentwa mi bori ye]*

pne	irepe	ta\wance/y	[tent-wa	mi	bori
DEM.FOC	person	SG.HOD.PFV\fall.RS	tall-ADJ	REL.PRO	REL

ye]
3.PRS.COP.NPL

'The man who is tall fell over'

d. *pne irepe Jon srrso tentwa mi bori ye*

pne	irepe	Jon	sr\rso/	[tent-wa	mi	bori
DEM.FOC	person	John	SG>3.FUT.PFV\hit.RS	tall-ADJ	REL.PRO	REL

ye]
3.PRS.COP.NPL

'The man will hit John who is tall.'

In addition to having restrictions on the nominal phrase of the matrix clause, Ngkolmpu is unusual in that relative clauses appear to display an ergative alignment as they only pick out the absolutive argument of the matrix clause. This is similar to what has been described for Dyirbal (Dixon, 1972) except that in Dyirbal it is the argument of the relative clause that must be absolutive. Thus, we can consider Ngkolmpu to be syntactically ergative at least in relation to the behaviour of relative constructions. Note that this is the second piece of evidence for syntactic ergativity in the language; the first coming from the topic marking clitic discussed in Section 4.3.1. It is not surprising that these should be similarly aligned, since the functions of relative clause have been long understood to be connected or related to notions of information structure (Grosu, 2012).

We have now established the behaviour of relative clauses as displaying ergative alignment. We can now abstract the total possibility space of grammatical relations as pertaining to relative clauses as in Table 8.20. This can then be abstracted to the shape in Figure 8.15. Note that relative clauses display the same alignment as nominal case marking.

-
Matrix clause

Table 8.20: Relative correference over grammatical terms
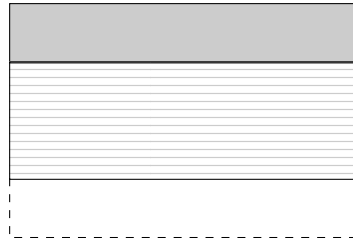
Figure 8.15: Relative correference grammatical shape

8.4.5   Distribution of grammatical relations

We have seen that the four morphosyntactic systems display a number of different alignments of grammatical relations. Both case marking and relative clauses display a clear ergative alignment. The agreement system is a two term system which is organised around a split of the S argument. Finally, the subordinate coreferential constructions, used to indicate simultaneous actions, are accusatively aligned. If we consider these four systems side by side as per Figure 8.16, it is clear that in order to provide an accurate description of the entire grammatical relations system of the language we require a four term system: A, O, S_O and S_A. In this way, we can say that the expression of grammatical relations is distributed across the four systems, each of which only ever displays a sub-set of the total possibilities.

Case   Agreement   Subordinate   Relative   Integrated
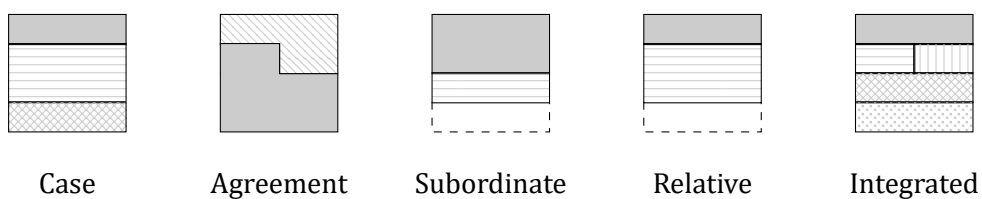
Figure 8.16: Comparison of grammatical shapes

8.5   Parallels between domains of distribution

We have shown that there are common elements to the morphosyntactic[1] domains of distribution discussed in this chapter. In each case, there is a single set of categories, either features or grammatical relations, which make reference to a number of morphosyntactic resources. In the case of TAM, it is the subparadigms of the undergoer prefix and the two suffixes. In the case of person and number, it is pronouns and agreement markers. In the case of syntactic roles, it is case marking, agreement alignment and interclausal syntactic constructions. Common to each example, any given resource collapses the set of categories/features into smaller, more abstract units. These units may be motivated in some regards, i.e. semantically or through feature structure, or they may not. Regardless, it is clear that each site reduces the number of formal distinctions to be made, which are contrast against the other subsystems.

Notions of distributed exponence and syntactically split systems are common in languages of the world. However, Ngkolmpu is significant in this regard in the extent to which morphosyntactic resources do not align. From a broad perspective this shows us, as linguists, that we cannot assume any systems in any given language to necessarily align at any given level. We frequently find reference to languages as being *ergative languages* (Farrell, 2005, p. 152), however even in those languages it is admitted that the language does not have ergative alignment for the entire system. The lesson in Ngkolmpu is that typologies of this type must be considered to be largely gradient or display inconsistent or mixed traits. In addition, we have seen that syntactic units, although typically considered to have some functional motivation, still involve a level of arbitrary structure that is similar to types of structure we see in the subparadigmatic elements of the Ngkolmpu verbal inflection. In the following chapter, we explore the various types of arbitrary structures in Ngkolmpu and propose a number of morphological structures to account for these.

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[1]Excluding the semantic domain of number.

Chapter 9

(Sub)paradigmatic autonomy

In the previous chapter we saw that distributed exponence and parallel structures in the domains of syntax and semantics are the result of the interaction between apposed and contrastingly organised systems. In this chapter we explore the organisational structure of the inflectional sites of verbs in this light and show evidence for a level of autonomous organisation specific to each inflectional site. The analysis in this chapter borrows from recent advances in realisational approaches to morphological theory but is not embedded in any particular formalism. This is to ensure that the chapter is accessible and in line with the descriptive goals of the thesis. An explicit model of morphology and its interfaces is presented in Section 9.1 and the formal mechanisms used in the description are introduced in Section 9.1.2. Section 9.2 sets out the argumentation for morphomic organisation. Section 9.3 provides an explicit account of each inflectional site.

The contention of this chapter is that feature distribution can be seen as a result of sets of intermediary morphological and/or morphosyntactic structures. This chapter will largely focus on the paradigmatic organisation of verbs, yet the arguments would be parallel for the other relevant domains of grammar. These structures are the result of common morphosyntactic structures such as underspecification, natural categories or the application of defaults. However, the stronger evidence comes from more complex, purely morphological, structures such as referrals or morphomic categories. This chapter provides an explicit analysis of each of the inflectional sites in order to capture

these phenomena and to show that different types of organisational structure are at work for each site. This is taken as evidence that each of these sites displays a level of autonomy.

The unique contribution of this chapter is the articulation between morphomic organisation at levels lower than the word. The implications of this beyond the current study is a more fine-grained understanding of paradigmatic inflectional structure, and an articulation of morphological categories existing below the paradigm level. This is also framed within a broader discussion of the nature of language-wide categories and the expectation that systems should be uniformly aligned within a language.

9.1   A model of inflection

The focus of this chapter is on morphological organisation and the morphology's interfaces with syntax and semantics. In order to do this we require an explicit model of morphology. In this section, I map out such a model, based on recent advances in realisational morphology, drawing heavily from Paradigm-Function Morphology. This model will allow us to make explicit claims about the locality of autonomous morphological structure discussed in the later sections of this chapter.

Our model of grammar is assumed to have an autonomous morphological component. This is in line with inferential-realisational theories of inflection including Paradigm-Function Morphology (Stump, 2001, 2016) and Network Morphology (Brown & Hippisley, 2012). The morphological component entails a level of autonomous organisation known as the *morphomic* level (Aronoff, 1994), discussed in more detail in Section 9.2. This morphological component interfaces with both the syntax and semantics on one side and the phonology on the other. This can be schematised as per Figure 9.1.

It is the role of morphosyntactic-semantic features to model the information required by the morphology from the syntax-semantics. Features are assumed to be fed from the syntax-semantics to the morphology via these interfaces[1]. From the interfaces

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[1]The internal structure of the syntax and semantics is not discussed here and the discussion in the rest of the chapter is equally compatible with a model in which semantics is mediated via the syntax although

Interface w. syntax & semantics, i.e. morphosyntactic features (content paradigm)

Morphomic organisation (form paradigm)

Realisational rules output to phonology (realised paradigm)
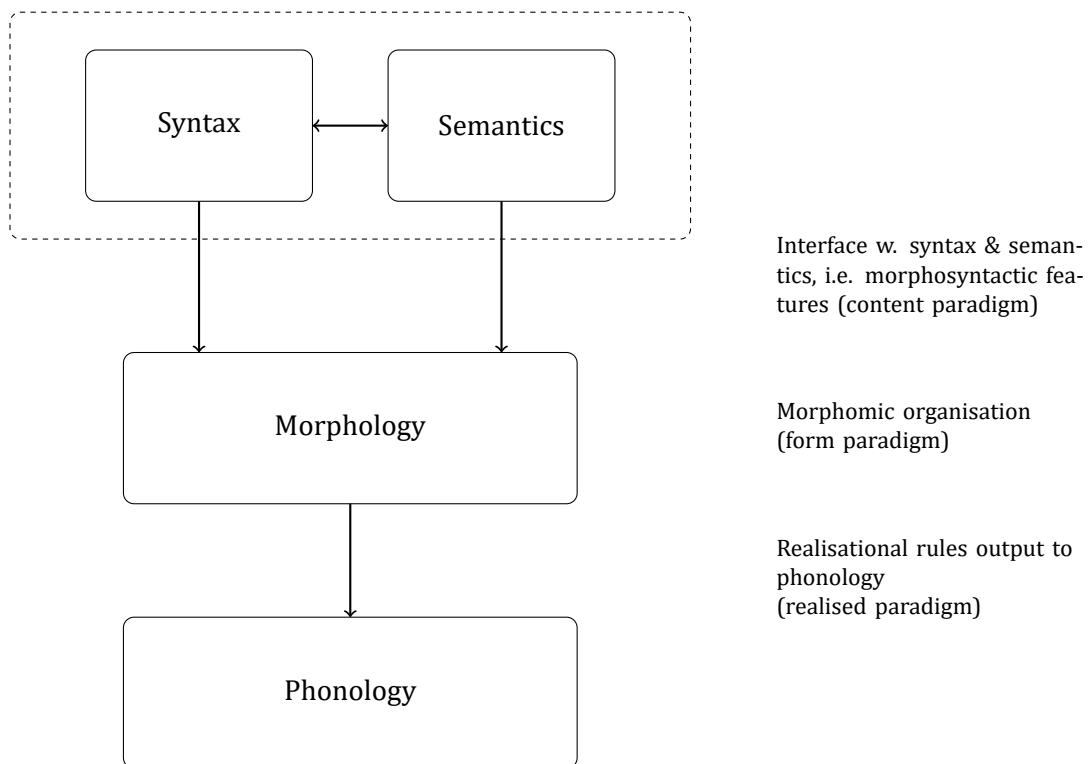
Figure 9.1: A model of morphology

the morphosyntactic-semantic features are mapped to morphological, i.e. morphomic, structure. Morphological structure is represented by morphological features. In the canonical case, morphological features are isomorphic with syntactic-semantic features and are mapped by default to equivalent features. However, various mismatches between morphology and the syntax and semantics can be modelled through this mapping process.

Within the morphology, lexemes are associated with appropriate morphological features. The pairs of lexemes and features then undergo phonological processes by virtue of these pairings. This is typically modelled using *rules of realisation* as discussed in Section 9.1.2. The resulting phonological forms are now fully inflected words that are then fed into the phonology.

In the canonical case, morphological structure is isomorphic with morphosyntactic and semantic structure. In this case the features map from the morphosyntactic / semantic features to identical features in the morphology as per Figure 9.2. This is the

that has consequences beyond the discussion here.
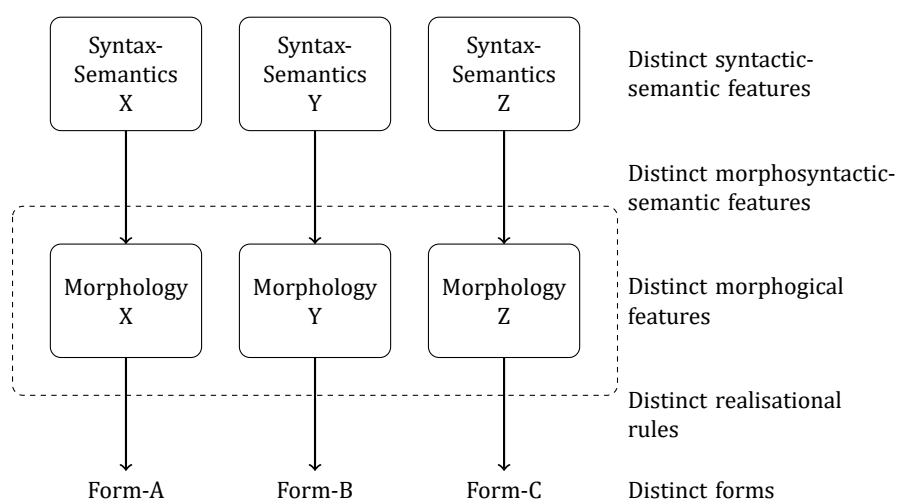
Figure 9.2: Canonical morphological structure

	SG	PL
NOM	ev	ev-ler
ACC	ev-i	ev-ler-i
GEN	ev-in	ev-ler-in
DAT	ev-e	ev-ler-e
LOC	ev-de	ev-ler-de
ABL	ev-den	ev-ler-den

Table 9.1: Turkish nominal paradigm for *ev* 'house'.

default and assumed mapping relationship between syntax-semantics and morphology. This type of structure is especially clear in languages of the agglutinating type such as Turkish or Swahili. Consider the Turkish nominal paradigm for the word *ev* 'house' in Table 9.1 in which each value of the features case and number corresponds to a single form. This type of structure is quite naturally captured by item and arrangement models of morphology.

In many languages there are numerous morphological structures which involve a level of morphological organisation which is independent from syntax, semantics and phonology. These phenomena have been the focus of much work in morphology in recent years with studies involving such phenomena as deponency (Baerman, Corbett, Brown, & Hippisley, 2007), overabundance (Thornton, 2011), defectiveness (Baerman et al., 2010) and syncretism (Baerman et al., 2005). To exemplify, lets take the simplest
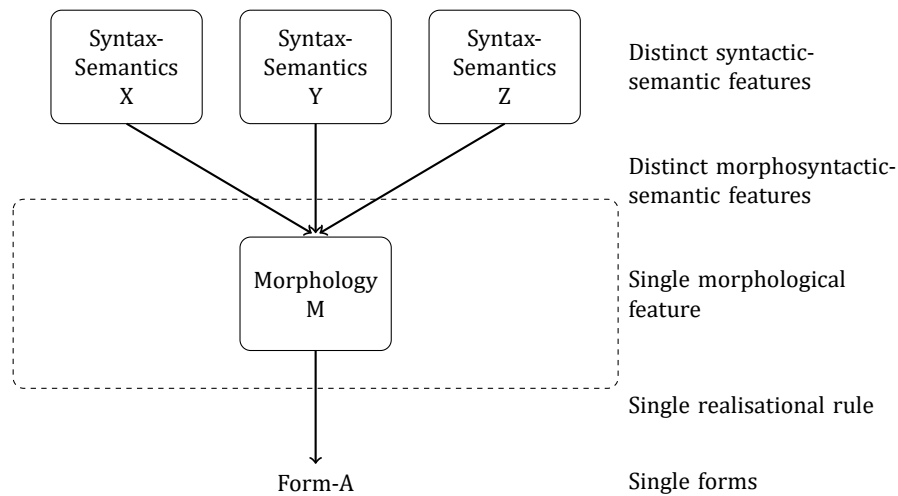
Figure 9.3: Morphological component of grammar

of these, syncretism, which involves multiple distinct feature values being realised by a single form. In cases where syncretism cannot be captured by underspecification and these elements display the same overall behaviour, i.e. displaying the same allomorphs, we take this as evidence that these are realised by the same morphological feature. This is captured by mapping these distinct morphosyntactic-semantic features to a single morphomic feature which realises the form in question. This is visualised in Figure 9.3. In this example, the three distinct syntactic-semantic properties are interfaced to the morphology in the form of three distinct feature values, X, Y and Z. These are then mapped to the single morphomic feature, M. This is then realised by a single realisational rule. A concrete example of this comes from the undergoer prefixes in Ngkolmpu, for instance the β-series prefix which maps both perfective aspect and future tense to a single form.

The morphosyntactic-semantic structure is modelled using *feature values pairs*, in the format FEATURE:value. For example, the feature value for the remote past tense would be represented as TENSE:remote past. These features are mapped to morphological features which are associated with lexemes. A lexeme may be associated with features by virtue of two distinct circumstances. First a lexeme may be associated with feature values by virtue of appearance in a particular syntactic context, i.e. either as a target for agreement or in a particular case position. Or it may be associated with a feature value by its association with a semantic value, i.e. not directed as a result of syntax.

In line with various typological work on the nature of features, the former is known as *contextual* or *relational* whilst the later is known as *inherent* (Anderson, 1985) (Booij, 1996) (Kibort, 2010). This is the primary reason for keeping the syntax and semantics separate in the model of morphology in Figure 9.1

As a result of the anisomorphic relationship between the morphosyntactic-semantic features and morphological features, we can think of lexemes having multiple paradigms. The first is their morphosyntactic-semantic paradigm or *content paradigm* as in Stump (2016). This represents the possible morphosyntactic-semantic space that is relevant for the inflection of a given lexeme, i.e. the set of feature values relevant for inflection. This is mapped onto the set of morphological features, this then comprises another paradigm which can be thought of as a morphological paradigm or *form paradigm*. This is the set of features relevant to the morphology. Finally, the set of total inflected forms can be thought of as a third paradigm, known as the *realised paradigm*.

9.1.1   Status of features

It is common for morphosyntactic-semantic features to be constrained in various ways. These constraints might be semantic or at least semantically driven, such as the fact that perfective aspect in Ngkolmpu is incompatible with present tense as discussed in Section 6.3. Others may be arbitrary, i.e. specified in the grammar at some level, such as the fact that imperfective forms do not co-occur with non-past tenses.

These particular constraints may provide evidence for a level of organisation within the features themselves. Various proposals abound in theoretical linguistics for the structure of features. However, it is the contention of this section that any such structure should be argued on empirical grounds. In (Stump, 2001) and (Stump, 2016), features are assumed to be flat structures and constraints on orthogonal features are handled through co-occurance restrictions, which simply stipulate any unavailable combinations. This will be assumed to the default case unless there is sufficient evidence for other types of feature structures. For an overview of other types of feature structures see Corbett (2012). These may involve hierarchies of feature structure or describing features in terms of types as in HPSG (Sag, Wasow, & Bender, 2003). In (Brown & Hip-

pisley, 2012) features are described as ordered attribute paths in which certain features are dependent on other features. The empirical motivations for such a structure are discussed in Section 9.2; it is important to note here that these involve a sort of inherent typing, since features are dependent on other features.

A logical consequence of having a level of morphological organisation that is distinct from the syntax-semantics is that feature organisation may also be distinct. Thus, even if there is evidence for a certain type of feature structure in the syntax or semantics this might not necessarily be reflected in the morphology. Largely we would assume that these would display similar types of organisation, however this would be an interesting avenue of investigation to confirm this empirically. Ngkolmpu does display some evidence for distinct feature structures in the syntax-semantics and morphology in which the features of person and number in agreement and pronouns each show different ordering restrictions between them.

9.1.2   Rule-based morphology

In order to provide a sufficiently explicit account of the morphomic structures at each level, a number of inflectional mechanisms must be introduced here. As stated, the analysis will largely be presented in natural language but a few mechanisms need to be established here in order to make the description explicit. Common to realisational models of morphology is the *realisation* of exponents through the application of *rules*. These rules state that morphological form is introduced in an appropriate morpho-syntactic / semantic context; in our model this is only once mediated through a level of morphological organisation. The contexts are represented by features. The forms may be any phonological operation. Anderson (1992) describes a number of non-concatenative operations used by morphological systems of the world, however for the discussion in this chapter we will only discuss affixation. An example of such a rule of exponence is in (9.1). This is a rule of nominal morphology that states that in the context of the feature values of ergative and singular append the underspecified /W/ to the input X, which in this case would be the nominal stem. Note that in a fully articulated theory, rules of this type need to be indexed for more than this, including but not limited to word class, inflection class and position in the word. However, the purpose

of this section is not to provide a full model of the entire inflectional system but rather to make explicit certain types of organisation within the paradigm.

(9.1)   X, ergative singular → XW

The bulk of mechanisms that we require to account for the Ngkolmpu paradigms are to provide explicit accounts for different types of syncretism, i.e. when multiple features are realised by the same form. The simplest examples of these come from underspecification or defaults. A default is simply the application of the elsewhere distribution of a rule, i.e. a rule that applies to all remaining cases after all other rules have been applied. For instance, in order to capture the paradigm structure in Table 9.2, we can specify the rules in (9.2). The first rule applies to the first person value, marking it with the suffix *-y*, whilst the other rule simply states that for all other contexts, i.e. non-first person, append an e.

1	2	3
y	e	e

Table 9.2: Non-singular actor agreement paradigm

(9.2)   a. X, first person → Xy

b. X, else → Xe

Related to a default is the notion of underspecification which involves omitting certain features so that natural classes may be captured. For instance, in the paradigm in Table 9.3, the feature PERSON is only relevant in the non-singular, so for the realisation of the singular agreement no reference to person is required. This would be formalised as the rules in (9.3).

	1	2	3
SG	ø	ø	ø
NSG	y	e	e

Table 9.3: Deafult actor agreement paradigm

(9.3)   a.   X, singular → Xø

        b.   X, first person non-singular → Xy

        c.   X, non-singular → Xe

Inherent to the concepts of default and underspecification is the notion that rules are applied disjunctively, arranged into groups based on shared distribution. So that in a group of rules only, each rule implies the non-application of other rules in that group. One common approach to determining between competing rules is through the application of a principle which applies the narrowest or most specific rule for a given context. This is known as the Elsewhere Principle (Kiparsky, 1973), the Subset Principle (Halle, 1997) and Pāṇini's Principle (Stump, 2001). Alternatively, rules may simply be applied in a stipulated order, or some combination of the two (Anderson, 1992). For the purposes of our discussion, it is not significant which approach is chosen except to note that under any approach there needs to be a mechanism for determining between competing rules.

Another type of shared exponence involves cases of simple homophony, in which two distinct inflectional exponents happen to be phonologically rather than systemically identical. These are typically uninteresting from a morphological viewpoint and we will not be considering any examples of these in this chapter. For a discussion of determining between simple homophony and systematic shared identity of exponence see Stump (2014).

The final mechanism that will be introduced is to capture directional syncretisms. A directional syncretism involves one context copying its form from another context, i.e. another cell in the paradigm. The directionality of these must be established beyond the mere sharing of identity of exponence. Directional relations of this type are handled through the application of rules of referral. Rules of referral were introduced by (Zwicky, 1985) and more fully articulated in (Stump, 1993). These have been included in most realisational-inferential theories. Rules of referral take the form of a rule which involves the inflectional context in the form of a feature value pair which specifies another feature for which the element should be inflected instead. This is exemplified in (9.4): this rule simply states that in order to inflect for second person

non-singular, instead inflect like the third person, unspecified for number.

(9.4)   X, second non-singular → third

9.2   Morphological autonomy and inflection

In his seminal work *Morphology by itself*, Aronoff (1994) argues for an autonomous level of morphology which he calls the *morphome*. In our model this involves the linking of morphosyntactic and semantic features to phonological strings mitigated through purely morphological categories. This contribution has been significant to our understanding of how inflectional systems may be organised. Since Aronoff (1994), considerable work has explored the extent of specific autonomous morphological phenomena with notable works including Maiden and Goldbach (2011), Cruschina, Maiden, and Smith (2013) and Round (2015).

It is the contention of this chapter that morphomic categories/structures can operate at any and all levels of morphological structure, including localised structure that is not found elsewhere in the morphology. In the Ngkolmpu case, there is clear evidence that the various inflectional sites of verbs, particularly the agreement sites, are organised along independent and autonomous lines, both from each other and from the other paradigms in the language, specifically pronouns. We have seen this from an impressionistic perspective in the previous chapter, where we explored the extent of distributed exponence. In the following section we explore the explicit morphomic structures localised to the three inflection sites of verbs. In doing so, we can explore the limits of localised autonomous morphological organisation in order to provide a more fine-grained understanding of the domains of morphomic structure. The analysis should also go some way to understanding the structural properties driving this particular case of distributed exponence.

Much of the morphomic structure in the paradigm involves instances of shared exponence or syncretism. In these cases we have two or more identical exponents with distinct morphosyntactic and semantic contexts. The contexts are not reducible to a single dimension of the paradigm, i.e. they cannot be handled through underspecifica-

tion. In addition, they are not simply the result of the application of defaults. As such, these are morphomic since they cannot be reduced to syntax, semantics or phonology. There are two distinct types of morphological syncretism that can be attributed to a morphomic level of organisation. These include the directional syncretisms that are handled through rules of referral as discussed in the previous section. These involve the mapping of morphosyntactic-semantic features into a new organisation that is not syntactically or semantically motivated and must be thought of as a type of morphological structure.

More commonly exponents will share a form without there being any evidence of directionality involved. That is, two different sets of feature values systematically display an identical exponent without there being any non-morphological motivation for this. These are handled through disjunctive exponence (Stump, 2014). A rule of disjunctive exponence simply has multiple possible sets of features which can satisfy the rule of exponence. This is exemplified in (9.5) which states that in order to inflect a verb that is future durative or recent imperfective append the suffix *nt*. Another alternative for formalising what is essentially the same relationship is using a meromorphome (Round, 2015). This is a purely morphological feature value onto which multiple morphosyntactic-semantic features are mapped. The term was introduced by Round (2015) to account for the extensive and consistent disjunctive exponence in Kayardild in which large sets of complex feature sets are realised with just a small set of forms. Arguably the distinction between these two approaches, i.e. rules of disjunctive exponence or meromorphomes, is a matter of notation rather than substance. It seems to me that arguments for determining a distinction between these two mechanisms appears, in practice, to be one of extent rather than quality. Meromorphomes are typically only invoked when the evidence that the shared identity exponence is systematic and extends sufficiently throughout the system. More theoretically, such categories potentially could be reserved for a category that displays evidence for a level of psychological reality, evidenced by historical consistency or being applied to loan words (Maiden & Goldbach, 2011). At the levels we are concerned with in Ngkolmpu and at our current stage of understanding the Yam languages it is very difficult to propose any more than disjunctive exponence. However, I will note that the two both account for very similar

types of relationships.

(9.5)   future durative OR recent perfective → Xnt

The final means we will explore for the structure of paradigms pertains to the internal structure of features. Since morphological features may, in theory, display anisomorphic organisation from morphosyntactic-semantic features then any evidence of contrasting types of internal structure to the features contributes to evidence of autonomous morphological structure. For our discussion of Ngkolmpu we will only be concerned with ordered feature values. However any type of distinct feature geometry could constitute evidence for morphomic organisation.

In Network Morphology features are treated as ordered attribute paths, in which features are ordered with respect to each other. The arguments for treating particular features as being ordered after another feature can be found in Brown and Hippisley (2012). To summarise here, these revolve around the fact that a certain feature may determine the number of distinctions made in another feature. For instance, if we consider the Ngkolmpu absolutive paradigm in Table 9.4 it appears that the feature of person determines the distribution of number, as number is only marked within the feature value of first person. Thus, for the purposes of this paradigm we would order the feature of person before number in order to maximise this generalisation.

	1	2	3
SG	ngko	mpu	pi
NSG	ni	mpu	pi

Table 9.4: Absolutive pronoun paradigm

Whilst it would be tempting to assume a universal ordering of features cross linguistically, one cannot assume this would be the case until demonstrated with a sufficiently large sample of languages. Brown and Hippisley (2012, p. 63) acknowledge that it is most likely that certain feature values will be ordered differently according to their semantic relevance to the part of speech being inflected. For instance, we would expect to see TAM defining a verbal paradigm at a higher level than person and number features. In Ngkolmpu, we see evidence of differently ordered features beyond just

semantic relevance. For instance, the absolute pronoun paradigm we have seen is defined as having person ordered before number, however the actor agreement paradigm is organised in the opposite dimension. We have already seen that person distinction is only ever made in the non-singular for actor agreement as per Table 9.3. This is discussed in more detail later, however, data like that suggests a level of arbitrariness to the ordering of feature values. The argument that the verb will have different orderings from nominals was presented in Brown and Hippisley (2012), however that was with regards to the combinations of agreement and TAM categories. There is no a-priori reason that person and number should be ordered differently when inflected on a verb or a pronoun. In addition, the actor suffix often refers to the same referent as an absolutive argument, so if there is a semantic motivation here, it is minimal. Thus, whilst potentially motivated by semantics, it is clear that there is some arbitrariness to the ordering of features in this way, i.e. an element of morphomic structure. And as we shall see in the following sections, this is something which can be entirely localised to a given inflectional site.

At this point one might consider that the ordering of features appears to be an artefact of the rule-based modelling mechanism. However, it is important to understand that the ordering of features is a way of representing prominence in the structure of a paradigm. For example, in the absolutive paradigm person is more *prominent* than number. Thus, when we are discussing this notion of feature ordering, we are talking about a relationship of prominence and ordered dominance in the structure of the paradigm.

9.3   Subparadigmatic structures

In this section we explore the paradigmatic structure of each of the primary inflectional sites on verbs. I will approach this by providing an explicit theory-informed account of the structural properties of each inflection site. By making explicit the structure of each site of the inflected verb, we will also see that each site involves a level of autonomous structure that is localised to that site. The analysis in this section will assume familiarity with the description of verbal inflection as presented in Chapter 6, however many

key points will be reiterated. The goal of this section is to explore structural relationships and not to provide complete descriptive coverage of the uses of each element.

The basic verbal inflectional template is presented in Table 9.5. This template lists the inflectional sites: the inflectional prefixes and suffixes. We need not concern ourselves with the other features indicated on verbs beyond these sites. In the remainder of this section, I will argue for a level of autonomy for three distinct inflectional sites based on the structures of the inflection prefixes (§ 9.3.1), the TAM suffix (§ 9.3.2) and the actor suffix (§ 9.3.3).

Inflectional prefixes		Stem	Inflectional suffixes	
undergoer			TAM	actor
(TAM)	Undergoer$_{\text{PERS/NUM}}$ + TAM	(Cross-index$_{\text{PERS}}$)	(TAM suffix)*	Actor$_{\text{PERS/NUM}}$ + TAM

Table 9.5: Verbal inflection template

9.3.1 Inflectional prefixes

The inflectional prefixes consist of the undergoer agreement, which for some values may be decomposable into a TAM marker and an agreement marker, and the cross-indexing marker. These form a single sub-paradigm that is sensitive to person and number of the undergoer argument and the actor argument for some restricted cases. It also carries information for a number of TAM categories. The arguments for the autonomy of this sub-paradigm come from the particular organisation of person and number features and TAM features.

The undergoer agreement marker is one of the most prominent elements of the verbal inflection in Ngkolmpu. The shape of the paradigm for its agreement patterns is particularly salient. The basic agreement shape remains identical for all tense, aspect and mood values and is presented for the α-series in Table 9.6. We have seen that

undergoer agreement indexes all three persons as well as number of the undergoer argument. This results in a paradigm of six cells as per Table 9.6, yet notice there are only three distinct forms. There are two primary elements to notice. The first is that undergoers never index the number of the third person. The second is that the second person forms are not unique: they are distinct for number from each other, but each cell shares its identity with another cell in the paradigm. First, we shall explore the syncretism of the second person forms, before returning to the notion of number marking.

	1	2	3
SG	w	n	y
NSG	n	y	y

Table 9.6: Undergoer agreement paradigm

The undergoer paradigm displays a distinct pattern of syncretism. One way to conceive of this is that the second person forms share their realisation with other forms in the paradigm, i.e. the second person singular form shares its exponent with the first non-singular form and the non-singular form shares its exponent with the third person form. In this section, I argue that the person and number syncretisms of this paradigm are the result of directional processes effecting second person agreement markers. In the first, the first non-singular refers to second person. In the second, the second person non-singular refers to third person marking. This can be visualised in Table 9.7 where the arrows represent the directional syncretism.

	1	2	3
SG	w	n	y
NSG	n	y	y

Table 9.7: Undergoer agreement paradigm

The evidence for the directionality of this syncretism comes from the distribution of the cross-indexing marker. Recall that the cross-indexing marker follows the undergoer marker in the inflectional prefixes. It occurs in the future tenses and indexes both arguments simultaneously. As established in Section 6.7.2, the marker, which takes the

form *r*, only occurs if the actor is not second person, i.e. first or third. In addition, it can only occur if the undergoer argument is neither the second singular or first non-singular undergoer.

When we compare the distribution of this marker with the undergoer prefix we notice an immediate parallel between the patterns of syncretism for the two elements: it picks out a category which links the second singular and the first non-singular undergoers whilst omitting the second non-singular undergoer. That is, the patterns of syncretism for the cross-indexing marker follow the same feature combinations as the undergoer agreement. This suggests that the two reflect the same morphological structure. To restate, the cross-indexing marker does not occur when there is any second person argument actor or undergoer, except in the non-singular undergoer where it is sensitive to the first non-singular. This suggests a rearrangement of features for non-singular undergoers in which first non-singular is indexed like a second person form and the second non-singular which is indexed like a third person form. This is exactly the pattern that we see. To that end, we can treat these as a case of referrals to capture this generalisation. This will require two referrals. The first involves first non-singular as making a referral to the second singular, i.e. the values of first non-singular is instead overwritten with the value of second person. The second involves the second non-singular being overwritten with the value of third person. These can be handled by two rules of referral as per Example (9.6). The first states that first non-singular is always realised as second person. The second states that the second non-singular is always realised as third person.

(9.6)   a. first person non-singular undergoer → second person undergoer

b. second person non-singular undergoer → third person undergoer

This analysis is motivated since it drastically improves the economy of the description. In the unanalysed paradigm we have three forms occupying five cells. Now we now have just three forms, each corresponding to a single person value as in (9.7). In addition, we can now state the distribution of the cross-indexing marker with greater simplicity as well. Under this analysis the cross-indexer marker only occurs as long as there are no second person feature values referring to any argument as per (9.8). In

terms of paradigmatic structure, these rules of referral represent an abstract, purely morphological, i.e. morphomic, level of organisation, or in this case re-organisation, of the paradigm. Intriguingly, however, this same arrangement is not repeated through any other part of the grammar, thus what we have is a level of organisation specific to the particular paradigm of undergoer prefixes.

(9.7)   a. X, first person undergoer → wX

       b. X, second person undergoer → nX

       c. X, third person undergoer → yX

(9.8)   a. X, non-second person future → rX

Under this analysis we are left with a clear feature structure for the undergoer agreement patterns which is primarily organised around three distinct person values. Number is therefore a less prominent aspect of the inflection of undergoer agreement. This analysis corresponds to the fact that number is not marked in the third person, as no number is marked in the undergoer at the level of the cell. As we shall see in the Section 9.3.3, treating number as secondary to person is the opposite pattern we see in the actor agreement suffix. In addition, this is distinct from the absolutive patterns, which mark number in the first person, but where number is dependent on person.

The inflectional prefixes also mark tense, aspect and mood as well as agreement. In this regard the sub-paradigm also shows a number of distinct structures. In these cases a number of these categories are abstract categories not driven by underspecification or any directionality. These abstract categories have been implicit in the description of the system so far and correspond to the multiple series of undergoer prefixes, α, β and γ. The most restricted of these is the γ-series. This marks either the recent past tense in the durative aspect or the remote past in the imperfective aspect. There is no single feature which unifies these two categories nor does this appear to be the result of a directional process. Yet since they are always marked identically, at least at this inflectional site, we can treat this as a kind of disjunctive exponence (Stump, 2014). The fact that these always occur the same regardless of any other features on the verb, including agreement features, suggests that this is systematic and should be accounted

for. Thus we can say that recent past durative and remote past imperfective form a set coordinated through a logical disjunction, i.e. recent durative OR remote imperfective. However, this particular grouping of categories only ever occurs in this inflectional site, i.e. for the undergoer marker, and not elsewhere. As such, we should consider this evidence for a level of structure existing at the sub-paradigm level.

The β-series appears to have a broader distribution than the γ-series. It marks the combination of perfective aspect and future tense for the majority of agreement features. Again, there is no directionality suggested in this analysis. In terms of formalisation it also represents disjunctive exponence, i.e. two cases of systematic non-directional shared exponence. Leaving aside for now the fact that members of the β-series are not identical for all agreement patterns, we see a systematic connection between functions of the β-prefix. We have treated the distribution of the prefixes as a case of disjunctive exponence yet there are good reasons to treat these as meromorphomic categories, despite the fact that these do not exist elsewhere in the grammar. This has primarily to do with their significance in the inflectional system of the language as these categories exist for the majority of verbs in the lexicon, only middle verbs lack undergoer prefixes. The presence of undergoer prefixes organised into a series of complex abstract categories is also a feature common to all Yam family languages for which we have sufficient data to date (Evans et al., 2017), making it an extremely old feature of the language. As I have argued above, the distinction between disjunctive exponence and meromorphomic categories is not a distinction that is particularly clear, however I would suggest that the Ngkolmpu data is probably best described as meromorphomic if we take the definition suggested in the previous section.

Finally the α-series serves as the default which marks the remaining categories. Under this analysis, this does not treat the disparate values of the remaining forms as a single category; rather this is simply the residue category evidenced by the fact that this distribution involves the most complex statement of features.

Interestingly, the inflection of tense, aspect and mood on the undergoer site appears to be dependant on the agreement features of undergoer. As we have seen from the distinctions in β-prefix subseries, mood distinctions in the future tense only occur for the second person agreement values, that is, after the directional processes have been ap-

plied. In other words, the person feature of the undergoer determines the number of possible mood distinctions. This suggests that, if we were to take an ordered attribute approach, the tense, aspect and mood features should follow the agreement features. This is counter to expectations of verbal inflection in which TAM should be more prominent than person and number. One possible interpretation of this is that this site is primarily an agreement marker and only secondarily a TAM marker, a phenomenon that Matthews (1974) discusses as primary and secondary exponence; a topic I will not explore further here. However, in terms of our argument regarding autonomous paradigms, it is the opposite prominence ordering that we find in the actor agreement position.

9.3.2 The TAM suffix

The TAM suffix displays the most direct mapping between the syntax-semantics and the morphology of the three inflectional sites. There are eight distinct forms as presented in Table 9.8. Mostly, these serve to indicate direct features. Interestingly, none of the features that are directly indicated in this site are also indicated elsewhere. There are a few syncretisms here that represent some structure which are worth mentioning. The first is the shared identity of the remote past perfective and the past potential suffix *ngk*. Whilst there is a shared semantics in that both have a past tense reference, under our feature analysis there is no unified category which could indicate both as there are a number of distinct past tense values. This appears to represent another case of disjunctive exponence and one that is not replicated elsewhere. In addition, for many verbs there is shared exponence between future durative and recent perfective in the form of the *nt* suffix. It is important to note that the syncretism in these paradigms is only present for certain verbs, i.e. those with vowel final stems.

9.3.3 Actor suffix

The actor suffix displays a level of complexity similar to the inflectional prefixes, yet is organised along entirely different lines. The structure of the agreement features here are the complete opposite of what we have seen for the undergoer, both in terms of

ø	Default
nt	Future durative and recent perfective V-final
ro	Recent perfective C-final
omo	Future-potential
ngk	Past-potential and remote perfective V-final
en	Recent imperfective
rnt	Remote imperfective

Table 9.8: TAM suffixes

	SG	1NSG	2NSG	3NSG
default	ø	y	e	e
future	ø	ei	ei	me
future-potential	ø	y	y	y
imperfective	ø	e	e	e
recent perfective	ø	rans	rans	rans
post-potential, remote perfective	ø	ai	ai	ai
hodiernal past perfective	y	me	me	me
hodiernal past durative	y	ns	ns	ns
remote past	w	ai	ai	ai

Table 9.9: Full paradigm of actor suffix forms.

agreement and TAM. The agreement system in the actor suffix is driven by number rather than person, as we saw for the undergoer. The TAM categories are very different, with a different set of disjunctive sets. In addition, TAM categories determine the agreement markers rather than the reverse we find in undergoer prefix. The complete set of forms, aligned into series, is presented in Table 9.9.

Regarding the structure of the person and number feature of agreement for the actor suffix there are two notable aspects. The first is that for the majority of TAM features only number is marked. That is, actors typically only mark agreement for singular vs. non-singular and often to nor mark person. However, person may be marked in certain TAM values, in which case it is only marked in the non-singular. This is a rather unusual typological fact and has been discussed in previous chapters. For the TAM values which do mark person, there are two primary patterns of person agreement. The default se-

ries, as shown in Table 9.9, groups the second non-singular with the third non-singular. This is reminiscent of the structure we saw in the undergoer paradigm, except that in this case there is a number distinction in the third person. In addition to this, there are the future agreement markers. These are used for both future-irrealis and future potential. For this series the second non-singular is marked like the first non-singular. There is no evidence for directionality in either of these; in the future TAM the second non-singular, which shares its exponent with the first non-singular for this TAM value, is marked as per second person values on the cross-index marker. These appear to be cases of either underspecification or disjunctive exponence. Either way, the fact that they display distinct patterns for different TAM values makes the pattern markedly different from the undergoer prefix structure.

Important to note regarding the structure of agreement features in this site is that person here is dependent on number. This is the opposite pattern to what we saw in the undergoer, where number values are largely dependent on person and undergoer exponence can be reduced to a person system. Under an analysis which entails ordering constraints, in this inflectional site person should follow number. This is the opposite structure to what we would propose for both absolutive pronouns and the undergoer prefix. Absolutive pronouns mark three persons and only make a number distinction in the first person. Thus, any ordering constraints on person and number for the pronouns are the exact opposite to the actor suffix, despite these frequently referring to the same referents. These three distinct types of organisation all show a level of morphological organisation, i.e. the feature structures of these paradigms, that is organised along autonomous lines.

The TAM marking of the actor suffixes is considerably more complex. There are a number of distinct categories, many of which indicate natural categories and others of which represent disjunctive exponents. I will not go through all the categories indicated by the actor suffix as this was discussed at length in both Chapters 6 and 8. Instead, I will point out a few interesting notes about the architecture of the subparadigm regarding TAM. It is clear that person distinctions are only ever made in certain TAM values. This seems to suggest that person is dependent on TAM categories, and if modelled through ordered attribute paths, this would involve ordering person after TAM.

This is in direct contrast to what has been discussed for the undergoer prefix. However, we should also see that most TAM distinctions are only made in the non-singular. This suggests that TAM distinctions are also dependent on number. This would place an ordered attribute path as per (9.9). This is a rather unusual ordering for features however it is supported by the data. Overall, we have a very different type of organisation in the actor suffix than we have seen in any other part of the grammar.

(9.9)   number » TAM^2 » person

9.4   Subparadigmatic autonomy

We have seen that each inflectional site is characterised by a different pattern of morphological organisation. The inflectional prefixes and the actor suffix each are governed by a series of complex morphomic structures whilst the TAM suffix is largely a matter of direct inflection. However, the prefixes and the actor suffix differ from each other drastically. The inflectional prefixes are governed by high-level directional syncretisms that rearrange non-singular forms to derive a system which marks both person and number out of a system that otherwise only marks person values. The actor suffix, on the other hand, is primarily organised around number distinction with person values being less prominent than both number and person features of the suffix.

The implication of this beyond the current study suggests that autonomous morphological structures may be uniquely localised to any single point in the inflection of a system. The important clarification is that this morphological structure will not be replicated in other parts of the morphology of the language. Considering our model of morphology presented in Section 9.1, what this suggests is that the morphosyntactic-semantic features may be mapped to morphological structure uniquely for different lexemes and, crucially to our point, inflectional sites. This suggests that there are multiple points in the morphology which interface directly with the syntax-semantics.

In Paradigm-Function Morphology the mapping of morphosyntactic / semantic features to morphological structure is handled through property mappings within the

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[2] I am not going into the ordering of TAM features at this point since it is not necessary for the argumentation.

form-correspondence function. This maps the morphosyntactic / semantic features associated with particular lexemes to stems and the corresponding morphological features. What this evidence confirms is that this function must be uniquely definable at each point in the definition of a paradigm. Currently, PFM entails mechanisms for defining subparadigms by use of the *paradigm function* within a paradigm, i.e. within a *paradigm function*. Arguably this also entails a unique definition of the *Corr* function for that sub-paradigm, however the current implementation of the formalism makes no clear way of stating this explicitly and this potentially requires a revision of how the *Corr* function and the *paradigm function* are formulated. A fully articulated exposition of this issue is beyond the scope of this chapter, however a implemented Paradigm-Function Morphology based model of the verbal inflection of Ngkolmpu, based on the current formalism, can be found in Appendix B.

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Part III

Appendices

Appendix A

Sample texts

This appendix contains three example texts. The soundfiles and elan files have been included on the CD that should be associated with the thesis. These transcriptions involve minor editing so that mistakes have been corrected at the recommendation of my language consultants. Within the Elan files there is both English and Indonesian translations. The Indonesian translation represent only very rough first pass translations provided by speakers in the field. The texts have been chosen to represent both male and female speakers and across distinct genres: a traditional narrative, a personal recount and a procedural text.

A.1 Cassowary story - *mpowrwa eibentei*

Title: *mpowrwa eibentei* 'The cassowary story'

Speaker: Yonas Gelambu

Files: 20141108-KCD-YG-CassowaryStory.wav

              20141108-KCD-YG-CassowaryStory.eaf

Recorded: 08/11/2014

This is a traditional story about two *nongkom* who go hunting a cassowary. *Nongkom* is roughly translated as brother-in-law but more precisely refers to the relationship

which involves two men who are married to two sisters. The term is also used as a reciprocal address term by men in this relationship. This relationship is a light-hearted and friendly relationship special to this pair and the story reflects this. It is a traditional story in which the two *nongkom* go out to catch a cassowary (unsuccessfully) and instead end up fighting and hurting each other. They get so upset with each other that others laugh at them and they do not speak to each other again.

The story contains a number of narrative conventions common to story telling in Ngkolmpu. The story is introduced with a fairly conventionalised start common to most formal stories. In addition, the speaker uses the word *moro* which means 'how' directly before the verb to emphasise new information. In addition, the speaker carefully switches between tenses and realis and irrealis mood as a way of foregrounding and backgrounding various information. Typically this involves irrealis mood being used to signify background bits of information similar to what has been described for Komnzo (Döhler, 2016), however at other times present tense is used for this same purpose.

(A.1.1) *Matthew, neme konsapor*

Matthew, neme konsapor
Matthew, good   day

'Matthew, good day.'

(A.1.2) *naempr eibentei smpo, ngki naempr ye*

naempr eibentei smpo ngki   naempr ye
one   tell.INF   again PROX.ABS one   3.PRS.DUR.be

'This is one more story.'

(A.1.3) *mpowrwa ye ngki*

mpowr-wa   ye   ngki
cassowary-ADJ 3.PRS.DUR.be PROX.ABS

'This is about a cassowary.'

(A.1.4) *yempoka irau nongkom poi, nongkomt irau*

yempoka irau   nongkom poi   nongkomt irau
two   3.RMT.DUR.be WZH   DIST.LOC WZH-COM 3.RMT.DUR.be

'There were these two brother-in-laws.'

(A.1.5) *potarmpa toirai ngki, moro tetnuaengkai: "nongkom, yeki ani ni, parat"*

potar-mpa t\oir/ai   ngki   moro
village-ABL MID.NSG.PFV.RMT\travel PROX.ABS FOC
te\tnwae/ngkai   nongkom yeki   ani
MID.NSG.PFV.RMT\plan.RS WZH   tomorrow NSG.PRS.DUR\go.NPL
ni   para-t
1.NSG.ABS hunting-PURP

'Whilst travelling from the village, they planned: "brother-in-law, let's go

hunting tomorrow"'

(A.1.6) *"yar kirot ani, paranm onto krantei"*

yar   kiro-t   ani,   para-nm onto
sleep hunt-COM NSG.PRS.DUR\go.NPL, hunt-INS can
kr\an/ntei
1.NSG.FUT-IRR.DUR\goNPL

'We'll go night hunting, we can hunt as we travel.'

(A.1.7) *naempr nongkom ngkoro: "bai"*

naempr nongkom ngkoro bai
one   WZH   thus   HOR.go

'One of the brother-in-laws says: "Let's go!"'

(A.1.8) *anai pngke po brarngke... nmaei brar surarrnt poi pi*

anai   pngke   po brar-ngke nmaei brar
NSG.RMT.DUR.go.NPL DIST.ALL JUS garden-ALL before garden
su\rar/rnt   poi   pi
3.RMT.IMPF\be.EX DIST.LOC DIST.ABS

'They went to the garden... the place that used to be a garden.'

(A.1.9)   *baoror teimerai pno parat*

baoror   te\imer/ai   pno   para-t
late.afternoon MID.NSG.RMT.PFV\exit.RS   that.time   hunting-PURP

'In the late afternoon they went out hunting.'

(A.1.10)   *naempr ngkompa yamakru, naempr naempa yamakru*

naempr ngkompa y\amakr/w,   naempr naem-mpa
one   PROX.ABL 3.RMT.DUR\walk.NPL one   side-ABL
yamakru
3.RMT.DUR\walk.NPL

'One walks this side and one walks the other.'

(A.1.11)   *watik, naempr yow sowoi*

watik,   naempr yow s\owo/y
enough,   one   NEG SG>3.HOD.PFV\see.RS

'After that, the first one didn't see anything.'

(A.1.12)   *pi naempr poi nongkomt moro yanmakr pngke*

pi   naempr poi   nongkom-t moro ya\nmakr/   pngke
3.ABS   one   DIST.LOC WZH-COM   FOC 3.PRS.DUR\come.NPL DIST.ALL

'The (other) one came to there with his brother-in-law.'

(A.1.13)   *baoror peto, ete mpowr tewu*

baoror   peto, ete mpowr   t\ew/w
late.afternoon very, ah cassowary SG>3SG.F.RMT.PFV\see.RS

'In the evening, oh my, he saw a cassowary (feminine).'

(A.1.14)   *yar nmaeito teiru*

yar   nmaei=to   te\yr/u
sleep before=ADV 3SG.F.RMT.DUR\sleep.EX

'She was asleep.'

(A.1.15) *blni skuknrnt*

bl-ni   s=kwo\kn/rnt
egg-LOC ?=3SG.F.RMT.IMPF\be.located.NPL

'She was sitting on eggs.'

(A.1.16) *blwa rau mpowr*

bl-wa   rau   mpowr
egg-ADJ 3SG.F.RMT.DUR.be cassowary

'The cassowary was nesting (lit. of egg).'

(A.1.17) *"ah nou pngke"*

ah nou pngke
ah HOR DIST.ALL

'"Let's go (get her)!"'

(A.1.18) *"Oh mpowr reye ngki, blni okn, bongke nkn"*

Oh mpowr   reye   ngki   bl-ni
Oh cassowary 3SG.F.PRS.DUR.be   PROX.ABS egg-LOC
o\kn/,   bongke   n\kn/
3SG.F.PRS.DURbe.located.NPL remaining 2SG.PRS.DUR\be.located.NPL

'"Oh this is (fem) a cassowary, she is sitting on an egg, you stay here"'

(A.1.19) *tenenkengk mwangke*

te\nenke/ngk   mwa-ngke
MID.SG.RMT.PFV\return.here.RS house-ALL

'He went back to the house.'

(A.1.20) *pi nongkom pno pi nmaeito imonsu nongkai pr, nmaeito imakru pi*

pi   nongkom pno   pi   nmaei=to   y\mons/w
3.ABS WZH   that.time 3.ABS before=ADV SG>3.RMT.DUR\gather.EX
nongkai pr   nmaei=to   y\makr/w   pi
food   tree before=ADV SG>3.RMT.DUR\cook.EX 3.ABS

'At that time, the brother-in-law had already gathered food and started cooking it.'

(A.1.21)   *te nmaeito imonsu*

    te   nmaei=to   y\mons/w
    kava before=ADV SG>3.RMT.DUR\gather.EX

    'He had gathered kava.'

(A.1.22)   *eh, yow bori*

    eh yow bori
    eh NEG REL

    'Ah, no he hasn't.' (mistake)

(A.1.23)   *"bongke ye, kotip ngkei poi irar"*

    bongke   ye   kotip ngkei   poi   y\rar
    remaining 3.PRS.DUR.be fish   PROX.LOC DIST.LOC 3.PRS.DUR\be.EX

    '"Ah leave it, there is fish all around here."' (lit. here and there)

(A.1.24)   *"sinm krantei pngke"*

    si-nm   kr\an/ntei   pngke
    torch-INS 1NSG.FUT-IRR.DUR\walk DIST.ALL

    '"We can go to there later with a torch."'

(A.1.25)   *piengku ngkoro: "nongkom yow, mpowr poi wown, blni onokempr"*

    piengku ngkoro nongkom yow mpowr   poi
    3SG.ERG thus   WZH   NEG cassowary DIST.LOC
    w\own/   bl-ni   o\nokempr/
    3SG.F.PRS.DUR\sleep.DUR egg-LOC 3SG.F.PRS.DUR\be.on.top.NPL

    'He says: "brother-in-law, no, there is a cassowary asleep on top of an egg."'

(A.1.26)   *"oh ncuene ye"*

    oh ncuene   ye
    oh 1.NSG.POSS 3.PRS.DUR.be

    '"ah... its ours" [the other replied]'

(A.1.27)   *te pi bongke ye nmaei, mpowr pi potaenmei nmaei*

te   pi   bongke   ye   nmaei mpowr   pi
kava DIST.ABS remaining 3.PRS.DUR.be before cassowary DIST.ABS
po=t\aenm/ei   nmaei
JUS=1NSG>3SG.F.HOR.PFV\capture.RS before

'"Leave the kava now, we will catch the cassowary first."'

(A.1.28)   *yempoka mel moro yamakr, supl... bpe poi surarrnt bpe*

yempoka mel   moro   y\amakr/   supl bpe poi
two   head   FOC   3.PRS.DUR\walk.SG bow   club DIST.LOC
su\rar/rnt   bpe
3.RMT.IMPF\be.EX

'The two left, with a bow... and they had clubs.'

(A.1.29)   *mlaempa surarrnt pi, ktormiru, naempru tormir*

mlae-mpa su\rar/rnt   pi   k=to\rmir/w
stone-ABL 3.RMT.IMPF\be.EX DIST.ABS IRR=MID.SG.RMT.PFV\hang.RS
naempr-w   to\rmir/
one-SG.ERG MID.SG.RMT.PFV\hang

'They were (made) from stone and could be hung, one (of them) hangs (wears)
it.'

(A.1.30)   *yamakr pngke pr melngke*

y\amakr/   pngke   pr   mel-ngke
3.PRS.DUR\walk.SG DIST.ABL tree head-ALL

'They went to the tree.'

(A.1.31)   *se narmpru, naempren se*

se   narmpr-w   naempr-en
SG>3.FUT-IRR.PFV.give.RS one-ERG.SG one-DAT
se
SG>3.FUT-IRR.PFV.give.RS

'One held on to the other.'

(A.1.32)   *yamakr, pi mpowr onto kwemernt tbou*

y\amakr/   pi   mpowr   onto kww\eme/rnt
3.PRS.DUR\walk.SG 3.ABS cassowary can   3SG.F.RMT.IMPF\be.sitting
tbou
quiet

'They keep going... the cassowary was sitting quietly.'

(A.1.33)   *yarwa rau mpowr pi*

yar-wa   rau   mpowr   pi
sleep-ADJ 3SG.F.RMT.DUR\be cassowary DIST.ABS

'The cassowary was asleep.'

(A.1.34)   *ksko, ngki mpowr reye... ngki*

k=s\ko/   ngki   mpowr   reye
IRR=3.FUT-IRR.PFV\stand.RS PROX.ABS cassowary 3SG.F.PRS.DUR\be
ngki
PROX.ABS

'They stand, this is the cassowary... here.' (The speaker demonstrates their
location in relation to the cassowary)

(A.1.35)   *naempr ngkompa skongk, naempr ngkompa, mpowr tobou*

naempr ngkompa s\ko/ngk   naempr ngkompa mpowr
one   PROX.ABS 3.RMT.PFV\stand.RS one   PROX.ABL cassowary
tobou
quiet

'One stands up here, one up here, the cassowary is quiet.'

(A.1.36)   *naempru ngkoro: "si swert, bewert"*

naempr-w ngkoro si   s\wert/
one-SG.ERG thus   torch 2SG>3.IMP.PFV\light
bewert
2SG>1SG.APPL.IMP.PFV\light

'One says: "light the torch, light it for me."'

(A.1.37)   *"ngkai srrso"*

ngkai   sr\rso/
1SG.ERG   SG>3.FUT-IRR.PFV\hit.RS

'"I'll hit it."'

(A.1.38)   *moro abse: "ou naempr, yuow, yemkpoka"*

moro   \abse/   ou   naempr   yuow   yemkpoka
FOC   MID.SG.PRS.DUR\count   PMS   one   three   two

'He starts counting: "ok, 1, 3, 2"' (mistake with order)

(A.1.39)   *pi ngkoro moro tayengk...*

pi   ngkoro   moro   ta\ye/ngk
3.ABS   thus   FOC   MID.SG.RMT.PFV\say.RS

'He says like that...'

(A.1.40)   *bpe moro siungk*

bpe   moro   s\yu/ngk
club   FOC   SG>3.RMT.PFV\draw.RS

'He drew his club...'

(A.1.41)   *pi siwa moro tanmeru, ngkoro ngkei*

pi   si-wa   moro   ta\nmer/u,   ngkoro   ngkei
3.ABS   eye-ADJ   FOC   MID.SG.RMT.PFV\duck.RS   thus   PROX.LOC

'He, with the torch, ducked down, here like this.'

(A.1.42)   *bpe piengku moro siungk, pi srrsngk naeimam*

bpe   piengku   moro   s\yu/ngk,   pi   sr\rso/ngk
club   3SG.ERG   FOC   SG>3.RMT.PFV\draw.RS   3.ABS   SG>3.RMT.PFV\hit.RS
naeimam
dead

'He drew his club and hit it hard.'

(A.1.43)   *Ola! mpowr ngkei pna ertekau*

Ola!   mpowr   ngkei   pna   e\rteka/u
Ohno   cassowary   PROX.LOC   because   MID.SG.RMT.DUR\chase.DUR

'Oh no, because of that the cassowary fled.'

(A.1.44)   *yentento eterkau mpowr pi*

yenten=to   e\terka/u   mpowr   pi
continue=ADV   MID.SG.RMT.DUR\chase.DUR   cassowary   DIST.ABS

'The cassowary ran right off.'

(A.1.45)   *nongkom moro srsongk ngki, mel sblnengk*

nongkom   moro   s\rso/ngk   ngki   mel
WZH   FOC   SG>3.RMT.PFV\hit.RS   PROX.ABS   head
s\blne/ngk
SG>3.RMT.PFV\smash

'The brother-in-law had hit this one (the other brother-in-law), he smashed
(his) head.'

(A.1.46)   "alae! ele! ele!"

"Ouch, ow! ow!"

(A.1.47)   *"nmaeito brsei mpai ngko"*

nmaei=to   b\rso/i   mpai   ngko
before=ADV   SG>1SG.HOD.PFV   2SG.ERG   1SG.ABS

'"You have hit me!"'

(A.1.48)   *mpowr moroko srmtau pngke, tepi pngke towlengk, tenenkengk*

mpowr   moro=ko   s\rmta/u   pngke   tepi   pngke
cassowary   FOC=IRR   SG>3.RMT.PFV\chase.RS   DIST.ALL   just   DIST.ALL
to\wle/ngk   te\nenke/ngk
MID.SG.RMT.DUR\happen/   MID.SG.RMT.PFV\return.here.RS

'He was going to chase cassowary, but once he reached there, he came back.'

(A.1.49)   *nongkom pi mpl ngkompa ntaepurau*

nongkom   pi   mpl   ngkompa   n=tae\pura/u
WZH   DIST.ABS   blood   PROX.ABL   FOC=MID.SG.RMT.PFV\bleed

'The brother-in-law was bleeding from here.'

(A.1.50)   *mgnke, si onto eyowkau, "aduh moro srwale ngkai?"*

mgnke   si   onto e\yowka/u   aduh   moro
where-ALL eye   can   SG>3.RMT.DUR\see.EX alas(I) FOC
sr\wale/   ngkai
SG>3.FUT-IRR.PFV\make.happen.RS 1SG.ERG

'He looks around "oh no, what have I done"' (Aduh from Indonesian)

(A.1.51)   *mpowr bl moro imanspi*

mpowr   bl   moro y\mans/=pi
cassowary egg   FOC   SG>3.PRS.DUR\gather.EX=DIST.ABS

'He gathers up the cassowary eggs.'

(A.1.52)   *kwosar moro irmingk kkaenm*

kwosar   moro y\rmingk/   kkae-nm
bundle   FOC   SG>3.PRS.DUR\tie.up paperbark-INS

'He ties a bundle from paperbark'

(A.1.53)   *"you kngko?"*

you   kn\ko/
NEG 2SG.IMP.PFV\stand.RS

'"Can you stand?"'

(A.1.54)   *"mpiea wo ntementme ngko wo"*

mpiea wo   nteme-nteme ngko   wo
thing   1SG.PRS.DUR.be little-little   1SG.ABS 1SG.PRS.DUR.be

'"I can, just a little bit."'

(A.1.55)   *"nmaeito bblnai mpai ngko"*

nmaei=to   b\blne/i   mpai   ngko
before=ADV SG>1SG.HOD.PFV\smash 2SG.ERG 1SG.ABS

'"You have broken my head."'

(A.1.56)   *ksmae*

k=s\mae/
IRR=SG>3.FUT-IRR.PFV\hold.RS

'He holds him.'

(A.1.57)   *moro kaeibrow pngk, yow, waeku ksikoru*

      moro   k\aeibro/w   pngk   yow   waeku
      FOC   MID.SG.RMT.PFV DIST.ALL   NEG   piggyback.INF
      k=s\ikor/u
      IRR=SG>3.RMT.PFV\piggyback.RS

      'He tries to escort him, but can't, so he carries him on his back.'

(A.1.58)   *pari imirinte, parinm sikoru pngke*

      pari   y\mirinte/   pari-nm   k=s\ikor/u   pngke
      cord SG>3.PRS.DUR\peel   cord-INS   IRR=SG>3.RMT.DUR\tie.RS

      'He peels a cord (from paperbark), he tied him to there with the cord.'

(A.1.59)   *tontu mwangke*

      t\ont/w   mwa-ngke
      MID.SG.RMT.PFV\bring.RS   house-ALL

      'He brought (him) to the house.'

(A.1.60)   *Aduh, mpl moro olempl, toba*

      Aduh, mpl   moro o\lempl/   toba
      Alas,   blood FOC   MID.SG.PRS.DUR\pour. lots

      'The blood is pouring out, lots of it.'

(A.1.61)   *te moro sront*

      te   moro sr\ont/
      kava FOC   SG>3.FUT-IRR.PFV\bring.RS

      'He brings kava.'

(A.1.62)   *"bongke ye, te bernsrnt nti pnm skrortiu nsone pi"*

      bongke   ye   te   be\rnsr/nt   nti
      remaining 3.PRS.DUR\be kava 2SG>1SG.APPL.IMP.DUR\steep sore
      pnm   s=k\rortiw/   nsone   pi
      DIST.INS ?=MID.SG.FUT-IRR.PFV\finish.RS 1SG.POSS DIST.ABS

      '"Leave it, steep the kava for me, so that my pain will finish."'

(A.1.63)   *ngki nmaeito sblnengk mel mpar nkgi*

      ngki   nmaei=to   s\blne/ngk   mel mpar nkgi
      PROX.ABS before=ADV SG>3.RMT.PFV\smash.RS head bone PROX.ABS

      'The skull was already smashed.'

(A.1.64)   *te moro erensre*

      te   moro e\rencr/e
      kava FOC   MID.NSG.PRS.DUR\chew.EX

      'The kava is chewed.'

(A.1.65)   *piengku yernsru poi nongkomt*

      piengku ye\rnsr/u   poi   nongkom-t
      3SG.ERG SG>3.APPL.RMT.DUR\steap DIST.LOC WZHPURP

      'He steeped the kava for his brother-in-law.' (In this case by chewing it and spitting out the mixture)

(A.1.66)   *townengkai te pi nemeto*

      t\owne/ngkai   te   pi   neme=to
      MID.NSG.RMT.PFV\drink.RS kava DIST.ABS good=ADV

      'They drank the kava well.'

(A.1.67)   *"ah yekinm, nkreke potarngke, ou"*

      ah yeki-nm,   n=kr\eke/   potar-ngke ou
      ah morning-INS FOC=MID.SG.FUT-IRR.PFV village-ALL PMS

      '"Ah, in the morning, I will return to the village, ok."'

(A.1.68)   *yekinm, mpyae pi mpowr bl kwosar waeku sikoru piengku pi*

      yeki-nm,   mpyae pi   mpowr   bl   kwosar waeku
      morning-INS thing   DIST.ABS cassowary egg bundle piggyback.INF
      s\ikor/u   piengku pi
      SG>3.RMT.PFV\piggyback 3SG.ABS 3.ABS

      'In the morning, he carried the cassowary egg bundle on his back.'

(A.1.69)   *pompa moro snngkongk mwampa pngke*

pompa   moro   s\nngko/ngk   mwa-mpa pngke
DIST.ABS FOC   3.RMT.PFV\rise.RS house-ABS DIST.ALL

'Then, he rose from the house to there (the village).'

(A.1.70)   *poi towowongkai*

poi   to\wowo/ngkai
DIST.LOC MID.NSG.RMT.PFV\rest.RS

'He rested there.'

(A.1.71)   *pompa smpo potarngke ngkoro sowoi: "moro tawaleme ?"*

pompa   smpo potar-ngke ngkoro s\owo/i
DIST.ABS again village-ALL thus   NSG>3.FUT-IRR.PFV\see.RS
moro   ta\wale/me
MID.NSG.FUT-IRR.PFV\happen.RS

'Then, back at the village they saw and asked: "what's happening?"'

(A.1.72)   *"nongkomu brsoi"*

nongkom-u   b\rso/i
WZH-SG.ERG SG>1SG.HOD.PFV\hit.RS

'"Brother-in-law hit me"'

(A.1.73)   *"mpowerngke trsome pnto irei, pnto pnto"*

mpower-ngke   t\rso/me   pnto   irei,
cassowary-ALL MID.NSG.FUT-IRR.PFV\hit.RS like.that 3.PRS.DUR.be
pnto   pnto
like.that like.that

'"We fought over a cassowary, just like that."'

(A.1.74)   *"oh mpra eh...", mpunceu ngkoro: "kopa mrwan menre"*

oh mpra eh mpunce-w ngkoro kopa mrwan   menre
oh funny eh wife-SG.ERG thus   idiot thought ignorant

'"Oh that's funny." The wife calls out: "You dumb idiots"'

(A.1.75) *pr moro inre pncent pr, nmaei pr*

pr   moro y\nre/   pncent   pr nmaei pr
tree FOC   SG>3.PRS.DUR\medicate 3NSG.PURP tree before tree

'They are given medicine, traditional medicine.'

(A.1.76) *"nswangkantei mpu"*

n=s\wangka/ntei   mpu
FOC=2NSG>3.IMP.DUR\massage.EX 2.ABS

'"You two massage him"'

(A.1.77) *iwangkaye*

y\wangka/e
NSG>SG.PRS.DUR\massage.EX

'They massaged him'

(A.1.78) *prnm pnm ilowaye*

pr-nm   pnm   i\lowa/e
tree-INS DIST.INS NSG>SG.PRS.DUR\rub.EX

'They massaged him with that plant.'

(A.1.79) *naempr oriminggu*

naempr oriminggu
one   week

'One week later.' (From Indonesian *Hari Minggu* 'Sunday')

(A.1.80) *pit neme ye moro towlengk*

pi-t   neme ye   moro to\wle/ngk
3.ABS-COM good 3.PRS.DUR.be FOC   SG.MID.RMT.PFV

'Him and his brother-in-law got better.'

(A.1.81) *pno teyengkai: yowmnto ntmerknt smpo ngkai pngke mngke*

pno   te\ye/ngkai   yow=mnto
that.time MID.NSG.RMT.DUR\say.RS=IGN SG>2SG.FUT-IRR.DUR\follow.DUR
nt\merk/nt smpo   ngkai   pngke mngke
again   1SG.ERG DIST.ALL INT.ALL

'At that time they said to each other: "I would never follow you anywhere."'

(A.1.82)   *"yow tepi"*

yow tepi
NSG just

'"Just no way."'

(A.1.83)   *"bongke ye"*

bongke ye
remain bongke ye

'"Just stay here."'

(A.1.84)   *pompa smpo, onto yemou ponta tepi*

pompa   smpo onto y\eme/u   ponta   tepi
DIST.ABS again can 3.RMT.DUR.be.located.NPL like.that just

'Then, it just stayed like that.'

(A.1.85)   *pngke tepi irei pne kiki mpowrwa pna pi*

pngke   tepi yrei   pne   kiki   mpowr-wa   pna
DIST.ALL just 3.HOD.DUR.be DIST.FOC speak cassowary-ADJ because
pi
DIST.ABS

'That cassowary story is finished here.'

(A.1.86)   *ptku eibentei irei*

ptku   eibentei yrei
short story   3.HOD.DUR.be

'Just a short story.'

A.2   Coconut story - *saklawa po*

Title: *saklawa po* 'the branched coconut palm.'

Speaker: Magdela Ndiken

Files: 20140212-KCD-ML-DreamStory.wav

               20140212-KCD-ML-DreamStory.eaf

Recorded: 12/02/2014

This is a recount of a prophetic dream spoken by Mama Magdelena Ndiken. The dream involves an unusual tree: a bifurcated coconut palm, i.e. a normal coconut palm that has grown to have multiple heads. This particular coconut palm is located at Ntmtr, one of the garden sites of the Ntikbwan clan and site of a former hamlet. Whilst the story is about a dream, the tree actually exists. The tree is considered to have particular spiritual significance. The story is particularly interesting, as it represents traditional beliefs and practices alongside Catholicism, particularly toward the end where the story shifts to include Christian imagery. The ending is also quite mysterious. The text involves examples of complex modalities as the story shifts from dreams to reality. It also involves extensive quoted speech with two conversations: one between the speaker and her brother and the other between the speaker and god.

(A.2.1)   *ngko powa kreibentent mpon*

      ngko   po-wa   kr\eibent/nt   mpon
      1SG.ABS coconut-ADJ MID.SG.FUT-IRR.DUR\tell 2SG.DAT

      'I will talk of the coconut to you.'

(A.2.2)   *po ncuen ngkoni ngkei moro talpuku saklawa mpaito waotaor ngki dua ribu*

      empat belasngke

      po   ncuen   ngkoni ngkei   moro ta\lpukaw/w
      coconut 1NSG.POSS 1SG.LOC PROX.LOC FOC   MID.SG.RMT.DUR\grow.DUR
      sakla-wa   mpaito waotaor ngki   2014-ngke
      branch-ADJ now   year   PROX.ABS 2014-ALL

      'Our coconut, that we have here, it grown branched, all the way up until this year 2014.' Note: Indonesian numerals for the year.

(A.2.3)   *enam owleu saklawa*

 enam \owle/w   sakla-wa
 six   MID.SG.RMT.DUR\happen.EX branched-ADJ

 'It branched 6 times.'

(A.2.4)   *ngkai pno sowu pye 2005*

 ngkai   pno   s\ow/w   p=ye   2005
 1SG.ERG that.time SG>3.RMT.PFV\see.RS DIST.ABS=3.PRS.DUR.be 2005

 'I saw her (the tree) in 2005' (corrected from 2015 in recording)

(A.2.5)   *pno totnontu pi*

 pno   to\tnont/w   pi
 that.time MID.SG.RMT.RMT\fine.work.RS DIST.ABS

 'That's when it happened.'

(A.2.6)   *yaortr wownau*

 yortr   w\owna/w
 dream 1SG.RMT.DUR\sleep.DUR

 'I had a dream.'

(A.2.7)   *moro wantnu Ntmr po prni*

 moro w\antn/w   ntmr po   pr-ni
 FOC   1SG.RMT.DUR\go.EX Ntmr coconut tree-LOC

 'I went to Ntmr (garden site) at site of the coconut tree.'

(A.2.8)   *ngkoroko bainentu liko sarni suritrrnt, yuwun pr reye, mpumpu pntra*

 ngkoro=ko b\ainent/w   liko   sar-ni   su\ritr/rnt,
 thus=IRR   1SG.RMT.DUR\look river bank-LOC 3.RMT.IMPF\stand.NPL
 yuwun pr   reye,   mpumpu pntra
 large   tree 3SG.F.PRS.DUR.be fruit   like.that

 'I saw it standing at the river bank, it was a large tree (female), with fruit

 like this (makes hand gesture).'

(A.2.9)   *ntop mpumpu sumitrrnt*

ntop   mpumpu   su\mitr/rnt
big   fruit   3.RMT.IMPF\hang.NPL

'Large fruit was hanging.'

(A.2.10)   *ngkai ngkoro: "ete pr pi ngkeye pi alu mito bori tayengk dilarang"*

ngkai   ngkoro: ete pr   pi   ngke=ye   pi
1SG.ERG thus: *   tree DIST.ABS PROX=3.PRS.DUR.be 3.ABS
al-u   mi=to   bori ta\ye/ngk,
father-SG.ERG REL.ABS.INAN=ADV REL   MID.SG.RMT.PFV\say.RS
forbidden(I)
forbidden(I)

'I said: "oh my, this is the tree which the Lord said is forbidden"' (Note, In-
donesian *dilarang* 'forbidden')

(A.2.11)   *ngkoro: "meri mekomminngk"*

ngkoro: meri   me=k\omminngk/
thus: PROH DEO=2SG.IMP.DUR\eat

'He said: "do not eat it."'

(A.2.12)   *"mpai moro kominngkntngki yekompyaeto kowlengk"*

mpai   moro k\ominngknt/=ngki   yeko=mpyae=to
2SG.ERG FOC   MID.2SG.IMP.DUR\eat=PROX.ABS bad=thing=ADV
k\owle/ngk
MID.2SG.IMP.POT.DUR\happen.RS

'"If you eat this, you will become unwell."'

(A.2.13)   *epi yow srboru pompa*

e=pi   yow s\rbor/w   pompa
TOP=DIST.PROX NEG SG>3.RMT.PFV\pick.RS DIST.ABL

'I didn't pick it (the fruit) from there (the tree).'

(A.2.14)   *bokri urow*

bokri   urow
shocked 1SG.RMT.DUR.be

'I was shocked.'

(A.2.15)   *ktancerei*

k=ta\ncere\y
IRR=SG.MID.HOD.PFV\wake.RS

'I awoke.'

(A.2.16)   *yaortr wownei*

yartr   w\owne/y
dream 1SG.HOD.DUR\sleep.DUR

'I had had dream.'

(A.2.17)   *pr ngkai nmaeito sowipi*

pr   ngkai   nmaei=to   s\ow/y=pi
tree 1SG.ERG before=ADV SG>3.HOD.PFV\see.RS=DIST.ABS

'I had seen that tree.'

(A.2.18)   *ngkai ngkoro: "Salpius, mpai pkkant Ntmr po prngke poi knyantnt"*

ngkai   ngkoro: "Salpius, mpai   p=k=kant   Ntmr
1SG.ERG thus: Salpius, 2SG.ERG JUS=IRR=2SG.IMP.DUR.go Ntmr
po   pr-ngke poi   kn\yantn/nt"
coconut tree-ALL DIST.LOC 2SG.IMP.DUR\go.PL

'I said: "Salpius, go to Ntmr to the coconut trees there, go all around"'

(A.2.19)   *"nor prmnto iritr poi?"*

nor   pr=mnto y\ritr/   poi
what tree=IGN 3.PRS.DUR\stand.PL DIST.LOC

'What sort of trees there? [Salpius replied]'

(A.2.20)   *"naynwato"*

naynwa=to
odd=ADV

'"Anything strange" [I said].'

(A.2.21)   *"kenenke"*

ke\nenke/
MID.2SG.IMP.PFV\return.here.RS

'"Come back."'

(A.2.22)   *beibent ngkoro: "kaka po irei"*

      b\eibent/   ngkoro kaka   po   irei
      SG>1SG.FUT-IRR.PFV\tell   thus   older.sibling coconut 3.HOD.DUR.be

      'He said to me: "Sister, there was a coconut." Note: Indonesian *kakak* elder

      sibling

(A.2.23)   *"mntra ye?"*

      mntra   ye
      like.what 3.PRS.DUR.be

      '"What's it like?"'

(A.2.24)   *"saklwa ye, yempoka"*

      sakla-wa   ye   yempoka
      branch-ADJ 3.PRS.DUR.be two

      '"It's branched... in two."'

(A.2.25)   *"owow"*

      owow
      ok

      '"okay"'

(A.2.26)   *"nslengklnt, mpone yepi"*

      n=s\lengkl/nt,   mpone   ye=pi
      FOC=2SG>3.IMP.DUR\watch.DUR 2SG.POSS 3.PRS.DUR.be=DIST.ABS

      '"You guard it, it belongs to you."' (By virtue of his clan)

(A.2.27)   *"bt santont"*

      bt   s\anto/nt
      care 2SG>3.IMP.DUR\watch.EX

      '"You keep guarding it carefully."'

(A.2.28)   *ngkoro teibent: "pene mpumpu moro srmitrant, meri mesrbor"*

ngkoro   t\eibent/   pene   mpumpu moro
thus   SG.MID.PFV\tell 3SG.POSS fruit   FOC
sr\mitr/nt,   meri   me=s\rbor/
SG.FUT-IRR.DUR\hang.PL PROH=2SG.IMP.PFV\pick.RS

'I said: "Its fruit which is hanging, don't eat it."'

(A.2.29)   *mpai moro srbor pi, yekompyaeto kowlei*

mpai   moro s\rbor/   pi,   yeko=mpyae=to
2SG.ERG FOC   2SG.FUT-IRR.PFV\pick.RS 3.ABS bad=thing=ADV
k\owle\
MID.2SG.FUT-IRR.PFV\happen.RS

'"If you pick the fruit, you will become unwell."'

(A.2.30)   *ah pi tepi*

ah pi   tepi
ah 3.ABS just

'Ah that's it.'

(A.2.31)   *pompa, smpo naempr mi, poi wantnu pnt (macam taman) po prni poi*

pompa,   smpo naempr mi,   poi   w\antn/w   pnt
DIST.ABS again   one   night DIST.LOC 1SG.RMT.DUR\go.EX DIST.PURP
(macam taman) po   pr-ni   poi
type   park   coconut tree-LOC DIST.LOC

'Then, one night later, I walked around there for it, (in the park) at the co-
conut tree.'

Indonesian *macam taman* 'kind of park'. The speaker is referring to the Na-
tional Park where the garden site is located.

(A.2.32)   *ngkoroko yanmakru al pi... makotawa ksowu*

ngkoro=ko ya\nmakr/w   al   pi   makota-wa
thus=IRR   3.RMT.DUR\come.NPL father DIST.ABS crown-ADJ
k=s\ow/w
IRR=SG>3.RMT.PFV\see.RS

'Like that the Lord came... I saw he had a halo.' Indonesian *mahkota* 'crown'

(A.2.33) *senter onto sunmangkrnt*

senter onto su\nmangk/rnt
torch   can   SG>3.RMT.IMPF\shine.EX

'He was shining a light.' Indonesian *senter* 'torch'

(A.2.34) *ni mwa-mwani bapak tuane klaempi, wutklne klaempi, nate...*

ni   mwa-mwa-ni   bapaktua-ne klaempi, wutkl-ne
1NSG.ABS house-house-LOC old.men-POSS children, small-POSS
klaempi, nate
children, other

'Us, in our houses, the old men's children, the small one's children, others...'

(A.2.35) *piengku pnm sinm senter, sinm, ewertei tapi oml poi onto kurntomprnt*

piengku pnm   si-nm   senter, si-nm   e\werte/y
3SG.ERG DIST.INS eye-INS torch   eye-INS SG.MID.HOD.DUR\light.up.DUR
tapi oml   poi   onto ku\rntompr/rnt
but   mother DIST.LOC can   3SG.F.RMT.IMPF\sit.aside

'...He, with the light of his torch, illuminated us, but there was a woman sitting aside (not in the light).'

(A.2.36) *nteme tengk-tengk*

nteme tengk-tengk
little   piece-piece

'little pieces.' (I am unsure the relevance of this statement.)

(A.2.37) (inaudible speech)

(A.2.38) *ngkai ngkoro: "oro yator?"*

ngkai   ngkoro oro   y\ator/
1SG.ERG thus   who SG>3.PRS.DUR\search.DUR

'I asked: "Who are you searching for?"'

(A.2.39) *"ngki yator?"*

ngki   yator?
PROX.ABS SG>3.PRS.DUR\search.DUR

'"This one?"'

(A.2.40)   *"yow"*

yow
no

'"No." [he said]'

(A.2.41)   *melto kwamulantnrnt*

mel=to   kwa\mulantn/rnt
head=ADV   MID.SGRMT.IMPF\move.circular.EX

'He shook his head.'

(A.2.42)   *"ow, mi? ngki? ah ete!"*

ow mi   ngki   ah exclaim
ok which PROX.ABS

'[I asked:] "Ok, which one? This one?" "ah yes!" [I realised.]'

(A.2.43)   *"owow mpai pi yeruki"*

owow   mpai   pi   y\eruk/y
ok   2SG.ERG 3.ABS   SG>3.HOD.DUR\remember.DUR

'[He said:] "Ok, you've remembered it."' (It is not clear that the speaker is
referring to in these segments.)

(A.2.44)   *pompa ngko bokri*

pompa   ngko   bokri
DIST.ABL 1SG.ABS   shocked

'That shocked me.'

(A.2.45)   *bra*

bra
finished

'The story is finished.'

A.3   Gardening story - *brar paya*

Title: *brar paya* 'Garden work'

Speaker: Yonas Gelambu

Files: 20140205-KCD-YG-Gardening.wav

                 20140205-KCD-YG-Gardening.eaf

Recorded: 05/02/2014

This is a procedural account of how one creates a garden site and prepares the appropriate feasts at each step in the process. The story mostly focuses on the ceremonial side of building garden sites although it also contains many interesting references to traditional slash-and-burn agriculture techniques practised by the Kanum people.

(A.3.1)   *ok mpyaewa kreibentnt ngko ngki, brar payawa*

> ok mpyae-wa kr\eibentnt   ngko   ngki   brar
> ok thing-ADJ   MID.SG.FUT-IRR.DUR\tell 1SG.ABS PROX.ABS garden
> paya-wa
> work-ADJ

> 'Ok, I will tell a story about garden work.'

(A.3.2)   *ni knume irepe moro brar moro ayalekai trnm*

> ni   knume irepe   moro brar   moro a\yalek/ai
> 1NSG kanum people FOC   garden FOC   MID.NSG.RMT.DUR\start.EX
> tr-nm
> front-INS

> 'We, Kanum people, started a garden from the beginning.'

(A.3.3)   *nmaei nyowkai pant*

> nmaei n=y\owk/ai   pant
> before FOC=NSG>3.RMT.DUR\see.EX high.place

> 'First, we looked for high ground.'

(A.3.4)   *"oh ngki ye pant kelimu"*

    oh ngki   ye   pant   kelimu
    oh, PROX.ABS 3.PRS.DUR.be high.place forest

    '[We'd say:] "Ok, this is high forest ground."'

(A.3.5)   *pompa moro sront yow iri poi*

    pompa   moro sront   yow y\r/i
    DIST.ABS FOC   3.FUT-IRR.DUR.be NEG 1NSG>3.PRS.DUR\work.EX
    poi
    DIST.LOC

    'Away from that place, we don't make it there.'

(A.3.6)   *moro srowpi... "oh pant ngkeye"... brar ngkei irpeni*

    moro sr\ow/ei=pi,   oh, pant
    FOC   NSG>3.FUT-IRR.PFV\see.RS=DIST.ABS oh high.place
    ngke=ye   brar   ngkei   y\rpen/i
    PROX=3.PRS.DUR.be garden PROX.LOC 1NSG>3.PRS.DUR\clear.forest

    'We'll see it[and think:] "ah this is high ground, we clear a garden here".'

(A.3.7)   *pompa srioukntei naemmpr oriminggu ntnyant pngke brar moi bori sront pi*

    pompa   sr\owk/ntei   naemmpr oriminggu
    DIST.ABS NSG>3.FUT-IRR.DUR\see.EX one   week
    nt\nya/nt   pngke   brar   moi   bori
    1.NSG.FUT-IRR.DUR\go.EX DIST.ALL garden REL.LOC REL
    sront=pi
    3.FUT-IRR.DUR.be DIST.ABS

    'Then, one week later we'll see, we'll go to where the garden will be.'

(A.3.8)   *sraku moro krayalei, nmaei kai kreye*

    sraku   moro kr\ale/ei,   nmaei kai
    clearing FOC   MID.NSG.FUT-IRR.PFV\start.RS before feast
    kr\eye/
    MID.SG.FUT-IRR.PFV\work.RS

    'We'll start the clearing, but first a feast will be held.'

(A.3.9)   *mens-mens kreye poi*

mens-mens   kr\eye/   poi
fire-fire   MID.SG.FUT-IRR.PFV\work.RS   DIST.LOC

'A big fire will be made.'

(A.3.10)   *kai moro kreyepi*

kai   moro   kr\eye/=pi
feast   FOC   MID.SG.FUT-IRR.PFV\work.RS=DIST.ABS

'A feast will be held.'

(A.3.11)   *sraku tepi ye pno, srtrunantei pngke, ngkoro, pnm nampa ye*

sraku   tepi   ye   pno,   sr\truna/ntei
clearing   just   3.PRS.DUR.be   that.time   NSG>3.FUT-IRR.DUR\measure.EX
pngke,   ngkoro,   pnm   nampa   ye
DIST.ALL   thus   DIST.INS   side   3.PRS.DUR.be

'At that time of the clearing, we'll measure it up so... that's one side.'

(A.3.12)   *pnm ye nampa brar*

pnm   ye   nampa   brar
DIST.INS   3.PRS.DUR.be   side   garden

'That's the side of the garden.'

(A.3.13)   *sraku moro krerntei*

sraku   moro   kre\r/ntei
clearing   FOC   MID.NSG.FUT-IRR.DUR\work.EX

'We'll make the clearing.'

(A.3.14)   *srrtiwei... bra*

sr\rtiw/ei   bra
NSG>3.FUT-IRR.PFV\finish.RS   finished

'We'll finish it, its over.'

(A.3.15)   *pompa smpo brar okrei ye*

pompa   smpo   brar   okrei   ye
DIST.ABL   again   fence   pile.INF   3.PRS.DUR.be

'Then, there's a stack of fence palings.' (Note, *brar* can mean either 'fence'
or 'garden', compare with cognate terms *Zaun* 'fence' from German and *tuin*
'garden' also cognate with English *town*.)

(A.3.16)   *tumetume krawakint*

tumetume   kra\waki/nt
fence.post   MID.SG.FUT-IRR.DUR\plant.EX

'Then the fence posts will get planted.'

(A.3.17)   *nampa mpiaengke omarentnei bra*

nampa   mpiae-ngke   o\marentn/ntei   bra
side   thing-ALL   MID.NSG.FUT-IRR.DUR\circumnavigate.EX   finished

'We'll circle around to the other side until finished.'

(A.3.18)   *pompa smpo ketap orirei ye*

pompa   smpo   ketap   orirei   ye
DIST.ABS   again   closed.fence   weave.INF   3.PRS.DUR.be

'Then, it is a woven fence.'

(A.3.19)   *poyr pari imrintei, pnm krakakont brar pi, orirei tepi ye pi*

poyr   pari   y\mrinte/i   pnm
red.paperbark   cord   NSG>3.PRS.DUR\peel.EX   DIST.INS
kra\kako/nt   brar   pi   orirei   tepi   ye
MID.SG.FUT-IRR.DUR\tie.EX   fence   DIST.ABS   weave.INF   just   3.PRS.DUR.be
pi
DIST.ABS

'We peel the red paperbark rope... with that, the fence will be tied... then it's
a woven fence.'

(A.3.20)   *brar moro ikri*

brar   moro   y\kr/i
fence   FOC   NSG>3.PRS.DUR\pile.EX

'We pile up the fence palings.'

(A.3.21) *srrtiwi nampa mpyaengke*

srrtiwi   nampa   mpyae-ngke
NSG>3.FUT-IRR.PFV\finish.RS side   thing-ALL

'We'll finish the sides.'

(A.3.22) *pr poi srakuni mito irarei pi, yow mi bori srrntei*

pr   poi   sraku-ni   mi=to   y\rar/ei=pi
tree DIST.LOC grass-LOC REL.ABS=ADV 3.NSG.HOD.DUR\be.EX=DIST.ABS
yow mi   bori sr\r/ntei
NEG REL.ABS REL   NSG>3.FUT-IRR.DUR\work.EX

'The wood (from the trees) which was in the clearing, we won't use (yet).'

(A.3.23) *srworntei mpaesmnm, ntop pr, wutkl pr, pne pr mito irar, tumetume pnt srarnt*

smpo pi

sr\wor/ntei   mpaeswm-nm ntop pr   wutkl pr
NSG>3.FUT-IRR.DUR\chop.EX axe-INS   big   wood   small wood
pne   pr   mi=to   y\rar/,   tumetume pnt
DIST.FOC tree REL.ABS=ADV 3.PRS.DUR\be.EX palings   DIST.PURP
sr\rar/nt smpo pi

'We'll chop the trees into large and small pieces, those are the pieces which
are fence palings later.'

(A.3.24) *ketapt, nampun sanpi pr, nampun sampa pr*

ketap-t   nampun sanpi   pr   nampun sampa   pr
close.fence-PURP other   long.stake wood other   short.stake wood

'For the closed fence, some long stakes and some short stakes.'

(A.3.25) *pnt moro krowert brwa moro krowle, pr krowlent brarni poi*

pnt   moro kro\wert/   br-wa   moro
DIST.PURP FOC   MID.SG.FUT-IRR.PFV\burn dry-ADJ FOC
kr\owle/,   pr   kr\owle/nt
MID.SG.FUT-IRR.PFV\happen wood MID.SG.FUT-IRR.DUR\happen
brar-ni   poi
garden-LOC DIST.LOC

'So that it will burn, the wood must become dry, then a garden can be there.'

(A.3.26)   *krowert brar pi, ympmprte krowert kongkomp*

kro\wert/   brar   pi,   ympomprte
MID.SG.FUT-IRR.PFV\burn   garden DIST.ABS   all
kro\wert/   kongkomp
MID.SG.FUT-IRR.PFV\burn   midday

'The garden [site] will burn, it'll all burn in the middle of the day.'

(A.3.27)   *mur kongkomp pno srwerti bra*

mur   kongkomp pno   sr\wert/ei   bra
peak   midday   that.time NSG>3.FUT-IRR.PFV\burn   finished

'At the top of the day, we'll burn it until finished.'

(A.3.28)   *brar moro krotiu mpiaenm mensnm*

brar   moro kr\otiw/   mpyea-nm mens-nm
garden   FOC   MID.SG.FUT-IRR.PFV\finish.RS thing-INS   fire-INS

'The garden will be finished off with the fire.'

(A.3.29)   *pompa smpo oritnnkgai ye pompa*

pompa   smpo oritnnkgai ye   pompa
DIST.ABL again clean.INF   3.PRS.DUR.be DIST.ABL

'Then, it's cleaned from that (the burning).'

(A.3.30)   *kar krakorant, mpon mpiae, mpon mpiae... sumpl oroit pnt pop*

kar   kra\kora/nt   mpon   mpiae mpon   mpiae
share MID.NSG.FUT-IRR.DUR\divide.EX   2SG.DAT thing 2SG.DAT thing
sumpl oroi-t   pnt   pop
yam   plant.INF-PURP   DIST.PURP   true

'It'll be divided into share plots, one for you, one for you... in order to plant

yams.'

(A.3.31)   *smpo kai kreye*

smpo kai   kr\eye/
again feast MID.SG.FUT-IRR.PFV\work.RS

'Another feast will be held.'

(A.3.32)   *kai kreye pnt sumpl oroit, baror kongkonm*

kai   kr\eye/   pnt   sumpl oroi-t
feast MID.SG.FUT-IRR.PFV\work.RS DIST.PURP yam   plant.INF-PURP
baror   kongko-nm
late.afternoon sun-INS

'A feast for the planting of yams will be held in the afternoon.'

(A.3.33)   *oh ympmprte barornm poi srnownt, naempr poi, naempr karni, naempr karni,*

bra

oh ympmprte baror-nm   poi   sr\now/nt
oh all   afternoon-INS DIST.LOC SG>3.FUT-IRR.DUR\distribute.EX
naempr poi   naempr kar-ni   naempr kar-ni   bra
one   DIST.LOC one   share-LOC one   share-LOC finished

'In the afternoon, everybody will be distributed, one there, one in a share,

one in another share, until finished.'

(A.3.34)   *pompa smpo mpusakrto paya krerntpi*

pompa   smpo mpusakr=to paya
DIST.ABL again alone=ADV   work
kre\r/nt=pi
MID.SG.FUT-IRR.DUR\work.EX=DIST.ABS

'Then, each will work alone again.'

(A.3.35)   *pnmwa-t artiboi, moro srrtiwi*

pnmwa-t   artiboi   moro sr\rtiw/i
until-PURP finish.INF FOC   NSG>3.FUT-IRR.PFV\finish.RS

'After all that, it'll be finished.'

(A.3.36)   *pngke yantoi sanpa prnm srwakintai*

pngke   y\anto/i   sanpa   pr-nm
DIST.ALL NSG>3.PRS.DUR\wait.DUR small.stake wood-INS
sr\waki/ntay
NSG>3.FUT-IRR.DUR\plant.EX

'We wait until we'll plant the small stakes.'

(A.3.37)   *pompa smpo krortiu, pompa smpo sanpinm*

> pompa   smpo kro\rtiw/   pompa   smpo
> DIST.ABL again MID.SG.FUT-IRR.PFV\finish.RS DIST.ABL again
> sanpi-nm
> long.stake-INS

'Then once that will be finished, then it's the long stakes.'

(A.3.38)   *sanpi moro krotiu, sanpi owakinei mito ye kaikai smpo poi pnt*

> sanpi   moro kro\rtiw/   sanpi   owakinei
> long.stake   FOC   MID.SG.FUT-IRR.PFVfinish.RS   long.stake plant.INF
> mi=to   ye   kaikai smpo poi   pnt
> REL.ABS=ADV 3.PRS.ABS   feast   again DIST.LOC DIST.PURP

'Once the long stakes will be finished, there is a long-stake planting feast.'

(A.3.39)   *kai kreye pnt*

> kai   kr\eye/   pnt
> feast MID.SG.FUT-IRR.PFV\work.RS DIST.PURP

'We'll hold a feast for that.'

(A.3.40)   *krotiu, pompa smpo ntontant yuow mpwale*

> kro\rtiw/   pompa   smpo nt\onta/nt
> MID.SG.FUT-IRR.PFVfinish.RS   DIST.ABL again 1NSG.FUT-IRR.DUR\wait.NPL
> yuow   mpwale
> three moon

'Once that'll be done, then we'll wait three more months.'

(A.3.41)   *sumpl pi moro krowle mpyaewa pop, kmput pene moro krenimer sumpl km-put pi*

> sumpl pi   moro kr\owle/   mpyae-wa pop
> yam   DIST.ABS FOC   MID.SG.FUT-IRR.PFV\happen thing-CAUS true
> kmput   pene   moro kre\nimer/   sumpl kmput
> big.yam 3SG.POSS   FOC   MID.SG.FUT-IRR.PFV\exit.RS   yam   large.yam
> pi
> DIST.ABS

'When the yams will be ready, the big yams will come out.' (Another translation for *kmput* would be 'prize yam')

(A.3.42)   *onongkoi tepi ye pi*

onongkoi   tepi ye   pi
pile.INF   just 3.PRS.DUR.be DIST.ABS

'And that's the stockpile.'

(A.3.43)   *ntarsin urei*

nstarsin   \ure/i
thorn   MID.NSG.PRS.DUR\remove.EX

'The thorns come out.'

(A.3.44)   *ntarsin bt yure pi ye, pnmwat neme ye*

ntarsin bt   y\ure/   pi   ye
thorn   carefully   SG>3.PRS.DUR\remove.EX DIST.ABS   3.PRS.DUR.be
pnmwa-t   neme   ye
until-PURP good 3.PRS.DUR.be

'You carefully remove the thorns until it's all good.'

(A.3.45)   *swani onto ntlngkolnt mpoi ngkei ntarsinu piengku, siurnt smpo*

swa-ni   onto nt\lngkol/nt   mpoi   ngkei
hand-LOC   can   SG>2SG.FUT-IRR.DUR\stab   IGN.LOC   PROX.LOC
ntarsin-u   piengku   s\yur/nt   smpo
thorn-SG.ERG   3SG.ERG   SG>3.FUT-IRR.DUR\remove.DUR again

'The thorns will potentially stab you here in the hand and you'll have to pull
them out again.'

(A.3.46)   *moro krortiu pompa smpo yantoi pngke... mpaito bulan Augustus-September
otroi pno ye smpo*

moro kro\rtiu/   pompa   smpo
FOC   MID.SG.FUT-IRR.PFV\finish.RS   DIST.ABL again
y\anto/i   pngke   mpaito bulan   Augustus-September
NSG>3.PRS.DUR\wait.EX   DIST.ALL   now   (month) (August-September)
otroi   pno   ye   smpo
dig.INF   that.time 3.PRS.DUR.be again

'Once that'll be finished, we wait again... now it's August-September, its dig-
ging time again.'

(A.3.47)   *otroi smpo mito ye kai ye smpo pno mens-mens otroit*

      otroi   smpo mi=to   ye   kai   ye   smpo
      dig.INF again REL.ABS=ADV 3.PRS.DUR.be feast 3.PRS.DUR.be again
      pno   mens-mens otroi-t
      that.time fire-fire   dig.INF-PURP

      'Its digging again, and again at that time there is a feast for the digging.'

(A.3.48)   (Speaker makes a number of false starts here)

(A.3.49)   *baror krolngkole moyanm… yekinm ortoit… yekinm peto… otroi mito ye jam*

              5, ntop yekinm peto

      baror   kro\lngkol/e   moya-nm yeki-nm
      late.afternoon MID.NSG.FUT-IRR.PFV\stab chant-INS morning-INS
      ortoi-t   yeki-nm   peto otroi mi-t   ye   jam
      dig.INF-PURP morning-INS very dig.INF REL-PURP 3.PRS.DUR.be (hour)
      lima   ntop yeki-nm   peto
      (five) big   morning-INS very

      'It'll be afternoon, we will dig (stab) whilst chanting… morning digging…

      early in the morning…. the dig is at 5am, really very early in the morning.'

(A.3.50)   *otroit tepi ye pi, ympmprte bra*

      otroi-t   tepi ye=pi,   yimpumprte bra
      dig.INF-PURP just 3.PRS.DUR.be DIST.ABS   all   finished

      'Once it's dug, we're all finished.'

(A.3.51)   *otroit mit ye pi, naempr konsopor, yempoka konsoper yow irar*

      otroi-t   mi-t   ye   pi   naempr konsopor
      dig.INF-PURP REL-PURP 3.PRS.DUR.be DIST.ABS one   day
      yempoka konsoper yow y\rar/
      two   days   NEG 3.PRS.DUR\be.EX

      'For that digging, [it must be] 1 day, not 2 days.'

(A.3.52)   *baror peto mi moro sront, srtrontei bra*

      baror   peto mi   moro sront
      late.afternoon very night FOC   3.FUT-IRR.DUR.be
      sr\tro/ntei   bra
      NSG>3.FUT-IRR.DUR\dig.EX finished

      'It'll be late afternoon or night when we'll finish digging, done.'

(A.3.53)   *srmonsntei sumpl krapsnteipi... naempr, yempoka, yuow...*

sr\mons/ntei   sumpl
NSG>3.FUT-IRR.DUR\gather.EX   yam
kra\ps/ntei=pi   naempr   yempoka   yuow
MID.NSG.FUT-IRR.DUR\count.EX=DIST.ABS   one   two   three

'We'll assemble the yams and they'll be counted... 1, 2, 3...'

(A.3.54)   *tarumpao moro bori ye pi, mpiae bori aepsei pi... tarumpao, ntamno, ulemeke*

tarumpo   moro   bori   ye   pi   mpiae   bori   opsei
216   FOC   REL   3.PRS.DUR.be   DIST.ABS   thing   REL   count.INF
pi   tarumpao   ntamno   ulemaeke
DIST.ABS   216   1296   7776

'...216, which is what we count to, that's the counting... 216, 1296 7776.'

(The counting is up to a certain amount either: 6^3, 6^4 or 6^5)

(A.3.55)   *kmput mito irar sumpl kmput, ngkoro yowngkaipi*

kmput   mi=to   y\rar/   sumpl   kmput   ngkoro
large.yam   REL.ADV   3.PRS.DUR\be.EX   yam   large.yam   thus
y\owngka\i=pi
1NSG>3.PRS.DUR\put.EX=DIST.ABS

'These are large yams, that we put like this.'

(A.3.56)   *pi mlko mito irar nkgoro sromkunteipi*

pi   mlko   mi=to   y\rar/   nkgoro
DIST.ABS   seed   REL=ADV   3.PRS.DUR\be.EX   thus
sro\mku/ntei=pi
1.NSG>3.FUT-IRR.DUR\assemble.EX

'The ones for seed, we'll gather them up.'

(A.3.57)   *kmput mito ye, prok (nongkait) pit ye*

kmput   mi=to   ye   prok   (nongkai-t)   pit
large.yam   REL=ADV   3.PRS.DUR.be   hunger   (food-PURP)   3.PURP
ye
3.PRS.DUR.be

'Those which are big, they are for food.' (Speaker used the word *prok*, which

is generally translated as 'hunger' but is commonly used to mean 'food'.

Upon re-listening, the comments that using *prok* to mean food is incorrect wanted to correct this to *nongkai*, although all speakers frequently will use *prok* in unmonitored speech.)

(A.3.58) *nongkai-nongkait pi ye*

nongkai-nongkai-t pi   ye
food-food-PURP   DIST.ABS 3.PRS.DUR.be

'Those are for food.'

(A.3.59) *pompa smpo krontongkntei pngke mpngke, sumpl (sobar) mwangke pngke pop*

pompa   smpo kr\ontongk/ntei   pngke   mpngke, sumpl
DIST.ABL again MID.NSG.FUT-IRR.DUR\bring.EX DIST.ALL REL.ALL   yam
mwa-ngke pngke   pop
house-ALL DIST.ALL true.'

'Then they'll be carried there, to the yam house.'

(A.3.60) *poi yowngkai pi*

poi   y\owngka/i   pi
DIST.LOC NSG>3.PRS.DUR\place.EX DIST.ABS

'We put them there.'

(A.3.61) *poi smpo nitrbri pi, mlko nato, nongkait nato, kmput mito nato*

poi   smpo n=y\trbr/i   pi   mlko nato
DIST.LOC again FOC=NSG>3.PRS.DUR\separate.EX DIST.ABS seed other
nongkai-t nato kmput   mi=to   nato
food-PURP other large.yam REL=ADV other

'We separate them there, some are seeds, others for food and other are those large yams.'

(A.3.62) *mpiaet iri smpo mens-menst mito bori irar, normnto mens-mens*

mpiae-t   y\r/y   smpo mens-mens-t mi=to   bori
thing-PURP NSG>3.PRS.DUR\work.EX again fire-fire-PURP REL=ADV REL
y\rar/   nor=mnto   mens-mens
3.PRS.DUR\be.Ex what-IGN   fire-fire

'The ones which we make for ceremonies, for whatever ceremonies.'

(A.3.63) *soi mito irar*

soi   mi=to   y\rar/
custom REL=ADV 3.PRS.DUR\be.EX

'Those which are our customs.'

(A.3.64) *pno imei pngke mpnke kait*

pno   y\me/y   pngke   mpnke kai-t
that.time NSG>3.PRS.DUR\exit.RS DIST.ALL REL.ALL feast-PURP

'At the time, we take them out for all sorts of feasts.'

(A.3.65) *pngke tepi irei pi brar paya, pompa smpo ntontant*

pngke   tepi yrei   pi   brar   paya, pompa smpo
DIST.ALL just 3.HOD.DUR\be DIST.ABS garden work DIST.ABL again
nt\onta/nt
1NSG.FUT-IRR.DUR\wait.EX

'That's it for garden work, after that we'll wait again.'

(A.3.66) *pnmwat smpo tempa brar srale*

pnmwa-t   smpo tempa brar   sr\ale/
until-PURP again new   garden SG>3.FUT-IRR.DUR\start.RS

'Up until we'll start a new garden.'

(A.3.67) *ya, ponto tepi irei kiki ebentei pi...*

ya ponto   tepi yrei   kiki   ebentei pi
ya like.that just SG.HOD.DUR.be speak story   DIST.ABS

'That's it for this story.'

(A.3.68) *knume irepe ni ponto tepi irei*

knume irepe ni   ponto   tepi yrei
kanum people 1NSG.ABS like.that just SG.HOD.DUR.be

'We Kanum people are just like that.'

(A.3.69) *neme ye*

neme ye
good SG.PRS.DUR.be

'Thank you.' (lit. it is good)

Appendix B

Formal model of inflection

This appendix is a fully articulated Paradigm Function Morphology model of the inflectional morphology of verbs in Ngkolmpu. This model is in line with the most recent aspects of Paradigm Function Morphology including paradigm linkage (Stump, 2016).

The model itself uses the particular formalism as required by the Cat's Claw Paradigm Function Morphology Engine (PFME) found at https://www.cs.uky.edu/ raphael/linguistics/pfm2.cgi. This is an online parsing tool developed by Raphael Finkel which allows fully explicit PFM theories to be tested for completeness. A file has been included with the thesis (NgkolmpuVerbalInflection.pfm2); this is a text file of the model that can be used to test the theory using the PFME. The model is broken up into various section representing the modules of the model; however, the model should be run together in its entirety and treated as a single file.

The model presented here models the inflectional paradigms of both prefixing and ambifixing verbs. It includes examples from each of the primary inflectional classes, discussed below. It only models inflectional features, i.e. diathesis and direction are not part of the model. The various aspects of each element of the model are briefly introduced, however it assumes the reader is familiar with the formalism. In addition, the particularities of each analytical choice are not explicated but reflect analytical decisions made throughout the thesis.

B.1   Content paradigm

There are two content paradigms, one for ambifixing verbs and one for prefixing verbs. These define the set of features relevant for inflected verbs of either class. Different schemas are required for each since they inflect for different features, namely prefixing verbs do not have an actor argument. In addition, perfective aspect is not included in this example as the verb chosen to represent prefixing verbs is a positional verb, and as such does not inflect for perfective aspect. This model uses the labels actor and undergoer and assumes a mapping from syntactic roles to these categories.

These paradigm schemas are constrained by a number of property co-occurrence restrictions. This takes the form of the Disallow schema, which restricts certain feature combinations. A discussion of the theoretical status of this approach and other potential mechanisms are briefly discussed in Section 9.1.1.

```
Content paradigm schema(V) = {
        TENSE:{fut/pres/hod/rct/rmt}
        ASP:{dur/ipfv/pfv}
        MOD:{real/irr/pot/imp}
        AGR(A):{1/2/3 sg/nsg}
        AGR(U):{((1/2 sg/nsg)/(3 sg fem/masc)/(3 nsg))}
        PLUR:{npl/pl}
        }

Content paradigm schema(V pre) = {
        TENSE:{fut/pres/hod/rct/rmt}
        ASP:{dur/ipfv}
        MOD:{real/irr/pot/imp}
        AGR(U):{((1/2 sg/nsg)/(3 sg fem/masc)/(3 nsg))}
        PLUR:{npl/pl}
        }

Disallow = {
        (ASP:{ipfv} TENSE:{fut/pres/hod})  /
        (ASP:{pfv} TENSE:{pres}) /
        (MOD:{imp/irr} TENSE:{pres/hod/rct/rmt} ) /
```

```
(MOD:{real} TENSE:{fut}) /
(MOD:{pot} TENSE:{prs/hod/rct}) /
(MOD:{pot} TENSE:{rmt} ASP:{pfv/ipfv}) /
(AGR(A):{1} AGR(U):{1}) /
(AGR(A):{2} AGR(U):{2}) /
(PLUR:{pl} ASP:{pfv})
}
```

B.2 Stems and lexical entries

The following are the set of lexical entries which serve as exemplar; these include both ambifixing verbs and prefixing verbs. In the ambifixing verbs, we have a verb with a single pan-aspectual stem along with verbs which display one, two and three stems as discussed in Section 7.1. There is a single prefixing verb from the positional class. Verbs have been selected in order to have stems ending in both vowels and consonants as discussed in Section 6.8.

Lexical entries contain four lines: the label, represented here by the infinitive in CAPS, the semantics, the syntactic category and the inflectional class. The meaning is provided only for the sake of clarity and memory but it is not used by the model.

```
Lexical entries

Lexeme: OPINOI
Meaning: touch
Syntactic category: V
Inflection class: pan

Lexeme: OMERKNTNAI
Meaning: follow
Syntactic category: V
Inflection class: 3

Lexeme: OBSUKAI
Meaning: lift
Syntactic category: V
```

```
Inflection class: 2


Lexeme: ONTKAI
Meaning: put in
Syntactic category: V
Inflection class: 2 c


Lexeme: OKROI
Meaning: pile
Syntactic category: V
Inflection class: 1


Lexeme: IRIRTR
Meaning: be.standing
Syntactic category: V
Inflection class: pre c
```

Roots for each verb are listed along with a set of rules for deriving stems and asso-ciating them with morphomic categories that define their distribution. The roots are all listed individually for each verb. For each inflectional class, there is a rule which associates a morphomic feature, i.e. extended or durative, with a morphophonological operation over a root. The full set of operations are discussed in Section 7.1, however here only a few have been chosen as examples. As discussed, the phonological opera-tions which are used to derive stems in Ngkolmpu are separate from the distribution of those stems. As such, these are modelled with operations defined separately from the stem features in the form of a list of morphophonological operations.

```
Root(OPINOI) = pino
Root(OMERKNTNAI) = merba
Root(OBSUKAI) = bsu
Root(OKROI) = kr
Root(ONTKAI) = ont
Root(IRIRTR) = ritr


Stem(L[pan]) = Root(L)


Stem(L[3]) = Root(L)
```

```
Stem(L[3]:dur) = k(Root(L))
Stem(L[3]:ex) = ntn(Root(L))


Stem(L[2]) = Root(L)
Stem(L[2]:ex) = k(Root(L))


Stem(L[1]:ex) = Root(L)


Stem(L[pre]) = Root(L)
Stem(L[pre]:pl) = kan(Root(L))



Morphophonological operations = {
        ntn(Pba) = Pkntn
        k(Pba)   = Pk
        kan(P)   = Pkan
        }
```

This model assumes that undefined stems are not generated. In the PFME, it assumes that the root will be used as a default stem even if this not defined in the model. As such, in order to use this model with the particular engine, the following two lines will need to be added in order to overwrite the assumed defaults built into the parser.

```
Stem(L) = undefined
Stem(L:dur) = undefined
```

B.3   Corr function

The FORM-CORRESPONDENCE FUNCTION *Corr* is used to map content paradigms to form paradigms. The Corr function states that for any content cell, i.e. a lexeme (L) and a particular feature value (σ), there is an equivilent form cell, i.e. a stem and the equivilent morphological feature. The morphological features are represented by a property mapping function over the content feature, PM(σ). The property mapping function is the primary locus of purely-morphological inflectional structure. Note that at this level this occurs for the entire paradigm, however in Chapter 9 I argued that this should po-

tentially be available for sub-paradigmatic structure as well.

```
Corr(<L, σ>) = <Stem(L:ex), PM(σ)>
Corr(<L, σ:{ASP:{dur} PLUR:{npl}}>) = <Stem(L:dur), PM(σ)>
Corr(<L, σ:{ASP:{pfv}}>) = <Stem(L), PM(σ)>


Corr(<L[pan], σ>) = <Stem(L), PM(σ)>


Corr(<L[pre], σ>) = <Stem(L), PM(σ)>
Corr(<L[pre], σ:{PLUR:{pl}}>) = <Stem(L:pl), PM(σ)>



Property mapping PM = {
        (AGR(U):{1 nsg}) → (AGR(U):{2})
        (AGR(U):{2 nsg}) → (AGR(U):{3})
        (AGR(U):{3 sg fem}) → (AGR(U):{1 sg})
        }
```

In Section 7.1, I discussed contrasting hierarchies of prominence, one for stem distribution and one for stem generation. These hierarchies are modelled through the use of contrasting defaults in the stem generation and the Corr function. The default Corr function uses the extended stem, whilst in the stem generation, the default stem was the root, i.e. the restricted stem.

B.4   Paradigm function and realisational rules

The paradigm function serves to link the form paradigm to the realised paradigm. It defines a set of rule blocks which introduce phonological material given a set of feature values. In Ngkolmpu there are 5 blocks defined in the paradigm function, however the undergoer block contains a further paradigm function which itself contains two further blocks, to account for the layering of the γ-series prefix.

```
PF(<X, σ>) = [ undergoer : [ iv : [ iii : [ ii : [ i : <X, σ>]]]]]
```

Rules are organised into rule blocks. Block i is the TAM suffix. Block ii is the future

potential marker which can co-occur with one of the TAM suffixes; as such, it has its own block. Block iii is the actor suffix. Block iv is the cross-indexer. Block undergoer contains two rules, the first rule is the third person γ-series marker and the second rule contains a further paradigm function which defines the two layers of the undergoer marker. Block v contains the the rules for the α-series and β-series prefixes. Block vi contains the γ-series layer that co-occurs with α-series prefixes.

```
Block i
i, X [V], σ:{(TENSE:{fut} ASP:{dur}) / (TENSE:{rct} ASP:{pfv})} → Xnt
i, X [V], σ:{TENSE:{rct} ASP:{ipfv}} → Xen
i, X [V], σ:{TENSE:{rmt} ASP:{ipfv}} → Xrnt
i, X [V], σ:{(TENSE:{rmt} ASP:{pfv}) / (MOD:{pot} TENSE:{rmt}} → Xngk
i, X [V c], σ:{TENSE:{rmt} ASP:{pfv}} → X
i, X [V c], σ:{(TENSE:{rct} ASP:{pfv})} → Xro


Block ii
ii, X [V], σ:{TENSE:{fut} MOD:{pot}} → Xomo


Block iii
iii, X [V], σ:{TENSE:{hod} AGR(A):{sg}} → Xy
iii, X [V], σ:{TENSE:{rmt} AGR(A):{sg} ASP:{dur}} → Xw
iii, X [V], σ:{TENSE:{hod} AGR(A):{nsg}} → Xns
iii, X [V], σ:{TENSE:{fut} AGR(A):{nsg}} → Xey
iii, X [V], σ:{(TENSE:{fut} AGR(A):{3 nsg}) / (TENSE:{hod} ASP:{pfv}
    AGR(A):{nsg})} → Xme
iii, X [V], σ:{ASP:{pfv} TENSE:{rct} AGR(A):{nsg}} → Xrans
iii, X [V], σ:{TENSE:{rmt} AGR(A):{nsg}} → Xai
iii, X [V], σ:{TENSE:{(pres/rct} AGR(A):{2/3 nsg} / (ASP:{ipfv}
    AGR(A):{sg}) → Xe
iii, X [V], σ:{AGR(A):{nsg}} → Xy
iii, X [V c], σ:{TENSE:{rmt} AGR(A):{sg} ASP:{pfv}} → Xw
iii, X [V c], σ:{TENSE:{rct} AGR(A):{nsg} ASP:{pfv}} → Xns


Block iv
iv, X [V], σ:{TENSE:{fut} AGR(A):{1/3} AGR(U):{1/3}} → rX


Block undergoer
```

```
undergoer, X [V], σ:{AGR(U):{3} ((TENSE:{rct} ASP:{dur})/(TENSE:{rmt}
    ASP:{ipfv}))} → swX
undergoer, X [V], σ:{} → [ vi : [ v : <Xσ,>]]


Block v
v, X [V], σ:{AGR(U):{1}} → wX
v, X [V], σ:{AGR(U):{2}} → nX
v, X [V], σ:{AGR(U):{3}} → yX
v, X [V], σ:{AGR(U):{1} (TENSE:{fut}/ASP:{pfv})} → bX
v, X [V], σ:{AGR(U):{3} (TENSE:{fut}/ASP:{pfv})} → sX
v, X [V], σ:{AGR(U):{2} TENSE:{fut}} → ntX
v, X [V], σ:{AGR(U):{2} ((TENSE:{fut} MOD:{imp}) / (ASP:{pfv}
    TENSE:{prs/hod/rct/rmt})} → knX
v, X [V], σ:{} → X


Block vi
vi, X [V], σ:{(TENSE:{rct} ASP:{dur})/(TENSE:{rmt} ASP:{ipfv})} → kwX
```